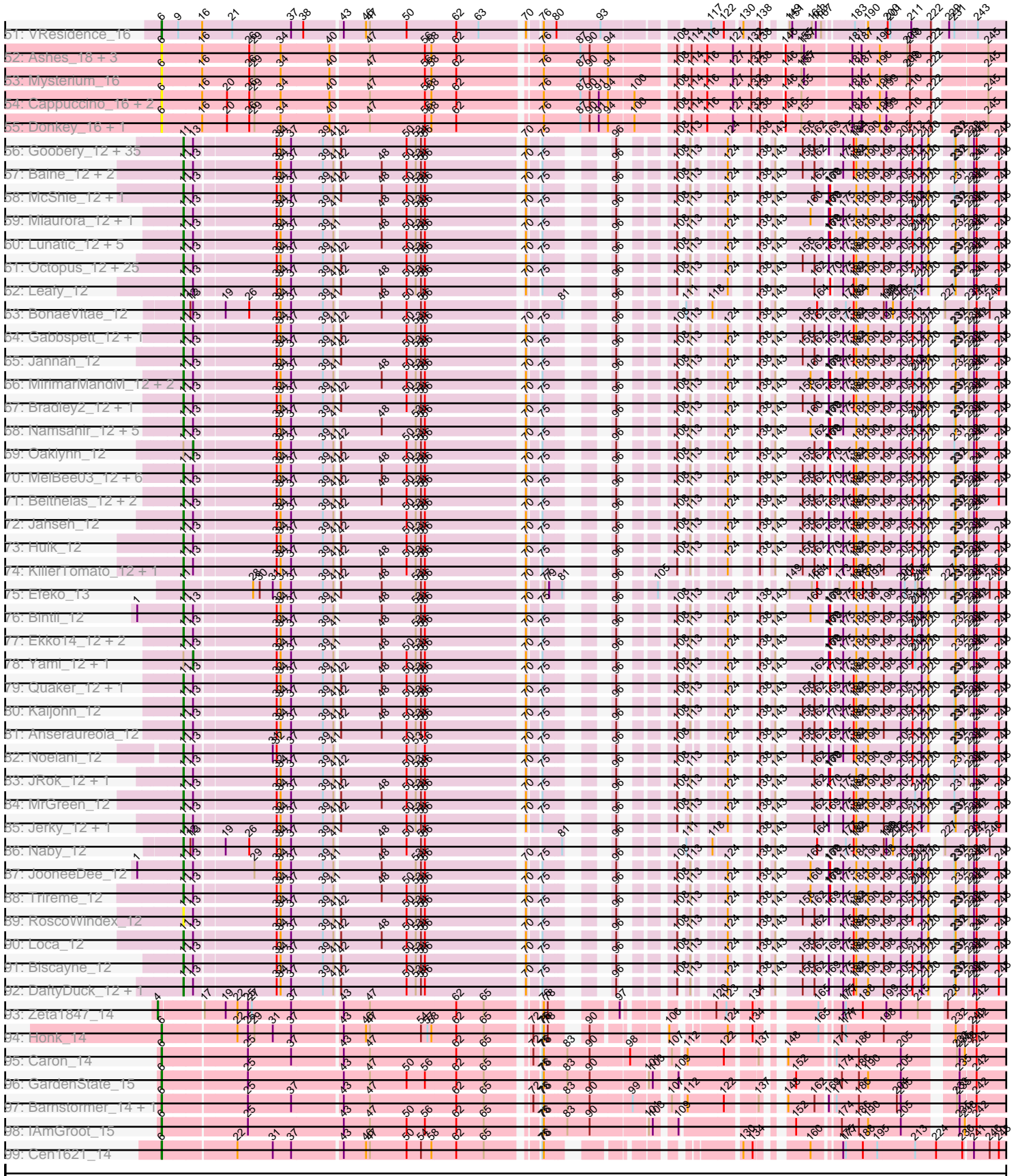


Zoomed Pham 192302

1: Kittykat_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
2: Makoto_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
3: EstebanJulior_14 + 1	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
4: BigBlack_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
5: O'Malley_14 + 4	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
6: Carpal_18 + 3	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
7: Oxyrhinus_18 + 1	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
8: CristinaYang_14 + 3	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
9: Scuttle_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
10: Suppi_18 + 1	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
11: AustinPowers_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
12: Moki_14 + 3	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
13: Beethoven_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
14: KingBob_14 + 5	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
15: HunterDaite_14 + 1	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
16: RAP15_18 + 3	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
17: LiiStuart_14 + 1	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
18: Wawa_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
19: Greenhouse_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
20: Potatoes_18 + 2	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
21: Orta_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
22: AppleCider_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
23: PinkFriday_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
24: Lakshmi_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
25: Fluke_18 + 3	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
26: Lucy_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
27: Korra_19	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
28: Gisselle_14 + 1	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
29: GreenHearts_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
30: DrRober_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
31: Nubia_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
32: OurGiniNessie_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
33: RcigaStruga_18 + 1	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
34: Pumancara_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
35: Litotes_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
36: Wayne_18 + 1	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
37: PitaDog_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
38: Rozby_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
39: Christian_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
40: MrGloopy_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
41: Riverdale_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
42: ChewChew_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
43: Pterodactyl_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
44: Joann_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
45: Preamble_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
46: CailleO'Malley_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
47: Supakev_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
48: Misaeng_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
49: WonderBoy_14	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240
50: BrotherBlo_18	3	6	10	18	30	36	40	50	61	70	81	87	92	104	112	119	120	130	140	150	160	170	180	190	200	210	220	230	240

# Zoomed Pham 192302



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 192302 Report

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

Pham number 192302 has 234 members, 17 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 : AustinPowers\_14
- Track 12 : Moki\_14, Bennie\_14, HeadNerd\_14, Huckleberry\_14
- Track 13 : Beethoven\_18
- Track 14 : KingBob\_14, Herb\_14, Sergei\_14, Temper16\_14, Maria1952\_14, Daiboju\_14
- Track 15 : HunterDalle\_14, Vulture\_14
- Track 16 : RAP15\_18, Vallejo\_18, Jumboset\_18, MeganNoll\_18
- Track 17 : LilStuart\_14, Lennox\_14
- Track 18 : Wawa\_18
- Track 19 : Greenhouse\_18
- Track 20 : Potatoes\_18, Cholula\_18, Immaculata\_18
- Track 21 : Urla\_14
- Track 22 : AppleCider\_18
- Track 23 : PinkFriday\_14
- Track 24 : Lakshmi\_18
- Track 25 : Fluke\_18, Glenn\_18, TattModd\_18, Savage2526\_18
- Track 26 : Lucy\_14
- Track 27 : Korra\_19
- Track 28 : Gisselle\_14, DreamTeam\_14
- Track 29 : GreenHearts\_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 : ChewChew\_14
- Track 43 : Pterodactyl\_14
- Track 44 : Joann\_18
- Track 45 : Preamble\_14
- Track 46 : CallieOMalley\_18
- Track 47 : Supakev\_14
- Track 48 : Misaeng\_18
- Track 49 : WonderBoy\_14
- Track 50 : BrotherBLo\_18
- Track 51 : VResidence\_16
- Track 52 : Ashes\_18, SpecialK\_18, Halsey\_20, Moss\_18
- Track 53 : Mysterium\_16
- Track 54 : Cappuccino\_16, Kalimba\_16, Sooty\_16
- Track 55 : Donkey\_16, Gambol\_16
- Track 56 : 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, Astro16\_12, Majesty\_12, Sage7\_12, BarBear\_12, Kojax4\_12, Aries55\_12, TeddyBoy\_12, Avvas\_12, Yasuo\_12, LaviMo\_12, Eightball\_12, TimoTea\_12
- Track 57 : Baine\_12, Lola20\_12, Cayde6\_12
- Track 58 : McShie\_12, BrokMonster\_12
- Track 59 : Miaurora\_12, Stem\_12
- Track 60 : Lunatic\_12, Nobel\_12, PuffyCat\_12, TinyTruffula\_12, Clownery\_12, Niffler\_12
- Track 61 : Octopus\_12, Alucard\_12, EdElric\_12, Puddles3\_12, Horacetta\_12, SeaWolves\_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, Sara\_12, Dongwon\_12, Witch\_12, YertPhresh\_12, Yubaba\_12
- Track 62 : Leafy\_12
- Track 63 : BonaeVitae\_12
- Track 64 : Gabbspett\_12, Hernandez44\_12
- Track 65 : Jannah\_12
- Track 66 : MirimarMandM\_12, Upsilon\_12, PoRanda\_12
- Track 67 : Bradley2\_12, Gillker\_12
- Track 68 : Namsahir\_12, Bullzi2019\_12, TomBrady12\_12, Snuffles\_13, Publix\_12, Slizam\_12
- Track 69 : Oaklynn\_12
- Track 70 : MelBee03\_12, Bodhi17\_12, KayPaulus\_12, Wolfpack\_12, Sippinontea\_12, Douggie\_12, Kevanna\_12
- Track 71 : Belthelas\_12, Concrete\_12, BoomRoasted\_12
- Track 72 : Jahseh\_12
- Track 73 : Hulk\_12
- Track 74 : KillerTomato\_12, Bri160\_12
- Track 75 : Efeko\_13
- Track 76 : Bintii\_12

- Track 77 : Ekko14\_12, HarperAnne\_12, Elspeth\_12
- Track 78 : Yami\_12, Cazares\_12
- Track 79 : Quaker\_12, Livingwater\_12
- Track 80 : Kaijohn\_12
- Track 81 : Anseraureola\_12
- Track 82 : Noelani\_12
- Track 83 : JRok\_12, Azizam\_12
- Track 84 : MrGreen\_12
- Track 85 : Jerky\_12, VitulaEligans\_12
- Track 86 : Naby\_12
- Track 87 : JooneeDee\_12
- Track 88 : Trireme\_12
- Track 89 : RoscoWindex\_12
- Track 90 : Loca\_12
- Track 91 : Biscayne\_12
- Track 92 : DaftyDuck\_12, MasterPitts\_12
- Track 93 : Zeta1847\_14
- Track 94 : Honk\_14
- Track 95 : Caron\_14
- Track 96 : GardenState\_15
- Track 97 : Barnstormer\_14, UtzChips\_14
- Track 98 : IAmGroot\_15
- Track 99 : 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 122 of the 217 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, Dongwon\_12, Dooby\_12, Duggie\_12, EdElric\_12, Efeko\_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, 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, Majesty\_12, ManAs\_12, Maneater\_12, MasterPitts\_12, McShie\_12, MelBee03\_12, Miaurora\_12, Minima\_12, MirimarMandM\_12, MrGreen\_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, Trireme\_12, Upsilon\_12, Vanisius\_12, VitulaEligans\_12, Witch\_12, Wolfpack\_12, Yasuo\_12, YertPhresh\_12, Yubaba\_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\_18, 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\_20, 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, Misaeng\_18, Moki\_14, Moss\_18, MrGloopy\_18, Mysterium\_16, Nancia\_14, Nubia\_18, OMalley\_14, OurGirlNessie\_14, Oxynfrius\_18, PartyCup\_18, PinkFriday\_14, PitaDog\_14, Potatoes\_18, Preamble\_14, Pterodactyl\_14, Pumancara\_14, RAP15\_18, RcigaStruga\_18, Riovina\_14, Riverdale\_18, Rozby\_18, Savage2526\_18, Scuttle\_18, Sergei\_14, Sooty\_16, SpecialK\_18, 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 234 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 217
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Zeta1847\_14 (EH),

Start 5:

- Found in 84 of 234 ( 35.9% ) of genes in pham
- Manual Annotations of this start: 83 of 217
- 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), LilStuart\_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),



Oxyxfrius\_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 18 of 234 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 8 of 217
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ashes\_18 (AZ5), Barnstormer\_14 (EH), Cappuccino\_16 (AZ5), Caron\_14 (EH), Cen1621\_14 (EH), Donkey\_16 (AZ5), Gambol\_16 (AZ5), GardenState\_15 (EH), Halsey\_20 (AZ5), Honk\_14 (EH), IAmGroot\_15 (EH), Kalimba\_16 (AZ5), Moss\_18 (AZ5), Mysterium\_16 (AZ5), Sooty\_16 (AZ5), SpecialK\_18 (AZ5), UtzChips\_14 (EH), VResidence\_16 (AZ1),

Start 11:

- Found in 131 of 234 ( 56.0% ) of genes in pham
- Manual Annotations of this start: 122 of 217
- Called 97.7% 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), Bintii\_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), Dongwon\_12 (EE), Dooby\_12 (EE), Douggie\_12 (EE), EdElric\_12 (EE), Efeke\_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), 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), 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), 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), 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),

Start 13:

- Found in 130 of 234 ( 55.6% ) of genes in pham
- Manual Annotations of this start: 3 of 217
- Called 2.3% 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 5 clusters represented in this pham: EE, AZ1, AK, EH, 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 EE:

- Start number 11 was manually annotated 122 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), (46, 13116), (49, 13161), (51, 13212), (52, 13215), (59, 13299), (71, 13485), (75, 13521), (78, 13533), (82, 13575), (95, 13686), (115, 13884), (129, 13977), (133, 14001), (135, 14004), (147, 14082), (149, 14088), (155, 14115), (162, 14145), (174, 14208), (179, 14223), (181, 14232), (182, 14235), (185, 14244), (190, 14268), (193, 14280), (194, 14286), (198, 14301), (199, 14307), (200, 14310), (204, 14331), (206, 14346), (210, 14361), (215, 14379), (216, 14385), (219, 14400), (222, 14409), (223, 14418), (229, 14451), (230, 14454), (232, 14466), (234, 14472), (237, 14484), (247, 14550), (248, 14565), (253, 14595), (255, 14604), (273, 14715), (279, 14751), (282, 14772), (291, 14847), (292, 14850), (298, 14904), (301, 14943), (309, 15000), (311, 15024), (317, 15066), (321, 15093), (331, 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), (46, 10194), (51, 10290), (52, 10293), (53, 10308), (61, 10395), (75, 10599), (76, 10602), (87, 10686), (119, 10992), (129, 11052), (131, 11070), (133, 11076), (141, 11109), (142, 11121), (147, 11157), (153, 11184), (159, 11208), (161, 11214), (171, 11271), (178, 11295), (180, 11304), (185, 11319), (190, 11343), (193, 11355), (198, 11376), (199, 11382), (203, 11403), (208, 11427), (210, 11436), (215, 11454), (219, 11475), (221, 11481), (223, 11493), (229, 11526), (230, 11529), (232, 11541), (236, 11556), (237, 11559), (249, 11646), (267, 11736), (268, 11739), (273, 11790), (282, 11847),



(283, 11856), (286, 11868), (291, 11922), (292, 11925), (298, 11979), (301, 12018), (308, 12066), (309, 12075), (311, 12099), (313, 12111), (328, 12207), (331, 12237),

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

Candidate Starts for Alucard\_12:

(Start: 11 @7541 has 122 MA's), (Start: 13 @7562 has 3 MA's), (32, 7739), (34, 7748), (37, 7772), (39, 7844), (41, 7868), (42, 7874), (50, 8024), (53, 8045), (54, 8057), (56, 8066), (70, 8273), (75, 8291), (96, 8378), (108, 8447), (113, 8459), (124, 8507), (138, 8537), (143, 8552), (156, 8588), (162, 8615), (169, 8636), (175, 8660), (182, 8684), (184, 8690), (190, 8717), (198, 8750), (205, 8789), (212, 8816), (217, 8837), (220, 8852), (231, 8879), (232, 8882), (239, 8903), (241, 8915), (242, 8921), (248, 8969), (254, 9005), (265, 9053), (270, 9080), (271, 9101), (280, 9164), (284, 9188), (290, 9245), (303, 9350), (305, 9371), (307, 9383), (311, 9425), (315, 9446), (317, 9467), (333, 9596),

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

Candidate Starts for Anseraureola\_12:

(Start: 11 @7563 has 122 MA's), (Start: 13 @7584 has 3 MA's), (32, 7761), (34, 7770), (37, 7794), (39, 7866), (41, 7890), (42, 7896), (48, 7989), (50, 8046), (53, 8067), (54, 8079), (56, 8088), (70, 8295), (75, 8313), (96, 8400), (108, 8469), (113, 8481), (124, 8529), (138, 8559), (143, 8574), (156, 8610), (162, 8637), (170, 8661), (175, 8682), (182, 8706), (184, 8712), (190, 8739), (198, 8772), (205, 8811), (212, 8838), (217, 8859), (220, 8874), (231, 8901), (232, 8904), (241, 8937), (242, 8943), (248, 8991), (254, 9027), (265, 9075), (270, 9102), (271, 9123), (280, 9186), (284, 9210), (290, 9267), (303, 9372), (305, 9393), (307, 9405), (311, 9447), (317, 9489), (333, 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), (46, 13068), (49, 13113), (51, 13164), (52, 13167), (55, 13197), (59, 13251), (64, 13335), (73, 13458), (81, 13518), (84, 13536), (86, 13551), (92, 13602), (115, 13833), (126, 13902), (129, 13926), (131, 13944), (133, 13950), (143, 14004), (144, 14016), (149, 14037), (154, 14061), (172, 14148), (179, 14172), (180, 14178), (181, 14181), (185, 14193), (189, 14214), (190, 14217), (191, 14223), (193, 14229), (197, 14247), (198, 14250), (199, 14256), (204, 14280), (208, 14301), (210, 14310), (215, 14328), (219, 14349), (222, 14358), (223, 14367), (229, 14400), (230, 14403), (231, 14412), (232, 14415), (243, 14466), (273, 14664), (275, 14676), (278, 14697), (279, 14700), (291, 14796), (292, 14799), (298, 14853), (301, 14892), (309, 14949), (314, 14991), (321, 15039), (328, 15081), (331, 15111),

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

Candidate Starts for Aries55\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 9478),

Gene: Ashes\_18 Start: 10335, Stop: 12755, Start Num: 6

Candidate Starts for Ashes\_18:

(Start: 6 @10335 has 8 MA's), (16, 10422), (26, 10527), (29, 10539), (34, 10599), (40, 10710), (47, 10791), (56, 10917), (58, 10932), (62, 10986), (76, 11160), (87, 11244), (90, 11265), (94, 11307), (108, 11433), (114, 11454), (116, 11487), (127, 11544), (132, 11586), (138, 11601), (146, 11652), (155, 11688), (157, 11694), (181, 11796), (187, 11817), (196, 11859), (209, 11919), (210, 11925), (222, 11973), (245, 12069), (275, 12246), (277, 12258), (285, 12309), (294, 12390), (301, 12459),

(306, 12495), (316, 12576), (319, 12591), (329, 12663), (332, 12687),

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

Candidate Starts for Astro16\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 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), (46, 10195), (51, 10291), (52, 10294), (53, 10309), (61, 10396), (64, 10462), (75, 10600), (76, 10603), (87, 10687), (119, 10993), (129, 11053), (131, 11071), (133, 11077), (141, 11110), (142, 11122), (147, 11158), (153, 11185), (159, 11209), (161, 11215), (171, 11272), (178, 11296), (180, 11305), (185, 11320), (190, 11344), (193, 11356), (198, 11377), (199, 11383), (203, 11404), (210, 11437), (215, 11455), (219, 11476), (221, 11482), (223, 11494), (229, 11527), (230, 11530), (232, 11542), (236, 11557), (237, 11560), (249, 11647), (267, 11737), (268, 11740), (273, 11791), (278, 11824), (282, 11848), (283, 11857), (291, 11923), (292, 11926), (298, 11980), (301, 12019), (308, 12067), (309, 12076), (311, 12100), (313, 12112), (328, 12208), (331, 12238),

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

Candidate Starts for Avvas\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 9478),

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

Candidate Starts for Azizam\_12:

(Start: 11 @7534 has 122 MA's), (Start: 13 @7555 has 3 MA's), (32, 7732), (34, 7741), (37, 7765), (39, 7837), (41, 7861), (42, 7867), (50, 8017), (53, 8038), (54, 8050), (56, 8059), (70, 8266), (75, 8284), (96, 8371), (108, 8440), (113, 8452), (124, 8500), (138, 8530), (143, 8545), (162, 8608), (169, 8629), (170, 8632), (184, 8683), (190, 8710), (198, 8743), (205, 8782), (212, 8809), (217, 8830), (220, 8845), (231, 8872), (239, 8896), (241, 8908), (242, 8914), (248, 8962), (265, 9046), (270, 9073), (271, 9094), (280, 9157), (284, 9181), (288, 9205), (289, 9226), (303, 9343), (305, 9364), (307, 9376), (311, 9418), (315, 9439), (317, 9460), (333, 9589),

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

Candidate Starts for Aztec\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Baine\_12:

(Start: 11 @7538 has 122 MA's), (Start: 13 @7559 has 3 MA's), (32, 7736), (34, 7745), (37, 7769), (39, 7841), (41, 7865), (42, 7871), (48, 7964), (50, 8021), (53, 8042), (54, 8054), (56, 8063), (70, 8270), (75, 8288), (96, 8375), (108, 8444), (113, 8456), (124, 8504), (138, 8534), (143, 8549), (156, 8585), (162, 8612), (175, 8657), (182, 8681), (184, 8687), (190, 8714), (198, 8747), (205, 8786), (212, 8813), (217, 8834), (220, 8849), (231, 8876), (232, 8879), (241, 8912), (242, 8918), (248, 8966), (254, 9002), (265, 9050), (270, 9077), (271, 9098), (280, 9161), (284, 9185), (290, 9242), (303, 9347), (305, 9368), (307, 9380), (311, 9422), (317, 9464), (333, 9596),

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

Candidate Starts for BarBear\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472),

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

Candidate Starts for Barnstormer\_14:

(Start: 6 @9927 has 8 MA's), (25, 10110), (37, 10206), (43, 10314), (47, 10374), (62, 10569), (65, 10632), (72, 10716), (75, 10728), (76, 10731), (83, 10782), (90, 10833), (99, 10920), (107, 10980), (112, 11004), (122, 11085), (137, 11145), (148, 11166), (162, 11226), (169, 11247), (171, 11256), (186, 11307), (204, 11394), (205, 11403), (233, 11499), (235, 11505), (242, 11538), (257, 11634), (265, 11673), (284, 11811), (291, 11874), (304, 11985), (317, 12090), (321, 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), (44, 12981), (46, 13023), (51, 13119), (52, 13122), (55, 13152), (59, 13206), (68, 13347), (69, 13368), (71, 13392), (73, 13413), (74, 13422), (81, 13473), (84, 13491), (102, 13677), (119, 13821), (125, 13854), (129, 13881), (131, 13899), (133, 13905), (139, 13929), (141, 13938), (147, 13986), (153, 14013), (161, 14043), (162, 14049), (171, 14100), (175, 14115), (179, 14127), (180, 14133), (181, 14136), (184, 14145), (190, 14172), (193, 14184), (195, 14193), (198, 14205), (199, 14211), (203, 14232), (208, 14256), (210, 14265), (218, 14301), (219, 14304), (223, 14322), (229, 14355), (230, 14358), (231, 14367), (232, 14370), (236, 14385), (249, 14475), (273, 14619), (279, 14655), (291, 14751), (292, 14754), (298, 14808), (301, 14847), (308, 14895), (309, 14904), (311, 14928), (314, 14946), (321, 14997), (325, 15021), (328, 15039), (331, 15069),

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

Candidate Starts for Belthelas\_12:

(Start: 11 @7590 has 122 MA's), (Start: 13 @7611 has 3 MA's), (32, 7788), (34, 7797), (37, 7821), (39, 7893), (41, 7917), (42, 7923), (48, 8016), (50, 8073), (53, 8094), (54, 8106), (56, 8115), (70, 8322), (75, 8340), (96, 8427), (108, 8496), (113, 8508), (124, 8556), (138, 8586), (143, 8601), (156, 8637), (162, 8664), (170, 8688), (175, 8709), (182, 8733), (184, 8739), (190, 8766), (198, 8799), (205, 8838), (212, 8865), (217, 8886), (220, 8901), (231, 8928), (232, 8931), (239, 8952), (241, 8964), (242, 8970), (248, 9018), (254, 9054), (265, 9102), (270, 9129), (271, 9150), (280, 9213), (284, 9237), (290, 9294), (303, 9399), (305, 9420), (307, 9432), (311, 9474), (315, 9495), (317, 9516), (333, 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), (46, 10176), (50, 10269), (51, 10272), (52, 10275), (55, 10305), (60, 10362), (68, 10500), (69, 10521), (73, 10566), (78, 10593), (81, 10626), (84, 10644), (90, 10686), (95, 10743), (125, 11007), (129, 11034), (131, 11052), (133, 11058), (139, 11082), (142, 11103), (147, 11139), (153, 11166), (161, 11196), (162, 11202), (171, 11253), (180, 11286), (190, 11325), (191, 11331), (193, 11337), (195, 11346), (198, 11358), (199, 11364), (204, 11388), (208, 11409), (210, 11418), (219, 11457), (223, 11475), (229, 11508), (230, 11511), (232, 11523), (236, 11538), (244, 11589), (248, 11622), (250, 11640), (256, 11664), (265, 11706), (273, 11772), (275, 11784), (282, 11829), (291, 11904), (292, 11907), (298, 11961), (301, 12000), (305, 12027), (309, 12057), (310, 12069), (311, 12081), (312, 12090), (321, 12156), (328, 12198), (331, 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), (44, 10130), (46, 10172), (50, 10265), (51, 10268), (52, 10271), (55, 10301), (68, 10496), (69, 10517), (73, 10562), (81, 10622), (84, 10640), (110, 10892), (125, 11003), (129, 11030), (131, 11048), (133, 11054), (139, 11078), (141, 11087), (147, 11135), (153, 11162), (154, 11165), (161, 11192), (162, 11198), (166, 11210), (171, 11249), (175, 11264), (179, 11276), (180, 11282), (181, 11285), (184, 11294), (190, 11321), (191, 11327), (193, 11333), (195, 11342), (198, 11354), (199, 11360), (200, 11363), (210, 11414), (218, 11450), (219, 11453), (229, 11504), (230, 11507), (231, 11516), (232, 11519), (236, 11534), (248, 11618), (269, 11726), (273, 11768), (291, 11900), (292, 11903), (298, 11957), (301, 11996), (308, 12044), (309, 12053), (311, 12077), (321, 12146), (322, 12152), (331, 12218),

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

Candidate Starts for BinkBonk\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472),

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

Candidate Starts for Bintii\_12:

(1, 7476), (Start: 11 @7572 has 122 MA's), (Start: 13 @7593 has 3 MA's), (32, 7770), (34, 7779), (37, 7803), (39, 7875), (41, 7899), (48, 7998), (53, 8076), (54, 8088), (56, 8097), (70, 8304), (75, 8322), (96, 8409), (108, 8478), (113, 8490), (124, 8538), (138, 8568), (143, 8583), (160, 8637), (169, 8667), (170, 8670), (175, 8691), (184, 8721), (190, 8748), (198, 8781), (205, 8820), (212, 8847), (213, 8853), (217, 8868), (220, 8883), (231, 8910), (232, 8913), (239, 8934), (241, 8946), (242, 8952), (248, 9000), (254, 9036), (265, 9084), (270, 9111), (271, 9132), (280, 9195), (284, 9219), (290, 9276), (303, 9381), (305, 9402), (307, 9414), (311, 9456), (315, 9477), (317, 9498),

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

Candidate Starts for Biscayne\_12:

(Start: 11 @7608 has 122 MA's), (Start: 13 @7629 has 3 MA's), (32, 7806), (34, 7815), (37, 7839), (39, 7911), (41, 7935), (42, 7941), (50, 8091), (53, 8112), (54, 8124), (56, 8133), (70, 8340), (75, 8358), (96, 8445), (108, 8514), (113, 8526), (124, 8574), (138, 8604), (143, 8619), (156, 8655), (162, 8682), (169, 8703), (175, 8727), (182, 8751), (184, 8757), (190, 8784), (198, 8817), (205, 8856), (212, 8883), (217, 8904), (220, 8919), (231, 8946), (232, 8949), (239, 8970), (241, 8982), (242, 8988), (248,

9036), (265, 9120), (270, 9147), (271, 9168), (280, 9231), (284, 9255), (290, 9312), (303, 9417), (305, 9438), (307, 9450), (311, 9492), (315, 9513), (317, 9534), (333, 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), (44, 10131), (46, 10173), (51, 10269), (52, 10272), (55, 10302), (64, 10440), (69, 10518), (73, 10563), (74, 10572), (81, 10623), (84, 10641), (85, 10653), (89, 10677), (110, 10893), (121, 10983), (125, 11004), (129, 11031), (131, 11049), (133, 11055), (139, 11079), (141, 11088), (147, 11136), (153, 11163), (161, 11193), (171, 11250), (175, 11265), (179, 11277), (180, 11283), (181, 11286), (184, 11295), (190, 11322), (193, 11334), (195, 11343), (198, 11355), (199, 11361), (204, 11385), (208, 11406), (210, 11415), (214, 11430), (219, 11454), (229, 11505), (230, 11508), (232, 11520), (245, 11595), (249, 11625), (256, 11661), (273, 11769), (275, 11781), (279, 11805), (291, 11901), (292, 11904), (296, 11937), (298, 11958), (301, 11997), (304, 12015), (308, 12045), (309, 12054), (311, 12078), (322, 12153), (331, 12219),

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

Candidate Starts for Bodhi17\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70, 8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (156, 8580), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (212, 8808), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248, 8961), (254, 8997), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 9588),

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

Candidate Starts for BonaeVitae\_12:

(Start: 11 @7240 has 122 MA's), (12, 7255), (Start: 13 @7261 has 3 MA's), (19, 7321), (26, 7375), (32, 7438), (34, 7447), (37, 7471), (39, 7543), (41, 7567), (48, 7666), (50, 7723), (54, 7756), (56, 7765), (81, 8032), (96, 8077), (111, 8149), (118, 8179), (138, 8236), (143, 8251), (164, 8320), (177, 8365), (182, 8383), (184, 8389), (198, 8449), (199, 8455), (202, 8470), (205, 8488), (212, 8515), (227, 8557), (239, 8602), (242, 8620), (246, 8647), (262, 8734), (265, 8752), (270, 8779), (274, 8821), (280, 8863), (281, 8866), (284, 8887), (297, 8998), (305, 9070), (307, 9082), (310, 9112), (311, 9124), (315, 9145), (330, 9253), (333, 9289),

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

Candidate Starts for BoomRoasted\_12:

(Start: 11 @7587 has 122 MA's), (Start: 13 @7608 has 3 MA's), (32, 7785), (34, 7794), (37, 7818), (39, 7890), (41, 7914), (42, 7920), (48, 8013), (50, 8070), (53, 8091), (54, 8103), (56, 8112), (70, 8319), (75, 8337), (96, 8424), (108, 8493), (113, 8505), (124, 8553), (138, 8583), (143, 8598), (156, 8634), (162, 8661), (170, 8685), (175, 8706), (182, 8730), (184, 8736), (190, 8763), (198, 8796), (205, 8835), (212, 8862), (217, 8883), (220, 8898), (231, 8925), (232, 8928), (239, 8949), (241, 8961), (242, 8967), (248, 9015), (254, 9051), (265, 9099), (270, 9126), (271, 9147), (280, 9210), (284, 9234), (290, 9291), (303, 9396), (305, 9417), (307, 9429), (311, 9471), (315, 9492), (317, 9513), (333, 9642),

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

Candidate Starts for Bradley2\_12:

(Start: 11 @7539 has 122 MA's), (Start: 13 @7560 has 3 MA's), (32, 7737), (34, 7746), (37, 7770), (39, 7842), (41, 7866), (42, 7872), (50, 8022), (53, 8043), (54, 8055), (56, 8064), (70, 8271), (75, 8289), (96, 8376), (108, 8445), (113, 8457), (124, 8505), (138, 8535), (143, 8550), (156, 8586), (162, 8613), (169, 8634), (175, 8658), (182, 8682), (184, 8688), (190, 8715), (198, 8748), (205, 8787), (212, 8814), (217, 8835), (220, 8850), (231, 8877), (232, 8880), (239, 8901), (241, 8913), (242, 8919), (248,

8967), (254, 9003), (265, 9051), (270, 9078), (271, 9099), (280, 9162), (284, 9186), (290, 9243), (303, 9348), (305, 9369), (307, 9381), (311, 9423), (315, 9444), (317, 9465), (333, 9594),

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

Candidate Starts for Bri160\_12:

(Start: 11 @7586 has 122 MA's), (Start: 13 @7607 has 3 MA's), (32, 7784), (34, 7793), (37, 7817), (39, 7889), (41, 7913), (42, 7919), (48, 8012), (50, 8069), (53, 8090), (54, 8102), (56, 8111), (70, 8318), (75, 8336), (96, 8423), (108, 8492), (113, 8504), (124, 8552), (138, 8582), (143, 8597), (156, 8633), (162, 8660), (170, 8684), (175, 8705), (182, 8729), (184, 8735), (190, 8762), (198, 8795), (205, 8834), (212, 8861), (217, 8882), (220, 8897), (231, 8924), (232, 8927), (239, 8948), (241, 8960), (242, 8966), (248, 9014), (254, 9050), (265, 9098), (270, 9125), (271, 9146), (280, 9209), (284, 9233), (290, 9290), (303, 9395), (305, 9416), (307, 9428), (311, 9470), (315, 9491), (317, 9512), (333, 9641),

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

Candidate Starts for BrokMonster\_12:

(Start: 11 @7529 has 122 MA's), (Start: 13 @7550 has 3 MA's), (32, 7727), (34, 7736), (37, 7760), (39, 7832), (41, 7856), (42, 7862), (48, 7955), (50, 8012), (53, 8033), (54, 8045), (56, 8054), (70, 8261), (75, 8279), (96, 8366), (108, 8435), (113, 8447), (124, 8495), (138, 8525), (143, 8540), (162, 8603), (169, 8624), (170, 8627), (184, 8678), (190, 8705), (198, 8738), (205, 8777), (212, 8804), (217, 8825), (220, 8840), (231, 8867), (239, 8891), (241, 8903), (242, 8909), (248, 8957), (265, 9041), (270, 9068), (271, 9089), (280, 9152), (284, 9176), (290, 9233), (303, 9338), (305, 9359), (307, 9371), (311, 9413), (315, 9434), (317, 9455), (333, 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), (44, 12987), (46, 13029), (51, 13125), (52, 13128), (55, 13158), (59, 13212), (68, 13353), (69, 13374), (71, 13398), (73, 13419), (74, 13428), (81, 13479), (84, 13497), (102, 13683), (119, 13827), (125, 13860), (129, 13887), (131, 13905), (133, 13911), (139, 13935), (141, 13944), (147, 13992), (153, 14019), (154, 14022), (159, 14043), (161, 14049), (162, 14055), (171, 14106), (175, 14121), (179, 14133), (180, 14139), (181, 14142), (184, 14151), (190, 14178), (193, 14190), (195, 14199), (198, 14211), (199, 14217), (203, 14238), (208, 14262), (210, 14271), (219, 14310), (223, 14328), (229, 14361), (230, 14364), (231, 14373), (232, 14376), (236, 14391), (249, 14481), (256, 14517), (273, 14625), (279, 14661), (282, 14682), (291, 14757), (292, 14760), (298, 14814), (301, 14853), (308, 14901), (309, 14910), (311, 14934), (314, 14952), (321, 15003), (325, 15027), (328, 15045), (331, 15075),

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

Candidate Starts for Bullzi2019\_12:

(Start: 11 @7561 has 122 MA's), (Start: 13 @7582 has 3 MA's), (32, 7759), (34, 7768), (37, 7792), (39, 7864), (41, 7888), (48, 7987), (53, 8065), (54, 8077), (56, 8086), (70, 8293), (75, 8311), (96, 8398), (108, 8467), (113, 8479), (124, 8527), (138, 8557), (143, 8572), (160, 8626), (169, 8656), (170, 8659), (175, 8680), (184, 8710), (190, 8737), (198, 8770), (205, 8809), (212, 8836), (213, 8842), (217, 8857), (220, 8872), (231, 8899), (232, 8902), (239, 8923), (241, 8935), (242, 8941), (248, 8989), (254, 9025), (265, 9073), (270, 9100), (271, 9121), (280, 9184), (284, 9208), (290, 9265), (303, 9370), (305, 9391), (311, 9445), (315, 9466), (317, 9487),

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

Candidate Starts for Burgy\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212,

8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 9478),

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

Candidate Starts for BurtonThePup\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 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), (46, 13068), (51, 13164), (52, 13167), (55, 13197), (64, 13335), (73, 13458), (81, 13518), (84, 13536), (86, 13551), (92, 13602), (115, 13833), (126, 13902), (129, 13926), (131, 13944), (133, 13950), (143, 14004), (144, 14016), (149, 14037), (154, 14061), (172, 14148), (179, 14172), (180, 14178), (181, 14181), (185, 14193), (189, 14214), (190, 14217), (191, 14223), (193, 14229), (195, 14238), (197, 14247), (198, 14250), (199, 14256), (204, 14280), (208, 14301), (210, 14310), (215, 14328), (219, 14349), (222, 14358), (223, 14367), (229, 14400), (230, 14403), (231, 14412), (232, 14415), (243, 14466), (256, 14556), (273, 14664), (275, 14676), (278, 14697), (279, 14700), (291, 14796), (292, 14799), (298, 14853), (301, 14892), (309, 14949), (314, 14991), (321, 15039), (328, 15081), (331, 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), (46, 13103), (49, 13148), (51, 13199), (52, 13202), (55, 13232), (64, 13370), (73, 13493), (81, 13553), (84, 13571), (86, 13586), (92, 13637), (115, 13868), (126, 13937), (129, 13961), (131, 13979), (133, 13985), (143, 14039), (144, 14051), (149, 14072), (154, 14096), (172, 14183), (179, 14207), (180, 14213), (181, 14216), (185, 14228), (189, 14249), (190, 14252), (191, 14258), (193, 14264), (195, 14273), (197, 14282), (198, 14285), (199, 14291), (204, 14315), (208, 14336), (210, 14345), (215, 14363), (219, 14384), (222, 14393), (223, 14402), (229, 14435), (230, 14438), (231, 14447), (232, 14450), (243, 14501), (256, 14591), (273, 14699), (275, 14711), (278, 14732), (279, 14735), (291, 14831), (292, 14834), (298, 14888), (301, 14927), (309, 14984), (314, 15026), (321, 15074), (328, 15116), (331, 15146),

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

Candidate Starts for Cappuccino\_16:

(Start: 6 @10243 has 8 MA's), (16, 10330), (20, 10387), (26, 10435), (29, 10447), (34, 10507), (40, 10618), (47, 10699), (56, 10825), (58, 10840), (62, 10894), (76, 11068), (87, 11152), (90, 11173), (91, 11194), (94, 11215), (100, 11266), (108, 11341), (114, 11362), (116, 11395), (127, 11452), (132, 11494), (138, 11509), (146, 11560), (155, 11596), (181, 11704), (187, 11725), (196, 11767), (199, 11779), (210, 11833), (222, 11881), (245, 11977), (272, 12133), (275, 12154), (277, 12166), (285, 12217), (301, 12367), (306, 12403), (310, 12436), (332, 12595),

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

Candidate Starts for Caron\_14:

(Start: 6 @9969 has 8 MA's), (25, 10152), (37, 10248), (43, 10356), (47, 10416), (62, 10611), (65, 10674), (72, 10758), (75, 10770), (76, 10773), (83, 10824), (90, 10875), (98, 10956), (107, 11022),



(112, 11046), (122, 11127), (137, 11187), (148, 11208), (171, 11298), (186, 11349), (205, 11445), (233, 11541), (235, 11547), (238, 11559), (242, 11580), (258, 11682), (265, 11715), (271, 11763), (284, 11853), (291, 11916), (293, 11928), (304, 12027), (317, 12132), (321, 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), (44, 12988), (46, 13030), (51, 13126), (52, 13129), (55, 13159), (59, 13213), (68, 13354), (69, 13375), (71, 13399), (73, 13420), (74, 13429), (81, 13480), (84, 13498), (102, 13684), (119, 13828), (125, 13861), (129, 13888), (131, 13906), (133, 13912), (139, 13936), (141, 13945), (147, 13993), (153, 14020), (154, 14023), (159, 14044), (162, 14056), (171, 14107), (175, 14122), (179, 14134), (181, 14143), (184, 14152), (190, 14179), (193, 14191), (195, 14200), (198, 14212), (199, 14218), (203, 14239), (208, 14263), (210, 14272), (219, 14311), (229, 14362), (230, 14365), (231, 14374), (232, 14377), (236, 14392), (249, 14482), (256, 14518), (273, 14626), (279, 14662), (291, 14758), (292, 14761), (298, 14815), (301, 14854), (308, 14902), (309, 14911), (311, 14935), (314, 14953), (321, 15004), (325, 15028), (328, 15046), (331, 15076),

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

Candidate Starts for Cayde6\_12:

(Start: 11 @7538 has 122 MA's), (Start: 13 @7559 has 3 MA's), (32, 7736), (34, 7745), (37, 7769), (39, 7841), (41, 7865), (42, 7871), (48, 7964), (50, 8021), (53, 8042), (54, 8054), (56, 8063), (70, 8270), (75, 8288), (96, 8375), (108, 8444), (113, 8456), (124, 8504), (138, 8534), (143, 8549), (156, 8585), (162, 8612), (175, 8657), (182, 8681), (184, 8687), (190, 8714), (198, 8747), (205, 8786), (212, 8813), (217, 8834), (220, 8849), (231, 8876), (232, 8879), (241, 8912), (242, 8918), (248, 8966), (254, 9002), (265, 9050), (270, 9077), (271, 9098), (280, 9161), (284, 9185), (290, 9242), (303, 9347), (305, 9368), (307, 9380), (311, 9422), (317, 9464), (333, 9596),

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

Candidate Starts for Cazares\_12:

(Start: 11 @7531 has 122 MA's), (Start: 13 @7552 has 3 MA's), (32, 7729), (34, 7738), (37, 7762), (39, 7834), (41, 7858), (48, 7957), (50, 8014), (53, 8035), (54, 8047), (56, 8056), (70, 8263), (75, 8281), (96, 8368), (108, 8437), (113, 8449), (124, 8497), (138, 8527), (143, 8542), (169, 8626), (170, 8629), (175, 8650), (184, 8680), (190, 8707), (198, 8740), (205, 8779), (212, 8806), (213, 8812), (217, 8827), (220, 8842), (232, 8872), (239, 8893), (241, 8905), (242, 8911), (248, 8959), (254, 8995), (265, 9043), (270, 9070), (271, 9091), (280, 9154), (284, 9178), (290, 9235), (303, 9340), (305, 9361), (311, 9415), (315, 9436), (317, 9457),

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

Candidate Starts for Cen1621\_14:

(Start: 6 @9057 has 8 MA's), (22, 9216), (31, 9294), (37, 9336), (43, 9444), (46, 9495), (47, 9504), (50, 9588), (54, 9621), (58, 9645), (62, 9699), (65, 9762), (75, 9858), (76, 9861), (130, 10152), (134, 10173), (160, 10254), (175, 10308), (177, 10314), (188, 10353), (195, 10386), (213, 10470), (224, 10518), (236, 10578), (241, 10596), (246, 10629), (248, 10650), (252, 10677), (260, 10710), (265, 10734), (266, 10743), (280, 10845), (291, 10932), (302, 11028), (309, 11082), (310, 11094), (323, 11187),

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

Candidate Starts for Charbie\_12:

(Start: 11 @7528 has 122 MA's), (Start: 13 @7549 has 3 MA's), (32, 7726), (34, 7735), (37, 7759), (39, 7831), (41, 7855), (42, 7861), (50, 8011), (53, 8032), (54, 8044), (56, 8053), (70, 8260), (75, 8278), (96, 8365), (108, 8434), (113, 8446), (124, 8494), (138, 8524), (143, 8539), (156, 8575), (162, 8602), (169, 8623), (175, 8647), (182, 8671), (184, 8677), (190, 8704), (198, 8737), (205, 8776), (212,

8803), (217, 8824), (220, 8839), (231, 8866), (232, 8869), (239, 8890), (241, 8902), (242, 8908), (248, 8956), (263, 9031), (265, 9040), (270, 9067), (271, 9088), (280, 9151), (284, 9175), (290, 9232), (303, 9337), (305, 9358), (307, 9370), (311, 9412), (315, 9433), (317, 9454),

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

Candidate Starts for Chatham\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Cheesecake\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 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), (46, 10172), (51, 10268), (52, 10271), (55, 10301), (64, 10439), (69, 10517), (73, 10562), (74, 10571), (81, 10622), (84, 10640), (85, 10652), (89, 10676), (110, 10892), (121, 10982), (125, 11003), (129, 11030), (131, 11048), (133, 11054), (139, 11078), (141, 11087), (147, 11135), (153, 11162), (161, 11192), (171, 11249), (175, 11264), (179, 11276), (180, 11282), (181, 11285), (184, 11294), (190, 11321), (193, 11333), (195, 11342), (198, 11354), (199, 11360), (204, 11384), (208, 11405), (210, 11414), (214, 11429), (218, 11450), (219, 11453), (229, 11504), (230, 11507), (232, 11519), (245, 11594), (249, 11624), (256, 11660), (273, 11768), (275, 11780), (279, 11804), (291, 11900), (292, 11903), (296, 11936), (298, 11957), (301, 11996), (304, 12014), (308, 12044), (309, 12053), (311, 12077), (322, 12152), (331, 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), (44, 13033), (46, 13075), (50, 13168), (51, 13171), (52, 13174), (55, 13204), (59, 13258), (68, 13399), (69, 13420), (71, 13444), (73, 13465), (74, 13474), (81, 13525), (84, 13543), (88, 13567), (102, 13729), (119, 13873), (125, 13906), (129, 13933), (131, 13951), (133, 13957), (139, 13981), (141, 13990), (147, 14038), (153, 14065), (159, 14089), (161, 14095), (162, 14101), (171, 14152), (175, 14167), (179, 14179), (180, 14185), (181, 14188), (184, 14197), (190, 14224), (193, 14236), (195, 14245), (198, 14257), (199, 14263), (203, 14284), (210, 14317), (219, 14356), (229, 14407), (230, 14410), (231, 14419), (232, 14422), (236, 14437), (248, 14521), (249, 14527), (256, 14563), (273, 14671), (275, 14683), (279, 14707), (291, 14803), (292, 14806), (298, 14860), (301, 14899), (308, 14947), (309, 14956), (311, 14980), (314, 14998), (321, 15049), (325, 15073), (328, 15091), (331, 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), (46, 10195), (51, 10291), (52, 10294), (53, 10309), (61, 10396), (75, 10600), (76, 10603), (87, 10687), (119, 10993), (129, 11053), (131, 11071), (133, 11077), (141, 11110), (142, 11122), (147, 11158), (153, 11185), (159, 11209), (161, 11215), (171, 11272), (178, 11296), (180, 11305), (185, 11320), (190, 11344), (193, 11356), (198, 11377), (199, 11383), (203, 11404), (208, 11428), (210, 11437), (215, 11455), (219, 11476), (221, 11482), (223, 11494), (229, 11527), (230, 11530), (232, 11542), (236, 11557), (237, 11560), (249, 11647), (267, 11737), (268, 11740), (273, 11791), (282, 11848), (283, 11857), (286, 11869), (291, 11923), (292, 11926), (298, 11980), (301, 12019), (308, 12067), (309, 12076), (311, 12100), (313, 12112), (328, 12208), (331, 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), (46, 10173), (51, 10269), (52, 10272), (55, 10302), (64, 10440), (69, 10518), (73, 10563), (74, 10572), (81, 10623), (84, 10641), (85, 10653), (89, 10677), (110, 10893), (121, 10983), (125, 11004), (129, 11031), (131, 11049), (133, 11055), (139, 11079), (141, 11088), (147, 11136), (153, 11163), (161, 11193), (171, 11250), (180, 11283), (184, 11295), (190, 11322), (191, 11328), (193, 11334), (195, 11343), (198, 11355), (199, 11361), (204, 11385), (208, 11406), (210, 11415), (214, 11430), (219, 11454), (229, 11505), (230, 11508), (232, 11520), (245, 11595), (249, 11625), (256, 11661), (273, 11769), (275, 11781), (279, 11805), (291, 11901), (292, 11904), (296, 11937), (298, 11958), (301, 11997), (304, 12015), (308, 12045), (309, 12054), (311, 12078), (322, 12153), (331, 12219),

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

Candidate Starts for Ciel\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472),

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

Candidate Starts for Clownery\_12:

(Start: 11 @7648 has 122 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (41, 7975), (48, 8074), (50, 8131), (53, 8152), (54, 8164), (56, 8173), (70, 8380), (75, 8398), (96, 8485), (108, 8554), (113, 8566), (124, 8614), (138, 8644), (143, 8659), (169, 8743), (170, 8746), (175, 8767), (184, 8797), (190, 8824), (198, 8857), (205, 8896), (212, 8923), (213, 8929), (217, 8944), (220, 8959), (232, 8989), (239, 9010), (241, 9022), (242, 9028), (248, 9076), (254, 9112), (265, 9160), (270, 9187), (271, 9208), (280, 9271), (284, 9295), (290, 9352), (303, 9457), (305, 9478), (311, 9532), (315, 9553), (317, 9574),

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

Candidate Starts for Concrete\_12:

(Start: 11 @7587 has 122 MA's), (Start: 13 @7608 has 3 MA's), (32, 7785), (34, 7794), (37, 7818), (39, 7890), (41, 7914), (42, 7920), (48, 8013), (50, 8070), (53, 8091), (54, 8103), (56, 8112), (70, 8319), (75, 8337), (96, 8424), (108, 8493), (113, 8505), (124, 8553), (138, 8583), (143, 8598), (156, 8634), (162, 8661), (170, 8685), (175, 8706), (182, 8730), (184, 8736), (190, 8763), (198, 8796), (205, 8835), (212, 8862), (217, 8883), (220, 8898), (231, 8925), (232, 8928), (239, 8949), (241, 8961), (242, 8967), (248, 9015), (254, 9051), (265, 9099), (270, 9126), (271, 9147), (280, 9210), (284, 9234), (290, 9291), (303, 9396), (305, 9417), (307, 9429), (311, 9471), (315, 9492), (317, 9513), (333, 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), (44, 10131), (46, 10173), (51, 10269), (52, 10272), (55, 10302), (64, 10440), (69, 10518), (73, 10563), (74, 10572), (81, 10623), (84, 10641), (85, 10653), (89, 10677), (110, 10893), (121, 10983), (125, 11004), (129, 11031), (131, 11049), (133, 11055), (139, 11079), (141, 11088), (147, 11136), (153, 11163), (161, 11193), (171, 11250), (175, 11265), (179, 11277), (180, 11283), (181, 11286), (184, 11295), (190, 11322), (193, 11334), (195, 11343), (198, 11355), (199, 11361), (204, 11385), (208, 11406), (210, 11415), (214, 11430), (219, 11454), (229, 11505), (230, 11508), (232, 11520), (245, 11595), (249, 11625), (256, 11661), (273, 11769), (275, 11781), (279, 11805), (291, 11901), (292, 11904), (296, 11937), (298, 11958), (301, 11997), (304, 12015), (308, 12045), (309, 12054), (311, 12078), (322, 12153), (331, 12219),

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

Candidate Starts for DaftyDuck\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472), (333, 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), (46, 10200), (51, 10296), (71, 10569), (73, 10590), (79, 10620), (81, 10650), (92, 10737), (104, 10860), (112, 10935), (119, 10998), (125, 11031), (128, 11052), (129, 11058), (131, 11076), (133, 11082), (139, 11106), (144, 11148), (147, 11163), (149, 11169), (155, 11196), (168, 11247), (172, 11280), (174, 11289), (180, 11310), (184, 11322), (190, 11349), (193, 11361), (195, 11370), (198, 11382), (199, 11388), (200, 11391), (204, 11412), (210, 11442), (215, 11460), (219, 11481), (222, 11490), (223, 11499), (229, 11532), (230, 11535), (232, 11547), (236, 11562), (248, 11646), (249, 11652), (256, 11688), (268, 11745), (269, 11754), (273, 11796), (282, 11853), (291, 11928), (292, 11931), (295, 11961), (298, 11985), (304, 12042), (308, 12072), (309, 12081), (311, 12105), (313, 12117), (331, 12243),

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

Candidate Starts for Danimal\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Danno\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248,

8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 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), (44, 12986), (46, 13028), (51, 13124), (52, 13127), (55, 13157), (59, 13211), (68, 13352), (69, 13373), (71, 13397), (73, 13418), (74, 13427), (81, 13478), (84, 13496), (102, 13682), (119, 13826), (125, 13859), (129, 13886), (131, 13904), (133, 13910), (139, 13934), (141, 13943), (147, 13991), (153, 14018), (154, 14021), (159, 14042), (162, 14054), (171, 14105), (175, 14120), (179, 14132), (181, 14141), (184, 14150), (190, 14177), (193, 14189), (195, 14198), (198, 14210), (199, 14216), (203, 14237), (208, 14261), (210, 14270), (219, 14309), (229, 14360), (230, 14363), (231, 14372), (232, 14375), (236, 14390), (249, 14480), (256, 14516), (273, 14624), (279, 14660), (291, 14756), (292, 14759), (298, 14813), (301, 14852), (308, 14900), (309, 14909), (311, 14933), (314, 14951), (321, 15002), (325, 15026), (328, 15044), (331, 15074),

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

Candidate Starts for Dongwon\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Donkey\_16:

(Start: 6 @10243 has 8 MA's), (16, 10330), (20, 10387), (26, 10435), (29, 10447), (34, 10507), (40, 10618), (47, 10699), (56, 10825), (58, 10840), (62, 10894), (76, 11068), (87, 11152), (90, 11173), (91, 11194), (94, 11215), (100, 11266), (108, 11341), (114, 11362), (116, 11395), (127, 11452), (132, 11494), (138, 11509), (146, 11560), (155, 11596), (181, 11704), (187, 11725), (196, 11767), (199, 11779), (210, 11833), (222, 11881), (245, 11977), (272, 12133), (275, 12154), (277, 12166), (285, 12217), (301, 12367), (306, 12403), (316, 12484), (332, 12595),

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

Candidate Starts for Dooby\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Douggie\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70, 8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (156, 8580), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (212, 8808), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248,

8961), (254, 8997), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 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), (46, 10173), (51, 10269), (52, 10272), (55, 10302), (64, 10440), (69, 10518), (73, 10563), (74, 10572), (81, 10623), (84, 10641), (85, 10653), (89, 10677), (110, 10893), (121, 10983), (125, 11004), (129, 11031), (131, 11049), (139, 11079), (141, 11088), (147, 11136), (153, 11163), (161, 11193), (171, 11250), (175, 11265), (179, 11277), (180, 11283), (181, 11286), (184, 11295), (190, 11322), (193, 11334), (195, 11343), (198, 11355), (199, 11361), (204, 11385), (208, 11406), (210, 11415), (214, 11430), (219, 11454), (229, 11505), (230, 11508), (232, 11520), (245, 11595), (249, 11625), (256, 11661), (273, 11769), (275, 11781), (278, 11802), (279, 11805), (291, 11901), (292, 11904), (296, 11937), (298, 11958), (304, 12015), (308, 12045), (309, 12054), (311, 12078), (322, 12153), (331, 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), (46, 10240), (49, 10285), (51, 10336), (52, 10339), (68, 10564), (69, 10585), (74, 10639), (78, 10657), (79, 10660), (81, 10690), (119, 11026), (128, 11080), (129, 11086), (131, 11104), (133, 11110), (142, 11155), (146, 11188), (147, 11191), (158, 11239), (159, 11242), (162, 11254), (165, 11263), (172, 11308), (174, 11317), (180, 11338), (184, 11350), (185, 11353), (190, 11377), (191, 11383), (193, 11389), (198, 11410), (199, 11416), (203, 11437), (208, 11461), (210, 11470), (215, 11488), (219, 11509), (221, 11515), (229, 11560), (230, 11563), (231, 11572), (232, 11575), (248, 11674), (249, 11680), (260, 11734), (273, 11824), (291, 11956), (292, 11959), (298, 12013), (301, 12052), (304, 12070), (308, 12100), (309, 12109), (314, 12151), (331, 12271),

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

Candidate Starts for EdElric\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Efeko\_13:

(Start: 11 @7413 has 122 MA's), (28, 7557), (30, 7572), (31, 7602), (34, 7620), (37, 7644), (39, 7716), (41, 7740), (42, 7746), (48, 7839), (53, 7917), (54, 7929), (56, 7938), (70, 8145), (77, 8169), (79, 8178), (81, 8205), (96, 8250), (105, 8295), (149, 8430), (161, 8478), (164, 8490), (173, 8523), (182, 8556), (184, 8562), (188, 8577), (192, 8598), (205, 8661), (207, 8670), (213, 8694), (215, 8700), (217, 8709), (227, 8730), (231, 8751), (232, 8754), (239, 8775), (241, 8787), (242, 8793), (246, 8820), (248, 8841), (252, 8868), (262, 8907), (265, 8925), (270, 8952), (271, 8973), (280, 9036), (281, 9039), (284, 9060), (289, 9105), (297, 9171), (303, 9222), (305, 9243), (307, 9255), (311, 9297), (329, 9420), (330, 9426),

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

Candidate Starts for Eightball\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75,

8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472),

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

Candidate Starts for Ekko14\_12:

(Start: 11 @7529 has 122 MA's), (Start: 13 @7550 has 3 MA's), (32, 7727), (34, 7736), (37, 7760), (39, 7832), (41, 7856), (48, 7955), (53, 8033), (54, 8045), (56, 8054), (70, 8261), (75, 8279), (96, 8366), (108, 8435), (113, 8447), (124, 8495), (138, 8525), (143, 8540), (169, 8624), (170, 8627), (175, 8648), (184, 8678), (190, 8705), (198, 8738), (205, 8777), (212, 8804), (213, 8810), (217, 8825), (220, 8840), (232, 8870), (239, 8891), (241, 8903), (242, 8909), (248, 8957), (254, 8993), (265, 9041), (270, 9068), (271, 9089), (280, 9152), (284, 9176), (290, 9233), (303, 9338), (305, 9359), (311, 9413), (315, 9434), (317, 9455),

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

Candidate Starts for Elspeth\_12:

(Start: 11 @7529 has 122 MA's), (Start: 13 @7550 has 3 MA's), (32, 7727), (34, 7736), (37, 7760), (39, 7832), (41, 7856), (48, 7955), (53, 8033), (54, 8045), (56, 8054), (70, 8261), (75, 8279), (96, 8366), (108, 8435), (113, 8447), (124, 8495), (138, 8525), (143, 8540), (169, 8624), (170, 8627), (175, 8648), (184, 8678), (190, 8705), (198, 8738), (205, 8777), (212, 8804), (213, 8810), (217, 8825), (220, 8840), (232, 8870), (239, 8891), (241, 8903), (242, 8909), (248, 8957), (254, 8993), (265, 9041), (270, 9068), (271, 9089), (280, 9152), (284, 9176), (290, 9233), (303, 9338), (305, 9359), (311, 9413), (315, 9434), (317, 9455),

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

Candidate Starts for Erin\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (45, 10187), (46, 10208), (51, 10304), (60, 10394), (66, 10487), (73, 10598), (81, 10658), (82, 10667), (114, 10940), (119, 10994), (125, 11027), (128, 11048), (129, 11054), (131, 11072), (147, 11159), (162, 11222), (172, 11276), (174, 11285), (180, 11306), (184, 11318), (185, 11321), (190, 11345), (191, 11351), (193, 11357), (195, 11366), (198, 11378), (199, 11384), (203, 11405), (210, 11438), (214, 11453), (215, 11456), (219, 11477), (221, 11483), (223, 11495), (229, 11528), (230, 11531), (231, 11540), (232, 11543), (236, 11558), (248, 11642), (255, 11681), (273, 11792), (275, 11804), (282, 11849), (291, 11924), (292, 11927), (298, 11981), (308, 12068), (309, 12077), (311, 12101), (313, 12113), (321, 12170), (322, 12176), (331, 12242), (334, 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), (46, 10194), (51, 10290), (52, 10293), (53, 10308), (61, 10395), (75, 10599), (76, 10602), (87, 10686), (119, 10992), (129, 11052), (131, 11070), (133, 11076), (141, 11109), (142, 11121), (147, 11157),



(153, 11184), (159, 11208), (161, 11214), (171, 11271), (178, 11295), (180, 11304), (185, 11319), (190, 11343), (193, 11355), (198, 11376), (199, 11382), (203, 11403), (208, 11427), (210, 11436), (215, 11454), (219, 11475), (221, 11481), (223, 11493), (229, 11526), (230, 11529), (232, 11541), (236, 11556), (237, 11559), (249, 11646), (267, 11736), (268, 11739), (273, 11790), (282, 11847), (283, 11856), (286, 11868), (291, 11922), (292, 11925), (298, 11979), (301, 12018), (308, 12066), (309, 12075), (311, 12099), (313, 12111), (328, 12207), (331, 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), (44, 13029), (46, 13071), (51, 13167), (52, 13170), (55, 13200), (59, 13254), (68, 13395), (69, 13416), (71, 13440), (73, 13461), (74, 13470), (81, 13521), (84, 13539), (102, 13725), (119, 13869), (125, 13902), (129, 13929), (131, 13947), (133, 13953), (139, 13977), (141, 13986), (147, 14034), (153, 14061), (161, 14091), (162, 14097), (171, 14148), (175, 14163), (179, 14175), (180, 14181), (181, 14184), (184, 14193), (190, 14220), (193, 14232), (195, 14241), (198, 14253), (199, 14259), (203, 14280), (208, 14304), (210, 14313), (219, 14352), (223, 14370), (229, 14403), (230, 14406), (231, 14415), (232, 14418), (236, 14433), (249, 14523), (256, 14559), (273, 14667), (279, 14703), (291, 14799), (292, 14802), (298, 14856), (301, 14895), (308, 14943), (309, 14952), (311, 14976), (314, 14994), (321, 15045), (325, 15069), (328, 15087), (331, 15117),

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

Candidate Starts for Gabbspett\_12:

(Start: 11 @7641 has 122 MA's), (Start: 13 @7662 has 3 MA's), (32, 7839), (34, 7848), (37, 7872), (39, 7944), (41, 7968), (42, 7974), (50, 8124), (53, 8145), (54, 8157), (56, 8166), (70, 8373), (75, 8391), (96, 8478), (108, 8547), (113, 8559), (124, 8607), (138, 8637), (143, 8652), (156, 8688), (162, 8715), (169, 8736), (175, 8760), (182, 8784), (184, 8790), (190, 8817), (198, 8850), (205, 8889), (212, 8916), (217, 8937), (220, 8952), (231, 8979), (232, 8982), (239, 9003), (241, 9015), (242, 9021), (248, 9069), (263, 9144), (265, 9153), (270, 9180), (271, 9201), (280, 9264), (284, 9288), (290, 9345), (303, 9450), (305, 9471), (307, 9483), (311, 9525), (315, 9546), (317, 9567),

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

Candidate Starts for Gambol\_16:

(Start: 6 @10243 has 8 MA's), (16, 10330), (20, 10387), (26, 10435), (29, 10447), (34, 10507), (40, 10618), (47, 10699), (56, 10825), (58, 10840), (62, 10894), (76, 11068), (87, 11152), (90, 11173), (91, 11194), (94, 11215), (100, 11266), (108, 11341), (114, 11362), (116, 11395), (127, 11452), (132, 11494), (138, 11509), (146, 11560), (155, 11596), (181, 11704), (187, 11725), (196, 11767), (199, 11779), (210, 11833), (222, 11881), (245, 11977), (272, 12133), (275, 12154), (277, 12166), (285, 12217), (301, 12367), (306, 12403), (316, 12484), (332, 12595),

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

Candidate Starts for GardenState\_15:

(Start: 6 @10196 has 8 MA's), (25, 10379), (43, 10595), (47, 10655), (50, 10739), (56, 10781), (62, 10850), (65, 10913), (75, 11009), (76, 11012), (83, 11063), (90, 11114), (101, 11228), (103, 11237), (109, 11276), (152, 11465), (174, 11549), (186, 11588), (190, 11609), (205, 11684), (235, 11786), (242, 11819), (261, 11933), (264, 11948), (265, 11954), (287, 12104), (290, 12149), (291, 12155), (304, 12266), (309, 12305), (317, 12371),

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

Candidate Starts for Gardevoir\_12:

(Start: 11 @7574 has 122 MA's), (Start: 13 @7595 has 3 MA's), (32, 7772), (34, 7781), (37, 7805), (39, 7877), (41, 7901), (42, 7907), (50, 8057), (53, 8078), (54, 8090), (56, 8099), (70, 8306), (75, 8324), (96, 8411), (108, 8480), (113, 8492), (124, 8540), (138, 8570), (143, 8585), (156, 8621), (162,

8648), (169, 8669), (175, 8693), (182, 8717), (184, 8723), (190, 8750), (198, 8783), (205, 8822), (212, 8849), (217, 8870), (220, 8885), (231, 8912), (232, 8915), (239, 8936), (241, 8948), (242, 8954), (248, 9002), (254, 9038), (265, 9086), (270, 9113), (271, 9134), (280, 9197), (284, 9221), (290, 9278), (303, 9383), (305, 9404), (307, 9416), (311, 9458), (315, 9479), (317, 9500), (333, 9629),

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

Candidate Starts for Gillker\_12:

(Start: 11 @7539 has 122 MA's), (Start: 13 @7560 has 3 MA's), (32, 7737), (34, 7746), (37, 7770), (39, 7842), (41, 7866), (42, 7872), (50, 8022), (53, 8043), (54, 8055), (56, 8064), (70, 8271), (75, 8289), (96, 8376), (108, 8445), (113, 8457), (124, 8505), (138, 8535), (143, 8550), (156, 8586), (162, 8613), (169, 8634), (175, 8658), (182, 8682), (184, 8688), (190, 8715), (198, 8748), (205, 8787), (212, 8814), (217, 8835), (220, 8850), (231, 8877), (232, 8880), (239, 8901), (241, 8913), (242, 8919), (248, 8967), (254, 9003), (265, 9051), (270, 9078), (271, 9099), (280, 9162), (284, 9186), (290, 9243), (303, 9348), (305, 9369), (307, 9381), (311, 9423), (315, 9444), (317, 9465), (333, 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), (46, 10240), (49, 10285), (51, 10336), (52, 10339), (68, 10564), (69, 10585), (74, 10639), (78, 10657), (79, 10660), (81, 10690), (119, 11026), (128, 11080), (129, 11086), (131, 11104), (133, 11110), (142, 11155), (146, 11188), (147, 11191), (158, 11239), (159, 11242), (162, 11254), (165, 11263), (172, 11308), (174, 11317), (180, 11338), (184, 11350), (185, 11353), (190, 11377), (191, 11383), (193, 11389), (198, 11410), (199, 11416), (203, 11437), (208, 11461), (210, 11470), (215, 11488), (219, 11509), (221, 11515), (229, 11560), (230, 11563), (231, 11572), (232, 11575), (248, 11674), (249, 11680), (260, 11734), (273, 11824), (291, 11956), (292, 11959), (298, 12013), (301, 12052), (304, 12070), (308, 12100), (309, 12109), (314, 12151), (331, 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), (44, 13038), (46, 13080), (51, 13176), (52, 13179), (55, 13209), (59, 13263), (68, 13404), (69, 13425), (71, 13449), (73, 13470), (74, 13479), (81, 13530), (84, 13548), (102, 13734), (119, 13878), (125, 13911), (129, 13938), (131, 13956), (133, 13962), (139, 13986), (141, 13995), (147, 14043), (153, 14070), (161, 14100), (162, 14106), (171, 14157), (175, 14172), (179, 14184), (180, 14190), (181, 14193), (184, 14202), (190, 14229), (193, 14241), (195, 14250), (198, 14262), (199, 14268), (203, 14289), (208, 14313), (210, 14322), (219, 14361), (223, 14379), (229, 14412), (230, 14415), (231, 14424), (232, 14427), (236, 14442), (249, 14532), (256, 14568), (273, 14676), (279, 14712), (291, 14808), (292, 14811), (298, 14865), (301, 14904), (308, 14952), (309, 14961), (311, 14985), (314, 15003), (321, 15054), (325, 15078), (328, 15096), (331, 15126),

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

Candidate Starts for Godfather\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 9478),

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

Candidate Starts for GoldenBlanche\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Goobery\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 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), (46, 13163), (49, 13208), (51, 13259), (52, 13262), (59, 13346), (71, 13532), (75, 13568), (78, 13580), (82, 13622), (115, 13931), (129, 14024), (131, 14042), (133, 14048), (147, 14129), (149, 14135), (155, 14162), (162, 14192), (174, 14255), (179, 14270), (181, 14279), (182, 14282), (185, 14291), (190, 14315), (193, 14327), (194, 14333), (198, 14348), (199, 14354), (200, 14357), (204, 14378), (206, 14393), (210, 14408), (215, 14426), (216, 14432), (219, 14447), (222, 14456), (223, 14465), (229, 14498), (230, 14501), (232, 14513), (234, 14519), (237, 14531), (247, 14597), (248, 14612), (253, 14642), (255, 14651), (273, 14762), (279, 14798), (282, 14819), (291, 14894), (292, 14897), (298, 14951), (301, 14990), (309, 15047), (311, 15071), (317, 15113), (321, 15140), (331, 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), (46, 13087), (49, 13132), (51, 13183), (55, 13216), (68, 13411), (73, 13477), (75, 13492), (78, 13504), (82, 13546), (95, 13657), (102, 13744), (115, 13855), (119, 13888), (129, 13948), (133, 13972), (135, 13975), (147, 14053), (149, 14059), (150, 14062), (155, 14086), (162, 14116), (174, 14179), (179, 14194), (180, 14200), (181, 14203), (185, 14215), (190, 14239), (193, 14251), (194, 14257), (198, 14272), (199, 14278), (200, 14281), (204, 14302), (206, 14317), (210, 14332), (215, 14350), (216, 14356), (219, 14371), (222, 14380), (229, 14422), (230, 14425), (232, 14437), (234, 14443), (237, 14455), (244, 14503), (247, 14521), (248, 14536), (253, 14566), (255, 14575), (273, 14686), (279, 14722), (282, 14743), (291, 14818), (292, 14821), (298, 14875), (301, 14914), (309, 14971), (311, 14995), (317, 15037), (321, 15064), (331, 15133),

Gene: Halsey\_20 Start: 10335, Stop: 12755, Start Num: 6

Candidate Starts for Halsey\_20:

(Start: 6 @10335 has 8 MA's), (16, 10422), (26, 10527), (29, 10539), (34, 10599), (40, 10710), (47, 10791), (56, 10917), (58, 10932), (62, 10986), (76, 11160), (87, 11244), (90, 11265), (94, 11307), (108, 11433), (114, 11454), (116, 11487), (127, 11544), (132, 11586), (138, 11601), (146, 11652), (155, 11688), (157, 11694), (181, 11796), (187, 11817), (196, 11859), (209, 11919), (210, 11925), (222, 11973), (245, 12069), (275, 12246), (277, 12258), (285, 12309), (294, 12390), (301, 12459), (306, 12495), (316, 12576), (319, 12591), (329, 12663), (332, 12687),

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

Candidate Starts for HarperAnne\_12:

(Start: 11 @7528 has 122 MA's), (Start: 13 @7549 has 3 MA's), (32, 7726), (34, 7735), (37, 7759), (39, 7831), (41, 7855), (48, 7954), (53, 8032), (54, 8044), (56, 8053), (70, 8260), (75, 8278), (96, 8365), (108, 8434), (113, 8446), (124, 8494), (138, 8524), (143, 8539), (169, 8623), (170, 8626), (175, 8647), (184, 8677), (190, 8704), (198, 8737), (205, 8776), (212, 8803), (213, 8809), (217, 8824), (220, 8839), (232, 8869), (239, 8890), (241, 8902), (242, 8908), (248, 8956), (254, 8992), (265, 9040), (270, 9067), (271, 9088), (280, 9151), (284, 9175), (290, 9232), (303, 9337), (305, 9358), (311, 9412), (315, 9433), (317, 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), (46, 10176), (50, 10269), (51, 10272), (52, 10275), (55, 10305), (60, 10362), (68, 10500), (69, 10521), (73, 10566), (78, 10593), (81, 10626), (84, 10644), (90, 10686), (95, 10743), (125, 11007), (129, 11034), (131, 11052), (133, 11058), (139, 11082), (142, 11103), (147, 11139), (153, 11166), (161, 11196), (162, 11202), (171, 11253), (180, 11286), (190, 11325), (191, 11331), (193, 11337), (195, 11346), (198, 11358), (199, 11364), (204, 11388), (208, 11409), (210, 11418), (219, 11457), (223, 11475), (229, 11508), (230, 11511), (232, 11523), (236, 11538), (244, 11589), (248, 11622), (250, 11640), (256, 11664), (265, 11706), (273, 11772), (275, 11784), (282, 11829), (291, 11904), (292, 11907), (298, 11961), (301, 12000), (305, 12027), (309, 12057), (310, 12069), (311, 12081), (312, 12090), (321, 12156), (328, 12198), (331, 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), (46, 10200), (51, 10296), (71, 10569), (73, 10590), (79, 10620), (81, 10650), (92, 10737), (104, 10860), (112, 10935), (119, 10998), (125, 11031), (128, 11052), (129, 11058), (131, 11076), (133, 11082), (139, 11106), (144, 11148), (147, 11163), (149, 11169), (155, 11196), (168, 11247), (172, 11280), (174, 11289), (180, 11310), (184, 11322), (190, 11349), (193, 11361), (195, 11370), (198, 11382), (199, 11388), (200, 11391), (204, 11412), (210, 11442), (215, 11460), (219, 11481), (222, 11490), (223, 11499), (229, 11532), (230, 11535), (232, 11547), (236, 11562), (248, 11646), (249, 11652), (256, 11688), (268, 11745), (269, 11754), (273, 11796), (282, 11853), (291, 11928), (292, 11931), (295, 11961), (298, 11985), (304, 12042), (308, 12072), (309, 12081), (311, 12105), (313, 12117), (331, 12243),

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

Candidate Starts for Hernandez44\_12:

(Start: 11 @7641 has 122 MA's), (Start: 13 @7662 has 3 MA's), (32, 7839), (34, 7848), (37, 7872), (39, 7944), (41, 7968), (42, 7974), (50, 8124), (53, 8145), (54, 8157), (56, 8166), (70, 8373), (75, 8391), (96, 8478), (108, 8547), (113, 8559), (124, 8607), (138, 8637), (143, 8652), (156, 8688), (162, 8715), (169, 8736), (175, 8760), (182, 8784), (184, 8790), (190, 8817), (198, 8850), (205, 8889), (212, 8916), (217, 8937), (220, 8952), (231, 8979), (232, 8982), (239, 9003), (241, 9015), (242, 9021), (248, 9069), (263, 9144), (265, 9153), (270, 9180), (271, 9201), (280, 9264), (284, 9288), (290, 9345), (303, 9450), (305, 9471), (307, 9483), (311, 9525), (315, 9546), (317, 9567),

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

Candidate Starts for Honk\_14:

(Start: 6 @9008 has 8 MA's), (22, 9167), (25, 9191), (29, 9203), (31, 9245), (37, 9287), (43, 9395), (46, 9446), (47, 9455), (54, 9572), (57, 9587), (58, 9596), (62, 9650), (65, 9713), (72, 9797), (75, 9809), (76, 9812), (78, 9821), (90, 9872), (106, 9986), (124, 10082), (134, 10124), (165, 10223), (174, 10256), (177, 10265), (198, 10349), (232, 10481), (240, 10511), (242, 10520), (254, 10604), (256, 10610), (258, 10619), (264, 10646), (265, 10652), (278, 10751), (289, 10832), (304, 10964), (309,

11003), (310, 11015), (317, 11069), (320, 11084), (323, 11111),

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

Candidate Starts for Horacetta\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (46, 10176), (50, 10269), (51, 10272), (52, 10275), (55, 10305), (60, 10362), (68, 10500), (69, 10521), (73, 10566), (78, 10593), (81, 10626), (84, 10644), (90, 10686), (95, 10743), (125, 11007), (129, 11034), (131, 11052), (133, 11058), (139, 11082), (142, 11103), (147, 11139), (153, 11166), (161, 11196), (162, 11202), (171, 11253), (180, 11286), (190, 11325), (191, 11331), (193, 11337), (195, 11346), (198, 11358), (199, 11364), (204, 11388), (208, 11409), (210, 11418), (219, 11457), (223, 11475), (229, 11508), (230, 11511), (232, 11523), (236, 11538), (244, 11589), (248, 11622), (250, 11640), (256, 11664), (265, 11706), (273, 11772), (275, 11784), (282, 11829), (291, 11904), (292, 11907), (298, 11961), (301, 12000), (305, 12027), (309, 12057), (310, 12069), (311, 12081), (312, 12090), (321, 12156), (328, 12198), (331, 12228),

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

Candidate Starts for Hulk\_12:

(Start: 11 @7553 has 122 MA's), (Start: 13 @7574 has 3 MA's), (32, 7751), (34, 7760), (37, 7784), (39, 7856), (41, 7880), (42, 7886), (50, 8036), (53, 8057), (54, 8069), (56, 8078), (70, 8285), (75, 8303), (96, 8390), (108, 8459), (113, 8471), (124, 8519), (138, 8549), (143, 8564), (156, 8600), (162, 8627), (169, 8648), (175, 8672), (182, 8696), (184, 8702), (190, 8729), (198, 8762), (205, 8801), (212, 8828), (217, 8849), (220, 8864), (231, 8891), (232, 8894), (239, 8915), (241, 8927), (242, 8933), (248, 8981), (263, 9056), (265, 9065), (270, 9092), (271, 9113), (280, 9176), (290, 9257), (303, 9362), (305, 9383), (307, 9395), (311, 9437), (315, 9458), (317, 9479), (333, 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), (46, 10194), (51, 10290), (52, 10293), (53, 10308), (61, 10395), (64, 10461), (75, 10599), (76, 10602), (87, 10686), (119, 10992), (129, 11052), (131, 11070), (133, 11076), (141, 11109), (142, 11121), (147, 11157), (153, 11184), (159, 11208), (161, 11214), (171, 11271), (178, 11295), (180, 11304), (185, 11319), (190, 11343), (193, 11355), (198, 11376), (199, 11382), (203, 11403), (208, 11427), (210, 11436), (215, 11454), (219, 11475), (221, 11481), (223, 11493), (229, 11526), (230, 11529), (232, 11541), (236, 11556), (237, 11559), (249, 11646), (267, 11736), (268, 11739), (273, 11790), (282, 11847), (283, 11856), (286, 11868), (291, 11922), (292, 11925), (298, 11979), (301, 12018), (308, 12066), (309, 12075), (311, 12099), (313, 12111), (328, 12207), (331, 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), (46, 13073), (49, 13118), (50, 13166), (51, 13169), (52, 13172), (59, 13256), (60, 13259), (68, 13397), (73, 13463), (78, 13490), (82, 13532), (115, 13841), (119, 13874), (129, 13934), (133, 13958), (147, 14039), (149, 14045), (150, 14048), (155, 14072), (162, 14102), (168, 14123), (176, 14171),

(180, 14186), (185, 14201), (190, 14225), (193, 14237), (194, 14243), (198, 14258), (199, 14264), (206, 14303), (208, 14309), (210, 14318), (215, 14336), (216, 14342), (218, 14354), (219, 14357), (222, 14366), (225, 14384), (229, 14408), (230, 14411), (232, 14423), (237, 14441), (247, 14507), (248, 14522), (253, 14552), (255, 14561), (268, 14621), (273, 14672), (279, 14708), (291, 14804), (292, 14807), (298, 14861), (301, 14900), (305, 14927), (309, 14957), (311, 14981), (317, 15023), (321, 15050), (331, 15119),

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

Candidate Starts for IAmGroot\_15:

(Start: 6 @10840 has 8 MA's), (25, 11023), (43, 11239), (47, 11299), (50, 11383), (56, 11425), (62, 11494), (65, 11557), (75, 11653), (76, 11656), (83, 11707), (90, 11758), (101, 11872), (103, 11881), (109, 11920), (152, 12109), (174, 12193), (186, 12232), (190, 12253), (205, 12328), (235, 12430), (238, 12442), (242, 12463), (261, 12577), (264, 12592), (265, 12598), (291, 12799), (309, 12949), (317, 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), (44, 13032), (46, 13074), (50, 13167), (51, 13170), (52, 13173), (55, 13203), (59, 13257), (68, 13398), (69, 13419), (71, 13443), (73, 13464), (74, 13473), (81, 13524), (84, 13542), (88, 13566), (102, 13728), (119, 13872), (125, 13905), (129, 13932), (131, 13950), (133, 13956), (139, 13980), (141, 13989), (147, 14037), (153, 14064), (159, 14088), (161, 14094), (162, 14100), (171, 14151), (175, 14166), (179, 14178), (180, 14184), (181, 14187), (184, 14196), (190, 14223), (193, 14235), (195, 14244), (198, 14256), (199, 14262), (203, 14283), (210, 14316), (219, 14355), (229, 14406), (230, 14409), (231, 14418), (232, 14421), (236, 14436), (248, 14520), (249, 14526), (256, 14562), (273, 14670), (275, 14682), (279, 14706), (291, 14802), (292, 14805), (298, 14859), (301, 14898), (308, 14946), (309, 14955), (311, 14979), (314, 14997), (321, 15048), (325, 15072), (328, 15090), (331, 15120),

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

Candidate Starts for JRok\_12:

(Start: 11 @7531 has 122 MA's), (Start: 13 @7552 has 3 MA's), (32, 7729), (34, 7738), (37, 7762), (39, 7834), (41, 7858), (42, 7864), (50, 8014), (53, 8035), (54, 8047), (56, 8056), (70, 8263), (75, 8281), (96, 8368), (108, 8437), (113, 8449), (124, 8497), (138, 8527), (143, 8542), (162, 8605), (169, 8626), (170, 8629), (184, 8680), (190, 8707), (198, 8740), (205, 8779), (212, 8806), (217, 8827), (220, 8842), (231, 8869), (239, 8893), (241, 8905), (242, 8911), (248, 8959), (265, 9043), (270, 9070), (271, 9091), (280, 9154), (284, 9178), (288, 9202), (289, 9223), (303, 9340), (305, 9361), (307, 9373), (311, 9415), (315, 9436), (317, 9457), (333, 9586),

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

Candidate Starts for Jahseh\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for JaimeB\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75,

8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472),

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

Candidate Starts for Jannah\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466),

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

Candidate Starts for Jerky\_12:

(Start: 11 @7627 has 122 MA's), (Start: 13 @7648 has 3 MA's), (32, 7825), (34, 7834), (37, 7858), (39, 7930), (41, 7954), (42, 7960), (50, 8110), (53, 8131), (54, 8143), (56, 8152), (70, 8359), (75, 8377), (96, 8464), (108, 8533), (113, 8545), (124, 8593), (138, 8623), (143, 8638), (162, 8701), (169, 8722), (175, 8746), (182, 8770), (184, 8776), (190, 8803), (198, 8836), (205, 8875), (212, 8902), (217, 8923), (220, 8938), (231, 8965), (232, 8968), (239, 8989), (241, 9001), (242, 9007), (248, 9055), (254, 9091), (263, 9130), (265, 9139), (270, 9166), (271, 9187), (280, 9250), (284, 9274), (290, 9331), (303, 9436), (305, 9457), (307, 9469), (311, 9511), (315, 9532), (317, 9553), (333, 9682),

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

Candidate Starts for JoBros\_12:

(Start: 11 @7541 has 122 MA's), (Start: 13 @7562 has 3 MA's), (32, 7739), (34, 7748), (37, 7772), (39, 7844), (41, 7868), (42, 7874), (50, 8024), (53, 8045), (54, 8057), (56, 8066), (70, 8273), (75, 8291), (96, 8378), (108, 8447), (113, 8459), (124, 8507), (138, 8537), (143, 8552), (156, 8588), (162, 8615), (169, 8636), (175, 8660), (182, 8684), (184, 8690), (190, 8717), (198, 8750), (205, 8789), (212, 8816), (217, 8837), (220, 8852), (231, 8879), (232, 8882), (239, 8903), (241, 8915), (242, 8921), (248, 8969), (254, 9005), (265, 9053), (270, 9080), (271, 9101), (280, 9164), (284, 9188), (290, 9245), (303, 9350), (305, 9371), (307, 9383), (311, 9425), (315, 9446), (317, 9467), (333, 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), (46, 13067), (49, 13112), (51, 13163), (52, 13166), (59, 13250), (73, 13457), (74, 13466), (78, 13484), (82, 13526), (115, 13835), (119, 13868), (129, 13928), (133, 13952), (147, 14033), (149, 14039), (150, 14042), (155, 14066), (162, 14096), (168, 14117), (180, 14180), (185, 14195), (190, 14219), (193, 14231), (194, 14237), (198, 14252), (199, 14258), (200, 14261), (204, 14282), (206, 14297), (210, 14312), (215, 14330), (216, 14336), (219, 14351), (222, 14360), (223, 14369), (229, 14402), (230, 14405), (232, 14417), (234, 14423), (237, 14435), (247, 14501), (248, 14516), (268, 14615), (273, 14666), (275, 14678), (278, 14699), (291, 14798), (292, 14801), (298, 14855), (301, 14894), (309, 14951), (311, 14975), (317, 15017), (321, 15044), (331, 15113),

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

Candidate Starts for JooneeDee\_12:

(1, 7476), (Start: 11 @7572 has 122 MA's), (Start: 13 @7593 has 3 MA's), (29, 7719), (32, 7770), (34, 7779), (37, 7803), (39, 7875), (41, 7899), (48, 7998), (53, 8076), (54, 8088), (56, 8097), (70, 8304), (75, 8322), (96, 8409), (108, 8478), (113, 8490), (124, 8538), (138, 8568), (143, 8583), (160, 8637),



(169, 8667), (170, 8670), (175, 8691), (184, 8721), (190, 8748), (198, 8781), (205, 8820), (212, 8847), (213, 8853), (217, 8868), (220, 8883), (231, 8910), (232, 8913), (239, 8934), (241, 8946), (242, 8952), (248, 9000), (254, 9036), (265, 9084), (270, 9111), (271, 9132), (280, 9195), (284, 9219), (290, 9276), (303, 9381), (305, 9402), (307, 9414), (311, 9456), (315, 9477), (317, 9498),

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

Candidate Starts for Josuke\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 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), (44, 12981), (46, 13023), (51, 13119), (52, 13122), (55, 13152), (59, 13206), (60, 13209), (68, 13347), (69, 13368), (71, 13392), (73, 13413), (74, 13422), (81, 13473), (84, 13491), (102, 13677), (119, 13821), (125, 13854), (129, 13881), (131, 13899), (133, 13905), (139, 13929), (141, 13938), (147, 13986), (153, 14013), (154, 14016), (159, 14037), (161, 14043), (162, 14049), (171, 14100), (175, 14115), (179, 14127), (180, 14133), (181, 14136), (184, 14145), (190, 14172), (193, 14184), (195, 14193), (198, 14205), (199, 14211), (203, 14232), (210, 14265), (219, 14304), (229, 14355), (230, 14358), (231, 14367), (232, 14370), (236, 14385), (249, 14475), (256, 14511), (273, 14619), (279, 14655), (291, 14751), (292, 14754), (298, 14808), (301, 14847), (308, 14895), (309, 14904), (311, 14928), (314, 14946), (321, 14997), (325, 15021), (328, 15039), (331, 15069),

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

Candidate Starts for Kaijohn\_12:

(Start: 11 @7545 has 122 MA's), (Start: 13 @7566 has 3 MA's), (32, 7743), (34, 7752), (37, 7776), (39, 7848), (41, 7872), (42, 7878), (48, 7971), (50, 8028), (53, 8049), (54, 8061), (56, 8070), (70, 8277), (75, 8295), (96, 8382), (108, 8451), (113, 8463), (124, 8511), (138, 8541), (143, 8556), (156, 8592), (162, 8619), (169, 8640), (175, 8664), (182, 8688), (184, 8694), (190, 8721), (198, 8754), (205, 8793), (212, 8820), (217, 8841), (220, 8856), (231, 8883), (232, 8886), (239, 8907), (241, 8919), (242, 8925), (248, 8973), (265, 9057), (270, 9084), (271, 9105), (280, 9168), (290, 9249), (303, 9354), (307, 9387), (311, 9429), (315, 9450), (317, 9471), (333, 9600),

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

Candidate Starts for Kalimba\_16:

(Start: 6 @10244 has 8 MA's), (16, 10331), (20, 10388), (26, 10436), (29, 10448), (34, 10508), (40, 10619), (47, 10700), (56, 10826), (58, 10841), (62, 10895), (76, 11069), (87, 11153), (90, 11174), (91, 11195), (94, 11216), (100, 11267), (108, 11342), (114, 11363), (116, 11396), (127, 11453), (132, 11495), (138, 11510), (146, 11561), (155, 11597), (181, 11705), (187, 11726), (196, 11768), (199, 11780), (210, 11834), (222, 11882), (245, 11978), (272, 12134), (275, 12155), (277, 12167), (285, 12218), (301, 12368), (306, 12404), (310, 12437), (332, 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), (44, 12980), (46, 13022), (51, 13118), (52, 13121), (55, 13151), (59, 13205), (68, 13346), (69, 13367), (71, 13391), (73, 13412), (74, 13421), (81,

13472), (84, 13490), (102, 13676), (119, 13820), (125, 13853), (129, 13880), (131, 13898), (133, 13904), (139, 13928), (141, 13937), (147, 13985), (153, 14012), (154, 14015), (159, 14036), (162, 14048), (171, 14099), (175, 14114), (179, 14126), (181, 14135), (184, 14144), (190, 14171), (193, 14183), (195, 14192), (198, 14204), (199, 14210), (203, 14231), (208, 14255), (210, 14264), (219, 14303), (229, 14354), (230, 14357), (231, 14366), (232, 14369), (236, 14384), (249, 14474), (256, 14510), (273, 14618), (279, 14654), (291, 14750), (292, 14753), (298, 14807), (301, 14846), (308, 14894), (309, 14903), (311, 14927), (314, 14945), (321, 14996), (325, 15020), (328, 15038), (331, 15068),

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

Candidate Starts for KayPaulus\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70, 8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (156, 8580), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (212, 8808), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248, 8961), (254, 8997), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 9588),

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

Candidate Starts for Kevanna\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70, 8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (156, 8580), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (212, 8808), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248, 8961), (254, 8997), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 9588),

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

Candidate Starts for KillerTomato\_12:

(Start: 11 @7586 has 122 MA's), (Start: 13 @7607 has 3 MA's), (32, 7784), (34, 7793), (37, 7817), (39, 7889), (41, 7913), (42, 7919), (48, 8012), (50, 8069), (53, 8090), (54, 8102), (56, 8111), (70, 8318), (75, 8336), (96, 8423), (108, 8492), (113, 8504), (124, 8552), (138, 8582), (143, 8597), (156, 8633), (162, 8660), (170, 8684), (175, 8705), (182, 8729), (184, 8735), (190, 8762), (198, 8795), (205, 8834), (212, 8861), (217, 8882), (220, 8897), (231, 8924), (232, 8927), (239, 8948), (241, 8960), (242, 8966), (248, 9014), (254, 9050), (265, 9098), (270, 9125), (271, 9146), (280, 9209), (284, 9233), (290, 9290), (303, 9395), (305, 9416), (307, 9428), (311, 9470), (315, 9491), (317, 9512), (333, 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), (46, 10200), (51, 10296), (71, 10569), (73, 10590), (79, 10620), (81, 10650), (92, 10737), (104, 10860), (112, 10935), (119, 10998), (125, 11031), (128, 11052), (129, 11058), (131, 11076), (133, 11082), (139, 11106), (144, 11148), (147, 11163), (149, 11169), (155, 11196), (168, 11247), (172, 11280), (174, 11289), (180, 11310), (184, 11322), (190, 11349), (193, 11361), (195, 11370), (198, 11382), (199, 11388), (200, 11391), (204, 11412), (210, 11442), (215, 11460), (219, 11481), (222, 11490), (223, 11499), (229, 11532), (230, 11535), (232, 11547), (236, 11562), (248, 11646), (249, 11652), (256, 11688), (268, 11745), (269, 11754), (273, 11796), (282, 11853), (291, 11928), (292, 11931), (295, 11961), (298, 11985), (304, 12042), (308, 12072), (309, 12081), (311, 12105), (313, 12117), (331, 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), (45, 10191), (46, 10212), (49, 10257), (51, 10308), (52, 10311), (55, 10341), (59, 10395), (67, 10524), (73, 10602), (74, 10611), (75, 10617), (78, 10629), (81, 10662), (87, 10704), (92, 10749), (102, 10869), (104, 10872), (112, 10947), (119, 11010), (129, 11070), (131, 11088), (133, 11094), (136, 11106), (140, 11124), (147, 11175), (149, 11181), (154, 11205), (158, 11223), (162, 11238), (165, 11247), (172, 11292), (174, 11301), (180, 11322), (184, 11334), (185, 11337), (189, 11358), (190, 11361), (191, 11367), (193, 11373), (198, 11394), (199, 11400), (203, 11421), (208, 11445), (210, 11454), (213, 11466), (215, 11472), (219, 11493), (229, 11544), (230, 11547), (231, 11556), (232, 11559), (249, 11664), (250, 11676), (255, 11697), (269, 11766), (273, 11808), (275, 11820), (276, 11823), (278, 11841), (279, 11844), (291, 11940), (292, 11943), (298, 11997), (301, 12036), (304, 12054), (308, 12084), (309, 12093), (314, 12135), (331, 12255),

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

Candidate Starts for Kojax4\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 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), (44, 12986), (46, 13028), (51, 13124), (52, 13127), (55, 13157), (59, 13211), (68, 13352), (69, 13373), (71, 13397), (73, 13418), (74, 13427), (81, 13478), (84, 13496), (102, 13682), (119, 13826), (125, 13859), (129, 13886), (131, 13904), (133, 13910), (139, 13934), (141, 13943), (147, 13991), (153, 14018), (154, 14021), (159, 14042), (162, 14054), (171, 14105), (175, 14120), (179, 14132), (181, 14141), (184, 14150), (190, 14177), (193, 14189), (195, 14198), (198, 14210), (199, 14216), (203, 14237), (208, 14261), (210, 14270), (219, 14309), (229, 14360), (230, 14363), (231, 14372), (232, 14375), (236, 14390), (249, 14480), (256, 14516), (273, 14624), (279, 14660), (291, 14756), (292, 14759), (298, 14813), (301, 14852), (308, 14900), (309, 14909), (311, 14933), (314, 14951), (321, 15002), (325, 15026), (331, 15074),

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

Candidate Starts for KyriosFaba\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (46, 13092), (49, 13137), (51, 13188), (52, 13191), (59, 13275), (71, 13461), (75, 13497), (78, 13509), (82, 13551), (95, 13662), (115, 13860), (129, 13953), (133, 13977), (135, 13980), (147, 14058), (149, 14064), (155, 14091), (162, 14121), (174, 14184), (179, 14199), (181, 14208), (182, 14211), (185, 14220), (190, 14244), (193, 14256), (194, 14262), (198, 14277), (199, 14283),

(200, 14286), (204, 14307), (206, 14322), (210, 14337), (215, 14355), (216, 14361), (219, 14376), (222, 14385), (223, 14394), (229, 14427), (230, 14430), (232, 14442), (234, 14448), (237, 14460), (247, 14526), (248, 14541), (253, 14571), (255, 14580), (273, 14691), (279, 14727), (282, 14748), (291, 14823), (292, 14826), (298, 14880), (300, 14895), (301, 14919), (309, 14976), (311, 15000), (317, 15042), (321, 15069), (331, 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), (44, 10131), (46, 10173), (51, 10269), (52, 10272), (55, 10302), (64, 10440), (69, 10518), (73, 10563), (74, 10572), (81, 10623), (84, 10641), (85, 10653), (89, 10677), (110, 10893), (121, 10983), (125, 11004), (129, 11031), (131, 11049), (133, 11055), (139, 11079), (141, 11088), (147, 11136), (153, 11163), (161, 11193), (171, 11250), (175, 11265), (179, 11277), (180, 11283), (181, 11286), (184, 11295), (190, 11322), (193, 11334), (195, 11343), (198, 11355), (199, 11361), (204, 11385), (208, 11406), (210, 11415), (214, 11430), (219, 11454), (229, 11505), (230, 11508), (232, 11520), (245, 11595), (249, 11625), (256, 11661), (273, 11769), (275, 11781), (279, 11805), (291, 11901), (292, 11904), (296, 11937), (298, 11958), (301, 11997), (304, 12015), (308, 12045), (309, 12054), (311, 12078), (322, 12153), (331, 12219),

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

Candidate Starts for LaviMo\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 9478),

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

Candidate Starts for Leafy\_12:

(Start: 11 @7556 has 122 MA's), (Start: 13 @7577 has 3 MA's), (32, 7754), (34, 7763), (37, 7787), (39, 7859), (41, 7883), (42, 7889), (48, 7982), (50, 8039), (53, 8060), (54, 8072), (56, 8081), (70, 8288), (75, 8306), (96, 8393), (108, 8462), (113, 8474), (124, 8522), (138, 8552), (143, 8567), (162, 8630), (170, 8654), (175, 8675), (182, 8699), (184, 8705), (190, 8732), (198, 8765), (205, 8804), (213, 8837), (217, 8852), (220, 8867), (231, 8894), (232, 8897), (241, 8930), (242, 8936), (248, 8984), (265, 9068), (270, 9095), (271, 9116), (280, 9179), (284, 9203), (290, 9260), (303, 9365), (305, 9386), (307, 9398), (311, 9440), (315, 9461), (317, 9482), (333, 9611),

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

Candidate Starts for LemonPepper\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (46, 10173), (51, 10269), (55, 10302), (64, 10440), (69, 10518), (73, 10563), (74,

10572), (81, 10623), (84, 10641), (85, 10653), (89, 10677), (110, 10893), (121, 10983), (125, 11004), (129, 11031), (131, 11049), (133, 11055), (139, 11079), (141, 11088), (147, 11136), (153, 11163), (161, 11193), (171, 11250), (175, 11265), (179, 11277), (180, 11283), (181, 11286), (184, 11295), (190, 11322), (193, 11334), (195, 11343), (198, 11355), (199, 11361), (204, 11385), (208, 11406), (210, 11415), (214, 11430), (219, 11454), (229, 11505), (230, 11508), (232, 11520), (249, 11625), (256, 11661), (273, 11769), (275, 11781), (279, 11805), (291, 11901), (292, 11904), (296, 11937), (298, 11958), (301, 11997), (304, 12015), (308, 12045), (309, 12054), (311, 12078), (322, 12153), (331, 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), (46, 10173), (51, 10269), (55, 10302), (64, 10440), (69, 10518), (73, 10563), (74, 10572), (81, 10623), (84, 10641), (85, 10653), (89, 10677), (110, 10893), (121, 10983), (125, 11004), (129, 11031), (131, 11049), (133, 11055), (139, 11079), (141, 11088), (147, 11136), (153, 11163), (161, 11193), (171, 11250), (175, 11265), (179, 11277), (180, 11283), (181, 11286), (184, 11295), (190, 11322), (193, 11334), (195, 11343), (198, 11355), (199, 11361), (204, 11385), (208, 11406), (210, 11415), (214, 11430), (219, 11454), (229, 11505), (230, 11508), (232, 11520), (249, 11625), (256, 11661), (273, 11769), (275, 11781), (279, 11805), (291, 11901), (292, 11904), (296, 11937), (298, 11958), (301, 11997), (304, 12015), (308, 12045), (309, 12054), (311, 12078), (322, 12153), (331, 12219),

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

Candidate Starts for LionelHutz\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 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), (46, 13053), (51, 13149), (52, 13152), (55, 13182), (64, 13320), (73, 13443), (81, 13503), (84, 13521), (86, 13536), (92, 13587), (115, 13818), (126, 13887), (129, 13911), (131, 13929), (133, 13935), (143, 13989), (144, 14001), (149, 14022), (154, 14046), (172, 14133), (179, 14157), (180, 14163), (181, 14166), (185, 14178), (189, 14199), (190, 14202), (191, 14208), (193, 14214), (197, 14232), (198, 14235), (199, 14241), (208, 14286), (210, 14295), (215, 14313), (219, 14334), (222, 14343), (223, 14352), (229, 14385), (230, 14388), (231, 14397), (232, 14400), (243, 14451), (273, 14649), (275, 14661), (278, 14682), (279, 14685), (291, 14781), (292, 14784), (298, 14838), (301, 14877), (309, 14934), (314, 14976), (321, 15024), (328, 15066), (331, 15096),

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

Candidate Starts for Livingwater\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70, 8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248, 8961), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 9588),

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

Candidate Starts for Loca\_12:

(Start: 11 @7559 has 122 MA's), (Start: 13 @7580 has 3 MA's), (32, 7757), (34, 7766), (37, 7790), (39, 7862), (41, 7886), (42, 7892), (48, 7985), (50, 8042), (53, 8063), (54, 8075), (56, 8084), (70, 8291), (75, 8309), (96, 8396), (108, 8465), (113, 8477), (124, 8525), (138, 8555), (143, 8570), (162, 8633), (175, 8678), (182, 8702), (184, 8708), (190, 8735), (198, 8768), (205, 8807), (217, 8855), (220, 8870), (231, 8897), (232, 8900), (241, 8933), (242, 8939), (248, 8987), (265, 9071), (270, 9098), (271, 9119), (280, 9182), (284, 9206), (290, 9263), (303, 9368), (305, 9389), (307, 9401), (311, 9443), (315, 9464), (317, 9485), (333, 9614),

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

Candidate Starts for Lola20\_12:

(Start: 11 @7538 has 122 MA's), (Start: 13 @7559 has 3 MA's), (32, 7736), (34, 7745), (37, 7769), (39, 7841), (41, 7865), (42, 7871), (48, 7964), (50, 8021), (53, 8042), (54, 8054), (56, 8063), (70, 8270), (75, 8288), (96, 8375), (108, 8444), (113, 8456), (124, 8504), (138, 8534), (143, 8549), (156, 8585), (162, 8612), (175, 8657), (182, 8681), (184, 8687), (190, 8714), (198, 8747), (205, 8786), (212, 8813), (217, 8834), (220, 8849), (231, 8876), (232, 8879), (241, 8912), (242, 8918), (248, 8966), (254, 9002), (265, 9050), (270, 9077), (271, 9098), (280, 9161), (284, 9185), (290, 9242), (303, 9347), (305, 9368), (307, 9380), (311, 9422), (317, 9464), (333, 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), (46, 10165), (51, 10261), (52, 10264), (55, 10294), (64, 10432), (69, 10510), (73, 10555), (74, 10564), (81, 10615), (84, 10633), (85, 10645), (89, 10669), (110, 10885), (121, 10975), (125, 10996), (129, 11023), (131, 11041), (133, 11047), (139, 11071), (141, 11080), (147, 11128), (153, 11155), (161, 11185), (171, 11242), (175, 11257), (179, 11269), (180, 11275), (181, 11278), (184, 11287), (190, 11314), (193, 11326), (195, 11335), (198, 11347), (199, 11353), (204, 11377), (208, 11398), (210, 11407), (214, 11422), (219, 11446), (223, 11464), (229, 11497), (230, 11500), (232, 11512), (245, 11587), (249, 11617), (256, 11653), (273, 11761), (275, 11773), (279, 11797), (291, 11893), (292, 11896), (298, 11950), (301, 11989), (304, 12007), (308, 12037), (309, 12046), (311, 12070), (322, 12145), (325, 12163), (331, 12211),

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

Candidate Starts for Lunatic\_12:

(Start: 11 @7531 has 122 MA's), (Start: 13 @7552 has 3 MA's), (32, 7729), (34, 7738), (37, 7762), (39, 7834), (41, 7858), (48, 7957), (50, 8014), (53, 8035), (54, 8047), (56, 8056), (70, 8263), (75, 8281), (96, 8368), (108, 8437), (113, 8449), (124, 8497), (138, 8527), (143, 8542), (169, 8626), (170, 8629), (175, 8650), (184, 8680), (190, 8707), (198, 8740), (205, 8779), (212, 8806), (213, 8812), (217, 8827), (220, 8842), (232, 8872), (239, 8893), (241, 8905), (242, 8911), (248, 8959), (254, 8995), (265, 9043), (270, 9070), (271, 9091), (280, 9154), (284, 9178), (290, 9235), (303, 9340), (305, 9361), (311, 9415), (315, 9436), (317, 9457),

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

Candidate Starts for Luxx\_12:

(Start: 11 @7564 has 122 MA's), (Start: 13 @7585 has 3 MA's), (32, 7762), (34, 7771), (37, 7795), (39, 7867), (41, 7891), (42, 7897), (50, 8047), (53, 8068), (54, 8080), (56, 8089), (70, 8296), (75, 8314), (96, 8401), (108, 8470), (113, 8482), (124, 8530), (138, 8560), (143, 8575), (156, 8611), (162, 8638), (169, 8659), (175, 8683), (182, 8707), (184, 8713), (190, 8740), (198, 8773), (205, 8812), (212, 8839), (217, 8860), (220, 8875), (231, 8902), (232, 8905), (239, 8926), (241, 8938), (242, 8944), (248, 8992), (263, 9067), (265, 9076), (270, 9103), (271, 9124), (280, 9187), (284, 9211), (290, 9268), (303, 9373), (305, 9394), (307, 9406), (311, 9448), (315, 9469), (317, 9490),

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

Candidate Starts for Majesty\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 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), (46, 10174), (51, 10270), (55, 10303), (64, 10441), (69, 10519), (73, 10564), (74, 10573), (81, 10624), (84, 10642), (85, 10654), (89, 10678), (110, 10894), (125, 11005), (129, 11032), (131, 11050), (133, 11056), (139, 11080), (141, 11089), (147, 11137), (153, 11164), (161, 11194), (171, 11251), (175, 11266), (179, 11278), (180, 11284), (181, 11287), (184, 11296), (190, 11323), (193, 11335), (195, 11344), (198, 11356), (199, 11362), (204, 11386), (208, 11407), (210, 11416), (214, 11431), (219, 11455), (229, 11506), (230, 11509), (232, 11521), (245, 11596), (249, 11626), (256, 11662), (273, 11770), (275, 11782), (279, 11806), (291, 11902), (292, 11905), (296, 11938), (298, 11959), (304, 12016), (308, 12046), (309, 12055), (311, 12079), (322, 12154), (331, 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), (45, 10187), (46, 10208), (51, 10304), (60, 10394), (66, 10487), (73, 10598), (81, 10658), (82, 10667), (114, 10940), (119, 10994), (125, 11027), (128, 11048), (129, 11054), (131, 11072), (147, 11159), (162, 11222), (172, 11276), (174, 11285), (180, 11306), (184, 11318), (185, 11321), (190, 11345), (191, 11351), (193, 11357), (195, 11366), (198, 11378), (199, 11384), (203, 11405), (210, 11438), (214, 11453), (215, 11456), (219, 11477), (221, 11483), (223, 11495), (229, 11528), (230, 11531), (231, 11540), (232, 11543), (236, 11558), (248, 11642), (255, 11681), (273, 11792), (275, 11804), (282, 11849), (291, 11924), (292, 11927), (298, 11981), (308, 12068), (309, 12077), (311, 12101), (313, 12113), (321, 12170), (322, 12176), (331, 12242), (334, 12284),

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

Candidate Starts for ManAs\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Maneater\_12:

(Start: 11 @7528 has 122 MA's), (Start: 13 @7549 has 3 MA's), (32, 7726), (34, 7735), (37, 7759), (39, 7831), (41, 7855), (42, 7861), (50, 8011), (53, 8032), (54, 8044), (56, 8053), (70, 8260), (75, 8278), (96, 8365), (108, 8434), (113, 8446), (124, 8494), (138, 8524), (143, 8539), (156, 8575), (162, 8602), (169, 8623), (175, 8647), (182, 8671), (184, 8677), (190, 8704), (198, 8737), (205, 8776), (212, 8803), (217, 8824), (220, 8839), (231, 8866), (232, 8869), (239, 8890), (241, 8902), (242, 8908), (248, 8956), (263, 9031), (265, 9040), (270, 9067), (271, 9088), (280, 9151), (284, 9175), (290, 9232), (303,

9337), (305, 9358), (307, 9370), (311, 9412), (315, 9433), (317, 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), (46, 10200), (51, 10296), (71, 10569), (73, 10590), (79, 10620), (81, 10650), (92, 10737), (104, 10860), (112, 10935), (119, 10998), (125, 11031), (128, 11052), (129, 11058), (131, 11076), (133, 11082), (139, 11106), (144, 11148), (147, 11163), (149, 11169), (155, 11196), (168, 11247), (172, 11280), (174, 11289), (180, 11310), (184, 11322), (190, 11349), (193, 11361), (195, 11370), (198, 11382), (199, 11388), (200, 11391), (204, 11412), (210, 11442), (215, 11460), (219, 11481), (222, 11490), (223, 11499), (229, 11532), (230, 11535), (232, 11547), (236, 11562), (248, 11646), (249, 11652), (256, 11688), (268, 11745), (269, 11754), (273, 11796), (282, 11853), (291, 11928), (292, 11931), (295, 11961), (298, 11985), (304, 12042), (308, 12072), (309, 12081), (311, 12105), (313, 12117), (331, 12243),

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

Candidate Starts for MasterPitts\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472), (333, 9601),

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

Candidate Starts for McShie\_12:

(Start: 11 @7529 has 122 MA's), (Start: 13 @7550 has 3 MA's), (32, 7727), (34, 7736), (37, 7760), (39, 7832), (41, 7856), (42, 7862), (48, 7955), (50, 8012), (53, 8033), (54, 8045), (56, 8054), (70, 8261), (75, 8279), (96, 8366), (108, 8435), (113, 8447), (124, 8495), (138, 8525), (143, 8540), (162, 8603), (169, 8624), (170, 8627), (184, 8678), (190, 8705), (198, 8738), (205, 8777), (212, 8804), (217, 8825), (220, 8840), (231, 8867), (239, 8891), (241, 8903), (242, 8909), (248, 8957), (265, 9041), (270, 9068), (271, 9089), (280, 9152), (284, 9176), (290, 9233), (303, 9338), (305, 9359), (307, 9371), (311, 9413), (315, 9434), (317, 9455), (333, 9584),

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), (44, 13038), (46, 13080), (51, 13176), (52, 13179), (55, 13209), (59, 13263), (60, 13266), (68, 13404), (69, 13425), (71, 13449), (73, 13470), (74, 13479), (81, 13530), (84, 13548), (102, 13734), (119, 13878), (125, 13911), (129, 13938), (131, 13956), (133, 13962), (139, 13986), (141, 13995), (147, 14043), (153, 14070), (154, 14073), (159, 14094), (161, 14100), (162, 14106), (171, 14157), (175, 14172), (179, 14184), (180, 14190), (181, 14193), (184, 14202), (190, 14229), (193, 14241), (195, 14250), (198, 14262), (199, 14268), (203, 14289), (210, 14322), (219, 14361), (229, 14412), (230, 14415), (231, 14424), (232, 14427), (236, 14442), (249, 14532), (256, 14568), (273, 14676), (279, 14712), (291, 14808), (292, 14811), (298, 14865), (301, 14904), (308, 14952), (309, 14961), (311, 14985), (314, 15003), (321, 15054), (325, 15078), (328, 15096), (331, 15126),

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

Candidate Starts for MelBee03\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70,



8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (156, 8580), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (212, 8808), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248, 8961), (254, 8997), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 9588),

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

Candidate Starts for Miaurora\_12:

(Start: 11 @7648 has 122 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (41, 7975), (48, 8074), (50, 8131), (53, 8152), (54, 8164), (56, 8173), (70, 8380), (75, 8398), (96, 8485), (108, 8554), (113, 8566), (124, 8614), (138, 8644), (143, 8659), (160, 8713), (169, 8743), (170, 8746), (175, 8767), (184, 8797), (190, 8824), (198, 8857), (205, 8896), (212, 8923), (213, 8929), (217, 8944), (220, 8959), (231, 8986), (232, 8989), (239, 9010), (241, 9022), (242, 9028), (248, 9076), (254, 9112), (265, 9160), (270, 9187), (271, 9208), (280, 9271), (284, 9295), (290, 9352), (303, 9457), (305, 9478), (311, 9532), (315, 9553), (317, 9574),

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

Candidate Starts for Minima\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for MirimarMandM\_12:

(Start: 11 @7615 has 122 MA's), (Start: 13 @7636 has 3 MA's), (32, 7813), (34, 7822), (37, 7846), (39, 7918), (41, 7942), (48, 8041), (50, 8098), (53, 8119), (54, 8131), (56, 8140), (70, 8347), (75, 8365), (96, 8452), (108, 8521), (113, 8533), (124, 8581), (138, 8611), (143, 8626), (160, 8680), (169, 8710), (170, 8713), (175, 8734), (184, 8764), (190, 8791), (198, 8824), (205, 8863), (212, 8890), (213, 8896), (217, 8911), (220, 8926), (232, 8956), (239, 8977), (241, 8989), (242, 8995), (248, 9043), (254, 9079), (265, 9127), (270, 9154), (271, 9175), (280, 9238), (284, 9262), (290, 9319), (303, 9424), (305, 9445), (307, 9457), (311, 9499), (315, 9520), (317, 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), (46, 13140), (49, 13185), (51, 13236), (52, 13239), (59, 13323), (73, 13530), (74, 13539), (78, 13557), (79, 13560), (82, 13599), (104, 13800), (108, 13851), (115, 13905), (129, 13998), (133, 14022), (145, 14091), (147, 14103), (149, 14109), (150, 14112), (155, 14136), (162, 14166), (168, 14187), (176, 14235), (180, 14250), (182, 14256), (185, 14265), (190, 14289), (193, 14301), (194, 14307), (198, 14322), (199, 14328), (200, 14331), (206, 14367), (208, 14373), (210, 14382), (215, 14400), (216, 14406), (219, 14421), (222, 14430), (225, 14448), (229, 14472), (230, 14475), (232, 14487), (237, 14505), (247, 14571), (248, 14586), (253, 14616), (255, 14625), (259, 14640), (268, 14685), (273, 14736), (279, 14772), (291, 14868), (292, 14871), (298, 14925), (301, 14964), (309, 15021), (311, 15045), (317, 15087), (321, 15114), (331, 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), (46, 10176), (50, 10269), (51, 10272), (52, 10275), (55, 10305), (60, 10362), (68,

10500), (69, 10521), (73, 10566), (78, 10593), (81, 10626), (84, 10644), (90, 10686), (95, 10743), (125, 11007), (129, 11034), (131, 11052), (133, 11058), (139, 11082), (142, 11103), (147, 11139), (153, 11166), (161, 11196), (162, 11202), (171, 11253), (180, 11286), (190, 11325), (191, 11331), (193, 11337), (195, 11346), (198, 11358), (199, 11364), (204, 11388), (208, 11409), (210, 11418), (219, 11457), (223, 11475), (229, 11508), (230, 11511), (232, 11523), (236, 11538), (244, 11589), (248, 11622), (250, 11640), (256, 11664), (265, 11706), (273, 11772), (275, 11784), (282, 11829), (291, 11904), (292, 11907), (298, 11961), (301, 12000), (305, 12027), (309, 12057), (310, 12069), (311, 12081), (312, 12090), (321, 12156), (328, 12198), (331, 12228),

Gene: Moss\_18 Start: 10335, Stop: 12755, Start Num: 6

Candidate Starts for Moss\_18:

(Start: 6 @10335 has 8 MA's), (16, 10422), (26, 10527), (29, 10539), (34, 10599), (40, 10710), (47, 10791), (56, 10917), (58, 10932), (62, 10986), (76, 11160), (87, 11244), (90, 11265), (94, 11307), (108, 11433), (114, 11454), (116, 11487), (127, 11544), (132, 11586), (138, 11601), (146, 11652), (155, 11688), (157, 11694), (181, 11796), (187, 11817), (196, 11859), (209, 11919), (210, 11925), (222, 11973), (245, 12069), (275, 12246), (277, 12258), (285, 12309), (294, 12390), (301, 12459), (306, 12495), (316, 12576), (319, 12591), (329, 12663), (332, 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), (44, 12972), (46, 13014), (51, 13110), (52, 13113), (55, 13143), (59, 13197), (68, 13338), (69, 13359), (71, 13383), (73, 13404), (74, 13413), (81, 13464), (84, 13482), (102, 13668), (119, 13812), (125, 13845), (129, 13872), (131, 13890), (133, 13896), (139, 13920), (141, 13929), (147, 13977), (153, 14004), (161, 14034), (162, 14040), (171, 14091), (175, 14106), (179, 14118), (180, 14124), (181, 14127), (184, 14136), (190, 14163), (193, 14175), (195, 14184), (198, 14196), (199, 14202), (203, 14223), (210, 14256), (219, 14295), (229, 14346), (230, 14349), (231, 14358), (232, 14361), (236, 14376), (249, 14466), (256, 14502), (273, 14610), (279, 14646), (291, 14742), (292, 14745), (298, 14799), (301, 14838), (308, 14886), (309, 14895), (311, 14919), (314, 14937), (321, 14988), (325, 15012), (328, 15030), (331, 15060),

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

Candidate Starts for MrGreen\_12:

(Start: 11 @7553 has 122 MA's), (Start: 13 @7574 has 3 MA's), (32, 7751), (34, 7760), (37, 7784), (39, 7856), (41, 7880), (42, 7886), (48, 7979), (50, 8036), (53, 8057), (54, 8069), (56, 8078), (70, 8285), (75, 8303), (96, 8390), (108, 8459), (113, 8471), (124, 8519), (138, 8549), (143, 8564), (162, 8627), (170, 8651), (175, 8672), (182, 8696), (184, 8702), (190, 8729), (198, 8762), (205, 8801), (213, 8834), (217, 8849), (220, 8864), (231, 8891), (241, 8927), (242, 8933), (248, 8981), (265, 9065), (270, 9092), (271, 9113), (280, 9176), (284, 9200), (290, 9257), (303, 9362), (305, 9383), (307, 9395), (311, 9437), (315, 9458), (317, 9479), (333, 9608),

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

Candidate Starts for Mysterium\_16:

(Start: 6 @10336 has 8 MA's), (16, 10423), (26, 10528), (29, 10540), (34, 10600), (40, 10711), (47, 10792), (56, 10918), (58, 10933), (62, 10987), (76, 11161), (87, 11245), (90, 11266), (94, 11308), (108, 11434), (114, 11455), (116, 11488), (127, 11545), (132, 11587), (138, 11602), (146, 11653), (155, 11689), (157, 11695), (181, 11797), (187, 11818), (196, 11860), (209, 11920), (210, 11926), (222, 11974), (245, 12070), (272, 12226), (275, 12247), (277, 12259), (285, 12310), (301, 12460), (306, 12496), (316, 12577), (329, 12664), (332, 12688),

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

Candidate Starts for Naby\_12:

(Start: 11 @7240 has 122 MA's), (12, 7255), (Start: 13 @7261 has 3 MA's), (19, 7321), (26, 7375), (32, 7438), (34, 7447), (37, 7471), (39, 7543), (41, 7567), (48, 7666), (50, 7723), (54, 7756), (56, 7765), (81, 8032), (96, 8077), (111, 8149), (118, 8179), (138, 8236), (143, 8251), (164, 8320), (177, 8365), (182, 8383), (184, 8389), (198, 8449), (199, 8455), (202, 8470), (205, 8488), (212, 8515), (227, 8557), (239, 8602), (242, 8620), (246, 8647), (262, 8734), (265, 8752), (270, 8779), (274, 8821), (280, 8863), (281, 8866), (284, 8887), (297, 8998), (305, 9070), (307, 9082), (310, 9112), (311, 9124), (315, 9145), (318, 9169), (330, 9253), (333, 9289),

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

Candidate Starts for Namsahir\_12:

(Start: 11 @7603 has 122 MA's), (Start: 13 @7624 has 3 MA's), (32, 7801), (34, 7810), (37, 7834), (39, 7906), (41, 7930), (48, 8029), (53, 8107), (54, 8119), (56, 8128), (70, 8335), (75, 8353), (96, 8440), (108, 8509), (113, 8521), (124, 8569), (138, 8599), (143, 8614), (160, 8668), (169, 8698), (170, 8701), (175, 8722), (184, 8752), (190, 8779), (198, 8812), (205, 8851), (212, 8878), (213, 8884), (217, 8899), (220, 8914), (231, 8941), (232, 8944), (239, 8965), (241, 8977), (242, 8983), (248, 9031), (254, 9067), (265, 9115), (270, 9142), (271, 9163), (280, 9226), (284, 9250), (290, 9307), (303, 9412), (305, 9433), (311, 9487), (315, 9508), (317, 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), (44, 10131), (46, 10173), (51, 10269), (52, 10272), (55, 10302), (64, 10440), (69, 10518), (73, 10563), (74, 10572), (81, 10623), (84, 10641), (85, 10653), (89, 10677), (110, 10893), (121, 10983), (125, 11004), (129, 11031), (131, 11049), (133, 11055), (139, 11079), (141, 11088), (147, 11136), (153, 11163), (161, 11193), (171, 11250), (175, 11265), (179, 11277), (180, 11283), (181, 11286), (184, 11295), (190, 11322), (193, 11334), (195, 11343), (198, 11355), (199, 11361), (204, 11385), (208, 11406), (210, 11415), (214, 11430), (219, 11454), (229, 11505), (230, 11508), (232, 11520), (245, 11595), (249, 11625), (256, 11661), (273, 11769), (275, 11781), (279, 11805), (291, 11901), (292, 11904), (296, 11937), (298, 11958), (301, 11997), (304, 12015), (308, 12045), (309, 12054), (311, 12078), (322, 12153), (331, 12219),

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

Candidate Starts for NeumannU\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472),

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

Candidate Starts for Niffler\_12:

(Start: 11 @7621 has 122 MA's), (Start: 13 @7642 has 3 MA's), (32, 7819), (34, 7828), (37, 7852), (39, 7924), (41, 7948), (48, 8047), (50, 8104), (53, 8125), (54, 8137), (56, 8146), (70, 8353), (75, 8371), (96, 8458), (108, 8527), (113, 8539), (124, 8587), (138, 8617), (143, 8632), (169, 8716), (170, 8719), (175, 8740), (184, 8770), (190, 8797), (198, 8830), (205, 8869), (212, 8896), (213, 8902), (217, 8917), (220, 8932), (232, 8962), (239, 8983), (241, 8995), (242, 9001), (248, 9049), (254, 9085), (265, 9133), (270, 9160), (271, 9181), (280, 9244), (284, 9268), (290, 9325), (303, 9430), (305, 9451), (311, 9505), (315, 9526), (317, 9547),

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

Candidate Starts for Nobel\_12:

(Start: 11 @7648 has 122 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (41, 7975), (48, 8074), (50, 8131), (53, 8152), (54, 8164), (56, 8173), (70, 8380), (75, 8398), (96, 8485), (108, 8554), (113, 8566), (124, 8614), (138, 8644), (143, 8659), (169, 8743), (170, 8746), (175, 8767), (184, 8797), (190, 8824), (198, 8857), (205, 8896), (212, 8923), (213, 8929), (217, 8944), (220, 8959), (232, 8989), (239, 9010), (241, 9022), (242, 9028), (248, 9076), (254, 9112), (265, 9160), (270, 9187), (271, 9208), (280, 9271), (284, 9295), (290, 9352), (303, 9457), (305, 9478), (311, 9532), (315, 9553), (317, 9574),

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

Candidate Starts for Noelani\_12:

(Start: 11 @7514 has 122 MA's), (Start: 13 @7535 has 3 MA's), (31, 7703), (32, 7712), (37, 7745), (39, 7817), (41, 7841), (50, 7997), (53, 8018), (56, 8039), (70, 8246), (75, 8264), (96, 8351), (108, 8420), (124, 8480), (138, 8510), (143, 8525), (156, 8561), (162, 8588), (169, 8609), (175, 8633), (182, 8657), (184, 8663), (190, 8690), (205, 8762), (212, 8789), (217, 8810), (220, 8825), (231, 8852), (232, 8855), (239, 8876), (241, 8888), (242, 8894), (248, 8942), (263, 9017), (265, 9026), (270, 9053), (271, 9074), (280, 9137), (284, 9161), (288, 9185), (290, 9218), (297, 9272), (305, 9344), (307, 9356), (311, 9398), (315, 9419), (317, 9440), (327, 9518), (333, 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), (46, 13052), (49, 13097), (51, 13148), (52, 13151), (59, 13235), (71, 13421), (75, 13457), (78, 13469), (82, 13511), (115, 13820), (129, 13913), (131, 13931), (133, 13937), (147, 14018), (149, 14024), (155, 14051), (162, 14081), (174, 14144), (179, 14159), (180, 14165), (181, 14168), (185, 14180), (190, 14204), (193, 14216), (194, 14222), (198, 14237), (199, 14243), (200, 14246), (204, 14267), (206, 14282), (208, 14288), (210, 14297), (215, 14315), (216, 14321), (219, 14336), (222, 14345), (223, 14354), (229, 14387), (230, 14390), (232, 14402), (234, 14408), (237, 14420), (244, 14468), (247, 14486), (248, 14501), (253, 14531), (255, 14540), (268, 14600), (273, 14651), (279, 14687), (282, 14708), (291, 14783), (292, 14786), (298, 14840), (301, 14879), (309, 14936), (311, 14960), (317, 15002), (321, 15029), (331, 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), (46, 10194), (51, 10290), (52, 10293), (53, 10308), (61, 10395), (75, 10599), (76, 10602), (87, 10686), (119, 10992), (129, 11052), (131, 11070), (133, 11076), (141, 11109), (142, 11121), (147, 11157), (153, 11184), (159, 11208), (161, 11214), (171, 11271), (178, 11295), (180, 11304), (185, 11319), (190, 11343), (193, 11355), (198, 11376), (199, 11382), (203, 11403), (208, 11427), (210, 11436), (215, 11454), (219, 11475), (221, 11481), (223, 11493), (229, 11526), (230, 11529), (232, 11541), (236, 11556), (237, 11559), (249, 11646), (267, 11736), (268, 11739), (273, 11790), (282, 11847), (283, 11856), (286, 11868), (291, 11922), (292, 11925), (298, 11979), (301, 12018), (308, 12066), (309, 12075), (311, 12099), (313, 12111), (328, 12207), (331, 12237),

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

Candidate Starts for Oaklynn\_12:

(Start: 11 @7534 has 122 MA's), (Start: 13 @7555 has 3 MA's), (32, 7732), (34, 7741), (37, 7765), (39, 7837), (41, 7861), (42, 7867), (50, 8017), (53, 8038), (54, 8050), (56, 8059), (70, 8266), (75, 8284), (96, 8371), (108, 8440), (113, 8452), (124, 8500), (138, 8530), (143, 8545), (162, 8608), (169, 8629), (170, 8632), (184, 8683), (190, 8710), (198, 8743), (205, 8782), (212, 8809), (217, 8830), (220, 8845), (231, 8872), (239, 8896), (241, 8908), (242, 8914), (248, 8962), (265, 9046), (270, 9073), (271, 9094), (280, 9157), (284, 9181), (288, 9205), (289, 9226), (303, 9343), (305, 9364), (307, 9376), (311, 9418), (315, 9439), (317, 9460), (333, 9589),

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

Candidate Starts for Octopus\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Otwor\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 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), (46, 10165), (51, 10261), (55, 10294), (64, 10432), (69, 10510), (71, 10534), (73, 10555), (74, 10564), (81, 10615), (84, 10633), (85, 10645), (89, 10669), (110, 10885), (121, 10975), (125, 10996), (129, 11023), (131, 11041), (133, 11047), (139, 11071), (141, 11080), (147, 11128), (153, 11155), (161, 11185), (171, 11242), (175, 11257), (179, 11269), (180, 11275), (181, 11278), (184, 11287), (190, 11314), (193, 11326), (195, 11335), (198, 11347), (199, 11353), (204, 11377), (208, 11398), (210, 11407), (214, 11422), (219, 11446), (223, 11464), (229, 11497), (230, 11500), (232, 11512), (245, 11587), (249, 11617), (256, 11653), (261, 11674), (273, 11761), (275, 11773), (278, 11794), (279, 11797), (291, 11893), (292, 11896), (296, 11929), (298, 11950), (301, 11989), (304, 12007), (308, 12037), (309, 12046), (322, 12145), (331, 12211),

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

Candidate Starts for Owens\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 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), (46, 13065), (49, 13110), (51, 13161), (52, 13164), (59, 13248), (71, 13434), (75, 13470), (78, 13482), (82, 13524), (95, 13635), (115, 13833), (129, 13926), (133, 13950), (135, 13953), (147, 14031), (149, 14037), (155, 14064), (162, 14094), (174, 14157), (179, 14172), (181, 14181), (182, 14184), (185, 14193), (190, 14217), (193, 14229), (194, 14235), (198, 14250), (199, 14256), (200, 14259), (204, 14280), (206, 14295), (210, 14310), (215, 14328), (216, 14334), (219, 14349), (222, 14358), (223, 14367), (229, 14400), (230, 14403), (232, 14415), (234, 14421), (237, 14433), (247, 14499), (248, 14514), (253, 14544), (255, 14553), (273, 14664), (279, 14700), (282, 14721),

(291, 14796), (292, 14799), (298, 14853), (301, 14892), (309, 14949), (311, 14973), (317, 15015), (321, 15042), (331, 15111),

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

Candidate Starts for PaoPu\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (46, 13100), (49, 13145), (51, 13196), (52, 13199), (55, 13229), (64, 13367), (73, 13490), (81, 13550), (84, 13568), (86, 13583), (92, 13634), (115, 13865), (126, 13934), (129, 13958), (131, 13976), (133, 13982), (143, 14036), (144, 14048), (149, 14069), (154, 14093), (172, 14180), (179, 14204), (180, 14210), (181, 14213), (185, 14225), (189, 14246), (190, 14249), (191, 14255), (193, 14261), (197, 14279), (198, 14282), (199, 14288), (208, 14333), (210, 14342), (215, 14360), (219, 14381), (222, 14390), (223, 14399), (229, 14432), (230, 14435), (231, 14444), (232, 14447), (243, 14498), (256, 14588), (273, 14696), (275, 14708), (278, 14729), (279, 14732), (291, 14828), (292, 14831), (298, 14885), (301, 14924), (309, 14981), (314, 15023), (321, 15071), (328, 15113), (331, 15143),

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

Candidate Starts for Picnic\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (46, 10206), (51, 10302), (57, 10347), (60, 10392), (71, 10575), (73, 10596), (74, 10605), (75, 10611), (78, 10623), (81, 10656), (92, 10743), (125, 11037), (128, 11058), (129, 11064), (131, 11082), (133, 11088), (139, 11112), (147, 11169), (153, 11196), (161, 11226), (162, 11232), (171, 11283), (175, 11298), (179, 11310), (181, 11319), (184, 11328), (190, 11355), (193, 11367), (195, 11376), (198, 11388), (199, 11394), (210, 11448), (215, 11466), (218, 11484), (219, 11487), (222, 11496), (223, 11505), (226, 11517), (229, 11538), (230, 11541), (232, 11553), (236, 11568), (248, 11652), (249, 11658), (256, 11694), (268, 11751), (273, 11802), (275, 11814), (282, 11859), (291, 11934), (292, 11937), (295, 11967), (296, 11970), (301, 12030), (304, 12048), (308, 12078), (309, 12087), (311, 12111), (313, 12123), (328, 12219), (331, 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), (46, 10164), (51, 10260), (55, 10293), (64, 10431), (69, 10509), (73, 10554), (74,

10563), (81, 10614), (84, 10632), (89, 10668), (110, 10884), (121, 10974), (125, 10995), (129, 11022), (131, 11040), (133, 11046), (139, 11070), (141, 11079), (147, 11127), (153, 11154), (161, 11184), (171, 11241), (175, 11256), (179, 11268), (180, 11274), (181, 11277), (184, 11286), (190, 11313), (193, 11325), (195, 11334), (198, 11346), (199, 11352), (204, 11376), (208, 11397), (210, 11406), (214, 11421), (219, 11445), (223, 11463), (229, 11496), (230, 11499), (232, 11511), (249, 11616), (256, 11652), (273, 11760), (275, 11772), (279, 11796), (291, 11892), (292, 11895), (296, 11928), (298, 11949), (301, 11988), (304, 12006), (308, 12036), (309, 12045), (311, 12069), (322, 12144), (331, 12210),

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

Candidate Starts for PoRanda\_12:

(Start: 11 @7615 has 122 MA's), (Start: 13 @7636 has 3 MA's), (32, 7813), (34, 7822), (37, 7846), (39, 7918), (41, 7942), (48, 8041), (50, 8098), (53, 8119), (54, 8131), (56, 8140), (70, 8347), (75, 8365), (96, 8452), (108, 8521), (113, 8533), (124, 8581), (138, 8611), (143, 8626), (160, 8680), (169, 8710), (170, 8713), (175, 8734), (184, 8764), (190, 8791), (198, 8824), (205, 8863), (212, 8890), (213, 8896), (217, 8911), (220, 8926), (232, 8956), (239, 8977), (241, 8989), (242, 8995), (248, 9043), (254, 9079), (265, 9127), (270, 9154), (271, 9175), (280, 9238), (284, 9262), (290, 9319), (303, 9424), (305, 9445), (307, 9457), (311, 9499), (315, 9520), (317, 9541),

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

Candidate Starts for Pondwater\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (44, 13033), (46, 13075), (50, 13168), (51, 13171), (52, 13174), (55, 13204), (59, 13258), (68, 13399), (69, 13420), (71, 13444), (73, 13465), (74, 13474), (81, 13525), (84, 13543), (88, 13567), (102, 13729), (119, 13873), (125, 13906), (129, 13933), (131, 13951), (133, 13957), (139, 13981), (141, 13990), (147, 14038), (153, 14065), (159, 14089), (161, 14095), (162, 14101), (171, 14152), (175, 14167), (179, 14179), (180, 14185), (181, 14188), (184, 14197), (190, 14224), (193, 14236), (195, 14245), (198, 14257), (199, 14263), (203, 14284), (210, 14317), (219, 14356), (229, 14407), (230, 14410), (231, 14419), (232, 14422), (236, 14437), (248, 14521), (249, 14527), (256, 14563), (273, 14671), (275, 14683), (279, 14707), (291, 14803), (292, 14806), (298, 14860), (301, 14899), (308, 14947), (309, 14956), (311, 14980), (314, 14998), (321, 15049), (325, 15073), (328, 15091), (331, 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), (45, 10156), (46, 10177), (49, 10222), (51, 10273), (52, 10276), (55, 10306), (67, 10489), (73, 10567), (74, 10576), (75, 10582), (78, 10594), (81, 10627), (87, 10669), (92, 10714), (102, 10834), (104, 10837), (119, 10975), (129, 11035), (131, 11053), (133, 11059), (140, 11089), (147, 11140), (149, 11146), (158, 11188), (162, 11203), (165, 11212), (172, 11257), (174, 11266), (180, 11287), (184, 11299), (185, 11302), (189, 11323), (190, 11326), (191, 11332), (193, 11338), (198, 11359), (199, 11365), (203, 11386), (208, 11410), (210, 11419), (215, 11437), (219, 11458), (229, 11509), (230, 11512), (231, 11521), (232, 11524), (249, 11629), (251, 11644), (255, 11662), (269,

11731), (273, 11773), (275, 11785), (278, 11806), (279, 11809), (291, 11905), (292, 11908), (298, 11962), (301, 12001), (304, 12019), (308, 12049), (309, 12058), (314, 12100), (331, 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), (46, 10166), (51, 10262), (55, 10295), (64, 10433), (69, 10511), (73, 10556), (74, 10565), (81, 10616), (84, 10634), (85, 10646), (89, 10670), (110, 10886), (125, 10997), (129, 11024), (131, 11042), (133, 11048), (139, 11072), (141, 11081), (147, 11129), (153, 11156), (161, 11186), (171, 11243), (175, 11258), (179, 11270), (180, 11276), (181, 11279), (184, 11288), (190, 11315), (193, 11327), (195, 11336), (198, 11348), (199, 11354), (204, 11378), (208, 11399), (210, 11408), (214, 11423), (219, 11447), (229, 11498), (230, 11501), (232, 11513), (245, 11588), (249, 11618), (256, 11654), (273, 11762), (275, 11774), (279, 11798), (291, 11894), (292, 11897), (296, 11930), (298, 11951), (301, 11990), (304, 12008), (308, 12038), (309, 12047), (322, 12146), (331, 12212),

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

Candidate Starts for Publix\_12:

(Start: 11 @7603 has 122 MA's), (Start: 13 @7624 has 3 MA's), (32, 7801), (34, 7810), (37, 7834), (39, 7906), (41, 7930), (48, 8029), (53, 8107), (54, 8119), (56, 8128), (70, 8335), (75, 8353), (96, 8440), (108, 8509), (113, 8521), (124, 8569), (138, 8599), (143, 8614), (160, 8668), (169, 8698), (170, 8701), (175, 8722), (184, 8752), (190, 8779), (198, 8812), (205, 8851), (212, 8878), (213, 8884), (217, 8899), (220, 8914), (231, 8941), (232, 8944), (239, 8965), (241, 8977), (242, 8983), (248, 9031), (254, 9067), (265, 9115), (270, 9142), (271, 9163), (280, 9226), (284, 9250), (290, 9307), (303, 9412), (305, 9433), (311, 9487), (315, 9508), (317, 9529),

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

Candidate Starts for Puddles3\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for PuffyCat\_12:

(Start: 11 @7573 has 122 MA's), (Start: 13 @7594 has 3 MA's), (32, 7771), (34, 7780), (37, 7804), (39, 7876), (41, 7900), (48, 7999), (50, 8056), (53, 8077), (54, 8089), (56, 8098), (70, 8305), (75, 8323), (96, 8410), (108, 8479), (113, 8491), (124, 8539), (138, 8569), (143, 8584), (169, 8668), (170, 8671), (175, 8692), (184, 8722), (190, 8749), (198, 8782), (205, 8821), (212, 8848), (213, 8854), (217, 8869), (220, 8884), (232, 8914), (239, 8935), (241, 8947), (242, 8953), (248, 9001), (254, 9037), (265, 9085), (270, 9112), (271, 9133), (280, 9196), (284, 9220), (290, 9277), (303, 9382), (305, 9403), (311, 9457), (315, 9478), (317, 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), (46, 10205), (51, 10301), (57, 10346), (60, 10391), (71, 10574), (73, 10595), (74, 10604), (75, 10610), (78, 10622), (81, 10655), (92, 10742), (104, 10865), (112, 10940), (119, 11003), (125, 11036), (128, 11057), (129, 11063), (131, 11081), (133, 11087), (139, 11111), (144, 11153), (147, 11168), (149, 11174), (168, 11252), (172, 11285), (174, 11294), (180, 11315), (184, 11327), (190, 11354), (193, 11366), (195, 11375), (198, 11387), (199, 11393), (200, 11396), (204, 11417), (210, 11447), (215, 11465), (218,



11483), (219, 11486), (222, 11495), (223, 11504), (229, 11537), (230, 11540), (232, 11552), (236, 11567), (248, 11651), (249, 11657), (256, 11693), (268, 11750), (273, 11801), (275, 11813), (282, 11858), (291, 11933), (292, 11936), (295, 11966), (301, 12029), (308, 12077), (309, 12086), (311, 12110), (313, 12122), (331, 12248),

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

Candidate Starts for Quaker\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70, 8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248, 8961), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 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), (44, 13038), (46, 13080), (51, 13176), (52, 13179), (55, 13209), (59, 13263), (60, 13266), (68, 13404), (69, 13425), (71, 13449), (73, 13470), (74, 13479), (81, 13530), (84, 13548), (102, 13734), (119, 13878), (125, 13911), (129, 13938), (131, 13956), (133, 13962), (139, 13986), (141, 13995), (147, 14043), (153, 14070), (154, 14073), (159, 14094), (161, 14100), (162, 14106), (171, 14157), (175, 14172), (179, 14184), (180, 14190), (181, 14193), (184, 14202), (190, 14229), (193, 14241), (195, 14250), (198, 14262), (199, 14268), (203, 14289), (210, 14322), (219, 14361), (229, 14412), (230, 14415), (231, 14424), (232, 14427), (236, 14442), (249, 14532), (256, 14568), (273, 14676), (279, 14712), (291, 14808), (292, 14811), (298, 14865), (301, 14904), (308, 14952), (309, 14961), (311, 14985), (314, 15003), (321, 15054), (325, 15078), (328, 15096), (331, 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), (46, 13073), (49, 13118), (50, 13166), (51, 13169), (52, 13172), (59, 13256), (60, 13259), (68, 13397), (73, 13463), (78, 13490), (82, 13532), (115, 13841), (119, 13874), (129, 13934), (133, 13958), (147, 14039), (149, 14045), (150, 14048), (155, 14072), (162, 14102), (168, 14123), (176, 14171), (180, 14186), (185, 14201), (190, 14225), (193, 14237), (194, 14243), (198, 14258), (199, 14264), (206, 14303), (208, 14309), (210, 14318), (215, 14336), (216, 14342), (218, 14354), (219, 14357), (222, 14366), (225, 14384), (229, 14408), (230, 14411), (232, 14423), (237, 14441), (247, 14507), (248, 14522), (253, 14552), (255, 14561), (268, 14621), (273, 14672), (279, 14708), (291, 14804), (292, 14807), (298, 14861), (301, 14900), (305, 14927), (309, 14957), (311, 14981), (317, 15023), (321, 15050), (331, 15119),

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

Candidate Starts for Rhogar\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472),

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

Candidate Starts for Rhysand\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 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), (46, 10194), (51, 10290), (52, 10293), (53, 10308), (61, 10395), (75, 10599), (76, 10602), (87, 10686), (119, 10992), (129, 11052), (131, 11070), (133, 11076), (141, 11109), (142, 11121), (147, 11157), (153, 11184), (159, 11208), (161, 11214), (171, 11271), (178, 11295), (180, 11304), (185, 11319), (190, 11343), (193, 11355), (198, 11376), (199, 11382), (203, 11403), (208, 11427), (210, 11436), (215, 11454), (219, 11475), (221, 11481), (223, 11493), (229, 11526), (230, 11529), (232, 11541), (236, 11556), (237, 11559), (249, 11646), (267, 11736), (268, 11739), (273, 11790), (282, 11847), (283, 11856), (286, 11868), (291, 11922), (292, 11925), (298, 11979), (301, 12018), (308, 12066), (309, 12075), (311, 12099), (313, 12111), (328, 12207), (331, 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), (44, 12968), (46, 13010), (51, 13106), (52, 13109), (55, 13139), (59, 13193), (68, 13334), (69, 13355), (71, 13379), (73, 13400), (74, 13409), (81, 13460), (84, 13478), (119, 13808), (125, 13841), (129, 13868), (131, 13886), (133, 13892), (139, 13916), (141, 13925), (147, 13973), (153, 14000), (161, 14030), (162, 14036), (171, 14087), (175, 14102), (179, 14114), (180, 14120), (181, 14123), (190, 14159), (193, 14171), (195, 14180), (198, 14192), (199, 14198), (203, 14219), (210, 14252), (219, 14291), (223, 14309), (229, 14342), (230, 14345), (231, 14354), (232, 14357), (236, 14372), (249, 14462), (256, 14498), (273, 14606), (279, 14642), (282, 14663), (291, 14738), (292, 14741), (298, 14795), (301, 14834), (308, 14882), (309, 14891), (311, 14915), (314, 14933), (321, 14984), (325, 15008), (328, 15026), (331, 15056),

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

Candidate Starts for RoscoWindex\_12:

(Start: 11 @7553 has 122 MA's), (Start: 13 @7574 has 3 MA's), (32, 7751), (34, 7760), (37, 7784), (39, 7856), (41, 7880), (42, 7886), (50, 8036), (53, 8057), (54, 8069), (56, 8078), (70, 8285), (75, 8303), (96, 8390), (108, 8459), (113, 8471), (124, 8519), (138, 8549), (143, 8564), (156, 8600), (162, 8627), (169, 8648), (175, 8672), (182, 8696), (184, 8702), (190, 8729), (198, 8762), (205, 8801), (212, 8828), (217, 8849), (220, 8864), (231, 8891), (232, 8894), (239, 8915), (241, 8927), (242, 8933), (248, 8981), (263, 9056), (265, 9065), (270, 9092), (271, 9113), (280, 9176), (284, 9200), (290, 9257), (303, 9362), (305, 9383), (307, 9395), (311, 9437), (315, 9458), (317, 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), (44, 12969), (46, 13011), (51, 13107), (52, 13110), (55, 13140), (59, 13194), (68, 13335), (69, 13356), (71, 13380), (73, 13401), (74, 13410), (81, 13461), (84, 13479), (102, 13665), (119, 13809), (125, 13842), (129, 13869), (131, 13887), (133, 13893), (139, 13917), (141, 13926), (147, 13974), (153, 14001), (161, 14031), (162, 14037), (171, 14088), (175, 14103), (179, 14115), (180, 14121), (181, 14124), (190, 14160), (193, 14172), (195, 14181), (198, 14193), (199, 14199), (203, 14220), (210, 14253), (219, 14292), (223, 14310), (229,

14343), (230, 14346), (231, 14355), (232, 14358), (236, 14373), (249, 14463), (256, 14499), (273, 14607), (279, 14643), (282, 14664), (291, 14739), (292, 14742), (298, 14796), (301, 14835), (308, 14883), (309, 14892), (311, 14916), (314, 14934), (321, 14985), (325, 15009), (328, 15027), (331, 15057),

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

Candidate Starts for Sage7\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 9478),

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

Candidate Starts for SantasSleigh\_12:

(Start: 11 @7576 has 122 MA's), (Start: 13 @7597 has 3 MA's), (32, 7774), (34, 7783), (37, 7807), (39, 7879), (41, 7903), (42, 7909), (50, 8059), (53, 8080), (54, 8092), (56, 8101), (70, 8308), (75, 8326), (96, 8413), (108, 8482), (113, 8494), (124, 8542), (138, 8572), (143, 8587), (156, 8623), (162, 8650), (169, 8671), (175, 8695), (182, 8719), (184, 8725), (190, 8752), (198, 8785), (205, 8824), (212, 8851), (217, 8872), (220, 8887), (231, 8914), (232, 8917), (239, 8938), (241, 8950), (242, 8956), (248, 9004), (263, 9079), (265, 9088), (270, 9115), (271, 9136), (280, 9199), (284, 9223), (290, 9280), (303, 9385), (305, 9406), (307, 9418), (311, 9460), (315, 9481), (317, 9502),

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

Candidate Starts for Sara\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (44, 13032), (46, 13074), (51, 13170), (52, 13173), (55, 13203), (59, 13257), (68, 13398), (69, 13419), (71, 13443), (73, 13464), (74, 13473), (81, 13524), (84, 13542), (102, 13728), (119, 13872), (125, 13905), (129, 13932), (131, 13950), (133, 13956), (139, 13980), (141, 13989), (147, 14037), (153, 14064), (161, 14094), (162, 14100), (171, 14151), (175, 14166), (179, 14178), (180, 14184), (181, 14187), (184, 14196), (190, 14223), (193, 14235), (195, 14244), (198, 14256), (199, 14262), (203, 14283), (208, 14307), (210, 14316), (219, 14355), (223, 14373), (229, 14406), (230, 14409), (231, 14418), (232, 14421), (236, 14436), (249, 14526), (256, 14562), (273, 14670), (279, 14706), (291, 14802), (292, 14805), (298, 14859), (301, 14898), (308, 14946), (309, 14955), (311, 14979), (314, 14997), (321, 15048), (325, 15072), (328, 15090), (331, 15120),

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

Candidate Starts for Scamander\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75,

8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 9478),

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

Candidate Starts for Scrunchy\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 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), (44, 13037), (46, 13079), (51, 13175), (52, 13178), (55, 13208), (59, 13262), (68, 13403), (69, 13424), (71, 13448), (73, 13469), (74, 13478), (81, 13529), (84, 13547), (88, 13571), (102, 13733), (119, 13877), (125, 13910), (129, 13937), (131, 13955), (133, 13961), (139, 13985), (141, 13994), (147, 14042), (153, 14069), (159, 14093), (161, 14099), (162, 14105), (171, 14156), (175, 14171), (179, 14183), (180, 14189), (181, 14192), (184, 14201), (190, 14228), (193, 14240), (195, 14249), (198, 14261), (199, 14267), (203, 14288), (210, 14321), (219, 14360), (229, 14411), (230, 14414), (231, 14423), (232, 14426), (236, 14441), (248, 14525), (249, 14531), (256, 14567), (273, 14675), (279, 14711), (291, 14807), (292, 14810), (298, 14864), (301, 14903), (308, 14951), (309, 14960), (311, 14984), (314, 15002), (321, 15053), (325, 15077), (328, 15095), (331, 15125),

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

Candidate Starts for SeaWolves\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 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), (46, 10200), (51, 10296), (71, 10569), (73, 10590), (79, 10620), (81, 10650), (92, 10737), (104, 10860), (112, 10935), (119, 10998), (125, 11031), (128, 11052), (129, 11058), (131, 11076), (133, 11082), (139, 11106), (144, 11148), (147, 11163), (149, 11169), (155, 11196), (168, 11247), (172, 11280), (174, 11289), (180, 11310), (184, 11322), (190, 11349), (193, 11361), (195, 11370), (198, 11382), (199, 11388), (200, 11391), (204, 11412), (210, 11442), (215, 11460), (219, 11481), (222, 11490), (223, 11499), (229, 11532), (230, 11535), (232, 11547), (236, 11562), (248, 11646), (249, 11652), (256, 11688), (268, 11745), (269, 11754), (273, 11796), (282, 11853), (291, 11928), (292, 11931), (295, 11961), (298, 11985), (304, 12042), (308, 12072), (309, 12081), (311, 12105), (313, 12117), (331, 12243),

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

Candidate Starts for Sippinontea\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70, 8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (156, 8580), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (212, 8808), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248, 8961), (254, 8997), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 9588),

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

Candidate Starts for Slentz\_12:

(Start: 11 @7546 has 122 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (41, 7873), (42, 7879), (50, 8029), (53, 8050), (54, 8062), (56, 8071), (70, 8278), (75, 8296), (96, 8383), (108, 8452), (113, 8464), (124, 8512), (138, 8542), (143, 8557), (156, 8593), (162, 8620), (169, 8641), (175, 8665), (182, 8689), (184, 8695), (190, 8722), (198, 8755), (205, 8794), (212, 8821), (217, 8842), (220, 8857), (231, 8884), (232, 8887), (239, 8908), (241, 8920), (242, 8926), (248, 8974), (263, 9049), (265, 9058), (270, 9085), (271, 9106), (280, 9169), (284, 9193), (290, 9250), (303, 9355), (305, 9376), (307, 9388), (311, 9430), (315, 9451), (317, 9472),

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

Candidate Starts for Slizam\_12:

(Start: 11 @7579 has 122 MA's), (Start: 13 @7600 has 3 MA's), (32, 7777), (34, 7786), (37, 7810), (39, 7882), (41, 7906), (48, 8005), (53, 8083), (54, 8095), (56, 8104), (70, 8311), (75, 8329), (96, 8416), (108, 8485), (113, 8497), (124, 8545), (138, 8575), (143, 8590), (160, 8644), (169, 8674), (170, 8677), (175, 8698), (184, 8728), (190, 8755), (198, 8788), (205, 8827), (212, 8854), (213, 8860), (217, 8875), (220, 8890), (231, 8917), (232, 8920), (239, 8941), (241, 8953), (242, 8959), (248, 9007), (254, 9043), (265, 9091), (270, 9118), (271, 9139), (280, 9202), (284, 9226), (290, 9283), (303, 9388), (305, 9409), (311, 9463), (315, 9484), (317, 9505),

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

Candidate Starts for Snuffles\_13:

(Start: 11 @7751 has 122 MA's), (Start: 13 @7772 has 3 MA's), (32, 7949), (34, 7958), (37, 7982), (39, 8054), (41, 8078), (48, 8177), (53, 8255), (54, 8267), (56, 8276), (70, 8483), (75, 8501), (96, 8588), (108, 8657), (113, 8669), (124, 8717), (138, 8747), (143, 8762), (160, 8816), (169, 8846), (170, 8849), (175, 8870), (184, 8900), (190, 8927), (198, 8960), (205, 8999), (212, 9026), (213, 9032), (217, 9047), (220, 9062), (231, 9089), (232, 9092), (239, 9113), (241, 9125), (242, 9131), (248, 9179), (254, 9215), (265, 9263), (270, 9290), (271, 9311), (280, 9374), (284, 9398), (290, 9455), (303, 9560), (305, 9581), (311, 9635), (315, 9656), (317, 9677),

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

Candidate Starts for Sooty\_16:

(Start: 6 @10245 has 8 MA's), (16, 10332), (20, 10389), (26, 10437), (29, 10449), (34, 10509), (40, 10620), (47, 10701), (56, 10827), (58, 10842), (62, 10896), (76, 11070), (87, 11154), (90, 11175), (91, 11196), (94, 11217), (100, 11268), (108, 11343), (114, 11364), (116, 11397), (127, 11454), (132, 11496), (138, 11511), (146, 11562), (155, 11598), (181, 11706), (187, 11727), (196, 11769), (199, 11781), (210, 11835), (222, 11883), (245, 11979), (272, 12135), (275, 12156), (277, 12168), (285, 12219), (301, 12369), (306, 12405), (310, 12438), (332, 12597),

Gene: SpecialK\_18 Start: 10242, Stop: 12662, Start Num: 6

Candidate Starts for SpecialK\_18:

(Start: 6 @10242 has 8 MA's), (16, 10329), (26, 10434), (29, 10446), (34, 10506), (40, 10617), (47, 10698), (56, 10824), (58, 10839), (62, 10893), (76, 11067), (87, 11151), (90, 11172), (94, 11214),

(108, 11340), (114, 11361), (116, 11394), (127, 11451), (132, 11493), (138, 11508), (146, 11559), (155, 11595), (157, 11601), (181, 11703), (187, 11724), (196, 11766), (209, 11826), (210, 11832), (222, 11880), (245, 11976), (275, 12153), (277, 12165), (285, 12216), (294, 12297), (301, 12366), (306, 12402), (316, 12483), (319, 12498), (329, 12570), (332, 12594),

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

Candidate Starts for Stem\_12:

(Start: 11 @7579 has 122 MA's), (Start: 13 @7600 has 3 MA's), (32, 7777), (34, 7786), (37, 7810), (39, 7882), (41, 7906), (48, 8005), (50, 8062), (53, 8083), (54, 8095), (56, 8104), (70, 8311), (75, 8329), (96, 8416), (108, 8485), (113, 8497), (124, 8545), (138, 8575), (143, 8590), (160, 8644), (169, 8674), (170, 8677), (175, 8698), (184, 8728), (190, 8755), (198, 8788), (205, 8827), (212, 8854), (213, 8860), (217, 8875), (220, 8890), (231, 8917), (232, 8920), (239, 8941), (241, 8953), (242, 8959), (248, 9007), (254, 9043), (265, 9091), (270, 9118), (271, 9139), (280, 9202), (284, 9226), (290, 9283), (303, 9388), (305, 9409), (311, 9463), (315, 9484), (317, 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), (46, 10196), (51, 10292), (52, 10295), (53, 10310), (61, 10397), (75, 10601), (76, 10604), (87, 10688), (119, 10994), (129, 11054), (131, 11072), (133, 11078), (141, 11111), (142, 11123), (147, 11159), (153, 11186), (159, 11210), (161, 11216), (171, 11273), (178, 11297), (180, 11306), (185, 11321), (190, 11345), (193, 11357), (198, 11378), (199, 11384), (203, 11405), (208, 11429), (210, 11438), (215, 11456), (219, 11477), (221, 11483), (223, 11495), (229, 11528), (230, 11531), (232, 11543), (236, 11558), (237, 11561), (249, 11648), (267, 11738), (268, 11741), (273, 11792), (282, 11849), (283, 11858), (291, 11924), (292, 11927), (298, 11981), (301, 12020), (308, 12068), (309, 12077), (311, 12101), (313, 12113), (328, 12209), (331, 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), (46, 13103), (49, 13148), (51, 13199), (52, 13202), (55, 13232), (64, 13370), (73, 13493), (81, 13553), (84, 13571), (86, 13586), (92, 13637), (115, 13868), (126, 13937), (129, 13961), (131, 13979), (133, 13985), (143, 14039), (144, 14051), (149, 14072), (154, 14096), (172, 14183), (179, 14207), (180, 14213), (181, 14216), (185, 14228), (189, 14249), (190, 14252), (191, 14258), (193, 14264), (195, 14273), (197, 14282), (198, 14285), (199, 14291), (204, 14315), (208, 14336), (210, 14345), (215, 14363), (219, 14384), (222, 14393), (223, 14402), (229, 14435), (230, 14438), (231, 14447), (232, 14450), (243, 14501), (256, 14591), (273, 14699), (275, 14711), (278, 14732), (279, 14735), (291, 14831), (292, 14834), (298, 14888), (301, 14927), (309, 14984), (314, 15026), (321, 15074), (328, 15116), (331, 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), (44, 13031), (46, 13073), (51, 13169), (52, 13172), (55, 13202), (59, 13256), (68, 13397), (69, 13418), (71, 13442), (73, 13463), (74, 13472), (81, 13523), (84, 13541), (102, 13727), (119, 13871), (125, 13904), (129, 13931), (131, 13949), (133, 13955), (139, 13979), (141, 13988), (147, 14036), (153, 14063), (161, 14093), (162, 14099), (171, 14150), (175, 14165), (179, 14177), (180, 14183), (181, 14186), (184, 14195), (190, 14222), (193, 14234), (195, 14243), (198, 14255), (199, 14261), (203, 14282), (208, 14306), (210, 14315), (219, 14354), (223, 14372), (229, 14405), (230, 14408), (231, 14417), (232, 14420), (236, 14435), (249, 14525), (256, 14561), (273, 14669), (279, 14705), (291, 14801), (292, 14804), (298, 14858), (301, 14897), (308, 14945), (309, 14954), (311, 14978), (314, 14996), (321, 15047), (325, 15071), (328, 15089), (331, 15119),

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

Candidate Starts for TeddyBoy\_12:

(Start: 11 @7547 has 122 MA's), (Start: 13 @7568 has 3 MA's), (32, 7745), (34, 7754), (37, 7778), (39, 7850), (41, 7874), (42, 7880), (50, 8030), (53, 8051), (54, 8063), (56, 8072), (70, 8279), (75, 8297), (96, 8384), (108, 8453), (113, 8465), (124, 8513), (138, 8543), (143, 8558), (156, 8594), (162, 8621), (169, 8642), (175, 8666), (182, 8690), (184, 8696), (190, 8723), (198, 8756), (205, 8795), (212, 8822), (217, 8843), (220, 8858), (231, 8885), (232, 8888), (239, 8909), (241, 8921), (242, 8927), (248, 8975), (263, 9050), (265, 9059), (270, 9086), (271, 9107), (280, 9170), (284, 9194), (290, 9251), (303, 9356), (305, 9377), (307, 9389), (311, 9431), (315, 9452), (317, 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), (46, 10200), (51, 10296), (71, 10569), (73, 10590), (79, 10620), (81, 10650), (92, 10737), (104, 10860), (112, 10935), (119, 10998), (125, 11031), (128, 11052), (129, 11058), (131, 11076), (133, 11082), (139, 11106), (144, 11148), (147, 11163), (149, 11169), (155, 11196), (168, 11247), (172, 11280), (174, 11289), (180, 11310), (184, 11322), (190, 11349), (193, 11361), (195, 11370), (198, 11382), (199, 11388), (200, 11391), (204, 11412), (210, 11442), (215, 11460), (219, 11481), (222, 11490), (223, 11499), (229, 11532), (230, 11535), (232, 11547), (236, 11562), (248, 11646), (249, 11652), (256, 11688), (268, 11745), (269, 11754), (273, 11796), (282, 11853), (291, 11928), (292, 11931), (295, 11961), (298, 11985), (304, 12042), (308, 12072), (309, 12081), (311, 12105), (313, 12117), (331, 12243),

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

Candidate Starts for TimoTea\_12:

(Start: 11 @7528 has 122 MA's), (Start: 13 @7549 has 3 MA's), (32, 7726), (34, 7735), (37, 7759), (39, 7831), (41, 7855), (42, 7861), (50, 8011), (53, 8032), (54, 8044), (56, 8053), (70, 8260), (75, 8278), (96, 8365), (108, 8434), (113, 8446), (124, 8494), (138, 8524), (143, 8539), (156, 8575), (162, 8602), (169, 8623), (175, 8647), (182, 8671), (184, 8677), (190, 8704), (198, 8737), (205, 8776), (212, 8803), (217, 8824), (220, 8839), (231, 8866), (232, 8869), (239, 8890), (241, 8902), (242, 8908), (248, 8956), (263, 9031), (265, 9040), (270, 9067), (271, 9088), (280, 9151), (284, 9175), (290, 9232), (303, 9337), (305, 9358), (307, 9370), (311, 9412), (315, 9433), (317, 9454),

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

Candidate Starts for TinyTruffula\_12:

(Start: 11 @7648 has 122 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (41, 7975), (48, 8074), (50, 8131), (53, 8152), (54, 8164), (56, 8173), (70, 8380), (75, 8398), (96, 8485), (108, 8554), (113, 8566), (124, 8614), (138, 8644), (143, 8659), (169, 8743), (170, 8746), (175, 8767), (184, 8797), (190, 8824), (198, 8857), (205, 8896), (212, 8923), (213, 8929), (217, 8944), (220, 8959), (232, 8989), (239, 9010), (241, 9022), (242, 9028), (248, 9076), (254, 9112), (265, 9160), (270, 9187), (271, 9208), (280, 9271), (284, 9295), (290, 9352), (303, 9457), (305, 9478), (311, 9532), (315, 9553), (317, 9574),

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

Candidate Starts for TomBrady12\_12:

(Start: 11 @7580 has 122 MA's), (Start: 13 @7601 has 3 MA's), (32, 7778), (34, 7787), (37, 7811), (39, 7883), (41, 7907), (48, 8006), (53, 8084), (54, 8096), (56, 8105), (70, 8312), (75, 8330), (96, 8417), (108, 8486), (113, 8498), (124, 8546), (138, 8576), (143, 8591), (160, 8645), (169, 8675), (170, 8678), (175, 8699), (184, 8729), (190, 8756), (198, 8789), (205, 8828), (212, 8855), (213, 8861), (217, 8876), (220, 8891), (231, 8918), (232, 8921), (239, 8942), (241, 8954), (242, 8960), (248, 9008), (254, 9044), (265, 9092), (270, 9119), (271, 9140), (280, 9203), (284, 9227), (290, 9284), (303, 9389), (305, 9410), (311, 9464), (315, 9485), (317, 9506),

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

Candidate Starts for Trireme\_12:

(Start: 11 @7646 has 122 MA's), (Start: 13 @7667 has 3 MA's), (32, 7844), (34, 7853), (37, 7877), (39, 7949), (41, 7973), (48, 8072), (50, 8129), (53, 8150), (54, 8162), (56, 8171), (70, 8378), (75, 8396), (96, 8483), (108, 8552), (113, 8564), (124, 8612), (138, 8642), (143, 8657), (160, 8711), (169, 8741), (170, 8744), (175, 8765), (184, 8795), (190, 8822), (198, 8855), (205, 8894), (212, 8921), (213, 8927), (217, 8942), (220, 8957), (232, 8987), (239, 9008), (241, 9020), (242, 9026), (248, 9074), (254, 9110), (265, 9158), (270, 9185), (271, 9206), (280, 9269), (284, 9293), (290, 9350), (303, 9455), (305, 9476), (311, 9530), (315, 9551), (317, 9572),

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

Candidate Starts for Upsilon\_12:

(Start: 11 @7615 has 122 MA's), (Start: 13 @7636 has 3 MA's), (32, 7813), (34, 7822), (37, 7846), (39, 7918), (41, 7942), (48, 8041), (50, 8098), (53, 8119), (54, 8131), (56, 8140), (70, 8347), (75, 8365), (96, 8452), (108, 8521), (113, 8533), (124, 8581), (138, 8611), (143, 8626), (160, 8680), (169, 8710), (170, 8713), (175, 8734), (184, 8764), (190, 8791), (198, 8824), (205, 8863), (212, 8890), (213, 8896), (217, 8911), (220, 8926), (232, 8956), (239, 8977), (241, 8989), (242, 8995), (248, 9043), (254, 9079), (265, 9127), (270, 9154), (271, 9175), (280, 9238), (284, 9262), (290, 9319), (303, 9424), (305, 9445), (307, 9457), (311, 9499), (315, 9520), (317, 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), (45, 10189), (46, 10210), (51, 10306), (60, 10396), (73, 10600), (81, 10660), (82, 10669), (119, 10996), (128, 11050), (129, 11056), (131, 11074), (141, 11113), (147, 11161), (162, 11224), (172, 11278), (179, 11302), (180, 11308), (190, 11347), (193, 11359), (197, 11377), (198, 11380), (199, 11386), (200, 11389), (203, 11407), (210, 11440), (215, 11458), (219, 11479), (222, 11488), (223, 11497), (229, 11530), (230, 11533), (231, 11542), (232, 11545), (236, 11560), (248, 11644), (256, 11686), (273, 11794), (275, 11806), (282, 11851), (283, 11860), (291, 11926), (292, 11929), (298, 11983), (301, 12022), (308, 12070), (309, 12079), (311, 12103), (313, 12115), (321, 12172), (322, 12178), (331, 12244), (334, 12286),

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

Candidate Starts for UtzChips\_14:

(Start: 6 @9915 has 8 MA's), (25, 10098), (37, 10194), (43, 10302), (47, 10362), (62, 10557), (65, 10620), (72, 10704), (75, 10716), (76, 10719), (83, 10770), (90, 10821), (99, 10908), (107, 10968), (112, 10992), (122, 11073), (137, 11133), (148, 11154), (162, 11214), (169, 11235), (171, 11244), (186, 11295), (204, 11382), (205, 11391), (233, 11487), (235, 11493), (242, 11526), (257, 11622), (265, 11661), (284, 11799), (291, 11862), (304, 11973), (317, 12078), (321, 12114),

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

Candidate Starts for VResidence\_16:

(Start: 6 @10828 has 8 MA's), (9, 10861), (16, 10915), (21, 10984), (37, 11116), (38, 11143), (43, 11224), (46, 11275), (47, 11284), (50, 11368), (62, 11479), (63, 11530), (70, 11620), (76, 11644), (80, 11671), (93, 11764), (117, 11956), (122, 11983), (130, 12016), (138, 12049), (149, 12067), (151, 12073), (161, 12115), (163, 12124), (167, 12136), (183, 12190), (190, 12214), (200, 12256), (201, 12262), (211, 12310), (222, 12355), (229, 12373), (231, 12385), (243, 12430), (251, 12496), (253, 12505), (289, 12730), (291, 12748), (292, 12751), (299, 12817), (304, 12862), (306, 12880), (309, 12901), (324, 13012), (332, 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), (44, 12970), (46, 13012), (51, 13108), (52, 13111), (55, 13141), (59, 13195), (60, 13198), (68, 13336), (69, 13357), (71, 13381), (73, 13402), (74, 13411), (81, 13462), (84, 13480), (102, 13666), (119, 13810), (125, 13843), (129, 13870), (131, 13888), (133, 13894), (139, 13918), (141, 13927), (147, 13975), (153, 14002), (154, 14005), (159, 14026), (161, 14032), (162, 14038), (171, 14089), (175, 14104), (179, 14116), (180, 14122), (181, 14125), (184, 14134), (190, 14161), (193, 14173), (195, 14182), (198, 14194), (199, 14200), (203, 14221), (210, 14254), (219, 14293), (229, 14344), (230, 14347), (231, 14356), (232, 14359), (236, 14374), (249, 14464), (256, 14500), (273, 14608), (279, 14644), (291, 14740), (292, 14743), (298, 14797), (301, 14836), (308, 14884), (309, 14893), (311, 14917), (314, 14935), (321, 14986), (325, 15010), (328, 15028), (331, 15058),

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

Candidate Starts for Vanisius\_12:

(Start: 11 @7552 has 122 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (41, 7879), (42, 7885), (50, 8035), (53, 8056), (54, 8068), (56, 8077), (70, 8284), (75, 8302), (96, 8389), (108, 8458), (113, 8470), (124, 8518), (138, 8548), (143, 8563), (156, 8599), (162, 8626), (169, 8647), (175, 8671), (182, 8695), (184, 8701), (190, 8728), (198, 8761), (205, 8800), (212, 8827), (217, 8848), (220, 8863), (231, 8890), (232, 8893), (239, 8914), (241, 8926), (242, 8932), (248, 8980), (263, 9055), (265, 9064), (270, 9091), (271, 9112), (280, 9175), (284, 9199), (290, 9256), (303, 9361), (305, 9382), (307, 9394), (311, 9436), (315, 9457), (317, 9478),

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

Candidate Starts for VitulaEligans\_12:

(Start: 11 @7636 has 122 MA's), (Start: 13 @7657 has 3 MA's), (32, 7834), (34, 7843), (37, 7867), (39, 7939), (41, 7963), (42, 7969), (50, 8119), (53, 8140), (54, 8152), (56, 8161), (70, 8368), (75, 8386), (96, 8473), (108, 8542), (113, 8554), (124, 8602), (138, 8632), (143, 8647), (162, 8710), (169, 8731), (175, 8755), (182, 8779), (184, 8785), (190, 8812), (198, 8845), (205, 8884), (212, 8911), (217, 8932), (220, 8947), (231, 8974), (232, 8977), (239, 8998), (241, 9010), (242, 9016), (248, 9064), (254, 9100), (263, 9139), (265, 9148), (270, 9175), (271, 9196), (280, 9259), (284, 9283), (290, 9340), (303, 9445), (305, 9466), (307, 9478), (311, 9520), (315, 9541), (317, 9562), (333, 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), (46, 10194), (51, 10290), (52, 10293), (53, 10308), (61, 10395), (64, 10461), (75, 10599), (76, 10602), (87, 10686), (119, 10992), (129, 11052), (131, 11070), (133, 11076), (141, 11109), (142, 11121), (147, 11157), (153, 11184), (159, 11208), (161, 11214), (171, 11271), (178, 11295), (180, 11304), (185, 11319), (190, 11343), (193, 11355), (198, 11376), (199, 11382), (203, 11403), (208, 11427), (210, 11436), (215, 11454), (219, 11475), (221, 11481), (223, 11493), (229, 11526), (230, 11529), (232, 11541), (236, 11556), (237, 11559), (249, 11646), (267, 11736), (268, 11739), (273, 11790), (282, 11847), (283, 11856), (286, 11868), (291, 11922), (292, 11925), (298, 11979), (301, 12018), (308, 12066), (309, 12075), (311, 12099), (313, 12111), (328, 12207), (331, 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), (44, 13007), (46, 13049), (51, 13145), (52, 13148), (55, 13178), (59, 13232), (68, 13373), (69, 13394), (71, 13418), (73, 13439), (74, 13448), (81, 13499), (84, 13517), (102, 13703), (119, 13847), (125, 13880), (129, 13907), (131, 13925), (133, 13931), (139, 13955), (141, 13964), (147, 14012), (153, 14039), (154, 14042), (159, 14063), (161, 14069), (162, 14075), (171, 14126), (175, 14141), (179, 14153), (180, 14159), (181, 14162), (184, 14171), (190, 14198), (193, 14210), (195, 14219), (198, 14231), (199, 14237), (203, 14258), (210,

14291), (219, 14330), (229, 14381), (230, 14384), (231, 14393), (232, 14396), (236, 14411), (249, 14501), (256, 14537), (273, 14645), (279, 14681), (291, 14777), (292, 14780), (298, 14834), (301, 14873), (308, 14921), (309, 14930), (311, 14954), (314, 14972), (321, 15023), (325, 15047), (328, 15065), (331, 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), (46, 13149), (49, 13194), (51, 13245), (52, 13248), (55, 13278), (64, 13416), (73, 13539), (81, 13599), (84, 13617), (86, 13632), (92, 13683), (115, 13914), (126, 13983), (129, 14007), (131, 14025), (133, 14031), (143, 14085), (144, 14097), (149, 14118), (154, 14142), (172, 14229), (179, 14253), (180, 14259), (181, 14262), (185, 14274), (189, 14295), (190, 14298), (191, 14304), (193, 14310), (197, 14328), (198, 14331), (199, 14337), (208, 14382), (210, 14391), (215, 14409), (219, 14430), (222, 14439), (223, 14448), (229, 14481), (230, 14484), (231, 14493), (232, 14496), (243, 14547), (256, 14637), (273, 14745), (275, 14757), (278, 14778), (279, 14781), (291, 14877), (292, 14880), (298, 14934), (301, 14973), (309, 15030), (314, 15072), (321, 15120), (328, 15162), (331, 15192),

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

Candidate Starts for Witch\_12:

(Start: 11 @7541 has 122 MA's), (Start: 13 @7562 has 3 MA's), (32, 7739), (34, 7748), (37, 7772), (39, 7844), (41, 7868), (42, 7874), (50, 8024), (53, 8045), (54, 8057), (56, 8066), (70, 8273), (75, 8291), (96, 8378), (108, 8447), (113, 8459), (124, 8507), (138, 8537), (143, 8552), (156, 8588), (162, 8615), (169, 8636), (175, 8660), (182, 8684), (184, 8690), (190, 8717), (198, 8750), (205, 8789), (212, 8816), (217, 8837), (220, 8852), (231, 8879), (232, 8882), (239, 8903), (241, 8915), (242, 8921), (248, 8969), (254, 9005), (265, 9053), (270, 9080), (271, 9101), (280, 9164), (284, 9188), (290, 9245), (303, 9350), (305, 9371), (307, 9383), (311, 9425), (315, 9446), (317, 9467), (333, 9596),

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

Candidate Starts for Wolfpack\_12:

(Start: 11 @7533 has 122 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (41, 7860), (42, 7866), (48, 7959), (50, 8016), (53, 8037), (54, 8049), (56, 8058), (70, 8265), (75, 8283), (96, 8370), (108, 8439), (113, 8451), (124, 8499), (138, 8529), (143, 8544), (156, 8580), (162, 8607), (170, 8631), (175, 8652), (182, 8676), (184, 8682), (190, 8709), (198, 8742), (205, 8781), (212, 8808), (217, 8829), (220, 8844), (231, 8871), (232, 8874), (241, 8907), (242, 8913), (248, 8961), (254, 8997), (265, 9045), (270, 9072), (271, 9093), (280, 9156), (284, 9180), (290, 9237), (303, 9342), (305, 9363), (307, 9375), (311, 9417), (315, 9438), (317, 9459), (333, 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), (46, 10166), (51, 10262), (52, 10265), (55, 10295), (64, 10433), (69, 10511), (73, 10556), (74, 10565), (81, 10616), (84, 10634), (85, 10646), (89, 10670), (110, 10886), (121, 10976), (125, 10997), (129, 11024), (131, 11042), (133, 11048), (139, 11072), (141, 11081), (147, 11129), (153, 11156), (161, 11186), (171, 11243), (175, 11258), (179, 11270), (180, 11276), (181, 11279), (184, 11288), (190, 11315), (193, 11327), (195, 11336), (198, 11348), (199, 11354), (204, 11378), (208, 11399), (210, 11408), (214, 11423), (219, 11447), (229, 11498), (230, 11501), (232, 11513), (237, 11531), (249, 11618), (256, 11654), (273, 11762), (275, 11774), (278, 11795), (279, 11798), (282, 11819), (291, 11894), (292, 11897), (296, 11930), (298, 11951), (301, 11990), (304, 12008), (308, 12038), (309, 12047), (322, 12146), (331, 12212),

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

Candidate Starts for Yami\_12:

(Start: 11 @7531 has 122 MA's), (Start: 13 @7552 has 3 MA's), (32, 7729), (34, 7738), (37, 7762), (39, 7834), (41, 7858), (48, 7957), (50, 8014), (53, 8035), (54, 8047), (56, 8056), (70, 8263), (75, 8281), (96, 8368), (108, 8437), (113, 8449), (124, 8497), (138, 8527), (143, 8542), (169, 8626), (170, 8629), (175, 8650), (184, 8680), (190, 8707), (198, 8740), (205, 8779), (212, 8806), (213, 8812), (217, 8827), (220, 8842), (232, 8872), (239, 8893), (241, 8905), (242, 8911), (248, 8959), (254, 8995), (265, 9043), (270, 9070), (271, 9091), (280, 9154), (284, 9178), (290, 9235), (303, 9340), (305, 9361), (311, 9415), (315, 9436), (317, 9457),

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

Candidate Starts for Yasuo\_12:

(Start: 11 @7537 has 122 MA's), (Start: 13 @7558 has 3 MA's), (32, 7735), (34, 7744), (37, 7768), (39, 7840), (41, 7864), (42, 7870), (50, 8020), (53, 8041), (54, 8053), (56, 8062), (70, 8269), (75, 8287), (96, 8374), (108, 8443), (113, 8455), (124, 8503), (138, 8533), (143, 8548), (156, 8584), (162, 8611), (169, 8632), (175, 8656), (182, 8680), (184, 8686), (190, 8713), (198, 8746), (205, 8785), (212, 8812), (217, 8833), (220, 8848), (231, 8875), (232, 8878), (239, 8899), (241, 8911), (242, 8917), (248, 8965), (263, 9040), (265, 9049), (270, 9076), (271, 9097), (280, 9160), (284, 9184), (290, 9241), (303, 9346), (305, 9367), (307, 9379), (311, 9421), (315, 9442), (317, 9463),

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

Candidate Starts for YertPhresh\_12:

(Start: 11 @7540 has 122 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (41, 7867), (42, 7873), (50, 8023), (53, 8044), (54, 8056), (56, 8065), (70, 8272), (75, 8290), (96, 8377), (108, 8446), (113, 8458), (124, 8506), (138, 8536), (143, 8551), (156, 8587), (162, 8614), (169, 8635), (175, 8659), (182, 8683), (184, 8689), (190, 8716), (198, 8749), (205, 8788), (212, 8815), (217, 8836), (220, 8851), (231, 8878), (232, 8881), (239, 8902), (241, 8914), (242, 8920), (248, 8968), (254, 9004), (265, 9052), (270, 9079), (271, 9100), (280, 9163), (284, 9187), (290, 9244), (303, 9349), (305, 9370), (307, 9382), (311, 9424), (315, 9445), (317, 9466), (333, 9595),

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

Candidate Starts for Yubaba\_12:

(Start: 11 @7574 has 122 MA's), (Start: 13 @7595 has 3 MA's), (32, 7772), (34, 7781), (37, 7805), (39, 7877), (41, 7901), (42, 7907), (50, 8057), (53, 8078), (54, 8090), (56, 8099), (70, 8306), (75, 8324), (96, 8411), (108, 8480), (113, 8492), (124, 8540), (138, 8570), (143, 8585), (156, 8621), (162, 8648), (169, 8669), (175, 8693), (182, 8717), (184, 8723), (190, 8750), (198, 8783), (205, 8822), (212, 8849), (217, 8870), (220, 8885), (231, 8912), (232, 8915), (239, 8936), (241, 8948), (242, 8954), (248, 9002), (254, 9038), (265, 9086), (270, 9113), (271, 9134), (280, 9197), (284, 9221), (290, 9278), (303, 9383), (305, 9404), (307, 9416), (311, 9458), (315, 9479), (317, 9500), (333, 9629),

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

Candidate Starts for Zeta1847\_14:

(Start: 4 @9068 has 1 MA's), (17, 9158), (19, 9203), (22, 9230), (25, 9254), (27, 9260), (37, 9350), (43, 9458), (47, 9518), (62, 9713), (65, 9776), (76, 9875), (78, 9884), (97, 9986), (120, 10118), (123, 10139), (134, 10184), (165, 10283), (175, 10319), (177, 10325), (188, 10364), (199, 10415), (205, 10448), (215, 10487), (228, 10523), (242, 10580), (257, 10673), (258, 10679), (265, 10712), (271, 10760), (291, 10910), (293, 10922), (302, 11006), (326, 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), (44, 12986), (46, 13028), (51, 13124), (52, 13127), (55, 13157), (59, 13211), (68, 13352), (69, 13373), (71, 13397), (73, 13418), (74, 13427), (81, 13478), (84, 13496), (102, 13682), (119, 13826), (125, 13859), (129, 13886), (131, 13904), (133, 13910), (139, 13934), (141, 13943), (147, 13991), (153, 14018), (154, 14021), (159, 14042), (162,

14054), (171, 14105), (175, 14120), (179, 14132), (181, 14141), (184, 14150), (190, 14177), (193, 14189), (195, 14198), (198, 14210), (199, 14216), (203, 14237), (208, 14261), (210, 14270), (219, 14309), (229, 14360), (230, 14363), (231, 14372), (232, 14375), (236, 14390), (249, 14480), (256, 14516), (273, 14624), (279, 14660), (291, 14756), (292, 14759), (298, 14813), (301, 14852), (308, 14900), (309, 14909), (311, 14933), (314, 14951), (321, 15002), (325, 15026), (328, 15044), (331, 15074),