









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 193645 Report

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

Pham number 193645 has 450 members, 23 are drafts.

Phages represented in each track:

- Track 1 : JacoRen57\_20
- Track 2 : Weirdo19\_22
- Track 3 : Delton\_30, Erk16\_30, KandZ\_30, Visconti\_30, Troll4\_30, PLOT\_31, Prager\_30, Giuseppe\_30, Adjutor\_31, Mopey\_30, Thoth\_30, WaldoWhy\_31, PBI1\_30, BigMama\_28, Butterscotch\_30, Chill\_31
- Track 4 : Penelope2018\_30, Helpful\_31
- Track 5 : Nova\_30
- Track 6 : SirHarley\_29, Gumball\_29
- Track 7 : Hawkeye\_32
- Track 8 : Manda\_27, Terminus\_26, Goldilocks\_27, Murphy\_27, Willez\_25, Holt\_27, Porky\_26, Teaspoon\_27, Buck\_25, Miniwave\_26, PhatBacter\_26, Cookies\_26, Murica\_25, Pharsalus\_27, Inca\_25, Gemini\_29, Tarkin\_28, Palpatine\_26, HufflyPuff\_25, Petra64142\_28, FireRed\_26, Phaux\_25, StellaBean\_26, TBrady12\_28, AmericanBeauty\_28, MPhalcon\_25, Misfit\_26, Paperbeatsrock\_28, Nala\_26, Argent26\_28, MISSy\_25, Nimrod\_26, GooberAzure\_28, Highbury\_27, SophKB\_26, Gage\_28, BugsBunny\_24, Saints25\_27, Kimchi\_28, ShereKhan\_28, Stank\_29, Qualification\_27, Easy2Say\_28, Filch\_27, Kanye\_28, Sassay\_25
- Track 9 : Command613\_27, Marshmallow\_26, Icee\_25, Bask21\_26, Sotrice96\_26, Kostya\_26, CrystalP\_26, BilboSwaggins\_26, Cactus\_27, SirDuracell\_25
- Track 10 : Gator\_24, Rakim\_27, ABCat\_25, Asriel\_25, Barbarian\_25, Goku\_26, Myrale\_26, Dusk\_25, Balomoji\_25, Tuco\_27, Traaww1\_24, TeardropMSU\_25, Eureka\_26
- Track 11 : HanKaySha\_27, Phrux\_26, Xandras\_28, Wiggin\_29, Adnama\_29, Lilizi\_28, Stark\_27, Emmina\_27, Czystczon1\_27, RiverMonster\_26, Elite2014\_25, Bench\_28, ChosenOne\_25, DoctorDiddles\_26, DrDrey\_27, Simpliphy\_27, Lilpickle\_25, Pumpkin\_28, MadamMonkfish\_26, NoSleep\_27, Dumbo\_26, Ukulele\_26, OrionPax\_27, Elph10\_27, Maxxinista\_27, JeTaime\_28, Hopey\_28, StolenFromERC\_28, Moldemort\_27, Hoonter\_28, Lilac\_28, 244\_28
- Track 12 : Phaja\_26, IHOP\_26
- Track 13 : Cjw1\_26
- Track 14 : YassJohnny\_27, Contagion\_25, Mosby\_25, Tomaszewski\_25, BigBubba\_27, Bruin\_26, ChotaBhai\_26, xkcd\_27, Rimmer\_25
- Track 15 : Pat3\_25
- Track 16 : BaboJay\_25
- Track 17 : BadStone\_25
- Track 18 : Harella\_25, Flypotenuse\_24, Glexan\_24
- Track 19 : Amao\_26

- Track 20 : NelitzaMV\_26, Henry\_26, ShamWow\_26, Daikon\_24, Toto\_26, Mindy\_26
- Track 21 : Policronamos\_26
- Track 22 : GoldenSpark\_28
- Track 23 : Thresher\_27
- Track 24 : Youngblood\_26
- Track 25 : Blarby\_25
- Track 26 : ShiLan\_18, Gandolph\_18, Burwell21\_18, OlympiaSaint\_18, NormanBulbieJr\_18, ShowerHandel\_18, Priscilla\_18, Yorick\_18, Jarcob\_18, Spoonbill\_18, Martik\_18, Cabrinians\_18
- Track 27 : Aubs\_18
- Track 28 : Rockne\_18, Llij\_18, PMC\_18
- Track 29 : Sabbb\_19, Mattes\_18, BobaPhett\_18, Gorge\_18, James\_18, LilMoolah\_18
- Track 30 : Flathead\_19
- Track 31 : RitaG\_18
- Track 32 : BlueCrab\_18, Pacc40\_18, Polka14\_19, Dorothy\_18, Daenerys\_18, PHappiness\_18, KingMidas\_19, JoeyJr\_18, OldBen\_18, DaddyRickover\_18, IbOuu\_18, Scottish\_19
- Track 33 : SG4\_18
- Track 34 : MisterCuddles\_18, GUmbie\_18, Girr\_18, Veteran\_18, Phasih\_19, Ruby\_18
- Track 35 : Totinger\_19, LittleShirley\_19, Starcevich\_19, GigiOuiOui\_18, Rialto\_20
- Track 36 : IMpilo\_18, Firehouse51\_19, Minnie\_19, Leozinho\_19, MilleniumForce\_19, Whatsapiecost\_18
- Track 37 : Alexphander\_20, ArcusAngelus\_18, DaWorst\_20, Chevrolet\_18
- Track 38 : Zerg\_18
- Track 39 : Madiba\_19
- Track 40 : VRedHorse\_18
- Track 41 : Job42\_21
- Track 42 : UncleRicky\_19, Phatniss\_19, Drago\_19, Lorde\_19, Enby\_19
- Track 43 : Doug\_19
- Track 44 : TootsiePop\_19, Awesomesauce\_19, Misha28\_19
- Track 45 : Tootsieroll\_19, Radiance\_18
- Track 46 : OfUltron\_18, Jinglebell\_17, Llama\_18, Modragons\_18, AlpineSix\_18, Sebastian\_18, Ochi17\_18
- Track 47 : Spikelee\_19, RedBird\_18, BuzzLyseyear\_20, WillSterrel\_19, RockyHorror\_19, IrishSherpFalk\_19, Mantra\_18
- Track 48 : OwlsT2W\_20, Hades\_18, DosHalletts\_19
- Track 49 : Coco12\_20, Phanphagia\_18, Kingsley\_19
- Track 50 : ChickenDinner\_19, DocMcStuffins\_19, Piper2020\_19
- Track 51 : Shauna1\_18
- Track 52 : StAnnes\_18
- Track 53 : Karhdo\_18
- Track 54 : Strokeseat\_18, Hlubikazi\_18, Mandlovu\_18
- Track 55 : Dante\_18
- Track 56 : Kersh\_19
- Track 57 : Mova\_19
- Track 58 : Moonbeam\_19, Kimberlium\_20, Juice456\_20, QuickMath\_19, MulchExplorer\_21
- Track 59 : Mozy\_19
- Track 60 : SuperGrey\_19
- Track 61 : DotProduct\_18
- Track 62 : MinionDave\_19, CaptainTrips\_19

- Track 63 : lbhubesi\_18, Harley\_18
- Track 64 : Nitzel\_19
- Track 65 : Taj\_18, DeadP\_18
- Track 66 : Nivrat\_18, Lizziana\_18
- Track 67 : Wee\_19
- Track 68 : Boomer\_19
- Track 69 : ByChance\_18
- Track 70 : PhesterPhotato\_18
- Track 71 : Chuckly\_18
- Track 72 : Ramsey\_19
- Track 73 : EleanorGeorge\_18, JalFarm20\_20, KristaRAM\_19, Batiatus\_18, Fruitloop\_18
- Track 74 : Nimbo\_18, Blexus\_18, Geralt\_18, Inventum\_18, Deb65\_18, Sassafras\_18
- Track 75 : XFactor\_18, Galactic\_18, Filuzino\_18
- Track 76 : Che8\_18
- Track 77 : Fancypants\_18
- Track 78 : ShroomBoi\_18
- Track 79 : Plumbus\_19
- Track 80 : SwagPiggett\_18, TDanisky\_18, Philus\_18, DRBy19\_18, Saal\_18, Sparkdehily\_18
- Track 81 : Spartacus\_19
- Track 82 : SimranZ1\_19
- Track 83 : Whouxphf\_18
- Track 84 : DLane\_18
- Track 85 : Donkeykong\_18
- Track 86 : LunaBlu\_19
- Track 87 : Bobi\_20
- Track 88 : Mutaforma13\_18
- Track 89 : Pollywog\_21, Ogopogo\_21
- Track 90 : Royals2015\_18
- Track 91 : Emma\_18, Tweety\_18
- Track 92 : Bubbles123\_19
- Track 93 : Stap\_19
- Track 94 : Wachhund\_18
- Track 95 : Phalconet\_18
- Track 96 : Oksu\_19
- Track 97 : Quico\_19, Girafales\_19, Florinda\_18
- Track 98 : Guppsters\_19
- Track 99 : Estave1\_18
- Track 100 : Mahavrat\_18, Juniper1\_18
- Track 101 : Ovechkin\_18
- Track 102 : Krakatau\_19
- Track 103 : Hegedechwinu\_19
- Track 104 : Eish\_18
- Track 105 : Hamulus\_18
- Track 106 : Empress\_19
- Track 107 : Sandalphon\_19
- Track 108 : SiSi\_18
- Track 109 : Poenanya\_18, Doomphist\_18
- Track 110 : SassyB\_18, PopTart\_18
- Track 111 : Seagreen\_19
- Track 112 : Cornucopia\_19, Marker\_19

- Track 113 : Leperchaun\_18
- Track 114 : Eradicator\_18
- Track 115 : Maravista\_18
- Track 116 : Melissauren88\_18
- Track 117 : Zizzle\_18
- Track 118 : Beakin\_19
- Track 119 : Bipolar\_18
- Track 120 : MadMen\_19
- Track 121 : DillTech15\_18
- Track 122 : FreddyB\_18
- Track 123 : BodEinwohner17\_18
- Track 124 : Byougenkin\_18
- Track 125 : Fastidio\_18
- Track 126 : DirtMcgirt\_19
- Track 127 : Ardmore\_18
- Track 128 : Latretium\_19
- Track 129 : Frankie\_19
- Track 130 : Rita\_18
- Track 131 : Kenuha5\_18
- Track 132 : Zapner\_25, Jabbawokkie\_26
- Track 133 : Avani\_24
- Track 134 : Soul22\_24
- Track 135 : Demsculpinboyz\_24
- Track 136 : Che9d\_24
- Track 137 : Yoshi\_24
- Track 138 : LunaStella\_20
- Track 139 : ThetaBob\_20
- Track 140 : Renaud18\_20
- Track 141 : Cornie\_20
- Track 142 : Toron\_20
- Track 143 : Puissant\_28
- Track 144 : Oaker\_29
- Track 145 : Damien\_29, Cborch11\_30, Beckerton\_29, Megatron06\_31
- Track 146 : Phreeze\_29, Konstantine\_34
- Track 147 : Thumb\_29
- Track 148 : Brujita\_21, Island3\_21
- Track 149 : Courthouse\_36, Squint\_35, Porcelain\_35, Ariel\_36, Superphikiman\_36, Lucky2013\_36
- Track 150 : LittleE\_39
- Track 151 : MiaZeal\_36
- Track 152 : Optimus\_37
- Track 153 : Wanda\_39, BAKA\_36, Omega\_38
- Track 154 : Duke13\_36
- Track 155 : Minerva\_39
- Track 156 : Gonephishing\_34
- Track 157 : Hannaconda\_33, KashFlow\_30
- Track 158 : DmpstrDiver\_37
- Track 159 : Boilgate\_24
- Track 160 : Vagabond\_56, Krili\_57, SchoolBus\_58, Idergollasper\_58, Mori\_58, Alkhayr\_56, NiebruSaylor\_57, Schuy\_59, Familton\_59, Winget\_59, MadKillah\_59, TelAviv\_55, Catdawg\_58, Blessica\_59, JangDynasty\_58, FoulBall\_58, Vorrps\_58
- Track 161 : YungJamal\_63, Wildflower\_58, Corndog\_61, Shida\_58, Dylan\_58, Murai\_59, Ashwin\_60, Zakhe101\_58

- Track 162 : Ryadel\_62
- Track 163 : Smooch\_61, Firecracker\_59
- Track 164 : Bora\_56
- Track 165 : Shipwreck\_20, Bogie\_20
- Track 166 : Pygmy\_20
- Track 167 : MaryV\_43, Wildcat\_43
- Track 168 : Cosmo\_43
- Track 169 : Azrael100\_42
- Track 170 : EniyanLRS\_40
- Track 171 : Gaia\_21
- Track 172 : Nebkiss\_22
- Track 173 : Kumao\_30
- Track 174 : MooMoo\_18
- Track 175 : StAugustine\_35

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

The start number called the most often in the published annotations is 18, it was called in 221 of the 427 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alexphander\_20, AlpineSix\_18, ArcusAngelus\_18, Ardmore\_18, Ariel\_36, Aubs\_18, Awesomesauce\_19, BAKA\_36, Batiatus\_18, Beakin\_19, Bipolar\_18, Blexus\_18, BlueCrab\_18, BobaPhett\_18, Bobi\_20, BodEinwohner17\_18, Boomer\_19, Bubbles123\_19, Burwell21\_18, BuzzLyseyear\_20, ByChance\_18, Byougenkin\_18, Cabrinians\_18, CaptainTrips\_19, Che8\_18, Chevrolet\_18, ChickenDinner\_19, Chuckly\_18, Coco12\_20, Cornucopia\_19, Courthouse\_36, DLane\_18, DRBy19\_18, DaWorst\_20, DaddyRickover\_18, Daenerys\_18, Dante\_18, DeadP\_18, Deb65\_18, DillTech15\_18, DirtMcgirt\_19, DmpstrDiver\_37, DocMcStuffins\_19, Donkeykong\_18, Doomphist\_18, Dorothy\_18, DosHalletts\_19, DotProduct\_18, Doug\_19, Drago\_19, Duke13\_36, Eish\_18, EleanorGeorge\_18, Emma\_18, Empress\_19, Enby\_19, Eradicator\_18, Estave1\_18, Fancypants\_18, Fastidio\_18, Filuzino\_18, Firehouse51\_19, Flathead\_19, Florinda\_18, Frankie\_19, FreddyB\_18, Fruitloop\_18, GUmbie\_18, Galactic\_18, Gandalph\_18, Geralt\_18, GigiOuiOui\_18, Girafales\_19, Girr\_18, Gorge\_18, Guppsters\_19, Hades\_18, Hamulus\_18, Hannaconda\_33, Harley\_18, Hegedechwinu\_19, Hlubikazi\_18, IMpilo\_18, IbOuu\_18, Ibhubesi\_18, Inventum\_18, IrishSherpFalk\_19, JalFarm20\_20, James\_18, Jarcob\_18, Jinglebell\_17, Job42\_21, JoeyJr\_18, Juice456\_20, Juniper1\_18, Karhdo\_18, KashFlow\_30, Kenuha5\_18, Kersh\_19, Kimberlium\_20, KingMidas\_19, Kingsley\_19, Krakatau\_19, KristaRAM\_19, Latretium\_19, Leozinho\_19, Leperchaun\_18, LilMoolah\_18, LittleE\_39, LittleShirley\_19, Lizziana\_18, Llama\_18, Llij\_18, Lorde\_19, Lucky2013\_36, LunaBlu\_19, MadMen\_19, Madiba\_19, Mahavrat\_18, Mandlovu\_18, Mantra\_18, Maravista\_18, Marker\_19, Martik\_18, Mattes\_18, MiaZeal\_36, MilleniumForce\_19, Minerva\_39, MinionDave\_19, Minnie\_19, Misha28\_19, MisterCuddles\_18, Modragons\_18, MooMoo\_18, Moonbeam\_19, Mova\_19, Mozy\_19, MulchExplorer\_21, Mutaforma13\_18, Nimbo\_18, Nitzel\_19, Nivrat\_18, NormanBulbieJr\_18, Ochi17\_18, OfUltron\_18, Ogopogo\_21, Oksu\_19, OldBen\_18, OlympiaSaint\_18, Omega\_38, Optimus\_37, Ovechkin\_18, OwlsT2W\_20, PHappiness\_18, PMC\_18, Pacc40\_18, Phalconet\_18, Phanphagia\_18, Phasih\_19, Phatniss\_19, PhesterPhotato\_18, Philus\_18, Piper2020\_19, Plumbus\_19,

Poenanya\_18, Polka14\_19, Pollywog\_21, PopTart\_18, Porcelain\_35, Priscilla\_18, QuickMath\_19, Quico\_19, Radiance\_18, Ramsey\_19, RedBird\_18, Rialto\_20, RitaG\_18, Rita\_18, Rockne\_18, RockyHorror\_19, Royals2015\_18, Ruby\_18, SG4\_18, Saal\_18, Sabbb\_19, Sandalphon\_19, Sassafras\_18, SassyB\_18, Scottish\_19, Seabastian\_18, Seagreen\_19, Shauna1\_18, ShiLan\_18, ShowerHandel\_18, ShroomBoi\_18, SiSi\_18, SimranZ1\_19, Sparkdehlily\_18, Spartacus\_19, Spikelee\_19, Spoonbill\_18, Squint\_35, StAnnes\_18, Stap\_19, Starceвич\_19, Strokeseat\_18, SuperGrey\_19, Superphikiman\_36, SwagPiggett\_18, TDanisky\_18, Taj\_18, TootsiePop\_19, Tootsieroll\_19, Totinger\_19, Tweety\_18, UncleRicky\_19, VRedHorse\_18, Veteran\_18, Wachhund\_18, Wanda\_39, Wee\_19, Whatsapiecost\_18, Whouxphf\_18, WillSterrel\_19, XFactor\_18, Yorick\_18, Zerg\_18, Zizzle\_18,

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

- Avani\_24, Che9d\_24, Demsculpinboyz\_24, Gonephishing\_34, Jabbawokkie\_26, Melissau88\_18, Soul22\_24, Yoshi\_24, Zapner\_25,

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

- 244\_28, ABCat\_25, Adjutor\_31, Adnama\_29, Alkhayr\_56, Amao\_26, AmericanBeauty\_28, Argent26\_28, Ashwin\_60, Asriel\_25, Azrael100\_42, BaboJay\_25, BadStone\_25, Balomoji\_25, Barbarian\_25, Bask21\_26, Beckerton\_29, Bench\_28, BigBubba\_27, BigMama\_28, BilboSwaggins\_26, Blarby\_25, Blessica\_59, Bogie\_20, Boilgate\_24, Bora\_56, Bruin\_26, Brujita\_21, Buck\_25, BugsBunny\_24, Butterscotch\_30, Cactus\_27, Catdawg\_58, Cborch11\_30, Chill\_31, ChosenOne\_25, ChotaBhai\_26, Cjw1\_26, Command613\_27, Contagion\_25, Cookies\_26, Corndog\_61, Cornie\_20, Cosmo\_43, CrystalP\_26, Czyszczonek\_27, Daikon\_24, Damien\_29, Delton\_30, DoctorDiddles\_26, DrDrey\_27, Dumbo\_26, Dusk\_25, Dylan\_58, Easy2Say\_28, Elite2014\_25, Elph10\_27, Emmina\_27, EniyanLRS\_40, Erk16\_30, Eureka\_26, Familton\_59, Filch\_27, FireRed\_26, Firecracker\_59, Flypotenuse\_24, FoulBall\_58, Gage\_28, Gaia\_21, Gator\_24, Gemini\_29, Giuseppe\_30, Glexan\_24, Goku\_26, GoldenSpark\_28, Goldilocks\_27, GooberAzure\_28, Gumball\_29, HanKaySha\_27, Harella\_25, Hawkeye\_32, Helpful\_31, Henry\_26, Highbury\_27, Holt\_27, Hoonter\_28, Hopey\_28, HufflyPuff\_25, IHOP\_26, Icee\_25, Idergollasper\_58, Inca\_25, Island3\_21, JacoRen57\_20, JangDynasty\_58, JeTaime\_28, KandZ\_30, Kanye\_28, Kimchi\_28, Konstantine\_34, Kostya\_26, Krili\_57, Kumao\_30, Lilac\_28, Lilizi\_28, Lilipickle\_25, LunaStella\_20, MISSy\_25, MPhalcon\_25, MadKillah\_59, MadamMonkfish\_26, Manda\_27, Marshmallow\_26, MaryV\_43, Maxxinista\_27, Megatron06\_31, Mindy\_26, Miniwave\_26, Misfit\_26, Moldemort\_27, Mopey\_30, Mori\_58, Mosby\_25, Murai\_59, Murica\_25, Murphy\_27, Myrale\_26, Nala\_26, Nebkiss\_22, NelitzaMV\_26, NiebruSaylor\_57, Nimrod\_26, NoSleep\_27, Nova\_30, Oaker\_29, OrionPax\_27, PBI1\_30, PLOT\_31, Palpatine\_26, Paperbeatsrock\_28, Pat3\_25, Penelope2018\_30, Petra64142\_28, Phaja\_26, Pharsalus\_27, PhatBacter\_26, Phaux\_25, Phreeze\_29, Phrux\_26, Policronamos\_26, Porky\_26, Prager\_30, Puissant\_28, Pumpkin\_28, Pygmy\_20, Quallification\_27, Rakim\_27, Renaud18\_20, Rimmer\_25, RiverMonster\_26, Ryadel\_62, Saints25\_27, Sassay\_25, SchoolBus\_58, Schuy\_59, ShamWow\_26, ShereKhan\_28, Shida\_58, Shipwreck\_20, Simpliphy\_27, SirDuracell\_25, SirHarley\_29, Smooch\_61, SophKB\_26, Sotrice96\_26, StAugustine\_35, Stank\_29, Stark\_27, StellaBean\_26, StolenFromERC\_28, TBrady12\_28, Tarkin\_28, TeardropMSU\_25, Teaspoon\_27, TelAviv\_55, Terminus\_26, ThetaBob\_20, Thoth\_30, Thresher\_27, Thumb\_29, Tomaszewski\_25, Toron\_20, Toto\_26, Traaww1\_24, Troll4\_30, Tuco\_27, Ukulele\_26, Vagabond\_56, Visconti\_30, Vorrps\_58, WaldoWhy\_31, Weirdo19\_22, Wiggin\_29, Wildcat\_43,

Wildflower\_58, Willez\_25, Winget\_59, Xandras\_28, YassJohnny\_27, Youngblood\_26, YungJamal\_63, Zakhe101\_58, xkcd\_27,

### Summary by start number:

#### Start 1:

- Found in 1 of 450 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hawkeye\_32 (D2),

#### Start 3:

- Found in 9 of 450 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 8 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beckerton\_29 (H1), Cborch11\_30 (H1), Damien\_29 (H1), Konstantine\_34 (H1), Megatron06\_31 (H1), Oaker\_29 (H1), Phreeze\_29 (H1), Puissant\_28 (H1), Thumb\_29 (H1),

#### Start 11:

- Found in 16 of 450 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 7 of 427
- Called 43.8% of time when present
- Phage (with cluster) where this start called: Avani\_24 (F2), Che9d\_24 (F2), Demsculpinboyz\_24 (F2), Jabbawokkie\_26 (F2), Soul22\_24 (F2), Yoshi\_24 (F2), Zapner\_25 (F2),

#### Start 14:

- Found in 1 of 450 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Blarby\_25 (F),

#### Start 15:

- Found in 2 of 450 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 2 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gaia\_21 (X), Nebkiss\_22 (X),

#### Start 18:

- Found in 237 of 450 ( 52.7% ) of genes in pham
- Manual Annotations of this start: 221 of 427
- Called 96.2% of time when present
- Phage (with cluster) where this start called: Alexphander\_20 (F1), AlpineSix\_18 (F1), ArcusAngelus\_18 (F1), Ardmore\_18 (F1), Ariel\_36 (J), Aubs\_18 (F1), Awesomesauce\_19 (F1), BAKA\_36 (J), Batiatus\_18 (F1), Beakin\_19 (F1), Bipolar\_18 (F1), Blexus\_18 (F1), BlueCrab\_18 (F1), BobaPhett\_18 (F1), Bobi\_20 (F1), BodEinwohner17\_18 (F1), Boomer\_19 (F1), Bubbles123\_19 (F1), Burwell21\_18 (F1), BuzzLyseyear\_20 (F1), ByChance\_18 (F1), Byougenkin\_18 (F1), Cabrinians\_18 (F1), CaptainTrips\_19 (F1), Che8\_18 (F1), Chevrolet\_18 (F1), ChickenDinner\_19 (F1), Chuckly\_18 (F1), Coco12\_20 (F1), Cornucopia\_19 (F1), Courthouse\_36 (J), DLane\_18 (F1), DRBy19\_18 (F1), DaWorst\_20 (F1), DaddyRickover\_18 (F1), Daenerys\_18 (F1), Dante\_18 (F1), DeadP\_18 (F1), Deb65\_18 (F1), DillTech15\_18

(F1), DirtMcgirt\_19 (F1), DmpstrDiver\_37 (J), DocMcStuffins\_19 (F1), Donkeykong\_18 (F1), Doomphist\_18 (F1), Dorothy\_18 (F1), DosHalletts\_19 (F1), DotProduct\_18 (F1), Doug\_19 (F1), Drago\_19 (F1), Duke13\_36 (J), Eish\_18 (F1), EleanorGeorge\_18 (F1), Emma\_18 (F1), Empress\_19 (F1), Enby\_19 (F1), Eradicator\_18 (F1), Estave1\_18 (F1), Fancypants\_18 (F1), Fastidio\_18 (F1), Filuzino\_18 (F1), Firehouse51\_19 (F1), Flathead\_19 (F1), Florinda\_18 (F1), Frankie\_19 (F1), FreddyB\_18 (F1), Fruitloop\_18 (F1), GUmbie\_18 (F1), Galactic\_18 (F1), Gandolph\_18 (F1), Geralt\_18 (F1), GigiOuiOui\_18 (F1), Girafales\_19 (F1), Girr\_18 (F1), Gorge\_18 (F1), Guppsters\_19 (F1), Hades\_18 (F1), Hamulus\_18 (F1), Hannaconda\_33 (J), Harley\_18 (F1), Hegedechwinu\_19 (F1), Hlubikazi\_18 (F1), IMpilo\_18 (F1), IbOuu\_18 (F1), Ibhubesi\_18 (F1), Inventum\_18 (F1), IrishSherpFalk\_19 (F1), JalFarm20\_20 (F1), James\_18 (F1), Jarcob\_18 (F1), Jinglebell\_17 (F1), Job42\_21 (F1), JoeyJr\_18 (F1), Juice456\_20 (F1), Juniper1\_18 (F1), Karhdo\_18 (F1), KashFlow\_30 (J), Kenuha5\_18 (F1), Kersh\_19 (F1), Kimberlium\_20 (F1), KingMidas\_19 (F1), Kingsley\_19 (F1), Krakatau\_19 (F1), KristaRAM\_19 (F1), Latretium\_19 (F1), Leozinho\_19 (F1), Leperchaun\_18 (F1), LilMoolah\_18 (F1), LittleE\_39 (J), LittleShirley\_19 (F1), Lizziana\_18 (F1), Llama\_18 (F1), Llij\_18 (F1), Lorde\_19 (F1), Lucky2013\_36 (J), LunaBlu\_19 (F1), MadMen\_19 (F1), Madiba\_19 (F1), Mahavrat\_18 (F1), Mandlovu\_18 (F1), Mantra\_18 (F1), Maravista\_18 (F1), Marker\_19 (F1), Martik\_18 (F1), Mattes\_18 (F1), MiaZeal\_36 (J), MilleniumForce\_19 (F1), Minerva\_39 (J), MinionDave\_19 (F1), Minnie\_19 (F1), Misha28\_19 (F1), MisterCuddles\_18 (F1), Modragons\_18 (F1), MooMoo\_18 (singleton), Moonbeam\_19 (F1), Mova\_19 (F1), Mozy\_19 (F1), MulchExplorer\_21 (F1), Mutaforma13\_18 (F1), Nimbo\_18 (F1), Nitzel\_19 (F1), Nivrat\_18 (F1), NormanBulbieJr\_18 (F1), Ochi17\_18 (F1), OfUltron\_18 (F1), Ogotopogo\_21 (F1), Oksu\_19 (F1), OldBen\_18 (F1), OlympiaSaint\_18 (F1), Omega\_38 (J), Optimus\_37 (J), Ovechkin\_18 (F1), OwlsT2W\_20 (F1), PHappiness\_18 (F1), PMC\_18 (F1), Pacc40\_18 (F1), Phalconet\_18 (F1), Phanphagia\_18 (F1), Phasih\_19 (F1), Phatniss\_19 (F1), PhesterPotato\_18 (F1), Philus\_18 (F1), Piper2020\_19 (F1), Plumbus\_19 (F1), Poenanya\_18 (F1), Polka14\_19 (F1), Pollywog\_21 (F1), PopTart\_18 (F1), Porcelain\_35 (J), Priscilla\_18 (F1), QuickMath\_19 (F1), Quico\_19 (F1), Radiance\_18 (F1), Ramsey\_19 (F1), RedBird\_18 (F1), Rialto\_20 (F1), RitaG\_18 (F1), Rita\_18 (F1), Rockne\_18 (F1), RockyHorror\_19 (F1), Royals2015\_18 (F1), Ruby\_18 (F1), SG4\_18 (F1), Saal\_18 (F1), Sabbb\_19 (F1), Sandalphon\_19 (F1), Sassafra\_18 (F1), SassyB\_18 (F1), Scottish\_19 (F1), Seabastian\_18 (F1), Seagreen\_19 (F1), Shauna1\_18 (F1), ShiLan\_18 (F1), ShowerHandel\_18 (F1), ShroomBoi\_18 (F1), SiSi\_18 (F1), SimranZ1\_19 (F1), Sparkdehlily\_18 (F1), Spartacus\_19 (F1), Spikelee\_19 (F1), Spoonbill\_18 (F1), Squint\_35 (J), StAnnes\_18 (F1), Stap\_19 (F1), Starcevic\_19 (F1), Strokeseat\_18 (F1), SuperGrey\_19 (F1), Superphikiman\_36 (J), SwagPiggett\_18 (F1), TDanisky\_18 (F1), Taj\_18 (F1), TootsiePop\_19 (F1), Tootsieroll\_19 (F1), Totinger\_19 (F1), Tweety\_18 (F1), UncleRicky\_19 (F1), VRedHorse\_18 (F1), Veteran\_18 (F1), Wachhund\_18 (F1), Wanda\_39 (J), Wee\_19 (F1), Whatsapiecost\_18 (F1), Whouxphf\_18 (F1), WillSterrel\_19 (F1), XFactor\_18 (F1), Yorick\_18 (F1), Zerg\_18 (F1), Zizzle\_18 (F1),

Start 19:

- Found in 2 of 450 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 427
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Cornie\_20 (F5),

Start 21:

- Found in 3 of 450 ( 0.7% ) of genes in pham

- Manual Annotations of this start: 3 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LunaStella\_20 (F4), Renaud18\_20 (F4), ThetaBob\_20 (F4),

#### Start 26:

- Found in 6 of 450 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 6 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azrael100\_42 (V), Cosmo\_43 (V), EniyanLRS\_40 (V), Kumao\_30 (singleton), MaryV\_43 (V), Wildcat\_43 (V),

#### Start 27:

- Found in 2 of 450 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 2 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Brujita\_21 (I1), Island3\_21 (I1),

#### Start 29:

- Found in 3 of 450 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 3 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bogie\_20 (P1), Pygmy\_20 (P1), Shipwreck\_20 (P1),

#### Start 35:

- Found in 29 of 450 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 27 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alkhayr\_56 (O), Ashwin\_60 (O), Blessica\_59 (O), Bora\_56 (O), Catdawg\_58 (O), Corndog\_61 (O), Dylan\_58 (O), Familton\_59 (O), Firecracker\_59 (O), FoulBall\_58 (O), Idergollasper\_58 (O), JangDynasty\_58 (O), Krili\_57 (O), MadKillah\_59 (O), Mori\_58 (O), Murai\_59 (O), NiebruSaylor\_57 (O), Ryadel\_62 (O), SchoolBus\_58 (O), Schuy\_59 (O), Shida\_58 (O), Smooch\_61 (O), TelAviv\_55 (O), Vagabond\_56 (O), Vorrps\_58 (O), Wildflower\_58 (O), Winget\_59 (O), YungJamal\_63 (O), Zakhe101\_58 (O),

#### Start 38:

- Found in 178 of 450 ( 39.6% ) of genes in pham
- Manual Annotations of this start: 1 of 427
- Called 0.6% of time when present
- Phage (with cluster) where this start called: Melissauren88\_18 (F1),

#### Start 46:

- Found in 1 of 450 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Toron\_20 (F6),

#### Start 52:

- Found in 133 of 450 ( 29.6% ) of genes in pham
- Manual Annotations of this start: 123 of 427
- Called 97.7% of time when present

- Phage (with cluster) where this start called: 244\_28 (E), ABCat\_25 (E), Adnama\_29 (E), Amao\_26 (E), AmericanBeauty\_28 (E), Argent26\_28 (E), Asriel\_25 (E), BaboJay\_25 (E), BadStone\_25 (E), Balomoji\_25 (E), Barbarian\_25 (E), Bask21\_26 (E), Bench\_28 (E), BigBubba\_27 (E), BilboSwaggins\_26 (E), Bruin\_26 (E), Buck\_25 (E), BugsBunny\_24 (E), Cactus\_27 (E), ChosenOne\_25 (E), ChotaBhai\_26 (E), Cjw1\_26 (E), Command613\_27 (E), Contagion\_25 (E), Cookies\_26 (E), CrystalP\_26 (E), Czyszczo1\_27 (E), Daikon\_24 (E), DoctorDiddles\_26 (E), DrDrey\_27 (E), Dumbo\_26 (E), Dusk\_25 (E), Easy2Say\_28 (E), Elite2014\_25 (E), Elph10\_27 (E), Emmina\_27 (E), Eureka\_26 (E), Filch\_27 (E), FireRed\_26 (E), Flypotenuse\_24 (E), Gage\_28 (E), Gator\_24 (E), Gemini\_29 (E), Glexan\_24 (E), Goku\_26 (E), GoldenSpark\_28 (E), Goldilocks\_27 (E), GooberAzure\_28 (E), HanKaySha\_27 (E), Harella\_25 (E), Henry\_26 (E), Highbury\_27 (E), Holt\_27 (E), Hoonter\_28 (E), Hopey\_28 (E), HufflyPuff\_25 (E), IHOP\_26 (E), Icee\_25 (E), Inca\_25 (E), JeTaimie\_28 (E), Kanye\_28 (E), Kimchi\_28 (E), Kostya\_26 (E), Lilac\_28 (E), Lilizi\_28 (E), Lilpickle\_25 (E), MISSy\_25 (E), MPhalcon\_25 (E), MadamMonkfish\_26 (E), Manda\_27 (E), Marshmallow\_26 (E), Maxxinista\_27 (E), Mindy\_26 (E), Miniwave\_26 (E), Misfit\_26 (E), Moldemort\_27 (E), Mosby\_25 (E), Murica\_25 (E), Murphy\_27 (E), Myrale\_26 (E), Nala\_26 (E), NelitzaMV\_26 (E), Nimrod\_26 (E), NoSleep\_27 (E), OrionPax\_27 (E), Palpatine\_26 (E), Paperbeatsrock\_28 (E), Pat3\_25 (E), Petra64142\_28 (E), Phaja\_26 (E), Pharsalus\_27 (E), PhatBacter\_26 (E), Phaux\_25 (E), Phrux\_26 (E), Policronamos\_26 (E), Porky\_26 (E), Pumpkin\_28 (E), Quallification\_27 (E), Rakim\_27 (E), Rimmer\_25 (E), RiverMonster\_26 (E), Saints25\_27 (E), Sassay\_25 (E), ShamWow\_26 (E), ShereKhan\_28 (E), Simpliphy\_27 (E), SirDuracell\_25 (E), SophKB\_26 (E), Sotrice96\_26 (E), Stank\_29 (E), Stark\_27 (E), StellaBean\_26 (E), StolenFromERC\_28 (E), TBrady12\_28 (E), Tarkin\_28 (E), TeardropMSU\_25 (E), Teaspoon\_27 (E), Terminus\_26 (E), Thresher\_27 (E), Tomaszewski\_25 (E), Toto\_26 (E), Traaww1\_24 (E), Tuco\_27 (E), Ukulele\_26 (E), Wiggin\_29 (E), Willez\_25 (E), Xandras\_28 (E), YassJohnny\_27 (E), Youngblood\_26 (E), xkcd\_27 (E),

Start 57:

- Found in 1 of 450 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 427
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boilgate\_24 (K8),

Start 81:

- Found in 235 of 450 ( 52.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.4% of time when present
- Phage (with cluster) where this start called: Gonephishing\_34 (J),

Start 101:

- Found in 152 of 450 ( 33.8% ) of genes in pham
- Manual Annotations of this start: 20 of 427
- Called 13.8% of time when present
- Phage (with cluster) where this start called: Adjutor\_31 (D1), BigMama\_28 (D1), Butterscotch\_30 (D1), Chill\_31 (D1), Delton\_30 (D1), Erk16\_30 (D1), Giuseppe\_30 (D1), Gumball\_29 (D1), Helpful\_31 (D1), KandZ\_30 (D1), Mopey\_30 (D1), Nova\_30 (D1), PBI1\_30 (D1), PLOT\_31 (D1), Penelope2018\_30 (D1), Prager\_30 (D1), SirHarley\_29 (D1), Thoth\_30 (D1), Troll4\_30 (D1), Visconti\_30 (D1), WaldoWhy\_31 (D1),

Start 157:

- Found in 1 of 450 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: StAugustine\_35 (singleton),

Start 159:

- Found in 209 of 450 ( 46.4% ) of genes in pham
- Manual Annotations of this start: 1 of 427
- Called 0.5% of time when present
- Phage (with cluster) where this start called: JacoRen57\_20 (AB),

Start 162:

- Found in 38 of 450 ( 8.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.6% of time when present
- Phage (with cluster) where this start called: Weirido19\_22 (AH),

**Summary by clusters:**

There are 20 clusters represented in this pham: F1, F2, P1, E, F5, F6, F, I1, F4, J, H1, singleton, O, AH, AB, V, X, K8, D2, D1,

Info for manual annotations of cluster AB:

- Start number 159 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster D1:

- Start number 101 was manually annotated 20 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 1 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster E:

- Start number 52 was manually annotated 123 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 18 was manually annotated 203 times for cluster F1.
- Start number 38 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 11 was manually annotated 7 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 21 was manually annotated 3 times for cluster F4.

Info for manual annotations of cluster F5:

- Start number 19 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster H1:

- Start number 3 was manually annotated 8 times for cluster H1.

Info for manual annotations of cluster I1:

- Start number 27 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster J:

- Start number 18 was manually annotated 17 times for cluster J.

Info for manual annotations of cluster K8:

- Start number 57 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster O:

- Start number 35 was manually annotated 27 times for cluster O.

Info for manual annotations of cluster P1:

- Start number 29 was manually annotated 3 times for cluster P1.

Info for manual annotations of cluster V:

- Start number 26 was manually annotated 5 times for cluster V.

Info for manual annotations of cluster X:

- Start number 15 was manually annotated 2 times for cluster X.

### **Gene Information:**

Gene: 244\_28 Start: 22564, Stop: 24960, Start Num: 52

Candidate Starts for 244\_28:

(Start: 52 @22564 has 123 MA's), (97, 22741), (Start: 101 @22762 has 20 MA's), (139, 22909), (164, 23083), (169, 23116), (174, 23152), (193, 23245), (206, 23305), (211, 23323), (234, 23455), (242, 23500), (262, 23632), (269, 23677), (281, 23737), (301, 23851), (304, 23872), (312, 23911), (315, 23932), (317, 23947), (346, 24097), (348, 24103), (350, 24121), (361, 24175), (375, 24259), (392, 24352), (430, 24598), (453, 24814), (462, 24898), (469, 24931),

Gene: ABCat\_25 Start: 22283, Stop: 24679, Start Num: 52

Candidate Starts for ABCat\_25:

(Start: 52 @22283 has 123 MA's), (97, 22460), (Start: 101 @22481 has 20 MA's), (139, 22628), (160, 22769), (164, 22802), (169, 22835), (174, 22871), (193, 22964), (206, 23024), (211, 23042), (225, 23123), (262, 23351), (269, 23396), (304, 23591), (305, 23597), (308, 23606), (315, 23651), (317, 23666), (348, 23822), (350, 23840), (352, 23849), (362, 23903), (375, 23978), (376, 23981), (411, 24191), (413, 24203), (430, 24317), (453, 24533), (462, 24617), (467, 24641), (469, 24650),

Gene: Adjutor\_31 Start: 24256, Stop: 26526, Start Num: 101

Candidate Starts for Adjutor\_31:

(Start: 101 @24256 has 20 MA's), (131, 24391), (133, 24400), (156, 24574), (158, 24580), (160, 24592), (185, 24745), (187, 24760), (190, 24775), (257, 25156), (258, 25162), (266, 25207), (282, 25294), (318, 25495), (319, 25501), (325, 25549), (331, 25579), (335, 25603), (365, 25792), (372, 25819), (378, 25867), (391, 25939), (399, 25978), (400, 25999), (403, 26014), (406, 26032), (408, 26062), (420, 26146), (451, 26347), (453, 26389), (474, 26515),

Gene: Adnama\_29 Start: 22791, Stop: 25187, Start Num: 52

Candidate Starts for Adnama\_29:

(Start: 52 @22791 has 123 MA's), (97, 22968), (Start: 101 @22989 has 20 MA's), (139, 23136), (164, 23310), (169, 23343), (174, 23379), (193, 23472), (206, 23532), (211, 23550), (234, 23682), (242, 23727), (262, 23859), (269, 23904), (281, 23964), (301, 24078), (304, 24099), (312, 24138), (315, 24159), (317, 24174), (346, 24324), (348, 24330), (350, 24348), (361, 24402), (375, 24486), (392, 24579), (430, 24825), (453, 25041), (462, 25125), (469, 25158),

Gene: Alexphander\_20 Start: 17923, Stop: 20460, Start Num: 18

Candidate Starts for Alexphander\_20:

(Start: 18 @17923 has 221 MA's), (28, 17944), (Start: 38 @17965 has 1 MA's), (48, 18004), (71, 18073), (73, 18082), (74, 18085), (81, 18103), (89, 18136), (91, 18151), (119, 18310), (120, 18313), (128, 18343), (135, 18358), (145, 18436), (147, 18457), (148, 18460), (Start: 159 @18526 has 1 MA's), (169, 18601), (170, 18607), (178, 18649), (179, 18655), (180, 18658), (186, 18691), (187, 18697), (193, 18727), (199, 18748), (204, 18778), (206, 18787), (226, 18895), (229, 18907), (230, 18916), (231, 18919), (232, 18928), (233, 18934), (236, 18949), (237, 18952), (240, 18973), (248, 19015), (251, 19048), (275, 19189), (276, 19195), (284, 19249), (285, 19252), (290, 19279), (302, 19339), (304, 19354), (307, 19366), (308, 19369), (320, 19435), (323, 19459), (325, 19480), (327, 19489), (339, 19549), (340, 19552), (348, 19588), (350, 19606), (353, 19618), (354, 19627), (359, 19654), (373, 19723), (375, 19741), (377, 19750), (378, 19762), (383, 19798), (388, 19828), (405, 19909), (412, 19963), (419, 20023), (425, 20065), (434, 20143), (442, 20200), (445, 20224), (450, 20278), (453, 20326), (459, 20368), (461, 20392), (462, 20395),

Gene: Alkhayr\_56 Start: 35810, Stop: 38320, Start Num: 35

Candidate Starts for Alkhayr\_56:

(Start: 35 @35810 has 27 MA's), (42, 35843), (60, 35912), (61, 35915), (68, 35939), (74, 35963), (83, 35987), (89, 36020), (124, 36227), (127, 36239), (128, 36242), (151, 36389), (152, 36419), (Start: 159 @36443 has 1 MA's), (165, 36473), (166, 36476), (169, 36503), (172, 36527), (179, 36557), (189, 36614), (194, 36638), (203, 36674), (204, 36686), (210, 36710), (211, 36713), (217, 36755), (236, 36851), (237, 36854), (279, 37109), (304, 37253), (315, 37313), (324, 37385), (325, 37388), (344, 37484), (375, 37658), (378, 37679), (395, 37772), (398, 37784), (412, 37874), (423, 37949), (432, 37994), (455, 38195), (460, 38249), (465, 38264),

Gene: AlpineSix\_18 Start: 17634, Stop: 20171, Start Num: 18

Candidate Starts for AlpineSix\_18:

(Start: 18 @17634 has 221 MA's), (28, 17655), (Start: 38 @17676 has 1 MA's), (48, 17715), (71, 17784), (73, 17793), (74, 17796), (81, 17814), (91, 17862), (119, 18021), (120, 18024), (134, 18066), (135, 18069), (145, 18147), (147, 18168), (148, 18171), (Start: 159 @18237 has 1 MA's), (160, 18246), (165, 18282), (169, 18312), (170, 18318), (178, 18360), (179, 18366), (180, 18369), (186, 18402), (187, 18408), (193, 18438), (199, 18459), (204, 18489), (206, 18498), (226, 18606), (229, 18618), (230, 18627), (231, 18630), (232, 18639), (233, 18645), (236, 18660), (237, 18663), (240, 18684), (248, 18726), (251, 18759), (275, 18900), (276, 18906), (284, 18960), (285, 18963), (290, 18990), (304, 19065), (307, 19077), (308, 19080), (320, 19146), (322, 19167), (323, 19170), (325, 19191), (336, 19242), (339, 19260), (340, 19263), (346, 19293), (350, 19317), (353, 19329), (373, 19434), (375, 19452), (377, 19461), (378, 19473), (383, 19509), (388, 19539), (393, 19560), (399, 19584), (405, 19620), (419, 19734), (425, 19776), (434, 19854), (442, 19911), (445, 19935), (450, 19989), (453, 20037), (459, 20079), (461, 20103), (462, 20106),

Gene: Amao\_26 Start: 21488, Stop: 23884, Start Num: 52

Candidate Starts for Amao\_26:

(Start: 52 @21488 has 123 MA's), (97, 21665), (Start: 101 @21686 has 20 MA's), (139, 21833), (160, 21974), (164, 22007), (174, 22076), (193, 22169), (206, 22229), (211, 22247), (234, 22379), (242, 22424), (262, 22556), (269, 22601), (301, 22775), (304, 22796), (312, 22835), (315, 22856), (317, 22871), (348, 23027), (350, 23045), (361, 23099), (375, 23183), (427, 23507), (453, 23738), (462, 23822), (469, 23855),

Gene: AmericanBeauty\_28 Start: 22271, Stop: 24667, Start Num: 52

Candidate Starts for AmericanBeauty\_28:

(Start: 52 @22271 has 123 MA's), (97, 22448), (Start: 101 @22469 has 20 MA's), (139, 22616), (160, 22757), (164, 22790), (169, 22823), (174, 22859), (193, 22952), (206, 23012), (211, 23030), (234, 23162), (242, 23207), (262, 23339), (269, 23384), (281, 23444), (301, 23558), (304, 23579), (312, 23618), (315, 23639), (317, 23654), (346, 23804), (348, 23810), (350, 23828), (361, 23882), (375, 23966), (392, 24059), (430, 24305), (453, 24521), (462, 24605), (469, 24638),

Gene: ArcusAngelus\_18 Start: 17438, Stop: 19975, Start Num: 18

Candidate Starts for ArcusAngelus\_18:

(Start: 18 @17438 has 221 MA's), (28, 17459), (Start: 38 @17480 has 1 MA's), (48, 17519), (71, 17588), (73, 17597), (74, 17600), (81, 17618), (89, 17651), (91, 17666), (119, 17825), (120, 17828), (128, 17858), (135, 17873), (145, 17951), (147, 17972), (148, 17975), (Start: 159 @18041 has 1 MA's), (169, 18116), (170, 18122), (178, 18164), (179, 18170), (180, 18173), (186, 18206), (187, 18212), (193, 18242), (199, 18263), (204, 18293), (206, 18302), (226, 18410), (229, 18422), (230, 18431), (231, 18434), (232, 18443), (233, 18449), (236, 18464), (237, 18467), (240, 18488), (248, 18530), (251, 18563), (275, 18704), (276, 18710), (284, 18764), (285, 18767), (290, 18794), (302, 18854), (304, 18869), (307, 18881), (308, 18884), (320, 18950), (323, 18974), (325, 18995), (327, 19004), (339, 19064), (340, 19067), (348, 19103), (350, 19121), (353, 19133), (354, 19142), (359, 19169), (373, 19238), (375, 19256), (377, 19265), (378, 19277), (383, 19313), (388, 19343), (405, 19424), (412, 19478), (419, 19538), (425, 19580), (434, 19658), (442, 19715), (445, 19739), (450, 19793), (453, 19841), (459, 19883), (461, 19907), (462, 19910),

Gene: Ardmore\_18 Start: 17447, Stop: 19984, Start Num: 18

Candidate Starts for Ardmore\_18:

(16, 17435), (Start: 18 @17447 has 221 MA's), (28, 17468), (Start: 38 @17489 has 1 MA's), (48, 17528), (71, 17597), (73, 17606), (74, 17609), (81, 17627), (89, 17660), (91, 17675), (99, 17723), (119, 17834), (120, 17837), (128, 17867), (134, 17879), (135, 17882), (145, 17960), (148, 17984), (Start: 159 @18050 has 1 MA's), (165, 18095), (169, 18125), (170, 18131), (172, 18149), (178, 18173), (180, 18182), (186, 18215), (187, 18221), (193, 18251), (203, 18290), (204, 18302), (206, 18311), (210, 18326), (211, 18329), (230, 18440), (231, 18443), (232, 18452), (233, 18458), (236, 18473), (237, 18476), (240, 18497), (246, 18527), (248, 18539), (251, 18572), (269, 18683), (270, 18686), (275, 18713), (276, 18719), (284, 18773), (285, 18776), (304, 18878), (307, 18890), (308, 18893), (320, 18959), (323, 18983), (325, 19004), (327, 19013), (339, 19073), (340, 19076), (348, 19112), (350, 19130), (353, 19142), (354, 19151), (359, 19178), (373, 19247), (375, 19265), (377, 19274), (378, 19286), (383, 19322), (388, 19352), (393, 19373), (405, 19433), (412, 19487), (419, 19547), (425, 19589), (442, 19724), (445, 19748), (450, 19802), (453, 19850), (459, 19892), (461, 19916), (462, 19919),

Gene: Argent26\_28 Start: 22274, Stop: 24670, Start Num: 52

Candidate Starts for Argent26\_28:

(Start: 52 @22274 has 123 MA's), (97, 22451), (Start: 101 @22472 has 20 MA's), (139, 22619), (160, 22760), (164, 22793), (169, 22826), (174, 22862), (193, 22955), (206, 23015), (211, 23033), (234, 23165), (242, 23210), (262, 23342), (269, 23387), (281, 23447), (301, 23561), (304, 23582), (312, 23621), (315, 23642), (317, 23657), (346, 23807), (348, 23813), (350, 23831), (361, 23885), (375, 23969), (392, 24062), (430, 24308), (453, 24524), (462, 24608), (469, 24641),

Gene: Ariel\_36 Start: 27338, Stop: 29845, Start Num: 18

Candidate Starts for Ariel\_36:

(Start: 18 @27338 has 221 MA's), (81, 27533), (89, 27569), (91, 27584), (108, 27671), (112, 27686), (135, 27761), (137, 27773), (142, 27800), (154, 27905), (162, 27944), (165, 27953), (169, 27977), (170, 27983), (172, 28001), (176, 28019), (180, 28034), (181, 28043), (183, 28052), (186, 28067),

(192, 28094), (193, 28103), (203, 28142), (204, 28154), (206, 28163), (223, 28247), (237, 28328), (242, 28358), (243, 28361), (248, 28391), (250, 28418), (252, 28427), (259, 28478), (260, 28487), (262, 28490), (268, 28526), (272, 28547), (278, 28583), (305, 28736), (315, 28790), (323, 28835), (324, 28853), (325, 28856), (334, 28895), (358, 29042), (361, 29051), (374, 29120), (375, 29135), (405, 29300), (414, 29387), (422, 29435), (430, 29486), (438, 29564), (463, 29786), (465, 29789), (469, 29816),

Gene: Ashwin\_60 Start: 36580, Stop: 39090, Start Num: 35

Candidate Starts for Ashwin\_60:

(Start: 35 @36580 has 27 MA's), (42, 36613), (60, 36682), (61, 36685), (68, 36709), (74, 36733), (83, 36757), (89, 36790), (124, 36997), (127, 37009), (128, 37012), (151, 37159), (152, 37189), (Start: 159 @37213 has 1 MA's), (165, 37243), (166, 37246), (169, 37273), (172, 37297), (179, 37327), (189, 37384), (203, 37444), (204, 37456), (210, 37480), (211, 37483), (217, 37525), (236, 37621), (237, 37624), (279, 37879), (304, 38023), (315, 38083), (324, 38155), (325, 38158), (344, 38254), (375, 38428), (378, 38449), (395, 38542), (398, 38554), (412, 38644), (423, 38719), (432, 38764), (455, 38965), (460, 39019), (465, 39034),

Gene: Asriel\_25 Start: 21152, Stop: 23548, Start Num: 52

Candidate Starts for Asriel\_25:

(Start: 52 @21152 has 123 MA's), (97, 21329), (Start: 101 @21350 has 20 MA's), (139, 21497), (160, 21638), (164, 21671), (169, 21704), (174, 21740), (193, 21833), (206, 21893), (211, 21911), (225, 21992), (262, 22220), (269, 22265), (304, 22460), (305, 22466), (308, 22475), (315, 22520), (317, 22535), (348, 22691), (350, 22709), (352, 22718), (362, 22772), (375, 22847), (376, 22850), (411, 23060), (413, 23072), (430, 23186), (453, 23402), (462, 23486), (467, 23510), (469, 23519),

Gene: Aubs\_18 Start: 17557, Stop: 20094, Start Num: 18

Candidate Starts for Aubs\_18:

(Start: 18 @17557 has 221 MA's), (28, 17578), (Start: 38 @17599 has 1 MA's), (47, 17635), (48, 17638), (71, 17707), (73, 17716), (74, 17719), (81, 17737), (89, 17770), (91, 17785), (99, 17833), (117, 17938), (119, 17944), (120, 17947), (134, 17989), (135, 17992), (148, 18094), (Start: 159 @18160 has 1 MA's), (165, 18205), (169, 18235), (170, 18241), (172, 18259), (178, 18283), (180, 18292), (186, 18325), (187, 18331), (199, 18382), (203, 18400), (204, 18412), (206, 18421), (210, 18436), (212, 18442), (230, 18550), (231, 18553), (232, 18562), (233, 18568), (236, 18583), (237, 18586), (240, 18607), (246, 18637), (248, 18649), (251, 18682), (262, 18748), (269, 18793), (270, 18796), (275, 18823), (276, 18829), (284, 18883), (285, 18886), (290, 18913), (304, 18988), (307, 19000), (308, 19003), (320, 19069), (323, 19093), (327, 19123), (336, 19165), (339, 19183), (340, 19186), (348, 19222), (350, 19240), (354, 19261), (359, 19288), (373, 19357), (375, 19375), (377, 19384), (378, 19396), (383, 19432), (393, 19483), (397, 19501), (405, 19543), (412, 19597), (425, 19699), (434, 19777), (442, 19834), (445, 19858), (450, 19912), (453, 19960), (461, 20026), (462, 20029),

Gene: Avani\_24 Start: 17093, Stop: 19642, Start Num: 11

Candidate Starts for Avani\_24:

(9, 17084), (Start: 11 @17093 has 7 MA's), (Start: 18 @17153 has 221 MA's), (31, 17186), (33, 17189), (58, 17258), (66, 17288), (108, 17468), (112, 17483), (120, 17519), (121, 17525), (122, 17528), (132, 17546), (135, 17558), (137, 17570), (141, 17594), (142, 17597), (162, 17741), (165, 17750), (169, 17774), (172, 17798), (178, 17822), (179, 17828), (183, 17849), (184, 17852), (187, 17870), (193, 17900), (201, 17930), (204, 17951), (223, 18044), (225, 18059), (226, 18068), (230, 18089), (231, 18092), (238, 18134), (246, 18176), (247, 18179), (248, 18188), (250, 18215), (252, 18224), (256, 18263), (260, 18284), (262, 18287), (268, 18323), (272, 18344), (284, 18422), (285, 18425), (298, 18479), (307, 18539), (321, 18626), (323, 18632), (325, 18653), (334, 18689), (343, 18743), (346, 18752), (358, 18830), (362, 18848), (368, 18884), (369, 18887), (373, 18905), (374, 18908), (375, 18923), (383, 18980), (385, 18992), (405, 19088), (414, 19175), (422, 19223), (424,

19247), (429, 19274), (430, 19283), (433, 19322), (438, 19361), (442, 19385), (444, 19406), (453, 19502), (456, 19523), (463, 19583), (465, 19586), (469, 19613),

Gene: Awesomesauce\_19 Start: 17268, Stop: 19793, Start Num: 18

Candidate Starts for Awesomesauce\_19:

(Start: 18 @17268 has 221 MA's), (28, 17289), (Start: 38 @17310 has 1 MA's), (48, 17349), (71, 17418), (73, 17427), (74, 17430), (81, 17448), (89, 17481), (91, 17496), (99, 17544), (119, 17655), (120, 17658), (135, 17703), (145, 17781), (148, 17805), (Start: 159 @17871 has 1 MA's), (165, 17916), (169, 17946), (170, 17952), (172, 17970), (178, 17994), (180, 18003), (186, 18036), (187, 18042), (193, 18072), (203, 18111), (204, 18123), (206, 18132), (210, 18147), (211, 18150), (237, 18297), (246, 18348), (261, 18459), (270, 18510), (274, 18534), (290, 18627), (299, 18672), (301, 18681), (304, 18702), (307, 18714), (308, 18717), (315, 18762), (323, 18807), (324, 18825), (325, 18828), (336, 18879), (346, 18930), (348, 18936), (350, 18954), (353, 18966), (354, 18975), (361, 19008), (375, 19089), (385, 19158), (392, 19185), (396, 19212), (406, 19263), (412, 19311), (444, 19554), (453, 19659), (456, 19680), (464, 19734), (468, 19758),

Gene: Azrael100\_42 Start: 28340, Stop: 30907, Start Num: 26

Candidate Starts for Azrael100\_42:

(Start: 26 @28340 has 6 MA's), (43, 28409), (77, 28532), (79, 28538), (81, 28541), (88, 28565), (90, 28586), (116, 28742), (118, 28748), (120, 28754), (128, 28784), (129, 28790), (135, 28811), (136, 28820), (144, 28880), (153, 28958), (170, 29057), (175, 29090), (179, 29105), (180, 29108), (187, 29147), (199, 29198), (203, 29216), (206, 29237), (208, 29243), (214, 29270), (217, 29297), (230, 29366), (235, 29390), (238, 29411), (242, 29432), (244, 29441), (248, 29462), (251, 29495), (252, 29498), (259, 29549), (273, 29627), (277, 29645), (283, 29684), (304, 29801), (313, 29846), (322, 29903), (325, 29927), (327, 29936), (329, 29954), (339, 29999), (346, 30032), (351, 30068), (382, 30242), (383, 30260), (384, 30266), (396, 30323), (441, 30647), (443, 30665), (448, 30716), (454, 30779), (461, 30854),

Gene: BAKA\_36 Start: 29892, Stop: 32447, Start Num: 18

Candidate Starts for BAKA\_36:

(Start: 18 @29892 has 221 MA's), (81, 30087), (89, 30123), (91, 30138), (99, 30186), (119, 30297), (120, 30300), (128, 30330), (135, 30345), (145, 30423), (148, 30447), (Start: 159 @30513 has 1 MA's), (165, 30558), (169, 30588), (170, 30594), (172, 30612), (178, 30636), (180, 30645), (186, 30678), (187, 30684), (193, 30714), (203, 30753), (204, 30765), (206, 30774), (210, 30789), (211, 30792), (230, 30903), (231, 30906), (232, 30915), (233, 30921), (236, 30936), (237, 30939), (240, 30960), (246, 30990), (248, 31002), (251, 31035), (262, 31101), (269, 31146), (270, 31149), (275, 31176), (276, 31182), (284, 31236), (285, 31239), (302, 31326), (304, 31341), (307, 31353), (308, 31356), (320, 31422), (325, 31467), (327, 31476), (339, 31536), (340, 31539), (348, 31575), (350, 31593), (353, 31605), (354, 31614), (359, 31641), (373, 31710), (375, 31728), (377, 31737), (378, 31749), (383, 31785), (388, 31815), (393, 31836), (399, 31860), (405, 31896), (412, 31950), (419, 32010), (425, 32052), (442, 32187), (445, 32211), (450, 32265), (453, 32313), (459, 32355), (461, 32379), (462, 32382),

Gene: BaboJay\_25 Start: 21834, Stop: 24230, Start Num: 52

Candidate Starts for BaboJay\_25:

(Start: 52 @21834 has 123 MA's), (97, 22011), (Start: 101 @22032 has 20 MA's), (139, 22179), (160, 22320), (164, 22353), (169, 22386), (174, 22422), (193, 22515), (206, 22575), (211, 22593), (234, 22725), (242, 22770), (262, 22902), (269, 22947), (301, 23121), (304, 23142), (312, 23181), (315, 23202), (317, 23217), (346, 23367), (348, 23373), (350, 23391), (361, 23445), (375, 23529), (392, 23622), (430, 23868), (453, 24084), (462, 24168), (469, 24201),

Gene: BadStone\_25 Start: 22283, Stop: 24679, Start Num: 52

Candidate Starts for BadStone\_25:

(Start: 52 @22283 has 123 MA's), (97, 22460), (Start: 101 @22481 has 20 MA's), (139, 22628), (160, 22769), (164, 22802), (169, 22835), (174, 22871), (193, 22964), (206, 23024), (225, 23123), (262, 23351), (269, 23396), (304, 23591), (305, 23597), (308, 23606), (315, 23651), (317, 23666), (348, 23822), (350, 23840), (352, 23849), (362, 23903), (375, 23978), (376, 23981), (411, 24191), (413, 24203), (430, 24317), (453, 24533), (462, 24617), (467, 24641), (469, 24650),

Gene: Balomoji\_25 Start: 22017, Stop: 24413, Start Num: 52

Candidate Starts for Balomoji\_25:

(Start: 52 @22017 has 123 MA's), (97, 22194), (Start: 101 @22215 has 20 MA's), (139, 22362), (160, 22503), (164, 22536), (169, 22569), (174, 22605), (193, 22698), (206, 22758), (211, 22776), (225, 22857), (262, 23085), (269, 23130), (304, 23325), (305, 23331), (308, 23340), (315, 23385), (317, 23400), (348, 23556), (350, 23574), (352, 23583), (362, 23637), (375, 23712), (376, 23715), (411, 23925), (413, 23937), (430, 24051), (453, 24267), (462, 24351), (467, 24375), (469, 24384),

Gene: Barbarian\_25 Start: 21152, Stop: 23548, Start Num: 52

Candidate Starts for Barbarian\_25:

(Start: 52 @21152 has 123 MA's), (97, 21329), (Start: 101 @21350 has 20 MA's), (139, 21497), (160, 21638), (164, 21671), (169, 21704), (174, 21740), (193, 21833), (206, 21893), (211, 21911), (225, 21992), (262, 22220), (269, 22265), (304, 22460), (305, 22466), (308, 22475), (315, 22520), (317, 22535), (348, 22691), (350, 22709), (352, 22718), (362, 22772), (375, 22847), (376, 22850), (411, 23060), (413, 23072), (430, 23186), (453, 23402), (462, 23486), (467, 23510), (469, 23519),

Gene: Bask21\_26 Start: 21463, Stop: 23859, Start Num: 52

Candidate Starts for Bask21\_26:

(Start: 52 @21463 has 123 MA's), (97, 21640), (Start: 101 @21661 has 20 MA's), (139, 21808), (160, 21949), (164, 21982), (169, 22015), (174, 22051), (193, 22144), (206, 22204), (211, 22222), (225, 22303), (262, 22531), (269, 22576), (304, 22771), (305, 22777), (308, 22786), (315, 22831), (317, 22846), (348, 23002), (350, 23020), (352, 23029), (375, 23158), (376, 23161), (411, 23371), (413, 23383), (430, 23497), (453, 23713), (462, 23797), (467, 23821), (469, 23830),

Gene: Batiatus\_18 Start: 17448, Stop: 19985, Start Num: 18

Candidate Starts for Batiatus\_18:

(16, 17436), (Start: 18 @17448 has 221 MA's), (28, 17469), (Start: 38 @17490 has 1 MA's), (48, 17529), (71, 17598), (73, 17607), (74, 17610), (81, 17628), (89, 17661), (91, 17676), (99, 17724), (119, 17835), (120, 17838), (128, 17868), (134, 17880), (135, 17883), (145, 17961), (148, 17985), (Start: 159 @18051 has 1 MA's), (165, 18096), (169, 18126), (170, 18132), (172, 18150), (178, 18174), (180, 18183), (186, 18216), (187, 18222), (193, 18252), (203, 18291), (204, 18303), (206, 18312), (210, 18327), (211, 18330), (230, 18441), (231, 18444), (232, 18453), (233, 18459), (236, 18474), (237, 18477), (240, 18498), (246, 18528), (248, 18540), (251, 18573), (269, 18684), (270, 18687), (275, 18714), (276, 18720), (284, 18774), (285, 18777), (302, 18864), (304, 18879), (307, 18891), (308, 18894), (320, 18960), (323, 18984), (325, 19005), (327, 19014), (339, 19074), (340, 19077), (348, 19113), (350, 19131), (353, 19143), (354, 19152), (359, 19179), (373, 19248), (375, 19266), (377, 19275), (378, 19287), (383, 19323), (388, 19353), (393, 19374), (399, 19398), (405, 19434), (412, 19488), (419, 19548), (425, 19590), (434, 19668), (442, 19725), (445, 19749), (450, 19803), (453, 19851), (459, 19893), (461, 19917), (462, 19920),

Gene: Beakin\_19 Start: 17255, Stop: 19786, Start Num: 18

Candidate Starts for Beakin\_19:

(16, 17243), (Start: 18 @17255 has 221 MA's), (28, 17276), (Start: 38 @17297 has 1 MA's), (48, 17336), (71, 17405), (73, 17414), (74, 17417), (81, 17435), (89, 17468), (91, 17483), (99, 17525), (119, 17636), (120, 17639), (128, 17669), (135, 17684), (145, 17762), (148, 17786), (Start: 159 @17852 has 1 MA's), (165, 17897), (169, 17927), (170, 17933), (172, 17951), (178, 17975), (180, 17984), (186, 18017), (187, 18023), (193, 18053), (203, 18092), (204, 18104), (206, 18113), (210,

18128), (211, 18131), (230, 18242), (231, 18245), (232, 18254), (233, 18260), (236, 18275), (237, 18278), (240, 18299), (246, 18329), (248, 18341), (251, 18374), (262, 18440), (269, 18485), (270, 18488), (275, 18515), (276, 18521), (284, 18575), (285, 18578), (302, 18665), (304, 18680), (307, 18692), (308, 18695), (320, 18761), (323, 18785), (325, 18806), (327, 18815), (339, 18875), (340, 18878), (348, 18914), (350, 18932), (354, 18953), (359, 18980), (373, 19049), (375, 19067), (377, 19076), (378, 19088), (383, 19124), (393, 19175), (397, 19193), (405, 19235), (412, 19289), (425, 19391), (434, 19469), (442, 19526), (445, 19550), (450, 19604), (453, 19652), (461, 19718), (462, 19721),

Gene: Beckerton\_29 Start: 26219, Stop: 29062, Start Num: 3

Candidate Starts for Beckerton\_29:

(Start: 3 @26219 has 8 MA's), (8, 26351), (9, 26363), (Start: 11 @26372 has 7 MA's), (20, 26441), (24, 26447), (40, 26507), (45, 26528), (59, 26576), (70, 26618), (76, 26642), (85, 26675), (92, 26711), (94, 26723), (107, 26816), (120, 26873), (130, 26912), (150, 27038), (160, 27107), (163, 27137), (170, 27179), (180, 27230), (199, 27320), (203, 27338), (217, 27419), (225, 27458), (229, 27479), (251, 27617), (255, 27656), (268, 27719), (285, 27821), (324, 28046), (389, 28409), (395, 28436), (431, 28679), (432, 28712), (436, 28736), (449, 28856), (457, 28934), (469, 29021), (473, 29036), (475, 29042),

Gene: Bench\_28 Start: 22144, Stop: 24540, Start Num: 52

Candidate Starts for Bench\_28:

(Start: 52 @22144 has 123 MA's), (97, 22321), (Start: 101 @22342 has 20 MA's), (139, 22489), (164, 22663), (169, 22696), (174, 22732), (193, 22825), (206, 22885), (211, 22903), (234, 23035), (242, 23080), (262, 23212), (269, 23257), (281, 23317), (301, 23431), (304, 23452), (312, 23491), (315, 23512), (317, 23527), (346, 23677), (348, 23683), (350, 23701), (361, 23755), (375, 23839), (392, 23932), (430, 24178), (453, 24394), (462, 24478), (469, 24511),

Gene: BigBubba\_27 Start: 22047, Stop: 24443, Start Num: 52

Candidate Starts for BigBubba\_27:

(Start: 52 @22047 has 123 MA's), (97, 22224), (Start: 101 @22245 has 20 MA's), (139, 22392), (160, 22533), (164, 22566), (169, 22599), (174, 22635), (193, 22728), (206, 22788), (211, 22806), (234, 22938), (242, 22983), (262, 23115), (269, 23160), (301, 23334), (304, 23355), (312, 23394), (315, 23415), (317, 23430), (348, 23586), (350, 23604), (361, 23658), (375, 23742), (392, 23835), (430, 24081), (453, 24297), (462, 24381), (469, 24414),

Gene: BigMama\_28 Start: 24332, Stop: 26602, Start Num: 101

Candidate Starts for BigMama\_28:

(Start: 101 @24332 has 20 MA's), (131, 24467), (133, 24476), (156, 24650), (158, 24656), (160, 24668), (185, 24821), (187, 24836), (190, 24851), (257, 25232), (258, 25238), (266, 25283), (282, 25370), (318, 25571), (319, 25577), (325, 25625), (331, 25655), (335, 25679), (365, 25868), (372, 25895), (378, 25943), (391, 26015), (399, 26054), (400, 26075), (403, 26090), (406, 26108), (408, 26138), (420, 26222), (451, 26423), (453, 26465), (474, 26591),

Gene: BilboSwaggins\_26 Start: 22284, Stop: 24680, Start Num: 52

Candidate Starts for BilboSwaggins\_26:

(Start: 52 @22284 has 123 MA's), (97, 22461), (Start: 101 @22482 has 20 MA's), (139, 22629), (160, 22770), (164, 22803), (169, 22836), (174, 22872), (193, 22965), (206, 23025), (211, 23043), (225, 23124), (262, 23352), (269, 23397), (304, 23592), (305, 23598), (308, 23607), (315, 23652), (317, 23667), (348, 23823), (350, 23841), (352, 23850), (375, 23979), (376, 23982), (411, 24192), (413, 24204), (430, 24318), (453, 24534), (462, 24618), (467, 24642), (469, 24651),

Gene: Bipolar\_18 Start: 17398, Stop: 19890, Start Num: 18

Candidate Starts for Bipolar\_18:

(17, 17386), (Start: 18 @17398 has 221 MA's), (28, 17419), (Start: 38 @17440 has 1 MA's), (49, 17479), (71, 17548), (73, 17557), (74, 17560), (81, 17578), (89, 17611), (95, 17644), (100, 17677), (112, 17731), (120, 17767), (122, 17776), (132, 17794), (137, 17818), (141, 17842), (154, 17950), (160, 17974), (162, 17989), (165, 17998), (169, 18022), (170, 18028), (172, 18046), (174, 18058), (176, 18064), (178, 18070), (179, 18076), (180, 18079), (181, 18088), (183, 18097), (186, 18112), (193, 18148), (203, 18187), (204, 18199), (206, 18208), (223, 18292), (237, 18373), (242, 18403), (243, 18406), (248, 18436), (250, 18463), (252, 18472), (259, 18523), (260, 18532), (262, 18535), (268, 18571), (272, 18592), (278, 18628), (305, 18781), (315, 18835), (323, 18880), (324, 18898), (325, 18901), (334, 18940), (358, 19087), (361, 19096), (374, 19165), (375, 19180), (405, 19345), (414, 19432), (422, 19480), (430, 19531), (438, 19609), (463, 19831), (465, 19834), (469, 19861),

Gene: Blarby\_25 Start: 17613, Stop: 20210, Start Num: 14

Candidate Starts for Blarby\_25:

(10, 17604), (14, 17613), (Start: 19 @17673 has 1 MA's), (32, 17706), (37, 17709), (65, 17808), (99, 17949), (119, 18060), (120, 18063), (128, 18093), (134, 18105), (135, 18108), (148, 18210), (Start: 159 @18276 has 1 MA's), (165, 18321), (169, 18351), (170, 18357), (172, 18375), (178, 18399), (180, 18408), (186, 18441), (187, 18447), (193, 18477), (203, 18516), (204, 18528), (206, 18537), (210, 18552), (211, 18555), (230, 18666), (231, 18669), (232, 18678), (233, 18684), (236, 18699), (237, 18702), (240, 18723), (246, 18753), (248, 18765), (251, 18798), (269, 18909), (270, 18912), (275, 18939), (276, 18945), (284, 18999), (285, 19002), (302, 19089), (304, 19104), (307, 19116), (308, 19119), (320, 19185), (325, 19230), (327, 19239), (339, 19299), (340, 19302), (348, 19338), (350, 19356), (354, 19377), (359, 19404), (373, 19473), (375, 19491), (377, 19500), (378, 19512), (383, 19548), (388, 19578), (393, 19599), (397, 19617), (405, 19659), (412, 19713), (425, 19815), (442, 19950), (445, 19974), (450, 20028), (453, 20076), (459, 20118), (461, 20142), (462, 20145),

Gene: Blessica\_59 Start: 36409, Stop: 38919, Start Num: 35

Candidate Starts for Blessica\_59:

(Start: 35 @36409 has 27 MA's), (42, 36442), (60, 36511), (61, 36514), (68, 36538), (74, 36562), (83, 36586), (89, 36619), (124, 36826), (127, 36838), (128, 36841), (151, 36988), (152, 37018), (Start: 159 @37042 has 1 MA's), (165, 37072), (166, 37075), (169, 37102), (172, 37126), (179, 37156), (189, 37213), (194, 37237), (203, 37273), (204, 37285), (210, 37309), (211, 37312), (217, 37354), (236, 37450), (237, 37453), (279, 37708), (304, 37852), (315, 37912), (324, 37984), (325, 37987), (344, 38083), (375, 38257), (378, 38278), (395, 38371), (398, 38383), (412, 38473), (423, 38548), (432, 38593), (455, 38794), (460, 38848), (465, 38863),

Gene: Blexus\_18 Start: 17586, Stop: 20123, Start Num: 18

Candidate Starts for Blexus\_18:

(Start: 18 @17586 has 221 MA's), (28, 17607), (Start: 38 @17628 has 1 MA's), (48, 17667), (71, 17736), (73, 17745), (74, 17748), (81, 17766), (91, 17814), (99, 17862), (119, 17973), (120, 17976), (135, 18021), (145, 18099), (148, 18123), (Start: 159 @18189 has 1 MA's), (169, 18264), (170, 18270), (172, 18288), (178, 18312), (180, 18321), (186, 18354), (187, 18360), (193, 18390), (199, 18411), (204, 18441), (206, 18450), (226, 18558), (229, 18570), (230, 18579), (231, 18582), (233, 18597), (236, 18612), (237, 18615), (240, 18636), (248, 18678), (251, 18711), (269, 18822), (270, 18825), (275, 18852), (276, 18858), (284, 18912), (285, 18915), (290, 18942), (304, 19017), (307, 19029), (308, 19032), (320, 19098), (322, 19119), (323, 19122), (325, 19143), (327, 19152), (336, 19194), (339, 19212), (340, 19215), (346, 19245), (350, 19269), (353, 19281), (354, 19290), (373, 19386), (375, 19404), (377, 19413), (378, 19425), (383, 19461), (388, 19491), (392, 19500), (393, 19512), (405, 19572), (412, 19626), (419, 19686), (425, 19728), (442, 19863), (445, 19887), (450, 19941), (453, 19989), (459, 20031), (461, 20055), (462, 20058),

Gene: BlueCrab\_18 Start: 17568, Stop: 20105, Start Num: 18

Candidate Starts for BlueCrab\_18:

(16, 17556), (Start: 18 @17568 has 221 MA's), (28, 17589), (Start: 38 @17610 has 1 MA's), (48, 17649), (71, 17718), (73, 17727), (74, 17730), (81, 17748), (91, 17796), (99, 17844), (119, 17955), (120, 17958), (135, 18003), (145, 18081), (148, 18105), (Start: 159 @18171 has 1 MA's), (165, 18216), (169, 18246), (170, 18252), (172, 18270), (178, 18294), (180, 18303), (186, 18336), (187, 18342), (193, 18372), (203, 18411), (204, 18423), (206, 18432), (210, 18447), (211, 18450), (230, 18561), (231, 18564), (232, 18573), (233, 18579), (236, 18594), (237, 18597), (240, 18618), (246, 18648), (248, 18660), (251, 18693), (269, 18804), (270, 18807), (275, 18834), (276, 18840), (284, 18894), (285, 18897), (304, 18999), (307, 19011), (308, 19014), (320, 19080), (323, 19104), (325, 19125), (327, 19134), (339, 19194), (340, 19197), (348, 19233), (350, 19251), (354, 19272), (359, 19299), (373, 19368), (375, 19386), (377, 19395), (378, 19407), (383, 19443), (393, 19494), (397, 19512), (405, 19554), (412, 19608), (425, 19710), (442, 19845), (445, 19869), (450, 19923), (456, 19992), (461, 20037), (462, 20040),

Gene: BobaPhett\_18 Start: 17397, Stop: 19922, Start Num: 18

Candidate Starts for BobaPhett\_18:

(Start: 18 @17397 has 221 MA's), (28, 17418), (Start: 38 @17439 has 1 MA's), (48, 17478), (71, 17547), (73, 17556), (74, 17559), (81, 17577), (91, 17625), (99, 17673), (119, 17784), (120, 17787), (132, 17820), (135, 17832), (145, 17910), (152, 17976), (160, 18009), (167, 18063), (169, 18075), (179, 18129), (180, 18132), (181, 18141), (188, 18174), (197, 18213), (199, 18216), (202, 18231), (203, 18234), (208, 18261), (209, 18267), (210, 18270), (211, 18273), (216, 18300), (218, 18318), (219, 18321), (232, 18396), (236, 18417), (237, 18420), (241, 18447), (246, 18471), (251, 18516), (252, 18519), (259, 18570), (270, 18633), (272, 18642), (276, 18666), (296, 18771), (297, 18774), (304, 18825), (305, 18831), (307, 18837), (308, 18840), (315, 18885), (317, 18900), (322, 18927), (325, 18951), (336, 19002), (339, 19020), (340, 19023), (341, 19035), (353, 19089), (375, 19212), (384, 19275), (397, 19338), (407, 19413), (435, 19614), (458, 19824), (464, 19863), (465, 19866),

Gene: Bobi\_20 Start: 17987, Stop: 20524, Start Num: 18

Candidate Starts for Bobi\_20:

(16, 17975), (Start: 18 @17987 has 221 MA's), (28, 18008), (Start: 38 @18029 has 1 MA's), (48, 18068), (71, 18137), (73, 18146), (74, 18149), (81, 18167), (89, 18200), (91, 18215), (99, 18263), (119, 18374), (120, 18377), (128, 18407), (134, 18419), (135, 18422), (145, 18500), (148, 18524), (Start: 159 @18590 has 1 MA's), (165, 18635), (169, 18665), (170, 18671), (172, 18689), (178, 18713), (180, 18722), (186, 18755), (187, 18761), (193, 18791), (203, 18830), (204, 18842), (206, 18851), (210, 18866), (211, 18869), (230, 18980), (231, 18983), (232, 18992), (233, 18998), (236, 19013), (237, 19016), (246, 19067), (248, 19079), (251, 19112), (262, 19178), (269, 19223), (270, 19226), (275, 19253), (276, 19259), (284, 19313), (285, 19316), (302, 19403), (304, 19418), (307, 19430), (308, 19433), (320, 19499), (325, 19544), (327, 19553), (339, 19613), (340, 19616), (348, 19652), (350, 19670), (353, 19682), (354, 19691), (359, 19718), (373, 19787), (375, 19805), (377, 19814), (378, 19826), (383, 19862), (388, 19892), (393, 19913), (399, 19937), (405, 19973), (412, 20027), (419, 20087), (425, 20129), (442, 20264), (445, 20288), (450, 20342), (453, 20390), (459, 20432), (461, 20456), (462, 20459),

Gene: BodEinwohner17\_18 Start: 17569, Stop: 20106, Start Num: 18

Candidate Starts for BodEinwohner17\_18:

(Start: 18 @17569 has 221 MA's), (28, 17590), (Start: 38 @17611 has 1 MA's), (48, 17650), (71, 17719), (73, 17728), (74, 17731), (81, 17749), (91, 17797), (117, 17950), (120, 17959), (135, 18004), (147, 18103), (148, 18106), (Start: 159 @18172 has 1 MA's), (169, 18247), (170, 18253), (172, 18271), (178, 18295), (180, 18304), (186, 18337), (187, 18343), (193, 18373), (199, 18394), (204, 18424), (206, 18433), (210, 18448), (211, 18451), (226, 18541), (229, 18553), (230, 18562), (231, 18565), (233, 18580), (236, 18595), (237, 18598), (240, 18619), (248, 18661), (251, 18694), (269, 18805), (270, 18808), (275, 18835), (276, 18841), (284, 18895), (285, 18898), (290, 18925), (304, 19000), (307, 19012), (308, 19015), (320, 19081), (322, 19102), (323, 19105), (325, 19126), (327, 19135), (336, 19177), (339, 19195), (340, 19198), (346, 19228), (350, 19252), (353, 19264), (354,

19273), (373, 19369), (375, 19387), (377, 19396), (378, 19408), (383, 19444), (388, 19474), (392, 19483), (393, 19495), (405, 19555), (412, 19609), (419, 19669), (425, 19711), (442, 19846), (445, 19870), (450, 19924), (453, 19972), (459, 20014), (461, 20038), (462, 20041),

Gene: Bogie\_20 Start: 18761, Stop: 21265, Start Num: 29

Candidate Starts for Bogie\_20:

(Start: 29 @18761 has 3 MA's), (74, 18914), (147, 19319), (151, 19334), (152, 19364), (153, 19370), (Start: 159 @19388 has 1 MA's), (178, 19496), (187, 19547), (211, 19658), (212, 19661), (217, 19700), (225, 19733), (237, 19799), (248, 19859), (250, 19886), (251, 19892), (304, 20198), (315, 20258), (321, 20306), (322, 20309), (324, 20330), (325, 20333), (375, 20594), (397, 20717), (398, 20720), (412, 20810), (419, 20867), (423, 20888), (435, 20948), (457, 21149), (460, 21191),

Gene: Boilgate\_24 Start: 21197, Stop: 23551, Start Num: 57

Candidate Starts for Boilgate\_24:

(Start: 57 @21197 has 1 MA's), (87, 21308), (92, 21338), (106, 21431), (107, 21440), (115, 21482), (119, 21494), (122, 21506), (126, 21518), (144, 21605), (163, 21728), (165, 21734), (187, 21866), (203, 21938), (204, 21950), (205, 21956), (216, 22004), (230, 22088), (239, 22142), (244, 22172), (246, 22181), (247, 22184), (249, 22214), (279, 22391), (287, 22469), (298, 22502), (307, 22562), (308, 22565), (315, 22610), (316, 22616), (317, 22625), (323, 22655), (327, 22685), (330, 22697), (341, 22754), (347, 22775), (356, 22832), (357, 22835), (373, 22910), (377, 22937), (378, 22949), (379, 22955), (381, 22964), (394, 23048), (410, 23144), (412, 23153), (417, 23192), (428, 23276), (433, 23336), (437, 23363), (454, 23522),

Gene: Boomer\_19 Start: 17212, Stop: 19749, Start Num: 18

Candidate Starts for Boomer\_19:

(Start: 18 @17212 has 221 MA's), (28, 17233), (Start: 38 @17254 has 1 MA's), (48, 17293), (71, 17362), (73, 17371), (74, 17374), (81, 17392), (89, 17425), (91, 17440), (99, 17488), (119, 17599), (120, 17602), (128, 17632), (135, 17647), (145, 17725), (148, 17749), (Start: 159 @17815 has 1 MA's), (165, 17860), (169, 17890), (170, 17896), (172, 17914), (178, 17938), (180, 17947), (186, 17980), (187, 17986), (193, 18016), (199, 18037), (203, 18055), (204, 18067), (206, 18076), (210, 18091), (211, 18094), (224, 18172), (230, 18205), (231, 18208), (232, 18217), (233, 18223), (236, 18238), (237, 18241), (240, 18262), (246, 18292), (248, 18304), (251, 18337), (269, 18448), (270, 18451), (275, 18478), (276, 18484), (284, 18538), (285, 18541), (302, 18628), (304, 18643), (307, 18655), (308, 18658), (320, 18724), (323, 18748), (325, 18769), (327, 18778), (339, 18838), (340, 18841), (346, 18871), (350, 18895), (353, 18907), (354, 18916), (359, 18943), (373, 19012), (375, 19030), (377, 19039), (378, 19051), (383, 19087), (388, 19117), (393, 19138), (399, 19162), (405, 19198), (412, 19252), (419, 19312), (425, 19354), (434, 19432), (442, 19489), (445, 19513), (450, 19567), (453, 19615), (461, 19681), (462, 19684),

Gene: Bora\_56 Start: 35766, Stop: 38276, Start Num: 35

Candidate Starts for Bora\_56:

(Start: 35 @35766 has 27 MA's), (42, 35799), (60, 35868), (61, 35871), (68, 35895), (74, 35919), (83, 35943), (89, 35976), (113, 36129), (124, 36183), (127, 36195), (128, 36198), (151, 36345), (152, 36375), (Start: 159 @36399 has 1 MA's), (165, 36429), (166, 36432), (169, 36459), (172, 36483), (179, 36513), (189, 36570), (203, 36630), (204, 36642), (210, 36666), (211, 36669), (217, 36711), (236, 36807), (237, 36810), (279, 37065), (304, 37209), (315, 37269), (324, 37341), (325, 37344), (344, 37440), (375, 37614), (377, 37623), (378, 37635), (395, 37728), (398, 37740), (412, 37830), (423, 37905), (432, 37950), (455, 38151), (460, 38205), (465, 38220),

Gene: Bruin\_26 Start: 22307, Stop: 24703, Start Num: 52

Candidate Starts for Bruin\_26:

(Start: 52 @22307 has 123 MA's), (97, 22484), (Start: 101 @22505 has 20 MA's), (139, 22652), (160, 22793), (164, 22826), (169, 22859), (174, 22895), (193, 22988), (206, 23048), (211, 23066), (234,

23198), (242, 23243), (262, 23375), (269, 23420), (301, 23594), (304, 23615), (312, 23654), (315, 23675), (317, 23690), (348, 23846), (350, 23864), (361, 23918), (375, 24002), (392, 24095), (430, 24341), (453, 24557), (462, 24641), (469, 24674),

Gene: Brujita\_21 Start: 19089, Stop: 21620, Start Num: 27

Candidate Starts for Brujita\_21:

(Start: 27 @19089 has 2 MA's), (34, 19113), (63, 19224), (66, 19233), (74, 19260), (100, 19407), (147, 19674), (151, 19689), (152, 19719), (153, 19725), (Start: 159 @19743 has 1 MA's), (178, 19851), (187, 19902), (211, 20013), (212, 20016), (217, 20055), (225, 20088), (237, 20154), (248, 20214), (250, 20241), (251, 20247), (304, 20553), (315, 20613), (321, 20661), (322, 20664), (324, 20685), (325, 20688), (375, 20949), (397, 21072), (398, 21075), (412, 21165), (419, 21222), (423, 21243), (435, 21303), (457, 21504), (460, 21546),

Gene: Bubbles123\_19 Start: 18112, Stop: 20649, Start Num: 18

Candidate Starts for Bubbles123\_19:

(Start: 18 @18112 has 221 MA's), (28, 18133), (Start: 38 @18154 has 1 MA's), (48, 18193), (71, 18262), (73, 18271), (74, 18274), (81, 18292), (89, 18325), (91, 18340), (99, 18388), (119, 18499), (120, 18502), (134, 18544), (135, 18547), (148, 18649), (Start: 159 @18715 has 1 MA's), (165, 18760), (169, 18790), (170, 18796), (172, 18814), (178, 18838), (180, 18847), (186, 18880), (187, 18886), (203, 18955), (204, 18967), (206, 18976), (210, 18991), (212, 18997), (230, 19105), (232, 19117), (233, 19123), (236, 19138), (237, 19141), (240, 19162), (246, 19192), (248, 19204), (251, 19237), (262, 19303), (269, 19348), (270, 19351), (275, 19378), (276, 19384), (284, 19438), (285, 19441), (290, 19468), (304, 19543), (307, 19555), (308, 19558), (320, 19624), (323, 19648), (327, 19678), (336, 19720), (339, 19738), (340, 19741), (348, 19777), (350, 19795), (354, 19816), (359, 19843), (373, 19912), (375, 19930), (377, 19939), (378, 19951), (383, 19987), (393, 20038), (399, 20062), (405, 20098), (412, 20152), (425, 20254), (434, 20332), (442, 20389), (445, 20413), (453, 20515), (459, 20557), (461, 20581), (462, 20584),

Gene: Buck\_25 Start: 22240, Stop: 24636, Start Num: 52

Candidate Starts for Buck\_25:

(Start: 52 @22240 has 123 MA's), (97, 22417), (Start: 101 @22438 has 20 MA's), (139, 22585), (160, 22726), (164, 22759), (169, 22792), (174, 22828), (193, 22921), (206, 22981), (211, 22999), (234, 23131), (242, 23176), (262, 23308), (269, 23353), (281, 23413), (301, 23527), (304, 23548), (312, 23587), (315, 23608), (317, 23623), (346, 23773), (348, 23779), (350, 23797), (361, 23851), (375, 23935), (392, 24028), (430, 24274), (453, 24490), (462, 24574), (469, 24607),

Gene: BugsBunny\_24 Start: 21873, Stop: 24269, Start Num: 52

Candidate Starts for BugsBunny\_24:

(Start: 52 @21873 has 123 MA's), (97, 22050), (Start: 101 @22071 has 20 MA's), (139, 22218), (160, 22359), (164, 22392), (169, 22425), (174, 22461), (193, 22554), (206, 22614), (211, 22632), (234, 22764), (242, 22809), (262, 22941), (269, 22986), (281, 23046), (301, 23160), (304, 23181), (312, 23220), (315, 23241), (317, 23256), (346, 23406), (348, 23412), (350, 23430), (361, 23484), (375, 23568), (392, 23661), (430, 23907), (453, 24123), (462, 24207), (469, 24240),

Gene: Burwell21\_18 Start: 17404, Stop: 19956, Start Num: 18

Candidate Starts for Burwell21\_18:

(Start: 18 @17404 has 221 MA's), (48, 17485), (71, 17554), (73, 17563), (74, 17566), (81, 17584), (91, 17632), (98, 17677), (119, 17791), (120, 17794), (123, 17806), (132, 17827), (134, 17836), (135, 17839), (142, 17887), (145, 17917), (152, 17983), (160, 18016), (165, 18052), (168, 18076), (179, 18136), (180, 18139), (183, 18157), (197, 18220), (199, 18223), (203, 18241), (206, 18262), (211, 18280), (216, 18307), (219, 18328), (225, 18361), (232, 18403), (233, 18409), (234, 18412), (237, 18427), (241, 18454), (242, 18457), (246, 18478), (248, 18490), (251, 18523), (265, 18616), (284, 18724), (287, 18748), (290, 18754), (295, 18772), (296, 18775), (299, 18799), (304, 18829), (310,

18853), (315, 18889), (316, 18895), (317, 18904), (322, 18931), (333, 18994), (336, 19018), (337, 19033), (346, 19075), (355, 19126), (374, 19222), (375, 19237), (377, 19246), (380, 19270), (392, 19333), (399, 19369), (440, 19675), (445, 19720), (453, 19822),

Gene: Butterscotch\_30 Start: 24316, Stop: 26586, Start Num: 101

Candidate Starts for Butterscotch\_30:

(Start: 101 @24316 has 20 MA's), (131, 24451), (133, 24460), (156, 24634), (158, 24640), (160, 24652), (185, 24805), (187, 24820), (190, 24835), (257, 25216), (258, 25222), (266, 25267), (282, 25354), (318, 25555), (319, 25561), (325, 25609), (331, 25639), (335, 25663), (365, 25852), (372, 25879), (378, 25927), (391, 25999), (399, 26038), (400, 26059), (403, 26074), (406, 26092), (408, 26122), (420, 26206), (451, 26407), (453, 26449), (474, 26575),

Gene: BuzzLyseyear\_20 Start: 17791, Stop: 20328, Start Num: 18

Candidate Starts for BuzzLyseyear\_20:

(Start: 18 @17791 has 221 MA's), (28, 17812), (Start: 38 @17833 has 1 MA's), (48, 17872), (71, 17941), (73, 17950), (74, 17953), (81, 17971), (91, 18019), (117, 18172), (120, 18181), (135, 18226), (147, 18325), (148, 18328), (Start: 159 @18394 has 1 MA's), (169, 18469), (170, 18475), (172, 18493), (178, 18517), (179, 18523), (180, 18526), (186, 18559), (187, 18565), (193, 18595), (199, 18616), (204, 18646), (206, 18655), (210, 18670), (211, 18673), (230, 18784), (231, 18787), (232, 18796), (233, 18802), (236, 18817), (237, 18820), (240, 18841), (246, 18871), (248, 18883), (251, 18916), (269, 19027), (270, 19030), (275, 19057), (276, 19063), (284, 19117), (285, 19120), (302, 19207), (304, 19222), (307, 19234), (308, 19237), (320, 19303), (323, 19327), (325, 19348), (327, 19357), (339, 19417), (340, 19420), (348, 19456), (350, 19474), (353, 19486), (354, 19495), (359, 19522), (371, 19579), (373, 19591), (375, 19609), (377, 19618), (378, 19630), (383, 19666), (388, 19696), (392, 19705), (393, 19717), (405, 19777), (412, 19831), (419, 19891), (425, 19933), (442, 20068), (445, 20092), (450, 20146), (453, 20194), (459, 20236), (461, 20260), (462, 20263),

Gene: ByChance\_18 Start: 17408, Stop: 19933, Start Num: 18

Candidate Starts for ByChance\_18:

(Start: 18 @17408 has 221 MA's), (48, 17489), (71, 17558), (73, 17567), (74, 17570), (81, 17588), (91, 17636), (99, 17684), (119, 17795), (120, 17798), (132, 17831), (135, 17843), (145, 17921), (152, 17987), (160, 18020), (167, 18074), (169, 18086), (179, 18140), (180, 18143), (181, 18152), (188, 18185), (197, 18224), (199, 18227), (202, 18242), (203, 18245), (208, 18272), (209, 18278), (210, 18281), (211, 18284), (216, 18311), (218, 18329), (219, 18332), (232, 18407), (236, 18428), (237, 18431), (241, 18458), (246, 18482), (251, 18527), (252, 18530), (259, 18581), (270, 18644), (272, 18653), (276, 18677), (296, 18782), (297, 18785), (304, 18836), (305, 18842), (307, 18848), (308, 18851), (315, 18896), (317, 18911), (322, 18938), (325, 18962), (336, 19013), (339, 19031), (340, 19034), (341, 19046), (353, 19100), (361, 19142), (384, 19286), (395, 19340), (396, 19346), (397, 19349), (402, 19385), (404, 19388), (406, 19397), (407, 19424), (435, 19625), (453, 19796), (458, 19835), (464, 19874), (465, 19877),

Gene: Byougenkin\_18 Start: 17418, Stop: 19949, Start Num: 18

Candidate Starts for Byougenkin\_18:

(Start: 18 @17418 has 221 MA's), (55, 17508), (71, 17568), (73, 17577), (74, 17580), (81, 17598), (89, 17631), (91, 17646), (99, 17694), (119, 17805), (120, 17808), (128, 17838), (135, 17853), (145, 17931), (148, 17955), (Start: 159 @18021 has 1 MA's), (165, 18066), (169, 18096), (170, 18102), (172, 18120), (178, 18144), (179, 18150), (180, 18153), (186, 18186), (187, 18192), (203, 18261), (206, 18282), (210, 18297), (211, 18300), (230, 18411), (232, 18423), (233, 18429), (236, 18444), (237, 18447), (240, 18468), (248, 18510), (251, 18543), (269, 18654), (270, 18657), (275, 18684), (276, 18690), (284, 18744), (285, 18747), (302, 18834), (304, 18849), (307, 18861), (308, 18864), (320, 18930), (323, 18954), (325, 18975), (327, 18984), (339, 19044), (340, 19047), (348, 19083), (350, 19101), (353, 19113), (354, 19122), (359, 19149), (373, 19218), (375, 19236), (377, 19245), (378, 19257), (383, 19293), (388, 19323), (393, 19344), (399, 19368), (405, 19404), (412, 19458),

(419, 19518), (425, 19560), (434, 19638), (442, 19695), (445, 19719), (450, 19773), (453, 19821), (459, 19857), (461, 19881), (462, 19884),

Gene: Cabrinians\_18 Start: 17398, Stop: 19950, Start Num: 18

Candidate Starts for Cabrinians\_18:

(Start: 18 @17398 has 221 MA's), (48, 17479), (71, 17548), (73, 17557), (74, 17560), (81, 17578), (91, 17626), (98, 17671), (119, 17785), (120, 17788), (123, 17800), (132, 17821), (134, 17830), (135, 17833), (142, 17881), (145, 17911), (152, 17977), (160, 18010), (165, 18046), (168, 18070), (179, 18130), (180, 18133), (183, 18151), (197, 18214), (199, 18217), (203, 18235), (206, 18256), (211, 18274), (216, 18301), (219, 18322), (225, 18355), (232, 18397), (233, 18403), (234, 18406), (237, 18421), (241, 18448), (242, 18451), (246, 18472), (248, 18484), (251, 18517), (265, 18610), (284, 18718), (287, 18742), (290, 18748), (295, 18766), (296, 18769), (299, 18793), (304, 18823), (310, 18847), (315, 18883), (316, 18889), (317, 18898), (322, 18925), (333, 18988), (336, 19012), (337, 19027), (346, 19069), (355, 19120), (374, 19216), (375, 19231), (377, 19240), (380, 19264), (392, 19327), (399, 19363), (440, 19669), (445, 19714), (453, 19816),

Gene: Cactus\_27 Start: 21496, Stop: 23892, Start Num: 52

Candidate Starts for Cactus\_27:

(Start: 52 @21496 has 123 MA's), (97, 21673), (Start: 101 @21694 has 20 MA's), (139, 21841), (160, 21982), (164, 22015), (169, 22048), (174, 22084), (193, 22177), (206, 22237), (211, 22255), (225, 22336), (262, 22564), (269, 22609), (304, 22804), (305, 22810), (308, 22819), (315, 22864), (317, 22879), (348, 23035), (350, 23053), (352, 23062), (375, 23191), (376, 23194), (411, 23404), (413, 23416), (430, 23530), (453, 23746), (462, 23830), (467, 23854), (469, 23863),

Gene: CaptainTrips\_19 Start: 18092, Stop: 20629, Start Num: 18

Candidate Starts for CaptainTrips\_19:

(Start: 18 @18092 has 221 MA's), (55, 18182), (71, 18242), (73, 18251), (74, 18254), (81, 18272), (89, 18305), (91, 18320), (99, 18368), (119, 18479), (120, 18482), (128, 18512), (134, 18524), (135, 18527), (145, 18605), (148, 18629), (Start: 159 @18695 has 1 MA's), (165, 18740), (169, 18770), (170, 18776), (172, 18794), (178, 18818), (180, 18827), (186, 18860), (187, 18866), (193, 18896), (203, 18935), (204, 18947), (206, 18956), (210, 18971), (211, 18974), (230, 19085), (231, 19088), (232, 19097), (233, 19103), (236, 19118), (237, 19121), (240, 19142), (246, 19172), (248, 19184), (251, 19217), (269, 19328), (270, 19331), (275, 19358), (276, 19364), (284, 19418), (285, 19421), (302, 19508), (304, 19523), (307, 19535), (308, 19538), (320, 19604), (323, 19628), (325, 19649), (327, 19658), (339, 19718), (340, 19721), (348, 19757), (350, 19775), (353, 19787), (354, 19796), (359, 19823), (373, 19892), (375, 19910), (377, 19919), (378, 19931), (383, 19967), (388, 19997), (393, 20018), (399, 20042), (405, 20078), (412, 20132), (419, 20192), (425, 20234), (434, 20312), (442, 20369), (445, 20393), (450, 20447), (453, 20495), (459, 20537), (461, 20561), (462, 20564),

Gene: Catdawg\_58 Start: 36145, Stop: 38655, Start Num: 35

Candidate Starts for Catdawg\_58:

(Start: 35 @36145 has 27 MA's), (42, 36178), (60, 36247), (61, 36250), (68, 36274), (74, 36298), (83, 36322), (89, 36355), (124, 36562), (127, 36574), (128, 36577), (151, 36724), (152, 36754), (Start: 159 @36778 has 1 MA's), (165, 36808), (166, 36811), (169, 36838), (172, 36862), (179, 36892), (189, 36949), (194, 36973), (203, 37009), (204, 37021), (210, 37045), (211, 37048), (217, 37090), (236, 37186), (237, 37189), (279, 37444), (304, 37588), (315, 37648), (324, 37720), (325, 37723), (344, 37819), (375, 37993), (378, 38014), (395, 38107), (398, 38119), (412, 38209), (423, 38284), (432, 38329), (455, 38530), (460, 38584), (465, 38599),

Gene: Cborch11\_30 Start: 25681, Stop: 28524, Start Num: 3

Candidate Starts for Cborch11\_30:

(Start: 3 @25681 has 8 MA's), (8, 25813), (9, 25825), (Start: 11 @25834 has 7 MA's), (20, 25903), (24, 25909), (40, 25969), (45, 25990), (59, 26038), (70, 26080), (76, 26104), (85, 26137), (92, 26173),

(94, 26185), (107, 26278), (120, 26335), (130, 26374), (150, 26500), (160, 26569), (163, 26599), (170, 26641), (180, 26692), (199, 26782), (203, 26800), (217, 26881), (225, 26920), (229, 26941), (251, 27079), (255, 27118), (268, 27181), (285, 27283), (324, 27508), (389, 27871), (395, 27898), (431, 28141), (432, 28174), (436, 28198), (449, 28318), (457, 28396), (469, 28483), (473, 28498), (475, 28504),

Gene: Che8\_18 Start: 17426, Stop: 19963, Start Num: 18

Candidate Starts for Che8\_18:

(Start: 18 @17426 has 221 MA's), (28, 17447), (Start: 38 @17468 has 1 MA's), (48, 17507), (71, 17576), (73, 17585), (74, 17588), (81, 17606), (89, 17639), (91, 17654), (119, 17813), (120, 17816), (128, 17846), (135, 17861), (145, 17939), (148, 17963), (Start: 159 @18029 has 1 MA's), (169, 18104), (170, 18110), (172, 18128), (178, 18152), (179, 18158), (180, 18161), (186, 18194), (187, 18200), (193, 18230), (199, 18251), (204, 18281), (206, 18290), (226, 18398), (229, 18410), (230, 18419), (231, 18422), (232, 18431), (233, 18437), (236, 18452), (237, 18455), (240, 18476), (246, 18506), (248, 18518), (251, 18551), (275, 18692), (276, 18698), (284, 18752), (285, 18755), (290, 18782), (304, 18857), (307, 18869), (308, 18872), (311, 18893), (320, 18938), (323, 18962), (327, 18992), (336, 19034), (339, 19052), (340, 19055), (348, 19091), (350, 19109), (353, 19121), (354, 19130), (359, 19157), (371, 19214), (373, 19226), (375, 19244), (377, 19253), (378, 19265), (383, 19301), (388, 19331), (392, 19340), (393, 19352), (405, 19412), (412, 19466), (425, 19568), (434, 19646), (442, 19703), (445, 19727), (450, 19781), (453, 19829), (456, 19850), (461, 19895), (462, 19898),

Gene: Che9d\_24 Start: 17101, Stop: 19650, Start Num: 11

Candidate Starts for Che9d\_24:

(9, 17092), (Start: 11 @17101 has 7 MA's), (Start: 18 @17161 has 221 MA's), (33, 17197), (66, 17296), (100, 17437), (108, 17476), (112, 17491), (120, 17527), (121, 17533), (122, 17536), (132, 17554), (137, 17578), (141, 17602), (142, 17605), (162, 17749), (165, 17758), (169, 17782), (172, 17806), (178, 17830), (179, 17836), (183, 17857), (184, 17860), (187, 17878), (193, 17908), (201, 17938), (204, 17959), (223, 18052), (225, 18067), (226, 18076), (230, 18097), (231, 18100), (238, 18142), (246, 18184), (247, 18187), (248, 18196), (250, 18223), (252, 18232), (256, 18271), (260, 18292), (262, 18295), (268, 18331), (272, 18352), (284, 18430), (285, 18433), (298, 18487), (307, 18547), (321, 18634), (323, 18640), (325, 18661), (334, 18697), (343, 18751), (346, 18760), (358, 18838), (362, 18856), (368, 18892), (369, 18895), (373, 18913), (375, 18931), (383, 18988), (385, 19000), (399, 19063), (405, 19096), (414, 19183), (422, 19231), (424, 19255), (429, 19282), (430, 19291), (433, 19330), (438, 19369), (442, 19393), (444, 19414), (453, 19510), (456, 19531), (463, 19591), (465, 19594), (469, 19621),

Gene: Chevrolet\_18 Start: 17438, Stop: 19975, Start Num: 18

Candidate Starts for Chevrolet\_18:

(Start: 18 @17438 has 221 MA's), (28, 17459), (Start: 38 @17480 has 1 MA's), (48, 17519), (71, 17588), (73, 17597), (74, 17600), (81, 17618), (89, 17651), (91, 17666), (119, 17825), (120, 17828), (128, 17858), (135, 17873), (145, 17951), (147, 17972), (148, 17975), (Start: 159 @18041 has 1 MA's), (169, 18116), (170, 18122), (178, 18164), (179, 18170), (180, 18173), (186, 18206), (187, 18212), (193, 18242), (199, 18263), (204, 18293), (206, 18302), (226, 18410), (229, 18422), (230, 18431), (231, 18434), (232, 18443), (233, 18449), (236, 18464), (237, 18467), (240, 18488), (248, 18530), (251, 18563), (275, 18704), (276, 18710), (284, 18764), (285, 18767), (290, 18794), (302, 18854), (304, 18869), (307, 18881), (308, 18884), (320, 18950), (323, 18974), (325, 18995), (327, 19004), (339, 19064), (340, 19067), (348, 19103), (350, 19121), (353, 19133), (354, 19142), (359, 19169), (373, 19238), (375, 19256), (377, 19265), (378, 19277), (383, 19313), (388, 19343), (405, 19424), (412, 19478), (419, 19538), (425, 19580), (434, 19658), (442, 19715), (445, 19739), (450, 19793), (453, 19841), (459, 19883), (461, 19907), (462, 19910),

Gene: ChickenDinner\_19 Start: 17271, Stop: 19796, Start Num: 18

Candidate Starts for ChickenDinner\_19:

(Start: 18 @17271 has 221 MA's), (28, 17292), (Start: 38 @17313 has 1 MA's), (48, 17352), (71, 17421), (73, 17430), (74, 17433), (81, 17451), (89, 17484), (91, 17499), (99, 17547), (119, 17658), (120, 17661), (135, 17706), (145, 17784), (148, 17808), (Start: 159 @17874 has 1 MA's), (160, 17883), (169, 17949), (170, 17955), (172, 17973), (178, 17997), (179, 18003), (180, 18006), (186, 18039), (187, 18045), (193, 18075), (199, 18096), (206, 18135), (210, 18150), (212, 18156), (237, 18300), (246, 18351), (261, 18462), (270, 18513), (274, 18537), (290, 18630), (299, 18675), (301, 18684), (304, 18705), (307, 18717), (308, 18720), (315, 18765), (323, 18810), (324, 18828), (325, 18831), (336, 18882), (346, 18933), (348, 18939), (350, 18957), (353, 18969), (354, 18978), (361, 19011), (375, 19092), (385, 19161), (392, 19188), (396, 19215), (406, 19266), (412, 19314), (444, 19557), (453, 19662), (456, 19683), (464, 19737), (468, 19761),

Gene: Chill\_31 Start: 24322, Stop: 26592, Start Num: 101

Candidate Starts for Chill\_31:

(Start: 101 @24322 has 20 MA's), (131, 24457), (133, 24466), (156, 24640), (158, 24646), (160, 24658), (185, 24811), (187, 24826), (190, 24841), (257, 25222), (258, 25228), (266, 25273), (282, 25360), (318, 25561), (319, 25567), (325, 25615), (331, 25645), (335, 25669), (365, 25858), (372, 25885), (378, 25933), (391, 26005), (399, 26044), (400, 26065), (403, 26080), (406, 26098), (408, 26128), (420, 26212), (451, 26413), (453, 26455), (474, 26581),

Gene: ChosenOne\_25 Start: 21491, Stop: 23887, Start Num: 52

Candidate Starts for ChosenOne\_25:

(Start: 52 @21491 has 123 MA's), (97, 21668), (Start: 101 @21689 has 20 MA's), (139, 21836), (164, 22010), (169, 22043), (174, 22079), (193, 22172), (206, 22232), (211, 22250), (234, 22382), (242, 22427), (262, 22559), (269, 22604), (281, 22664), (301, 22778), (304, 22799), (312, 22838), (315, 22859), (317, 22874), (346, 23024), (348, 23030), (350, 23048), (361, 23102), (375, 23186), (392, 23279), (430, 23525), (453, 23741), (462, 23825), (469, 23858),

Gene: ChotaBhai\_26 Start: 21533, Stop: 23929, Start Num: 52

Candidate Starts for ChotaBhai\_26:

(Start: 52 @21533 has 123 MA's), (97, 21710), (Start: 101 @21731 has 20 MA's), (139, 21878), (160, 22019), (164, 22052), (169, 22085), (174, 22121), (193, 22214), (206, 22274), (211, 22292), (234, 22424), (242, 22469), (262, 22601), (269, 22646), (301, 22820), (304, 22841), (312, 22880), (315, 22901), (317, 22916), (348, 23072), (350, 23090), (361, 23144), (375, 23228), (392, 23321), (430, 23567), (453, 23783), (462, 23867), (469, 23900),

Gene: Chuckly\_18 Start: 17569, Stop: 20106, Start Num: 18

Candidate Starts for Chuckly\_18:

(16, 17557), (Start: 18 @17569 has 221 MA's), (28, 17590), (Start: 38 @17611 has 1 MA's), (48, 17650), (71, 17719), (73, 17728), (74, 17731), (81, 17749), (89, 17782), (91, 17797), (99, 17845), (119, 17956), (120, 17959), (128, 17989), (134, 18001), (135, 18004), (145, 18082), (148, 18106), (Start: 159 @18172 has 1 MA's), (165, 18217), (169, 18247), (170, 18253), (172, 18271), (178, 18295), (180, 18304), (186, 18337), (187, 18343), (193, 18373), (203, 18412), (204, 18424), (206, 18433), (210, 18448), (212, 18454), (230, 18562), (231, 18565), (232, 18574), (233, 18580), (236, 18595), (237, 18598), (240, 18619), (246, 18649), (248, 18661), (251, 18694), (262, 18760), (269, 18805), (270, 18808), (275, 18835), (276, 18841), (284, 18895), (285, 18898), (302, 18985), (304, 19000), (307, 19012), (308, 19015), (320, 19081), (323, 19105), (325, 19126), (327, 19135), (339, 19195), (340, 19198), (348, 19234), (350, 19252), (354, 19273), (359, 19300), (373, 19369), (375, 19387), (377, 19396), (378, 19408), (383, 19444), (388, 19474), (393, 19495), (399, 19519), (405, 19555), (412, 19609), (419, 19669), (425, 19711), (442, 19846), (445, 19870), (450, 19924), (453, 19972), (459, 20014), (461, 20038), (462, 20041),

Gene: Cjw1\_26 Start: 23044, Stop: 25440, Start Num: 52

Candidate Starts for Cjw1\_26:

(Start: 52 @23044 has 123 MA's), (97, 23221), (Start: 101 @23242 has 20 MA's), (139, 23389), (164, 23563), (169, 23596), (174, 23632), (206, 23785), (211, 23803), (234, 23935), (242, 23980), (262, 24112), (269, 24157), (281, 24217), (301, 24331), (304, 24352), (312, 24391), (315, 24412), (317, 24427), (346, 24577), (348, 24583), (350, 24601), (361, 24655), (375, 24739), (392, 24832), (430, 25078), (453, 25294), (462, 25378), (469, 25411),

Gene: Coco12\_20 Start: 17795, Stop: 20272, Start Num: 18

Candidate Starts for Coco12\_20:

(17, 17783), (Start: 18 @17795 has 221 MA's), (28, 17816), (Start: 38 @17837 has 1 MA's), (49, 17876), (71, 17945), (73, 17954), (74, 17957), (81, 17975), (89, 18008), (91, 18023), (108, 18110), (112, 18125), (120, 18161), (121, 18167), (135, 18200), (137, 18212), (162, 18383), (165, 18392), (169, 18416), (179, 18470), (186, 18506), (187, 18512), (193, 18542), (201, 18572), (204, 18593), (206, 18602), (223, 18686), (233, 18749), (237, 18767), (238, 18776), (242, 18797), (243, 18800), (246, 18818), (248, 18830), (250, 18857), (252, 18866), (259, 18917), (260, 18926), (262, 18929), (265, 18956), (268, 18965), (272, 18986), (284, 19064), (285, 19067), (305, 19175), (307, 19181), (315, 19229), (322, 19271), (323, 19274), (325, 19295), (326, 19301), (327, 19304), (334, 19334), (358, 19475), (362, 19493), (367, 19526), (373, 19550), (374, 19553), (375, 19568), (378, 19589), (383, 19625), (384, 19631), (390, 19658), (395, 19685), (414, 19820), (422, 19868), (424, 19892), (426, 19898), (430, 19916), (442, 20015), (444, 20036), (446, 20054), (453, 20132), (456, 20153), (465, 20216), (467, 20234), (472, 20252),

Gene: Command613\_27 Start: 22552, Stop: 24948, Start Num: 52

Candidate Starts for Command613\_27:

(Start: 52 @22552 has 123 MA's), (97, 22729), (Start: 101 @22750 has 20 MA's), (139, 22897), (160, 23038), (164, 23071), (169, 23104), (174, 23140), (193, 23233), (206, 23293), (211, 23311), (225, 23392), (262, 23620), (269, 23665), (304, 23860), (305, 23866), (308, 23875), (315, 23920), (317, 23935), (348, 24091), (350, 24109), (352, 24118), (375, 24247), (376, 24250), (411, 24460), (413, 24472), (430, 24586), (453, 24802), (462, 24886), (467, 24910), (469, 24919),

Gene: Contagion\_25 Start: 21791, Stop: 24187, Start Num: 52

Candidate Starts for Contagion\_25:

(Start: 52 @21791 has 123 MA's), (97, 21968), (Start: 101 @21989 has 20 MA's), (139, 22136), (160, 22277), (164, 22310), (169, 22343), (174, 22379), (193, 22472), (206, 22532), (211, 22550), (234, 22682), (242, 22727), (262, 22859), (269, 22904), (301, 23078), (304, 23099), (312, 23138), (315, 23159), (317, 23174), (348, 23330), (350, 23348), (361, 23402), (375, 23486), (392, 23579), (430, 23825), (453, 24041), (462, 24125), (469, 24158),

Gene: Cookies\_26 Start: 22153, Stop: 24549, Start Num: 52

Candidate Starts for Cookies\_26:

(Start: 52 @22153 has 123 MA's), (97, 22330), (Start: 101 @22351 has 20 MA's), (139, 22498), (160, 22639), (164, 22672), (169, 22705), (174, 22741), (193, 22834), (206, 22894), (211, 22912), (234, 23044), (242, 23089), (262, 23221), (269, 23266), (281, 23326), (301, 23440), (304, 23461), (312, 23500), (315, 23521), (317, 23536), (346, 23686), (348, 23692), (350, 23710), (361, 23764), (375, 23848), (392, 23941), (430, 24187), (453, 24403), (462, 24487), (469, 24520),

Gene: Corndog\_61 Start: 37139, Stop: 39649, Start Num: 35

Candidate Starts for Corndog\_61:

(Start: 35 @37139 has 27 MA's), (42, 37172), (60, 37241), (61, 37244), (68, 37268), (74, 37292), (83, 37316), (89, 37349), (124, 37556), (127, 37568), (128, 37571), (151, 37718), (152, 37748), (Start: 159 @37772 has 1 MA's), (165, 37802), (166, 37805), (169, 37832), (172, 37856), (179, 37886), (189, 37943), (203, 38003), (204, 38015), (210, 38039), (211, 38042), (217, 38084), (236, 38180), (237, 38183), (279, 38438), (304, 38582), (315, 38642), (324, 38714), (325, 38717), (344, 38813), (375,

38987), (378, 39008), (395, 39101), (398, 39113), (412, 39203), (423, 39278), (432, 39323), (455, 39524), (460, 39578), (465, 39593),

Gene: Cornie\_20 Start: 18264, Stop: 20744, Start Num: 19

Candidate Starts for Cornie\_20:

(Start: 19 @18264 has 1 MA's), (22, 18270), (28, 18276), (Start: 52 @18339 has 123 MA's), (54, 18342), (62, 18369), (77, 18423), (81, 18432), (89, 18465), (95, 18498), (100, 18531), (108, 18570), (112, 18585), (120, 18621), (121, 18627), (122, 18630), (132, 18648), (135, 18660), (137, 18672), (141, 18696), (142, 18699), (154, 18804), (160, 18828), (162, 18843), (165, 18852), (169, 18876), (170, 18882), (172, 18900), (174, 18912), (176, 18918), (178, 18924), (179, 18930), (180, 18933), (181, 18942), (183, 18951), (186, 18966), (193, 19002), (203, 19041), (204, 19053), (206, 19062), (223, 19146), (237, 19227), (238, 19236), (243, 19260), (248, 19290), (252, 19326), (259, 19377), (260, 19386), (262, 19389), (265, 19416), (268, 19425), (272, 19446), (278, 19482), (284, 19524), (285, 19527), (298, 19581), (307, 19641), (321, 19728), (323, 19734), (325, 19755), (334, 19791), (343, 19845), (346, 19854), (358, 19932), (362, 19950), (368, 19986), (369, 19989), (373, 20007), (375, 20025), (383, 20082), (385, 20094), (399, 20157), (405, 20190), (414, 20277), (422, 20325), (424, 20349), (429, 20376), (430, 20385), (433, 20424), (438, 20463), (442, 20487), (444, 20508), (453, 20604), (456, 20625), (463, 20685), (465, 20688), (469, 20715),

Gene: Cornucopia\_19 Start: 17435, Stop: 19972, Start Num: 18

Candidate Starts for Cornucopia\_19:

(Start: 18 @17435 has 221 MA's), (28, 17456), (Start: 38 @17477 has 1 MA's), (48, 17516), (71, 17585), (73, 17594), (74, 17597), (81, 17615), (91, 17663), (117, 17816), (120, 17825), (135, 17870), (147, 17969), (148, 17972), (Start: 159 @18038 has 1 MA's), (169, 18113), (170, 18119), (172, 18137), (178, 18161), (180, 18170), (186, 18203), (187, 18209), (193, 18239), (199, 18260), (203, 18278), (204, 18290), (206, 18299), (210, 18314), (211, 18317), (230, 18428), (231, 18431), (232, 18440), (233, 18446), (236, 18461), (237, 18464), (240, 18485), (246, 18515), (248, 18527), (251, 18560), (269, 18671), (270, 18674), (275, 18701), (276, 18707), (284, 18761), (285, 18764), (296, 18812), (302, 18851), (304, 18866), (307, 18878), (308, 18881), (311, 18902), (320, 18947), (323, 18971), (327, 19001), (336, 19043), (339, 19061), (340, 19064), (348, 19100), (350, 19118), (353, 19130), (354, 19139), (361, 19172), (373, 19235), (375, 19253), (377, 19262), (378, 19274), (388, 19340), (393, 19361), (399, 19385), (405, 19421), (412, 19475), (419, 19535), (425, 19577), (434, 19655), (442, 19712), (445, 19736), (450, 19790), (453, 19838), (459, 19880), (461, 19904), (462, 19907),

Gene: Cosmo\_43 Start: 28347, Stop: 30914, Start Num: 26

Candidate Starts for Cosmo\_43:

(Start: 26 @28347 has 6 MA's), (43, 28416), (77, 28539), (79, 28545), (81, 28548), (88, 28572), (90, 28593), (116, 28749), (118, 28755), (120, 28761), (128, 28791), (129, 28797), (135, 28818), (136, 28827), (144, 28887), (149, 28923), (153, 28965), (170, 29064), (175, 29097), (179, 29112), (180, 29115), (187, 29154), (199, 29205), (203, 29223), (206, 29244), (208, 29250), (214, 29277), (217, 29304), (230, 29373), (235, 29397), (238, 29418), (242, 29439), (244, 29448), (248, 29469), (251, 29502), (252, 29505), (259, 29556), (262, 29568), (273, 29634), (277, 29652), (283, 29691), (304, 29808), (313, 29853), (322, 29910), (325, 29934), (327, 29943), (329, 29961), (339, 30006), (346, 30039), (351, 30075), (382, 30249), (383, 30267), (384, 30273), (396, 30330), (441, 30654), (443, 30672), (448, 30723), (454, 30786), (461, 30861),

Gene: Courthouse\_36 Start: 27742, Stop: 30249, Start Num: 18

Candidate Starts for Courthouse\_36:

(Start: 18 @27742 has 221 MA's), (81, 27937), (89, 27973), (91, 27988), (108, 28075), (112, 28090), (135, 28165), (137, 28177), (142, 28204), (154, 28309), (162, 28348), (165, 28357), (169, 28381), (170, 28387), (172, 28405), (176, 28423), (180, 28438), (181, 28447), (183, 28456), (186, 28471), (192, 28498), (193, 28507), (203, 28546), (204, 28558), (206, 28567), (223, 28651), (237, 28732),

(242, 28762), (243, 28765), (248, 28795), (250, 28822), (252, 28831), (259, 28882), (260, 28891), (262, 28894), (268, 28930), (272, 28951), (278, 28987), (305, 29140), (315, 29194), (323, 29239), (324, 29257), (325, 29260), (334, 29299), (358, 29446), (361, 29455), (374, 29524), (375, 29539), (405, 29704), (414, 29791), (422, 29839), (430, 29890), (438, 29968), (463, 30190), (465, 30193), (469, 30220),

Gene: CrystalP\_26 Start: 22284, Stop: 24680, Start Num: 52

Candidate Starts for CrystalP\_26:

(Start: 52 @22284 has 123 MA's), (97, 22461), (Start: 101 @22482 has 20 MA's), (139, 22629), (160, 22770), (164, 22803), (169, 22836), (174, 22872), (193, 22965), (206, 23025), (211, 23043), (225, 23124), (262, 23352), (269, 23397), (304, 23592), (305, 23598), (308, 23607), (315, 23652), (317, 23667), (348, 23823), (350, 23841), (352, 23850), (375, 23979), (376, 23982), (411, 24192), (413, 24204), (430, 24318), (453, 24534), (462, 24618), (467, 24642), (469, 24651),

Gene: Czyszczone1\_27 Start: 22029, Stop: 24425, Start Num: 52

Candidate Starts for Czyszczone1\_27:

(Start: 52 @22029 has 123 MA's), (97, 22206), (Start: 101 @22227 has 20 MA's), (139, 22374), (164, 22548), (169, 22581), (174, 22617), (193, 22710), (206, 22770), (211, 22788), (234, 22920), (242, 22965), (262, 23097), (269, 23142), (281, 23202), (301, 23316), (304, 23337), (312, 23376), (315, 23397), (317, 23412), (346, 23562), (348, 23568), (350, 23586), (361, 23640), (375, 23724), (392, 23817), (430, 24063), (453, 24279), (462, 24363), (469, 24396),

Gene: DLane\_18 Start: 17386, Stop: 19923, Start Num: 18

Candidate Starts for DLane\_18:

(16, 17374), (Start: 18 @17386 has 221 MA's), (28, 17407), (Start: 38 @17428 has 1 MA's), (48, 17467), (71, 17536), (73, 17545), (74, 17548), (81, 17566), (89, 17599), (91, 17614), (99, 17662), (119, 17773), (120, 17776), (128, 17806), (132, 17809), (135, 17821), (145, 17899), (148, 17923), (Start: 159 @17989 has 1 MA's), (165, 18034), (169, 18064), (170, 18070), (172, 18088), (178, 18112), (180, 18121), (186, 18154), (187, 18160), (193, 18190), (204, 18241), (206, 18250), (210, 18265), (211, 18268), (230, 18379), (231, 18382), (232, 18391), (233, 18397), (236, 18412), (237, 18415), (240, 18436), (246, 18466), (248, 18478), (251, 18511), (269, 18622), (270, 18625), (275, 18652), (276, 18658), (284, 18712), (285, 18715), (304, 18817), (307, 18829), (308, 18832), (320, 18898), (323, 18922), (325, 18943), (327, 18952), (339, 19012), (340, 19015), (348, 19051), (350, 19069), (353, 19081), (354, 19090), (359, 19117), (373, 19186), (375, 19204), (377, 19213), (378, 19225), (383, 19261), (388, 19291), (393, 19312), (399, 19336), (405, 19372), (412, 19426), (419, 19486), (425, 19528), (434, 19606), (442, 19663), (445, 19687), (450, 19741), (453, 19789), (459, 19831), (461, 19855), (462, 19858),

Gene: DRBy19\_18 Start: 17429, Stop: 19966, Start Num: 18

Candidate Starts for DRBy19\_18:

(Start: 18 @17429 has 221 MA's), (28, 17450), (Start: 38 @17471 has 1 MA's), (48, 17510), (71, 17579), (73, 17588), (74, 17591), (81, 17609), (91, 17657), (117, 17810), (120, 17819), (135, 17864), (145, 17942), (148, 17966), (Start: 159 @18032 has 1 MA's), (165, 18077), (169, 18107), (170, 18113), (172, 18131), (178, 18155), (180, 18164), (186, 18197), (187, 18203), (193, 18233), (203, 18272), (206, 18293), (210, 18308), (211, 18311), (231, 18425), (232, 18434), (233, 18440), (237, 18458), (240, 18479), (246, 18509), (248, 18521), (251, 18554), (269, 18665), (270, 18668), (275, 18695), (276, 18701), (284, 18755), (285, 18758), (302, 18845), (304, 18860), (308, 18875), (323, 18965), (325, 18986), (327, 18995), (339, 19055), (340, 19058), (348, 19094), (350, 19112), (353, 19124), (354, 19133), (359, 19160), (373, 19229), (375, 19247), (377, 19256), (378, 19268), (383, 19304), (388, 19334), (393, 19355), (399, 19379), (405, 19415), (412, 19469), (425, 19571), (434, 19649), (442, 19706), (445, 19730), (450, 19784), (453, 19832), (459, 19874), (464, 19907), (465, 19910),

Gene: DaWorst\_20 Start: 17930, Stop: 20467, Start Num: 18

Candidate Starts for DaWorst\_20:

(Start: 18 @17930 has 221 MA's), (28, 17951), (Start: 38 @17972 has 1 MA's), (48, 18011), (71, 18080), (73, 18089), (74, 18092), (81, 18110), (89, 18143), (91, 18158), (119, 18317), (120, 18320), (128, 18350), (135, 18365), (145, 18443), (147, 18464), (148, 18467), (Start: 159 @18533 has 1 MA's), (169, 18608), (170, 18614), (178, 18656), (179, 18662), (180, 18665), (186, 18698), (187, 18704), (193, 18734), (199, 18755), (204, 18785), (206, 18794), (226, 18902), (229, 18914), (230, 18923), (231, 18926), (232, 18935), (233, 18941), (236, 18956), (237, 18959), (240, 18980), (248, 19022), (251, 19055), (275, 19196), (276, 19202), (284, 19256), (285, 19259), (290, 19286), (302, 19346), (304, 19361), (307, 19373), (308, 19376), (320, 19442), (323, 19466), (325, 19487), (327, 19496), (339, 19556), (340, 19559), (348, 19595), (350, 19613), (353, 19625), (354, 19634), (359, 19661), (373, 19730), (375, 19748), (377, 19757), (378, 19769), (383, 19805), (388, 19835), (405, 19916), (412, 19970), (419, 20030), (425, 20072), (434, 20150), (442, 20207), (445, 20231), (450, 20285), (453, 20333), (459, 20375), (461, 20399), (462, 20402),

Gene: DaddyRickover\_18 Start: 17568, Stop: 20105, Start Num: 18

Candidate Starts for DaddyRickover\_18:

(16, 17556), (Start: 18 @17568 has 221 MA's), (28, 17589), (Start: 38 @17610 has 1 MA's), (48, 17649), (71, 17718), (73, 17727), (74, 17730), (81, 17748), (91, 17796), (99, 17844), (119, 17955), (120, 17958), (135, 18003), (145, 18081), (148, 18105), (Start: 159 @18171 has 1 MA's), (165, 18216), (169, 18246), (170, 18252), (172, 18270), (178, 18294), (180, 18303), (186, 18336), (187, 18342), (193, 18372), (203, 18411), (204, 18423), (206, 18432), (210, 18447), (211, 18450), (230, 18561), (231, 18564), (232, 18573), (233, 18579), (236, 18594), (237, 18597), (240, 18618), (246, 18648), (248, 18660), (251, 18693), (269, 18804), (270, 18807), (275, 18834), (276, 18840), (284, 18894), (285, 18897), (304, 18999), (307, 19011), (308, 19014), (320, 19080), (323, 19104), (325, 19125), (327, 19134), (339, 19194), (340, 19197), (348, 19233), (350, 19251), (354, 19272), (359, 19299), (373, 19368), (375, 19386), (377, 19395), (378, 19407), (383, 19443), (393, 19494), (397, 19512), (405, 19554), (412, 19608), (425, 19710), (442, 19845), (445, 19869), (450, 19923), (456, 19992), (461, 20037), (462, 20040),

Gene: Daenerys\_18 Start: 17400, Stop: 19937, Start Num: 18

Candidate Starts for Daenerys\_18:

(16, 17388), (Start: 18 @17400 has 221 MA's), (28, 17421), (Start: 38 @17442 has 1 MA's), (48, 17481), (71, 17550), (73, 17559), (74, 17562), (81, 17580), (91, 17628), (99, 17676), (119, 17787), (120, 17790), (135, 17835), (145, 17913), (148, 17937), (Start: 159 @18003 has 1 MA's), (165, 18048), (169, 18078), (170, 18084), (172, 18102), (178, 18126), (180, 18135), (186, 18168), (187, 18174), (193, 18204), (203, 18243), (204, 18255), (206, 18264), (210, 18279), (211, 18282), (230, 18393), (231, 18396), (232, 18405), (233, 18411), (236, 18426), (237, 18429), (240, 18450), (246, 18480), (248, 18492), (251, 18525), (269, 18636), (270, 18639), (275, 18666), (276, 18672), (284, 18726), (285, 18729), (304, 18831), (307, 18843), (308, 18846), (320, 18912), (323, 18936), (325, 18957), (327, 18966), (339, 19026), (340, 19029), (348, 19065), (350, 19083), (354, 19104), (359, 19131), (373, 19200), (375, 19218), (377, 19227), (378, 19239), (383, 19275), (393, 19326), (397, 19344), (405, 19386), (412, 19440), (425, 19542), (442, 19677), (445, 19701), (450, 19755), (456, 19824), (461, 19869), (462, 19872),

Gene: Daikon\_24 Start: 22021, Stop: 24417, Start Num: 52

Candidate Starts for Daikon\_24:

(Start: 52 @22021 has 123 MA's), (97, 22198), (Start: 101 @22219 has 20 MA's), (139, 22366), (160, 22507), (164, 22540), (169, 22573), (174, 22609), (193, 22702), (206, 22762), (211, 22780), (238, 22936), (242, 22957), (259, 23077), (262, 23089), (269, 23134), (304, 23329), (308, 23344), (315, 23389), (317, 23404), (348, 23560), (350, 23578), (352, 23587), (375, 23716), (376, 23719), (411, 23929), (413, 23941), (430, 24055), (453, 24271), (462, 24355), (467, 24379), (469, 24388),

Gene: Damien\_29 Start: 25682, Stop: 28525, Start Num: 3

Candidate Starts for Damien\_29:

(Start: 3 @25682 has 8 MA's), (8, 25814), (9, 25826), (Start: 11 @25835 has 7 MA's), (20, 25904), (24, 25910), (40, 25970), (45, 25991), (59, 26039), (70, 26081), (76, 26105), (85, 26138), (92, 26174), (94, 26186), (107, 26279), (120, 26336), (130, 26375), (150, 26501), (160, 26570), (163, 26600), (170, 26642), (180, 26693), (199, 26783), (203, 26801), (217, 26882), (225, 26921), (229, 26942), (251, 27080), (255, 27119), (268, 27182), (285, 27284), (324, 27509), (389, 27872), (395, 27899), (431, 28142), (432, 28175), (436, 28199), (449, 28319), (457, 28397), (469, 28484), (473, 28499), (475, 28505),

Gene: Dante\_18 Start: 17416, Stop: 19953, Start Num: 18

Candidate Starts for Dante\_18:

(16, 17404), (Start: 18 @17416 has 221 MA's), (28, 17437), (Start: 38 @17458 has 1 MA's), (48, 17497), (71, 17566), (73, 17575), (74, 17578), (81, 17596), (89, 17629), (91, 17644), (99, 17692), (117, 17797), (119, 17803), (120, 17806), (134, 17848), (135, 17851), (145, 17929), (148, 17953), (Start: 159 @18019 has 1 MA's), (165, 18064), (169, 18094), (170, 18100), (172, 18118), (178, 18142), (180, 18151), (186, 18184), (187, 18190), (193, 18220), (203, 18259), (204, 18271), (206, 18280), (210, 18295), (211, 18298), (230, 18409), (231, 18412), (232, 18421), (233, 18427), (236, 18442), (237, 18445), (240, 18466), (246, 18496), (251, 18541), (269, 18652), (270, 18655), (275, 18682), (276, 18688), (284, 18742), (285, 18745), (304, 18847), (307, 18859), (308, 18862), (320, 18928), (323, 18952), (325, 18973), (327, 18982), (339, 19042), (340, 19045), (348, 19081), (350, 19099), (353, 19111), (354, 19120), (359, 19147), (373, 19216), (375, 19234), (377, 19243), (378, 19255), (383, 19291), (388, 19321), (393, 19342), (399, 19366), (405, 19402), (412, 19456), (419, 19516), (425, 19558), (434, 19636), (442, 19693), (445, 19717), (450, 19771), (453, 19819), (459, 19861), (461, 19885), (462, 19888),

Gene: DeadP\_18 Start: 17430, Stop: 19967, Start Num: 18

Candidate Starts for DeadP\_18:

(16, 17418), (Start: 18 @17430 has 221 MA's), (28, 17451), (Start: 38 @17472 has 1 MA's), (48, 17511), (71, 17580), (73, 17589), (74, 17592), (81, 17610), (89, 17643), (91, 17658), (99, 17706), (117, 17811), (119, 17817), (120, 17820), (134, 17862), (135, 17865), (145, 17943), (Start: 159 @18033 has 1 MA's), (165, 18078), (169, 18108), (170, 18114), (172, 18132), (178, 18156), (180, 18165), (186, 18198), (187, 18204), (193, 18234), (203, 18273), (204, 18285), (206, 18294), (210, 18309), (211, 18312), (230, 18423), (231, 18426), (232, 18435), (233, 18441), (236, 18456), (237, 18459), (240, 18480), (246, 18510), (248, 18522), (251, 18555), (269, 18666), (270, 18669), (275, 18696), (276, 18702), (284, 18756), (285, 18759), (302, 18846), (304, 18861), (307, 18873), (308, 18876), (320, 18942), (323, 18966), (325, 18987), (327, 18996), (339, 19056), (340, 19059), (348, 19095), (350, 19113), (353, 19125), (354, 19134), (359, 19161), (373, 19230), (375, 19248), (377, 19257), (378, 19269), (383, 19305), (388, 19335), (393, 19356), (399, 19380), (405, 19416), (412, 19470), (419, 19530), (425, 19572), (442, 19707), (445, 19731), (450, 19785), (453, 19833), (459, 19875), (461, 19899), (462, 19902),

Gene: Deb65\_18 Start: 17397, Stop: 19934, Start Num: 18

Candidate Starts for Deb65\_18:

(Start: 18 @17397 has 221 MA's), (28, 17418), (Start: 38 @17439 has 1 MA's), (48, 17478), (71, 17547), (73, 17556), (74, 17559), (81, 17577), (91, 17625), (99, 17673), (119, 17784), (120, 17787), (135, 17832), (145, 17910), (148, 17934), (Start: 159 @18000 has 1 MA's), (169, 18075), (170, 18081), (172, 18099), (178, 18123), (180, 18132), (186, 18165), (187, 18171), (193, 18201), (199, 18222), (204, 18252), (206, 18261), (226, 18369), (229, 18381), (230, 18390), (231, 18393), (233, 18408), (236, 18423), (237, 18426), (240, 18447), (248, 18489), (251, 18522), (269, 18633), (270, 18636), (275, 18663), (276, 18669), (284, 18723), (285, 18726), (290, 18753), (304, 18828), (307, 18840), (308, 18843), (320, 18909), (322, 18930), (323, 18933), (325, 18954), (327, 18963), (336, 19005), (339, 19023), (340, 19026), (346, 19056), (350, 19080), (353, 19092), (354, 19101), (373,

19197), (375, 19215), (377, 19224), (378, 19236), (383, 19272), (388, 19302), (392, 19311), (393, 19323), (405, 19383), (412, 19437), (419, 19497), (425, 19539), (442, 19674), (445, 19698), (450, 19752), (453, 19800), (459, 19842), (461, 19866), (462, 19869),

Gene: Delton\_30 Start: 24328, Stop: 26598, Start Num: 101

Candidate Starts for Delton\_30:

(Start: 101 @24328 has 20 MA's), (131, 24463), (133, 24472), (156, 24646), (158, 24652), (160, 24664), (185, 24817), (187, 24832), (190, 24847), (257, 25228), (258, 25234), (266, 25279), (282, 25366), (318, 25567), (319, 25573), (325, 25621), (331, 25651), (335, 25675), (365, 25864), (372, 25891), (378, 25939), (391, 26011), (399, 26050), (400, 26071), (403, 26086), (406, 26104), (408, 26134), (420, 26218), (451, 26419), (453, 26461), (474, 26587),

Gene: Demsculpinboyz\_24 Start: 17086, Stop: 19635, Start Num: 11

Candidate Starts for Demsculpinboyz\_24:

(9, 17077), (Start: 11 @17086 has 7 MA's), (Start: 18 @17146 has 221 MA's), (31, 17179), (33, 17182), (58, 17251), (66, 17281), (108, 17461), (112, 17476), (120, 17512), (121, 17518), (132, 17539), (137, 17563), (141, 17587), (162, 17734), (165, 17743), (169, 17767), (172, 17791), (178, 17815), (179, 17821), (183, 17842), (187, 17863), (193, 17893), (201, 17923), (204, 17944), (223, 18037), (225, 18052), (226, 18061), (228, 18070), (230, 18082), (231, 18085), (246, 18169), (247, 18172), (248, 18181), (250, 18208), (252, 18217), (256, 18256), (260, 18277), (262, 18280), (268, 18316), (272, 18337), (284, 18415), (285, 18418), (307, 18532), (321, 18619), (323, 18625), (325, 18646), (334, 18682), (343, 18736), (346, 18745), (358, 18823), (362, 18841), (368, 18877), (369, 18880), (373, 18898), (375, 18916), (383, 18973), (385, 18985), (399, 19048), (405, 19081), (414, 19168), (422, 19216), (424, 19240), (430, 19276), (433, 19315), (438, 19354), (442, 19378), (444, 19399), (453, 19495), (456, 19516), (463, 19576), (465, 19579), (469, 19606),

Gene: DillTech15\_18 Start: 17434, Stop: 19971, Start Num: 18

Candidate Starts for DillTech15\_18:

(Start: 18 @17434 has 221 MA's), (28, 17455), (Start: 38 @17476 has 1 MA's), (48, 17515), (71, 17584), (73, 17593), (74, 17596), (81, 17614), (89, 17647), (91, 17662), (117, 17815), (120, 17824), (135, 17869), (147, 17968), (148, 17971), (Start: 159 @18037 has 1 MA's), (165, 18082), (169, 18112), (170, 18118), (172, 18136), (178, 18160), (179, 18166), (180, 18169), (186, 18202), (187, 18208), (193, 18238), (203, 18277), (204, 18289), (206, 18298), (210, 18313), (211, 18316), (230, 18427), (231, 18430), (232, 18439), (233, 18445), (236, 18460), (237, 18463), (240, 18484), (246, 18514), (248, 18526), (251, 18559), (269, 18670), (270, 18673), (275, 18700), (276, 18706), (284, 18760), (285, 18763), (302, 18850), (304, 18865), (307, 18877), (308, 18880), (320, 18946), (323, 18970), (325, 18991), (327, 19000), (339, 19060), (340, 19063), (348, 19099), (350, 19117), (353, 19129), (354, 19138), (359, 19165), (373, 19234), (375, 19252), (377, 19261), (378, 19273), (383, 19309), (388, 19339), (392, 19348), (393, 19360), (399, 19384), (405, 19420), (412, 19474), (419, 19534), (425, 19576), (442, 19711), (445, 19735), (450, 19789), (453, 19837), (459, 19879), (461, 19903), (462, 19906),

Gene: DirtMcgirt\_19 Start: 17221, Stop: 19758, Start Num: 18

Candidate Starts for DirtMcgirt\_19:

(16, 17209), (Start: 18 @17221 has 221 MA's), (28, 17242), (Start: 38 @17263 has 1 MA's), (48, 17302), (71, 17371), (73, 17380), (74, 17383), (81, 17401), (89, 17434), (91, 17449), (99, 17497), (117, 17602), (120, 17611), (134, 17653), (135, 17656), (145, 17734), (148, 17758), (Start: 159 @17824 has 1 MA's), (165, 17869), (169, 17899), (170, 17905), (172, 17923), (178, 17947), (180, 17956), (186, 17989), (187, 17995), (193, 18025), (203, 18064), (204, 18076), (206, 18085), (210, 18100), (211, 18103), (230, 18214), (232, 18226), (233, 18232), (236, 18247), (237, 18250), (240, 18271), (246, 18301), (248, 18313), (251, 18346), (269, 18457), (270, 18460), (275, 18487), (276, 18493), (284, 18547), (285, 18550), (290, 18577), (304, 18652), (307, 18664), (308, 18667), (320, 18733), (323, 18757), (327, 18787), (336, 18829), (339, 18847), (340, 18850), (348, 18886), (350,

18904), (354, 18925), (359, 18952), (373, 19021), (375, 19039), (377, 19048), (378, 19060), (383, 19096), (388, 19126), (392, 19135), (393, 19147), (405, 19207), (412, 19261), (419, 19321), (425, 19363), (434, 19441), (442, 19498), (445, 19522), (450, 19576), (453, 19624), (459, 19666), (461, 19690), (462, 19693),

Gene: DmpstrDiver\_37 Start: 30383, Stop: 32890, Start Num: 18

Candidate Starts for DmpstrDiver\_37:

(13, 30326), (Start: 18 @30383 has 221 MA's), (81, 30578), (89, 30614), (91, 30629), (100, 30677), (112, 30731), (120, 30767), (121, 30773), (122, 30776), (132, 30794), (135, 30806), (137, 30818), (142, 30845), (154, 30950), (162, 30989), (165, 30998), (169, 31022), (170, 31028), (172, 31046), (176, 31064), (180, 31079), (181, 31088), (183, 31097), (186, 31112), (192, 31139), (193, 31148), (203, 31187), (204, 31199), (206, 31208), (223, 31292), (237, 31373), (242, 31403), (243, 31406), (248, 31436), (250, 31463), (252, 31472), (259, 31523), (260, 31532), (262, 31535), (268, 31571), (272, 31592), (278, 31628), (305, 31781), (315, 31835), (323, 31880), (324, 31898), (325, 31901), (334, 31940), (358, 32087), (361, 32096), (374, 32165), (375, 32180), (405, 32345), (414, 32432), (422, 32480), (430, 32531), (438, 32609), (463, 32831), (465, 32834), (469, 32861),

Gene: DocMcStuffins\_19 Start: 17271, Stop: 19796, Start Num: 18

Candidate Starts for DocMcStuffins\_19:

(Start: 18 @17271 has 221 MA's), (28, 17292), (Start: 38 @17313 has 1 MA's), (48, 17352), (71, 17421), (73, 17430), (74, 17433), (81, 17451), (89, 17484), (91, 17499), (99, 17547), (119, 17658), (120, 17661), (135, 17706), (145, 17784), (148, 17808), (Start: 159 @17874 has 1 MA's), (160, 17883), (169, 17949), (170, 17955), (172, 17973), (178, 17997), (179, 18003), (180, 18006), (186, 18039), (187, 18045), (193, 18075), (199, 18096), (206, 18135), (210, 18150), (212, 18156), (237, 18300), (246, 18351), (261, 18462), (270, 18513), (274, 18537), (290, 18630), (299, 18675), (301, 18684), (304, 18705), (307, 18717), (308, 18720), (315, 18765), (323, 18810), (324, 18828), (325, 18831), (336, 18882), (346, 18933), (348, 18939), (350, 18957), (353, 18969), (354, 18978), (361, 19011), (375, 19092), (385, 19161), (392, 19188), (396, 19215), (406, 19266), (412, 19314), (444, 19557), (453, 19662), (456, 19683), (464, 19737), (468, 19761),

Gene: DoctorDiddles\_26 Start: 21446, Stop: 23842, Start Num: 52

Candidate Starts for DoctorDiddles\_26:

(Start: 52 @21446 has 123 MA's), (97, 21623), (Start: 101 @21644 has 20 MA's), (139, 21791), (164, 21965), (169, 21998), (174, 22034), (193, 22127), (206, 22187), (211, 22205), (234, 22337), (242, 22382), (262, 22514), (269, 22559), (281, 22619), (301, 22733), (304, 22754), (312, 22793), (315, 22814), (317, 22829), (346, 22979), (348, 22985), (350, 23003), (361, 23057), (375, 23141), (392, 23234), (430, 23480), (453, 23696), (462, 23780), (469, 23813),

Gene: Donkeykong\_18 Start: 17574, Stop: 20111, Start Num: 18

Candidate Starts for Donkeykong\_18:

(16, 17562), (Start: 18 @17574 has 221 MA's), (28, 17595), (Start: 38 @17616 has 1 MA's), (48, 17655), (71, 17724), (73, 17733), (74, 17736), (81, 17754), (89, 17787), (91, 17802), (99, 17850), (119, 17961), (120, 17964), (128, 17994), (134, 18006), (135, 18009), (145, 18087), (148, 18111), (Start: 159 @18177 has 1 MA's), (165, 18222), (169, 18252), (170, 18258), (172, 18276), (178, 18300), (180, 18309), (186, 18342), (187, 18348), (193, 18378), (203, 18417), (204, 18429), (206, 18438), (210, 18453), (211, 18456), (230, 18567), (231, 18570), (232, 18579), (233, 18585), (236, 18600), (237, 18603), (240, 18624), (246, 18654), (248, 18666), (251, 18699), (262, 18765), (269, 18810), (270, 18813), (275, 18840), (276, 18846), (284, 18900), (285, 18903), (304, 19005), (307, 19017), (308, 19020), (320, 19086), (323, 19110), (325, 19131), (327, 19140), (339, 19200), (340, 19203), (348, 19239), (350, 19257), (353, 19269), (354, 19278), (359, 19305), (373, 19374), (375, 19392), (377, 19401), (378, 19413), (383, 19449), (388, 19479), (393, 19500), (399, 19524), (405, 19560), (412, 19614), (419, 19674), (425, 19716), (434, 19794), (442, 19851), (445, 19875), (450, 19929), (453, 19977), (459, 20019), (461, 20043), (462, 20046),

Gene: Doomphist\_18 Start: 17534, Stop: 20071, Start Num: 18

Candidate Starts for Doomphist\_18:

(Start: 18 @17534 has 221 MA's), (28, 17555), (Start: 38 @17576 has 1 MA's), (48, 17615), (71, 17684), (73, 17693), (74, 17696), (81, 17714), (91, 17762), (119, 17921), (120, 17924), (135, 17969), (145, 18047), (148, 18071), (Start: 159 @18137 has 1 MA's), (169, 18212), (170, 18218), (172, 18236), (178, 18260), (179, 18266), (180, 18269), (186, 18302), (187, 18308), (193, 18338), (199, 18359), (204, 18389), (206, 18398), (226, 18506), (229, 18518), (230, 18527), (231, 18530), (233, 18545), (236, 18560), (237, 18563), (240, 18584), (248, 18626), (251, 18659), (269, 18770), (270, 18773), (275, 18800), (276, 18806), (284, 18860), (285, 18863), (290, 18890), (304, 18965), (307, 18977), (308, 18980), (320, 19046), (322, 19067), (323, 19070), (325, 19091), (327, 19100), (339, 19160), (340, 19163), (348, 19199), (350, 19217), (353, 19229), (354, 19238), (359, 19265), (371, 19322), (373, 19334), (375, 19352), (377, 19361), (378, 19373), (383, 19409), (388, 19439), (392, 19448), (393, 19460), (405, 19520), (412, 19574), (419, 19634), (425, 19676), (442, 19811), (445, 19835), (450, 19889), (453, 19937), (459, 19979), (461, 20003), (462, 20006),

Gene: Dorothy\_18 Start: 17358, Stop: 19895, Start Num: 18

Candidate Starts for Dorothy\_18:

(16, 17346), (Start: 18 @17358 has 221 MA's), (28, 17379), (Start: 38 @17400 has 1 MA's), (48, 17439), (71, 17508), (73, 17517), (74, 17520), (81, 17538), (91, 17586), (99, 17634), (119, 17745), (120, 17748), (135, 17793), (145, 17871), (148, 17895), (Start: 159 @17961 has 1 MA's), (165, 18006), (169, 18036), (170, 18042), (172, 18060), (178, 18084), (180, 18093), (186, 18126), (187, 18132), (193, 18162), (203, 18201), (204, 18213), (206, 18222), (210, 18237), (211, 18240), (230, 18351), (231, 18354), (232, 18363), (233, 18369), (236, 18384), (237, 18387), (240, 18408), (246, 18438), (248, 18450), (251, 18483), (269, 18594), (270, 18597), (275, 18624), (276, 18630), (284, 18684), (285, 18687), (304, 18789), (307, 18801), (308, 18804), (320, 18870), (323, 18894), (325, 18915), (327, 18924), (339, 18984), (340, 18987), (348, 19023), (350, 19041), (354, 19062), (359, 19089), (373, 19158), (375, 19176), (377, 19185), (378, 19197), (383, 19233), (393, 19284), (397, 19302), (405, 19344), (412, 19398), (425, 19500), (442, 19635), (445, 19659), (450, 19713), (456, 19782), (461, 19827), (462, 19830),

Gene: DosHalletts\_19 Start: 17327, Stop: 19879, Start Num: 18

Candidate Starts for DosHalletts\_19:

(Start: 18 @17327 has 221 MA's), (55, 17417), (71, 17477), (73, 17486), (74, 17489), (81, 17507), (91, 17555), (98, 17600), (119, 17714), (120, 17717), (123, 17729), (132, 17750), (134, 17759), (135, 17762), (145, 17840), (152, 17906), (160, 17939), (165, 17975), (168, 17999), (179, 18059), (180, 18062), (183, 18080), (197, 18143), (199, 18146), (203, 18164), (206, 18185), (211, 18203), (216, 18230), (219, 18251), (225, 18284), (232, 18326), (233, 18332), (234, 18335), (237, 18350), (241, 18377), (242, 18380), (246, 18401), (248, 18413), (251, 18446), (265, 18539), (284, 18647), (287, 18671), (290, 18677), (295, 18695), (296, 18698), (299, 18722), (304, 18752), (310, 18776), (315, 18812), (316, 18818), (317, 18827), (322, 18854), (333, 18917), (336, 18941), (337, 18956), (346, 18998), (355, 19049), (374, 19145), (375, 19160), (377, 19169), (380, 19193), (392, 19256), (399, 19292), (440, 19598), (445, 19643), (453, 19745),

Gene: DotProduct\_18 Start: 17408, Stop: 19939, Start Num: 18

Candidate Starts for DotProduct\_18:

(16, 17396), (Start: 18 @17408 has 221 MA's), (28, 17429), (Start: 38 @17450 has 1 MA's), (48, 17489), (71, 17558), (73, 17567), (74, 17570), (81, 17588), (89, 17621), (91, 17636), (99, 17678), (119, 17789), (120, 17792), (132, 17825), (134, 17834), (135, 17837), (145, 17915), (Start: 159 @18005 has 1 MA's), (165, 18050), (169, 18080), (170, 18086), (172, 18104), (178, 18128), (180, 18137), (186, 18170), (187, 18176), (193, 18206), (204, 18257), (206, 18266), (210, 18281), (211, 18284), (230, 18395), (231, 18398), (232, 18407), (233, 18413), (236, 18428), (237, 18431), (240, 18452), (246, 18482), (248, 18494), (251, 18527), (269, 18638), (270, 18641), (276, 18674), (284,

18728), (285, 18731), (304, 18833), (307, 18845), (308, 18848), (320, 18914), (323, 18938), (325, 18959), (327, 18968), (339, 19028), (340, 19031), (348, 19067), (350, 19085), (353, 19097), (354, 19106), (359, 19133), (373, 19202), (375, 19220), (377, 19229), (378, 19241), (383, 19277), (388, 19307), (393, 19328), (399, 19352), (405, 19388), (412, 19442), (419, 19502), (425, 19544), (434, 19622), (442, 19679), (445, 19703), (450, 19757), (453, 19805), (459, 19847), (461, 19871), (462, 19874),

Gene: Doug\_19 Start: 17950, Stop: 20487, Start Num: 18

Candidate Starts for Doug\_19:

(16, 17938), (Start: 18 @17950 has 221 MA's), (28, 17971), (Start: 38 @17992 has 1 MA's), (48, 18031), (71, 18100), (73, 18109), (74, 18112), (81, 18130), (89, 18163), (91, 18178), (99, 18226), (117, 18331), (119, 18337), (120, 18340), (134, 18382), (135, 18385), (145, 18463), (Start: 159 @18553 has 1 MA's), (165, 18598), (169, 18628), (170, 18634), (172, 18652), (178, 18676), (180, 18685), (186, 18718), (187, 18724), (193, 18754), (203, 18793), (204, 18805), (206, 18814), (210, 18829), (211, 18832), (230, 18943), (231, 18946), (232, 18955), (233, 18961), (236, 18976), (237, 18979), (240, 19000), (246, 19030), (248, 19042), (251, 19075), (262, 19141), (269, 19186), (270, 19189), (275, 19216), (276, 19222), (284, 19276), (285, 19279), (302, 19366), (304, 19381), (307, 19393), (308, 19396), (320, 19462), (323, 19486), (325, 19507), (327, 19516), (339, 19576), (340, 19579), (348, 19615), (350, 19633), (353, 19645), (354, 19654), (359, 19681), (373, 19750), (375, 19768), (377, 19777), (378, 19789), (383, 19825), (388, 19855), (393, 19876), (399, 19900), (405, 19936), (412, 19990), (419, 20050), (425, 20092), (434, 20170), (442, 20227), (445, 20251), (450, 20305), (453, 20353), (461, 20419), (462, 20422),

Gene: DrDrey\_27 Start: 22776, Stop: 25172, Start Num: 52

Candidate Starts for DrDrey\_27:

(Start: 52 @22776 has 123 MA's), (97, 22953), (Start: 101 @22974 has 20 MA's), (139, 23121), (164, 23295), (169, 23328), (174, 23364), (193, 23457), (206, 23517), (211, 23535), (234, 23667), (242, 23712), (262, 23844), (269, 23889), (281, 23949), (301, 24063), (304, 24084), (312, 24123), (315, 24144), (317, 24159), (346, 24309), (348, 24315), (350, 24333), (361, 24387), (375, 24471), (392, 24564), (430, 24810), (453, 25026), (462, 25110), (469, 25143),

Gene: Drago\_19 Start: 17219, Stop: 19756, Start Num: 18

Candidate Starts for Drago\_19:

(16, 17207), (Start: 18 @17219 has 221 MA's), (28, 17240), (Start: 38 @17261 has 1 MA's), (48, 17300), (71, 17369), (73, 17378), (74, 17381), (81, 17399), (89, 17432), (91, 17447), (99, 17495), (117, 17600), (120, 17609), (134, 17651), (135, 17654), (145, 17732), (148, 17756), (Start: 159 @17822 has 1 MA's), (165, 17867), (169, 17897), (170, 17903), (172, 17921), (178, 17945), (180, 17954), (186, 17987), (187, 17993), (193, 18023), (203, 18062), (204, 18074), (206, 18083), (210, 18098), (211, 18101), (230, 18212), (232, 18224), (233, 18230), (236, 18245), (237, 18248), (240, 18269), (246, 18299), (248, 18311), (251, 18344), (262, 18410), (269, 18455), (270, 18458), (275, 18485), (276, 18491), (284, 18545), (285, 18548), (290, 18575), (304, 18650), (307, 18662), (308, 18665), (320, 18731), (323, 18755), (327, 18785), (336, 18827), (339, 18845), (340, 18848), (348, 18884), (350, 18902), (354, 18923), (359, 18950), (373, 19019), (375, 19037), (377, 19046), (378, 19058), (383, 19094), (388, 19124), (392, 19133), (393, 19145), (405, 19205), (412, 19259), (419, 19319), (425, 19361), (434, 19439), (442, 19496), (445, 19520), (450, 19574), (453, 19622), (459, 19664), (461, 19688), (462, 19691),

Gene: Duke13\_36 Start: 29781, Stop: 32336, Start Num: 18

Candidate Starts for Duke13\_36:

(12, 29724), (Start: 18 @29781 has 221 MA's), (81, 29976), (89, 30012), (91, 30027), (99, 30075), (119, 30186), (120, 30189), (135, 30234), (145, 30312), (148, 30336), (Start: 159 @30402 has 1 MA's), (165, 30447), (169, 30477), (170, 30483), (172, 30501), (178, 30525), (180, 30534), (186, 30567), (187, 30573), (193, 30603), (203, 30642), (204, 30654), (206, 30663), (210, 30678), (211,

30681), (230, 30792), (231, 30795), (232, 30804), (233, 30810), (236, 30825), (237, 30828), (240, 30849), (246, 30879), (248, 30891), (251, 30924), (269, 31035), (270, 31038), (275, 31065), (276, 31071), (284, 31125), (285, 31128), (304, 31230), (307, 31242), (308, 31245), (320, 31311), (323, 31335), (325, 31356), (327, 31365), (339, 31425), (340, 31428), (348, 31464), (350, 31482), (354, 31503), (359, 31530), (373, 31599), (375, 31617), (377, 31626), (378, 31638), (383, 31674), (393, 31725), (397, 31743), (405, 31785), (412, 31839), (425, 31941), (442, 32076), (445, 32100), (450, 32154), (456, 32223), (461, 32268), (462, 32271),

Gene: Dumbo\_26 Start: 21751, Stop: 24147, Start Num: 52

Candidate Starts for Dumbo\_26:

(Start: 52 @21751 has 123 MA's), (97, 21928), (Start: 101 @21949 has 20 MA's), (139, 22096), (164, 22270), (169, 22303), (174, 22339), (193, 22432), (206, 22492), (211, 22510), (234, 22642), (242, 22687), (262, 22819), (269, 22864), (281, 22924), (301, 23038), (304, 23059), (312, 23098), (315, 23119), (317, 23134), (346, 23284), (348, 23290), (350, 23308), (361, 23362), (375, 23446), (392, 23539), (430, 23785), (453, 24001), (462, 24085), (469, 24118),

Gene: Dusk\_25 Start: 21943, Stop: 24339, Start Num: 52

Candidate Starts for Dusk\_25:

(Start: 52 @21943 has 123 MA's), (97, 22120), (Start: 101 @22141 has 20 MA's), (139, 22288), (160, 22429), (164, 22462), (169, 22495), (174, 22531), (193, 22624), (206, 22684), (211, 22702), (225, 22783), (262, 23011), (269, 23056), (304, 23251), (305, 23257), (308, 23266), (315, 23311), (317, 23326), (348, 23482), (350, 23500), (352, 23509), (362, 23563), (375, 23638), (376, 23641), (411, 23851), (413, 23863), (430, 23977), (453, 24193), (462, 24277), (467, 24301), (469, 24310),

Gene: Dylan\_58 Start: 36190, Stop: 38700, Start Num: 35

Candidate Starts for Dylan\_58:

(Start: 35 @36190 has 27 MA's), (42, 36223), (60, 36292), (61, 36295), (68, 36319), (74, 36343), (83, 36367), (89, 36400), (124, 36607), (127, 36619), (128, 36622), (151, 36769), (152, 36799), (Start: 159 @36823 has 1 MA's), (165, 36853), (166, 36856), (169, 36883), (172, 36907), (179, 36937), (189, 36994), (203, 37054), (204, 37066), (210, 37090), (211, 37093), (217, 37135), (236, 37231), (237, 37234), (279, 37489), (304, 37633), (315, 37693), (324, 37765), (325, 37768), (344, 37864), (375, 38038), (378, 38059), (395, 38152), (398, 38164), (412, 38254), (423, 38329), (432, 38374), (455, 38575), (460, 38629), (465, 38644),

Gene: Easy2Say\_28 Start: 23534, Stop: 25930, Start Num: 52

Candidate Starts for Easy2Say\_28:

(Start: 52 @23534 has 123 MA's), (97, 23711), (Start: 101 @23732 has 20 MA's), (139, 23879), (160, 24020), (164, 24053), (169, 24086), (174, 24122), (193, 24215), (206, 24275), (211, 24293), (234, 24425), (242, 24470), (262, 24602), (269, 24647), (281, 24707), (301, 24821), (304, 24842), (312, 24881), (315, 24902), (317, 24917), (346, 25067), (348, 25073), (350, 25091), (361, 25145), (375, 25229), (392, 25322), (430, 25568), (453, 25784), (462, 25868), (469, 25901),

Gene: Eish\_18 Start: 17540, Stop: 20077, Start Num: 18

Candidate Starts for Eish\_18:

(Start: 18 @17540 has 221 MA's), (28, 17561), (Start: 38 @17582 has 1 MA's), (48, 17621), (71, 17690), (73, 17699), (74, 17702), (81, 17720), (89, 17753), (91, 17768), (99, 17816), (117, 17921), (120, 17930), (135, 17975), (145, 18053), (148, 18077), (Start: 159 @18143 has 1 MA's), (169, 18218), (170, 18224), (172, 18242), (178, 18266), (179, 18272), (180, 18275), (186, 18308), (187, 18314), (193, 18344), (199, 18365), (204, 18395), (206, 18404), (226, 18512), (229, 18524), (230, 18533), (231, 18536), (232, 18545), (233, 18551), (236, 18566), (237, 18569), (240, 18590), (246, 18620), (248, 18632), (251, 18665), (252, 18668), (262, 18731), (275, 18806), (276, 18812), (284, 18866), (285, 18869), (290, 18896), (304, 18971), (307, 18983), (308, 18986), (320, 19052), (325, 19097), (327, 19106), (339, 19166), (340, 19169), (348, 19205), (350, 19223), (354, 19244), (373,

19340), (375, 19358), (377, 19367), (378, 19379), (383, 19415), (388, 19445), (405, 19526), (412, 19580), (425, 19682), (442, 19817), (445, 19841), (450, 19895), (453, 19943), (459, 19985), (461, 20009), (462, 20012),

Gene: EleanorGeorge\_18 Start: 17568, Stop: 20105, Start Num: 18

Candidate Starts for EleanorGeorge\_18:

(16, 17556), (Start: 18 @17568 has 221 MA's), (28, 17589), (Start: 38 @17610 has 1 MA's), (48, 17649), (71, 17718), (73, 17727), (74, 17730), (81, 17748), (89, 17781), (91, 17796), (99, 17844), (119, 17955), (120, 17958), (128, 17988), (134, 18000), (135, 18003), (145, 18081), (148, 18105), (Start: 159 @18171 has 1 MA's), (165, 18216), (169, 18246), (170, 18252), (172, 18270), (178, 18294), (180, 18303), (186, 18336), (187, 18342), (193, 18372), (203, 18411), (204, 18423), (206, 18432), (210, 18447), (211, 18450), (230, 18561), (231, 18564), (232, 18573), (233, 18579), (236, 18594), (237, 18597), (240, 18618), (246, 18648), (248, 18660), (251, 18693), (269, 18804), (270, 18807), (275, 18834), (276, 18840), (284, 18894), (285, 18897), (302, 18984), (304, 18999), (307, 19011), (308, 19014), (320, 19080), (323, 19104), (325, 19125), (327, 19134), (339, 19194), (340, 19197), (348, 19233), (350, 19251), (353, 19263), (354, 19272), (359, 19299), (373, 19368), (375, 19386), (377, 19395), (378, 19407), (383, 19443), (388, 19473), (393, 19494), (399, 19518), (405, 19554), (412, 19608), (419, 19668), (425, 19710), (434, 19788), (442, 19845), (445, 19869), (450, 19923), (453, 19971), (459, 20013), (461, 20037), (462, 20040),

Gene: Elite2014\_25 Start: 21491, Stop: 23887, Start Num: 52

Candidate Starts for Elite2014\_25:

(Start: 52 @21491 has 123 MA's), (97, 21668), (Start: 101 @21689 has 20 MA's), (139, 21836), (164, 22010), (169, 22043), (174, 22079), (193, 22172), (206, 22232), (211, 22250), (234, 22382), (242, 22427), (262, 22559), (269, 22604), (281, 22664), (301, 22778), (304, 22799), (312, 22838), (315, 22859), (317, 22874), (346, 23024), (348, 23030), (350, 23048), (361, 23102), (375, 23186), (392, 23279), (430, 23525), (453, 23741), (462, 23825), (469, 23858),

Gene: Elph10\_27 Start: 21754, Stop: 24150, Start Num: 52

Candidate Starts for Elph10\_27:

(Start: 52 @21754 has 123 MA's), (97, 21931), (Start: 101 @21952 has 20 MA's), (139, 22099), (164, 22273), (169, 22306), (174, 22342), (193, 22435), (206, 22495), (211, 22513), (234, 22645), (242, 22690), (262, 22822), (269, 22867), (281, 22927), (301, 23041), (304, 23062), (312, 23101), (315, 23122), (317, 23137), (346, 23287), (348, 23293), (350, 23311), (361, 23365), (375, 23449), (392, 23542), (430, 23788), (453, 24004), (462, 24088), (469, 24121),

Gene: Emma\_18 Start: 17448, Stop: 19985, Start Num: 18

Candidate Starts for Emma\_18:

(16, 17436), (Start: 18 @17448 has 221 MA's), (28, 17469), (Start: 38 @17490 has 1 MA's), (48, 17529), (71, 17598), (73, 17607), (74, 17610), (81, 17628), (89, 17661), (91, 17676), (99, 17724), (119, 17835), (120, 17838), (128, 17868), (135, 17883), (145, 17961), (148, 17985), (Start: 159 @18051 has 1 MA's), (165, 18096), (169, 18126), (170, 18132), (172, 18150), (178, 18174), (180, 18183), (186, 18216), (187, 18222), (193, 18252), (203, 18291), (204, 18303), (206, 18312), (210, 18327), (211, 18330), (230, 18441), (231, 18444), (232, 18453), (233, 18459), (236, 18474), (237, 18477), (240, 18498), (246, 18528), (248, 18540), (251, 18573), (262, 18639), (269, 18684), (270, 18687), (275, 18714), (276, 18720), (284, 18774), (285, 18777), (302, 18864), (304, 18879), (307, 18891), (308, 18894), (320, 18960), (323, 18984), (325, 19005), (327, 19014), (336, 19056), (339, 19074), (340, 19077), (348, 19113), (350, 19131), (353, 19143), (354, 19152), (359, 19179), (373, 19248), (375, 19266), (377, 19275), (378, 19287), (383, 19323), (388, 19353), (393, 19374), (399, 19398), (405, 19434), (412, 19488), (419, 19548), (425, 19590), (442, 19725), (445, 19749), (450, 19803), (453, 19851), (459, 19893), (461, 19917), (462, 19920),

Gene: Emmina\_27 Start: 22115, Stop: 24511, Start Num: 52

Candidate Starts for Emmina\_27:

(Start: 52 @22115 has 123 MA's), (97, 22292), (Start: 101 @22313 has 20 MA's), (139, 22460), (164, 22634), (169, 22667), (174, 22703), (193, 22796), (206, 22856), (211, 22874), (234, 23006), (242, 23051), (262, 23183), (269, 23228), (281, 23288), (301, 23402), (304, 23423), (312, 23462), (315, 23483), (317, 23498), (346, 23648), (348, 23654), (350, 23672), (361, 23726), (375, 23810), (392, 23903), (430, 24149), (453, 24365), (462, 24449), (469, 24482),

Gene: Empress\_19 Start: 18749, Stop: 21286, Start Num: 18

Candidate Starts for Empress\_19:

(16, 18737), (Start: 18 @18749 has 221 MA's), (28, 18770), (Start: 38 @18791 has 1 MA's), (48, 18830), (71, 18899), (73, 18908), (74, 18911), (81, 18929), (91, 18977), (99, 19025), (119, 19136), (120, 19139), (135, 19184), (145, 19262), (148, 19286), (Start: 159 @19352 has 1 MA's), (165, 19397), (169, 19427), (170, 19433), (172, 19451), (178, 19475), (180, 19484), (186, 19517), (187, 19523), (193, 19553), (203, 19592), (204, 19604), (206, 19613), (210, 19628), (211, 19631), (230, 19742), (231, 19745), (232, 19754), (233, 19760), (236, 19775), (237, 19778), (240, 19799), (246, 19829), (248, 19841), (251, 19874), (269, 19985), (270, 19988), (275, 20015), (276, 20021), (284, 20075), (285, 20078), (304, 20180), (307, 20192), (308, 20195), (320, 20261), (323, 20285), (325, 20306), (327, 20315), (339, 20375), (340, 20378), (348, 20414), (350, 20432), (354, 20453), (359, 20480), (371, 20537), (373, 20549), (375, 20567), (377, 20576), (378, 20588), (383, 20624), (388, 20654), (392, 20663), (393, 20675), (405, 20735), (412, 20789), (419, 20849), (425, 20891), (442, 21026), (445, 21050), (450, 21104), (453, 21152), (456, 21173), (461, 21218), (462, 21221),

Gene: Enby\_19 Start: 17219, Stop: 19756, Start Num: 18

Candidate Starts for Enby\_19:

(16, 17207), (Start: 18 @17219 has 221 MA's), (28, 17240), (Start: 38 @17261 has 1 MA's), (48, 17300), (71, 17369), (73, 17378), (74, 17381), (81, 17399), (89, 17432), (91, 17447), (99, 17495), (117, 17600), (120, 17609), (134, 17651), (135, 17654), (145, 17732), (148, 17756), (Start: 159 @17822 has 1 MA's), (165, 17867), (169, 17897), (170, 17903), (172, 17921), (178, 17945), (180, 17954), (186, 17987), (187, 17993), (193, 18023), (203, 18062), (204, 18074), (206, 18083), (210, 18098), (211, 18101), (230, 18212), (232, 18224), (233, 18230), (236, 18245), (237, 18248), (240, 18269), (246, 18299), (248, 18311), (251, 18344), (262, 18410), (269, 18455), (270, 18458), (275, 18485), (276, 18491), (284, 18545), (285, 18548), (290, 18575), (304, 18650), (307, 18662), (308, 18665), (320, 18731), (323, 18755), (327, 18785), (336, 18827), (339, 18845), (340, 18848), (348, 18884), (350, 18902), (354, 18923), (359, 18950), (373, 19019), (375, 19037), (377, 19046), (378, 19058), (383, 19094), (388, 19124), (392, 19133), (393, 19145), (405, 19205), (412, 19259), (419, 19319), (425, 19361), (434, 19439), (442, 19496), (445, 19520), (450, 19574), (453, 19622), (459, 19664), (461, 19688), (462, 19691),

Gene: EniyanLRS\_40 Start: 28045, Stop: 30612, Start Num: 26

Candidate Starts for EniyanLRS\_40:

(Start: 26 @28045 has 6 MA's), (43, 28114), (77, 28237), (79, 28243), (81, 28246), (88, 28270), (90, 28291), (116, 28447), (118, 28453), (120, 28459), (128, 28489), (129, 28495), (135, 28516), (136, 28525), (144, 28585), (153, 28663), (170, 28762), (175, 28795), (179, 28810), (180, 28813), (187, 28852), (199, 28903), (203, 28921), (206, 28942), (208, 28948), (217, 29002), (230, 29071), (235, 29095), (238, 29116), (242, 29137), (244, 29146), (248, 29167), (251, 29200), (252, 29203), (259, 29254), (262, 29266), (273, 29332), (277, 29350), (283, 29389), (304, 29506), (313, 29551), (322, 29608), (325, 29632), (327, 29641), (329, 29659), (339, 29704), (346, 29737), (351, 29773), (382, 29947), (383, 29965), (384, 29971), (396, 30028), (441, 30352), (443, 30370), (448, 30421), (454, 30484), (461, 30559),

Gene: Eradicator\_18 Start: 17363, Stop: 19915, Start Num: 18

Candidate Starts for Eradicator\_18:

(Start: 18 @17363 has 221 MA's), (28, 17384), (55, 17453), (71, 17513), (73, 17522), (74, 17525), (89, 17576), (91, 17591), (99, 17639), (119, 17750), (120, 17753), (132, 17786), (134, 17795), (135, 17798), (145, 17876), (152, 17942), (160, 17975), (167, 18029), (169, 18041), (178, 18089), (180, 18098), (181, 18107), (188, 18140), (199, 18182), (202, 18197), (208, 18227), (209, 18233), (210, 18236), (211, 18239), (216, 18266), (219, 18287), (225, 18320), (232, 18362), (233, 18368), (234, 18371), (236, 18383), (237, 18386), (241, 18413), (246, 18437), (248, 18449), (251, 18482), (254, 18503), (265, 18575), (270, 18596), (287, 18707), (295, 18731), (296, 18734), (299, 18758), (304, 18788), (310, 18812), (315, 18848), (316, 18854), (317, 18863), (333, 18953), (336, 18977), (337, 18992), (346, 19034), (348, 19040), (355, 19085), (374, 19181), (375, 19196), (377, 19205), (380, 19229), (392, 19292), (412, 19418), (440, 19634), (445, 19679), (453, 19781), (465, 19859),

Gene: Erk16\_30 Start: 24319, Stop: 26589, Start Num: 101

Candidate Starts for Erk16\_30:

(Start: 101 @24319 has 20 MA's), (131, 24454), (133, 24463), (156, 24637), (158, 24643), (160, 24655), (185, 24808), (187, 24823), (190, 24838), (257, 25219), (258, 25225), (266, 25270), (282, 25357), (318, 25558), (319, 25564), (325, 25612), (331, 25642), (335, 25666), (365, 25855), (372, 25882), (378, 25930), (391, 26002), (399, 26041), (400, 26062), (403, 26077), (406, 26095), (408, 26125), (420, 26209), (451, 26410), (453, 26452), (474, 26578),

Gene: Estave1\_18 Start: 17517, Stop: 20006, Start Num: 18

Candidate Starts for Estave1\_18:

(Start: 18 @17517 has 221 MA's), (28, 17538), (Start: 38 @17559 has 1 MA's), (49, 17598), (71, 17667), (73, 17676), (74, 17679), (81, 17697), (89, 17730), (91, 17745), (100, 17793), (112, 17847), (120, 17883), (122, 17892), (132, 17910), (135, 17922), (137, 17934), (141, 17958), (142, 17961), (162, 18105), (165, 18114), (169, 18138), (172, 18162), (178, 18186), (179, 18192), (183, 18213), (187, 18234), (193, 18264), (201, 18294), (204, 18315), (223, 18408), (225, 18423), (226, 18432), (230, 18453), (231, 18456), (246, 18540), (247, 18543), (248, 18552), (250, 18579), (252, 18588), (256, 18627), (260, 18648), (262, 18651), (268, 18687), (272, 18708), (284, 18786), (285, 18789), (298, 18843), (307, 18903), (323, 18996), (325, 19017), (334, 19053), (343, 19107), (346, 19116), (358, 19194), (362, 19212), (368, 19248), (369, 19251), (373, 19269), (374, 19272), (375, 19287), (383, 19344), (385, 19356), (405, 19452), (414, 19539), (422, 19587), (424, 19611), (429, 19638), (430, 19647), (433, 19686), (438, 19725), (442, 19749), (444, 19770), (453, 19866), (456, 19887), (465, 19950), (469, 19977), (472, 19986),

Gene: Eureka\_26 Start: 22269, Stop: 24665, Start Num: 52

Candidate Starts for Eureka\_26:

(Start: 52 @22269 has 123 MA's), (97, 22446), (Start: 101 @22467 has 20 MA's), (139, 22614), (160, 22755), (164, 22788), (169, 22821), (174, 22857), (193, 22950), (206, 23010), (211, 23028), (225, 23109), (262, 23337), (269, 23382), (304, 23577), (305, 23583), (308, 23592), (315, 23637), (317, 23652), (348, 23808), (350, 23826), (352, 23835), (362, 23889), (375, 23964), (376, 23967), (411, 24177), (413, 24189), (430, 24303), (453, 24519), (462, 24603), (467, 24627), (469, 24636),

Gene: Familton\_59 Start: 36102, Stop: 38612, Start Num: 35

Candidate Starts for Familton\_59:

(Start: 35 @36102 has 27 MA's), (42, 36135), (60, 36204), (61, 36207), (68, 36231), (74, 36255), (83, 36279), (89, 36312), (124, 36519), (127, 36531), (128, 36534), (151, 36681), (152, 36711), (Start: 159 @36735 has 1 MA's), (165, 36765), (166, 36768), (169, 36795), (172, 36819), (179, 36849), (189, 36906), (194, 36930), (203, 36966), (204, 36978), (210, 37002), (211, 37005), (217, 37047), (236, 37143), (237, 37146), (279, 37401), (304, 37545), (315, 37605), (324, 37677), (325, 37680), (344, 37776), (375, 37950), (378, 37971), (395, 38064), (398, 38076), (412, 38166), (423, 38241), (432, 38286), (455, 38487), (460, 38541), (465, 38556),

Gene: Fancypants\_18 Start: 17408, Stop: 19945, Start Num: 18

Candidate Starts for Fancypants\_18:

(16, 17396), (Start: 18 @17408 has 221 MA's), (28, 17429), (Start: 38 @17450 has 1 MA's), (48, 17489), (71, 17558), (73, 17567), (74, 17570), (81, 17588), (89, 17621), (91, 17636), (99, 17684), (119, 17795), (120, 17798), (128, 17828), (134, 17840), (135, 17843), (145, 17921), (148, 17945), (Start: 159 @18011 has 1 MA's), (165, 18056), (169, 18086), (170, 18092), (172, 18110), (178, 18134), (180, 18143), (186, 18176), (187, 18182), (193, 18212), (203, 18251), (204, 18263), (206, 18272), (210, 18287), (211, 18290), (230, 18401), (231, 18404), (232, 18413), (233, 18419), (236, 18434), (237, 18437), (240, 18458), (246, 18488), (248, 18500), (251, 18533), (269, 18644), (270, 18647), (275, 18674), (276, 18680), (284, 18734), (285, 18737), (304, 18839), (307, 18851), (308, 18854), (320, 18920), (323, 18944), (325, 18965), (327, 18974), (339, 19034), (340, 19037), (341, 19049), (348, 19073), (350, 19091), (353, 19103), (354, 19112), (359, 19139), (373, 19208), (375, 19226), (377, 19235), (378, 19247), (383, 19283), (388, 19313), (393, 19334), (399, 19358), (405, 19394), (412, 19448), (419, 19508), (425, 19550), (434, 19628), (442, 19685), (445, 19709), (450, 19763), (453, 19811), (459, 19853), (461, 19877), (462, 19880),

Gene: Fastidio\_18 Start: 17365, Stop: 19902, Start Num: 18

Candidate Starts for Fastidio\_18:

(16, 17353), (Start: 18 @17365 has 221 MA's), (28, 17386), (Start: 38 @17407 has 1 MA's), (48, 17446), (71, 17515), (73, 17524), (74, 17527), (81, 17545), (89, 17578), (91, 17593), (99, 17641), (119, 17752), (120, 17755), (128, 17785), (134, 17797), (135, 17800), (145, 17878), (148, 17902), (Start: 159 @17968 has 1 MA's), (165, 18013), (169, 18043), (170, 18049), (172, 18067), (178, 18091), (180, 18100), (186, 18133), (187, 18139), (193, 18169), (203, 18208), (204, 18220), (206, 18229), (210, 18244), (211, 18247), (230, 18358), (231, 18361), (232, 18370), (233, 18376), (236, 18391), (237, 18394), (240, 18415), (246, 18445), (248, 18457), (251, 18490), (269, 18601), (270, 18604), (275, 18631), (276, 18637), (284, 18691), (285, 18694), (302, 18781), (304, 18796), (307, 18808), (308, 18811), (320, 18877), (322, 18898), (323, 18901), (325, 18922), (336, 18973), (339, 18991), (340, 18994), (348, 19030), (350, 19048), (353, 19060), (354, 19069), (371, 19153), (373, 19165), (375, 19183), (377, 19192), (378, 19204), (383, 19240), (388, 19270), (399, 19315), (405, 19351), (412, 19405), (425, 19507), (434, 19585), (442, 19642), (445, 19666), (450, 19720), (453, 19768), (459, 19810), (461, 19834), (462, 19837),

Gene: Filch\_27 Start: 22042, Stop: 24438, Start Num: 52

Candidate Starts for Filch\_27:

(Start: 52 @22042 has 123 MA's), (97, 22219), (Start: 101 @22240 has 20 MA's), (139, 22387), (160, 22528), (164, 22561), (169, 22594), (174, 22630), (193, 22723), (206, 22783), (211, 22801), (234, 22933), (242, 22978), (262, 23110), (269, 23155), (281, 23215), (301, 23329), (304, 23350), (312, 23389), (315, 23410), (317, 23425), (346, 23575), (348, 23581), (350, 23599), (361, 23653), (375, 23737), (392, 23830), (430, 24076), (453, 24292), (462, 24376), (469, 24409),

Gene: Filuzino\_18 Start: 17390, Stop: 19927, Start Num: 18

Candidate Starts for Filuzino\_18:

(16, 17378), (Start: 18 @17390 has 221 MA's), (28, 17411), (Start: 38 @17432 has 1 MA's), (48, 17471), (71, 17540), (73, 17549), (74, 17552), (81, 17570), (89, 17603), (91, 17618), (99, 17666), (119, 17777), (120, 17780), (128, 17810), (135, 17825), (145, 17903), (148, 17927), (Start: 159 @17993 has 1 MA's), (165, 18038), (169, 18068), (170, 18074), (172, 18092), (178, 18116), (180, 18125), (186, 18158), (187, 18164), (193, 18194), (203, 18233), (204, 18245), (206, 18254), (210, 18269), (211, 18272), (230, 18383), (231, 18386), (232, 18395), (233, 18401), (236, 18416), (237, 18419), (240, 18440), (246, 18470), (248, 18482), (251, 18515), (269, 18626), (270, 18629), (275, 18656), (276, 18662), (284, 18716), (285, 18719), (304, 18821), (307, 18833), (308, 18836), (320, 18902), (323, 18926), (325, 18947), (327, 18956), (339, 19016), (340, 19019), (348, 19055), (350, 19073), (353, 19085), (354, 19094), (359, 19121), (373, 19190), (375, 19208), (377, 19217), (378, 19229), (383, 19265), (388, 19295), (393, 19316), (399, 19340), (405, 19376), (412, 19430), (419, 19490), (425, 19532), (434, 19610), (442, 19667), (445, 19691), (450, 19745), (453, 19793), (459,

19835), (461, 19859), (462, 19862),

Gene: FireRed\_26 Start: 22312, Stop: 24708, Start Num: 52

Candidate Starts for FireRed\_26:

(Start: 52 @22312 has 123 MA's), (97, 22489), (Start: 101 @22510 has 20 MA's), (139, 22657), (160, 22798), (164, 22831), (169, 22864), (174, 22900), (193, 22993), (206, 23053), (211, 23071), (234, 23203), (242, 23248), (262, 23380), (269, 23425), (281, 23485), (301, 23599), (304, 23620), (312, 23659), (315, 23680), (317, 23695), (346, 23845), (348, 23851), (350, 23869), (361, 23923), (375, 24007), (392, 24100), (430, 24346), (453, 24562), (462, 24646), (469, 24679),

Gene: Firecracker\_59 Start: 36292, Stop: 38802, Start Num: 35

Candidate Starts for Firecracker\_59:

(Start: 35 @36292 has 27 MA's), (42, 36325), (60, 36394), (61, 36397), (68, 36421), (74, 36445), (83, 36469), (89, 36502), (124, 36709), (127, 36721), (128, 36724), (151, 36871), (152, 36901), (Start: 159 @36925 has 1 MA's), (165, 36955), (166, 36958), (169, 36985), (172, 37009), (179, 37039), (189, 37096), (203, 37156), (204, 37168), (210, 37192), (211, 37195), (217, 37237), (236, 37333), (237, 37336), (269, 37540), (279, 37591), (304, 37735), (315, 37795), (324, 37867), (325, 37870), (344, 37966), (375, 38140), (378, 38161), (395, 38254), (398, 38266), (412, 38356), (423, 38431), (432, 38476), (455, 38677), (460, 38731), (465, 38746),

Gene: Firehouse51\_19 Start: 17957, Stop: 20494, Start Num: 18

Candidate Starts for Firehouse51\_19:

(16, 17945), (Start: 18 @17957 has 221 MA's), (28, 17978), (Start: 38 @17999 has 1 MA's), (48, 18038), (71, 18107), (73, 18116), (74, 18119), (81, 18137), (89, 18170), (91, 18185), (99, 18233), (119, 18344), (120, 18347), (128, 18377), (134, 18389), (135, 18392), (145, 18470), (148, 18494), (Start: 159 @18560 has 1 MA's), (165, 18605), (169, 18635), (170, 18641), (172, 18659), (178, 18683), (180, 18692), (186, 18725), (187, 18731), (193, 18761), (203, 18800), (204, 18812), (206, 18821), (210, 18836), (211, 18839), (230, 18950), (231, 18953), (232, 18962), (233, 18968), (236, 18983), (237, 18986), (240, 19007), (246, 19037), (248, 19049), (251, 19082), (269, 19193), (270, 19196), (275, 19223), (276, 19229), (284, 19283), (285, 19286), (304, 19388), (307, 19400), (308, 19403), (320, 19469), (323, 19493), (325, 19514), (327, 19523), (339, 19583), (340, 19586), (348, 19622), (350, 19640), (353, 19652), (354, 19661), (359, 19688), (373, 19757), (375, 19775), (377, 19784), (378, 19796), (383, 19832), (388, 19862), (393, 19883), (399, 19907), (405, 19943), (412, 19997), (419, 20057), (425, 20099), (434, 20177), (442, 20234), (445, 20258), (450, 20312), (453, 20360), (459, 20402), (461, 20426), (462, 20429),

Gene: Flathead\_19 Start: 17265, Stop: 19802, Start Num: 18

Candidate Starts for Flathead\_19:

(16, 17253), (Start: 18 @17265 has 221 MA's), (28, 17286), (Start: 38 @17307 has 1 MA's), (48, 17346), (71, 17415), (73, 17424), (74, 17427), (81, 17445), (89, 17478), (91, 17493), (99, 17541), (119, 17652), (120, 17655), (128, 17685), (134, 17697), (135, 17700), (145, 17778), (148, 17802), (Start: 159 @17868 has 1 MA's), (165, 17913), (169, 17943), (170, 17949), (172, 17967), (178, 17991), (180, 18000), (186, 18033), (187, 18039), (193, 18069), (203, 18108), (204, 18120), (206, 18129), (210, 18144), (211, 18147), (230, 18258), (231, 18261), (232, 18270), (233, 18276), (236, 18291), (237, 18294), (240, 18315), (246, 18345), (248, 18357), (251, 18390), (262, 18456), (269, 18501), (270, 18504), (275, 18531), (276, 18537), (284, 18591), (285, 18594), (302, 18681), (304, 18696), (307, 18708), (308, 18711), (320, 18777), (323, 18801), (325, 18822), (327, 18831), (339, 18891), (340, 18894), (348, 18930), (350, 18948), (353, 18960), (354, 18969), (359, 18996), (373, 19065), (375, 19083), (377, 19092), (378, 19104), (383, 19140), (388, 19170), (393, 19191), (399, 19215), (405, 19251), (412, 19305), (419, 19365), (425, 19407), (442, 19542), (445, 19566), (450, 19620), (453, 19668), (459, 19710), (461, 19734), (462, 19737),

Gene: Florinda\_18 Start: 17419, Stop: 19956, Start Num: 18

Candidate Starts for Florinda\_18:

(Start: 18 @17419 has 221 MA's), (28, 17440), (Start: 38 @17461 has 1 MA's), (48, 17500), (71, 17569), (73, 17578), (74, 17581), (81, 17599), (89, 17632), (91, 17647), (99, 17695), (119, 17806), (120, 17809), (128, 17839), (135, 17854), (145, 17932), (148, 17956), (Start: 159 @18022 has 1 MA's), (165, 18067), (169, 18097), (170, 18103), (172, 18121), (178, 18145), (180, 18154), (186, 18187), (187, 18193), (193, 18223), (203, 18262), (206, 18283), (210, 18298), (211, 18301), (231, 18415), (232, 18424), (233, 18430), (237, 18448), (240, 18469), (246, 18499), (248, 18511), (251, 18544), (269, 18655), (270, 18658), (275, 18685), (276, 18691), (284, 18745), (285, 18748), (302, 18835), (304, 18850), (308, 18865), (323, 18955), (325, 18976), (327, 18985), (339, 19045), (340, 19048), (346, 19078), (350, 19102), (354, 19123), (373, 19219), (375, 19237), (377, 19246), (378, 19258), (383, 19294), (388, 19324), (393, 19345), (399, 19369), (405, 19405), (412, 19459), (419, 19519), (425, 19561), (434, 19639), (442, 19696), (445, 19720), (450, 19774), (453, 19822), (459, 19864), (461, 19888), (462, 19891),

Gene: Flypotenuse\_24 Start: 21900, Stop: 24296, Start Num: 52

Candidate Starts for Flypotenuse\_24:

(Start: 52 @21900 has 123 MA's), (97, 22077), (Start: 101 @22098 has 20 MA's), (139, 22245), (160, 22386), (164, 22419), (169, 22452), (174, 22488), (193, 22581), (206, 22641), (211, 22659), (234, 22791), (262, 22968), (269, 23013), (301, 23187), (304, 23208), (312, 23247), (315, 23268), (317, 23283), (348, 23439), (350, 23457), (361, 23511), (375, 23595), (427, 23919), (453, 24150), (462, 24234), (469, 24267),

Gene: FoulBall\_58 Start: 36096, Stop: 38606, Start Num: 35

Candidate Starts for FoulBall\_58:

(Start: 35 @36096 has 27 MA's), (42, 36129), (60, 36198), (61, 36201), (68, 36225), (74, 36249), (83, 36273), (89, 36306), (124, 36513), (127, 36525), (128, 36528), (151, 36675), (152, 36705), (Start: 159 @36729 has 1 MA's), (165, 36759), (166, 36762), (169, 36789), (172, 36813), (179, 36843), (189, 36900), (194, 36924), (203, 36960), (204, 36972), (210, 36996), (211, 36999), (217, 37041), (236, 37137), (237, 37140), (279, 37395), (304, 37539), (315, 37599), (324, 37671), (325, 37674), (344, 37770), (375, 37944), (378, 37965), (395, 38058), (398, 38070), (412, 38160), (423, 38235), (432, 38280), (455, 38481), (460, 38535), (465, 38550),

Gene: Frankie\_19 Start: 17503, Stop: 20040, Start Num: 18

Candidate Starts for Frankie\_19:

(Start: 18 @17503 has 221 MA's), (28, 17524), (Start: 38 @17545 has 1 MA's), (48, 17584), (71, 17653), (73, 17662), (74, 17665), (81, 17683), (89, 17716), (91, 17731), (99, 17779), (119, 17890), (120, 17893), (128, 17923), (135, 17938), (145, 18016), (148, 18040), (Start: 159 @18106 has 1 MA's), (165, 18151), (169, 18181), (170, 18187), (172, 18205), (178, 18229), (180, 18238), (186, 18271), (187, 18277), (193, 18307), (203, 18346), (206, 18367), (210, 18382), (212, 18388), (237, 18532), (240, 18553), (246, 18583), (248, 18595), (251, 18628), (260, 18691), (262, 18694), (275, 18769), (276, 18775), (284, 18829), (285, 18832), (290, 18859), (293, 18868), (304, 18934), (307, 18946), (308, 18949), (320, 19015), (322, 19036), (323, 19039), (325, 19060), (336, 19111), (339, 19129), (340, 19132), (346, 19162), (350, 19186), (354, 19207), (361, 19240), (373, 19303), (375, 19321), (377, 19330), (378, 19342), (388, 19408), (392, 19417), (393, 19429), (419, 19603), (425, 19645), (434, 19723), (442, 19780), (445, 19804), (450, 19858), (453, 19906), (461, 19972), (462, 19975),

Gene: FreddyB\_18 Start: 17407, Stop: 19959, Start Num: 18

Candidate Starts for FreddyB\_18:

(Start: 18 @17407 has 221 MA's), (48, 17488), (71, 17557), (73, 17566), (74, 17569), (81, 17587), (91, 17635), (98, 17680), (119, 17794), (120, 17797), (123, 17809), (132, 17830), (134, 17839), (135, 17842), (142, 17890), (145, 17920), (152, 17986), (160, 18019), (165, 18055), (168, 18079), (179, 18139), (180, 18142), (183, 18160), (197, 18223), (199, 18226), (203, 18244), (206, 18265), (211,

18283), (216, 18310), (219, 18331), (225, 18364), (232, 18406), (233, 18412), (234, 18415), (237, 18430), (241, 18457), (246, 18481), (248, 18493), (251, 18526), (265, 18619), (284, 18727), (287, 18751), (295, 18775), (296, 18778), (299, 18802), (304, 18832), (310, 18856), (315, 18892), (316, 18898), (317, 18907), (322, 18934), (333, 18997), (336, 19021), (337, 19036), (346, 19078), (355, 19129), (374, 19225), (375, 19240), (377, 19249), (380, 19273), (392, 19336), (399, 19372), (440, 19678), (445, 19723), (453, 19825),

Gene: Fruitloop\_18 Start: 17429, Stop: 19966, Start Num: 18

Candidate Starts for Fruitloop\_18:

(16, 17417), (Start: 18 @17429 has 221 MA's), (28, 17450), (Start: 38 @17471 has 1 MA's), (48, 17510), (71, 17579), (73, 17588), (74, 17591), (81, 17609), (89, 17642), (91, 17657), (99, 17705), (119, 17816), (120, 17819), (128, 17849), (134, 17861), (135, 17864), (145, 17942), (148, 17966), (Start: 159 @18032 has 1 MA's), (165, 18077), (169, 18107), (170, 18113), (172, 18131), (178, 18155), (180, 18164), (186, 18197), (187, 18203), (193, 18233), (203, 18272), (204, 18284), (206, 18293), (210, 18308), (211, 18311), (230, 18422), (231, 18425), (232, 18434), (233, 18440), (236, 18455), (237, 18458), (240, 18479), (246, 18509), (248, 18521), (251, 18554), (269, 18665), (270, 18668), (275, 18695), (276, 18701), (284, 18755), (285, 18758), (302, 18845), (304, 18860), (307, 18872), (308, 18875), (320, 18941), (323, 18965), (325, 18986), (327, 18995), (339, 19055), (340, 19058), (348, 19094), (350, 19112), (353, 19124), (354, 19133), (359, 19160), (373, 19229), (375, 19247), (377, 19256), (378, 19268), (383, 19304), (388, 19334), (393, 19355), (399, 19379), (405, 19415), (412, 19469), (419, 19529), (425, 19571), (434, 19649), (442, 19706), (445, 19730), (450, 19784), (453, 19832), (459, 19874), (461, 19898), (462, 19901),

Gene: GUmbie\_18 Start: 17402, Stop: 19939, Start Num: 18

Candidate Starts for GUmbie\_18:

(Start: 18 @17402 has 221 MA's), (28, 17423), (Start: 38 @17444 has 1 MA's), (48, 17483), (71, 17552), (73, 17561), (74, 17564), (81, 17582), (89, 17615), (91, 17630), (117, 17783), (120, 17792), (135, 17837), (147, 17936), (148, 17939), (Start: 159 @18005 has 1 MA's), (169, 18080), (170, 18086), (178, 18128), (179, 18134), (180, 18137), (186, 18170), (187, 18176), (193, 18206), (199, 18227), (204, 18257), (206, 18266), (210, 18281), (211, 18284), (230, 18395), (231, 18398), (232, 18407), (233, 18413), (236, 18428), (237, 18431), (240, 18452), (246, 18482), (248, 18494), (251, 18527), (269, 18638), (270, 18641), (275, 18668), (276, 18674), (284, 18728), (285, 18731), (302, 18818), (304, 18833), (307, 18845), (308, 18848), (320, 18914), (323, 18938), (325, 18959), (327, 18968), (336, 19010), (339, 19028), (340, 19031), (346, 19061), (350, 19085), (353, 19097), (354, 19106), (373, 19202), (375, 19220), (377, 19229), (378, 19241), (383, 19277), (388, 19307), (392, 19316), (393, 19328), (405, 19388), (412, 19442), (419, 19502), (425, 19544), (442, 19679), (445, 19703), (450, 19757), (453, 19805), (459, 19847), (461, 19871), (462, 19874),

Gene: Gage\_28 Start: 22274, Stop: 24670, Start Num: 52

Candidate Starts for Gage\_28:

(Start: 52 @22274 has 123 MA's), (97, 22451), (Start: 101 @22472 has 20 MA's), (139, 22619), (160, 22760), (164, 22793), (169, 22826), (174, 22862), (193, 22955), (206, 23015), (211, 23033), (234, 23165), (242, 23210), (262, 23342), (269, 23387), (281, 23447), (301, 23561), (304, 23582), (312, 23621), (315, 23642), (317, 23657), (346, 23807), (348, 23813), (350, 23831), (361, 23885), (375, 23969), (392, 24062), (430, 24308), (453, 24524), (462, 24608), (469, 24641),

Gene: Gaia\_21 Start: 19931, Stop: 22501, Start Num: 15

Candidate Starts for Gaia\_21:

(Start: 15 @19931 has 2 MA's), (41, 20021), (64, 20090), (67, 20099), (69, 20102), (84, 20156), (86, 20168), (96, 20216), (100, 20261), (114, 20333), (120, 20354), (126, 20375), (134, 20396), (135, 20399), (152, 20543), (160, 20576), (170, 20633), (180, 20684), (183, 20702), (204, 20798), (206, 20807), (208, 20813), (210, 20822), (211, 20825), (216, 20852), (219, 20873), (225, 20906), (226, 20915), (230, 20936), (232, 20948), (236, 20969), (246, 21023), (248, 21035), (251, 21068), (263,

21143), (268, 21170), (287, 21293), (296, 21320), (299, 21344), (304, 21374), (310, 21398), (316, 21440), (317, 21449), (337, 21578), (342, 21605), (353, 21656), (374, 21767), (375, 21782), (421, 22073), (442, 22241), (445, 22265), (459, 22409), (462, 22436), (464, 22442), (465, 22445),

Gene: Galactic\_18 Start: 17394, Stop: 19931, Start Num: 18

Candidate Starts for Galactic\_18:

(16, 17382), (Start: 18 @17394 has 221 MA's), (28, 17415), (Start: 38 @17436 has 1 MA's), (48, 17475), (71, 17544), (73, 17553), (74, 17556), (81, 17574), (89, 17607), (91, 17622), (99, 17670), (119, 17781), (120, 17784), (128, 17814), (135, 17829), (145, 17907), (148, 17931), (Start: 159 @17997 has 1 MA's), (165, 18042), (169, 18072), (170, 18078), (172, 18096), (178, 18120), (180, 18129), (186, 18162), (187, 18168), (193, 18198), (203, 18237), (204, 18249), (206, 18258), (210, 18273), (211, 18276), (230, 18387), (231, 18390), (232, 18399), (233, 18405), (236, 18420), (237, 18423), (240, 18444), (246, 18474), (248, 18486), (251, 18519), (269, 18630), (270, 18633), (275, 18660), (276, 18666), (284, 18720), (285, 18723), (304, 18825), (307, 18837), (308, 18840), (320, 18906), (323, 18930), (325, 18951), (327, 18960), (339, 19020), (340, 19023), (348, 19059), (350, 19077), (353, 19089), (354, 19098), (359, 19125), (373, 19194), (375, 19212), (377, 19221), (378, 19233), (383, 19269), (388, 19299), (393, 19320), (399, 19344), (405, 19380), (412, 19434), (419, 19494), (425, 19536), (434, 19614), (442, 19671), (445, 19695), (450, 19749), (453, 19797), (459, 19839), (461, 19863), (462, 19866),

Gene: Gandolph\_18 Start: 17413, Stop: 19965, Start Num: 18

Candidate Starts for Gandolph\_18:

(Start: 18 @17413 has 221 MA's), (48, 17494), (71, 17563), (73, 17572), (74, 17575), (81, 17593), (91, 17641), (98, 17686), (119, 17800), (120, 17803), (123, 17815), (132, 17836), (134, 17845), (135, 17848), (142, 17896), (145, 17926), (152, 17992), (160, 18025), (165, 18061), (168, 18085), (179, 18145), (180, 18148), (183, 18166), (197, 18229), (199, 18232), (203, 18250), (206, 18271), (211, 18289), (216, 18316), (219, 18337), (225, 18370), (232, 18412), (233, 18418), (234, 18421), (237, 18436), (241, 18463), (242, 18466), (246, 18487), (248, 18499), (251, 18532), (265, 18625), (284, 18733), (287, 18757), (290, 18763), (295, 18781), (296, 18784), (299, 18808), (304, 18838), (310, 18862), (315, 18898), (316, 18904), (317, 18913), (322, 18940), (333, 19003), (336, 19027), (337, 19042), (346, 19084), (355, 19135), (374, 19231), (375, 19246), (377, 19255), (380, 19279), (392, 19342), (399, 19378), (440, 19684), (445, 19729), (453, 19831),

Gene: Gator\_24 Start: 21899, Stop: 24295, Start Num: 52

Candidate Starts for Gator\_24:

(Start: 52 @21899 has 123 MA's), (97, 22076), (Start: 101 @22097 has 20 MA's), (139, 22244), (160, 22385), (164, 22418), (169, 22451), (174, 22487), (193, 22580), (206, 22640), (211, 22658), (225, 22739), (262, 22967), (269, 23012), (304, 23207), (305, 23213), (308, 23222), (315, 23267), (317, 23282), (348, 23438), (350, 23456), (352, 23465), (362, 23519), (375, 23594), (376, 23597), (411, 23807), (413, 23819), (430, 23933), (453, 24149), (462, 24233), (467, 24257), (469, 24266),

Gene: Gemini\_29 Start: 22791, Stop: 25187, Start Num: 52

Candidate Starts for Gemini\_29:

(Start: 52 @22791 has 123 MA's), (97, 22968), (Start: 101 @22989 has 20 MA's), (139, 23136), (160, 23277), (164, 23310), (169, 23343), (174, 23379), (193, 23472), (206, 23532), (211, 23550), (234, 23682), (242, 23727), (262, 23859), (269, 23904), (281, 23964), (301, 24078), (304, 24099), (312, 24138), (315, 24159), (317, 24174), (346, 24324), (348, 24330), (350, 24348), (361, 24402), (375, 24486), (392, 24579), (430, 24825), (453, 25041), (462, 25125), (469, 25158),

Gene: Geralt\_18 Start: 17396, Stop: 19933, Start Num: 18

Candidate Starts for Geralt\_18:

(Start: 18 @17396 has 221 MA's), (28, 17417), (Start: 38 @17438 has 1 MA's), (48, 17477), (71, 17546), (73, 17555), (74, 17558), (81, 17576), (91, 17624), (99, 17672), (119, 17783), (120, 17786),

(135, 17831), (145, 17909), (148, 17933), (Start: 159 @17999 has 1 MA's), (169, 18074), (170, 18080), (172, 18098), (178, 18122), (180, 18131), (186, 18164), (187, 18170), (193, 18200), (199, 18221), (204, 18251), (206, 18260), (226, 18368), (229, 18380), (230, 18389), (231, 18392), (233, 18407), (236, 18422), (237, 18425), (240, 18446), (248, 18488), (251, 18521), (269, 18632), (270, 18635), (275, 18662), (276, 18668), (284, 18722), (285, 18725), (290, 18752), (304, 18827), (307, 18839), (308, 18842), (320, 18908), (322, 18929), (323, 18932), (325, 18953), (327, 18962), (336, 19004), (339, 19022), (340, 19025), (346, 19055), (350, 19079), (353, 19091), (354, 19100), (373, 19196), (375, 19214), (377, 19223), (378, 19235), (383, 19271), (388, 19301), (392, 19310), (393, 19322), (405, 19382), (412, 19436), (419, 19496), (425, 19538), (442, 19673), (445, 19697), (450, 19751), (453, 19799), (459, 19841), (461, 19865), (462, 19868),

Gene: GigiOuiOui\_18 Start: 17527, Stop: 20064, Start Num: 18

Candidate Starts for GigiOuiOui\_18:

(Start: 18 @17527 has 221 MA's), (28, 17548), (Start: 38 @17569 has 1 MA's), (48, 17608), (71, 17677), (73, 17686), (74, 17689), (81, 17707), (91, 17755), (117, 17908), (120, 17917), (135, 17962), (147, 18061), (148, 18064), (Start: 159 @18130 has 1 MA's), (169, 18205), (170, 18211), (172, 18229), (178, 18253), (179, 18259), (180, 18262), (186, 18295), (187, 18301), (193, 18331), (199, 18352), (204, 18382), (206, 18391), (210, 18406), (211, 18409), (230, 18520), (231, 18523), (232, 18532), (233, 18538), (236, 18553), (237, 18556), (240, 18577), (246, 18607), (248, 18619), (251, 18652), (269, 18763), (270, 18766), (275, 18793), (276, 18799), (284, 18853), (285, 18856), (304, 18958), (307, 18970), (308, 18973), (320, 19039), (323, 19063), (325, 19084), (327, 19093), (339, 19153), (340, 19156), (348, 19192), (350, 19210), (353, 19222), (354, 19231), (359, 19258), (371, 19315), (373, 19327), (375, 19345), (377, 19354), (378, 19366), (383, 19402), (388, 19432), (392, 19441), (393, 19453), (405, 19513), (412, 19567), (419, 19627), (425, 19669), (442, 19804), (445, 19828), (450, 19882), (453, 19930), (459, 19972), (461, 19996), (462, 19999),

Gene: Girafales\_19 Start: 17227, Stop: 19764, Start Num: 18

Candidate Starts for Girafales\_19:

(Start: 18 @17227 has 221 MA's), (28, 17248), (Start: 38 @17269 has 1 MA's), (48, 17308), (71, 17377), (73, 17386), (74, 17389), (81, 17407), (89, 17440), (91, 17455), (99, 17503), (119, 17614), (120, 17617), (128, 17647), (135, 17662), (145, 17740), (148, 17764), (Start: 159 @17830 has 1 MA's), (165, 17875), (169, 17905), (170, 17911), (172, 17929), (178, 17953), (180, 17962), (186, 17995), (187, 18001), (193, 18031), (203, 18070), (206, 18091), (210, 18106), (211, 18109), (231, 18223), (232, 18232), (233, 18238), (237, 18256), (240, 18277), (246, 18307), (248, 18319), (251, 18352), (269, 18463), (270, 18466), (275, 18493), (276, 18499), (284, 18553), (285, 18556), (302, 18643), (304, 18658), (308, 18673), (323, 18763), (325, 18784), (327, 18793), (339, 18853), (340, 18856), (346, 18886), (350, 18910), (354, 18931), (373, 19027), (375, 19045), (377, 19054), (378, 19066), (383, 19102), (388, 19132), (393, 19153), (399, 19177), (405, 19213), (412, 19267), (419, 19327), (425, 19369), (434, 19447), (442, 19504), (445, 19528), (450, 19582), (453, 19630), (459, 19672), (461, 19696), (462, 19699),

Gene: Girr\_18 Start: 17371, Stop: 19908, Start Num: 18

Candidate Starts for Girr\_18:

(Start: 18 @17371 has 221 MA's), (28, 17392), (Start: 38 @17413 has 1 MA's), (48, 17452), (71, 17521), (73, 17530), (74, 17533), (81, 17551), (89, 17584), (91, 17599), (117, 17752), (120, 17761), (135, 17806), (147, 17905), (148, 17908), (Start: 159 @17974 has 1 MA's), (169, 18049), (170, 18055), (178, 18097), (179, 18103), (180, 18106), (186, 18139), (187, 18145), (193, 18175), (199, 18196), (204, 18226), (206, 18235), (210, 18250), (211, 18253), (230, 18364), (231, 18367), (232, 18376), (233, 18382), (236, 18397), (237, 18400), (240, 18421), (246, 18451), (248, 18463), (251, 18496), (269, 18607), (270, 18610), (275, 18637), (276, 18643), (284, 18697), (285, 18700), (302, 18787), (304, 18802), (307, 18814), (308, 18817), (320, 18883), (323, 18907), (325, 18928), (327, 18937), (336, 18979), (339, 18997), (340, 19000), (346, 19030), (350, 19054), (353, 19066), (354, 19075), (373, 19171), (375, 19189), (377, 19198), (378, 19210), (383, 19246), (388, 19276), (392,

19285), (393, 19297), (405, 19357), (412, 19411), (419, 19471), (425, 19513), (442, 19648), (445, 19672), (450, 19726), (453, 19774), (459, 19816), (461, 19840), (462, 19843),

Gene: Giuseppe\_30 Start: 24308, Stop: 26578, Start Num: 101

Candidate Starts for Giuseppe\_30:

(Start: 101 @24308 has 20 MA's), (131, 24443), (133, 24452), (156, 24626), (158, 24632), (160, 24644), (185, 24797), (187, 24812), (190, 24827), (257, 25208), (258, 25214), (266, 25259), (282, 25346), (318, 25547), (319, 25553), (325, 25601), (331, 25631), (335, 25655), (365, 25844), (372, 25871), (378, 25919), (391, 25991), (399, 26030), (400, 26051), (403, 26066), (406, 26084), (408, 26114), (420, 26198), (451, 26399), (453, 26441), (474, 26567),

Gene: Glexan\_24 Start: 21900, Stop: 24296, Start Num: 52

Candidate Starts for Glexan\_24:

(Start: 52 @21900 has 123 MA's), (97, 22077), (Start: 101 @22098 has 20 MA's), (139, 22245), (160, 22386), (164, 22419), (169, 22452), (174, 22488), (193, 22581), (206, 22641), (211, 22659), (234, 22791), (262, 22968), (269, 23013), (301, 23187), (304, 23208), (312, 23247), (315, 23268), (317, 23283), (348, 23439), (350, 23457), (361, 23511), (375, 23595), (427, 23919), (453, 24150), (462, 24234), (469, 24267),

Gene: Goku\_26 Start: 21998, Stop: 24394, Start Num: 52

Candidate Starts for Goku\_26:

(Start: 52 @21998 has 123 MA's), (97, 22175), (Start: 101 @22196 has 20 MA's), (139, 22343), (160, 22484), (164, 22517), (169, 22550), (174, 22586), (193, 22679), (206, 22739), (211, 22757), (225, 22838), (262, 23066), (269, 23111), (304, 23306), (305, 23312), (308, 23321), (315, 23366), (317, 23381), (348, 23537), (350, 23555), (352, 23564), (362, 23618), (375, 23693), (376, 23696), (411, 23906), (413, 23918), (430, 24032), (453, 24248), (462, 24332), (467, 24356), (469, 24365),

Gene: GoldenSpark\_28 Start: 22274, Stop: 24670, Start Num: 52

Candidate Starts for GoldenSpark\_28:

(Start: 52 @22274 has 123 MA's), (97, 22451), (Start: 101 @22472 has 20 MA's), (139, 22619), (164, 22793), (169, 22826), (174, 22862), (193, 22955), (206, 23015), (211, 23033), (234, 23165), (242, 23210), (262, 23342), (269, 23387), (281, 23447), (301, 23561), (304, 23582), (312, 23621), (315, 23642), (317, 23657), (346, 23807), (348, 23813), (350, 23831), (361, 23885), (375, 23969), (430, 24308), (453, 24524), (462, 24608), (469, 24641),

Gene: Goldilocks\_27 Start: 21694, Stop: 24090, Start Num: 52

Candidate Starts for Goldilocks\_27:

(Start: 52 @21694 has 123 MA's), (97, 21871), (Start: 101 @21892 has 20 MA's), (139, 22039), (160, 22180), (164, 22213), (169, 22246), (174, 22282), (193, 22375), (206, 22435), (211, 22453), (234, 22585), (242, 22630), (262, 22762), (269, 22807), (281, 22867), (301, 22981), (304, 23002), (312, 23041), (315, 23062), (317, 23077), (346, 23227), (348, 23233), (350, 23251), (361, 23305), (375, 23389), (392, 23482), (430, 23728), (453, 23944), (462, 24028), (469, 24061),

Gene: Gonephishing\_34 Start: 28088, Stop: 30448, Start Num: 81

Candidate Starts for Gonephishing\_34:

(Start: 18 @27893 has 221 MA's), (81, 28088), (89, 28124), (91, 28139), (99, 28187), (119, 28298), (120, 28301), (128, 28331), (135, 28346), (145, 28424), (148, 28448), (Start: 159 @28514 has 1 MA's), (165, 28559), (169, 28589), (170, 28595), (172, 28613), (178, 28637), (180, 28646), (186, 28679), (187, 28685), (193, 28715), (203, 28754), (204, 28766), (206, 28775), (210, 28790), (211, 28793), (230, 28904), (231, 28907), (232, 28916), (233, 28922), (236, 28937), (237, 28940), (246, 28991), (248, 29003), (251, 29036), (262, 29102), (269, 29147), (270, 29150), (275, 29177), (276, 29183), (284, 29237), (285, 29240), (302, 29327), (304, 29342), (307, 29354), (308, 29357), (320, 29423), (325, 29468), (327, 29477), (339, 29537), (340, 29540), (348, 29576), (350, 29594), (353,

29606), (354, 29615), (359, 29642), (373, 29711), (375, 29729), (377, 29738), (378, 29750), (383, 29786), (388, 29816), (393, 29837), (399, 29861), (405, 29897), (412, 29951), (419, 30011), (425, 30053), (442, 30188), (445, 30212), (450, 30266), (453, 30314), (459, 30356), (461, 30380), (462, 30383),

Gene: GooberAzure\_28 Start: 22274, Stop: 24670, Start Num: 52

Candidate Starts for GooberAzure\_28:

(Start: 52 @22274 has 123 MA's), (97, 22451), (Start: 101 @22472 has 20 MA's), (139, 22619), (160, 22760), (164, 22793), (169, 22826), (174, 22862), (193, 22955), (206, 23015), (211, 23033), (234, 23165), (242, 23210), (262, 23342), (269, 23387), (281, 23447), (301, 23561), (304, 23582), (312, 23621), (315, 23642), (317, 23657), (346, 23807), (348, 23813), (350, 23831), (361, 23885), (375, 23969), (392, 24062), (430, 24308), (453, 24524), (462, 24608), (469, 24641),

Gene: Gorge\_18 Start: 17383, Stop: 19926, Start Num: 18

Candidate Starts for Gorge\_18:

(Start: 18 @17383 has 221 MA's), (28, 17404), (Start: 38 @17425 has 1 MA's), (48, 17464), (71, 17533), (73, 17542), (74, 17545), (81, 17563), (91, 17611), (99, 17659), (119, 17770), (120, 17773), (132, 17806), (135, 17818), (145, 17896), (152, 17962), (160, 17995), (167, 18049), (169, 18061), (179, 18115), (180, 18118), (181, 18127), (188, 18160), (197, 18199), (199, 18202), (202, 18217), (203, 18220), (208, 18247), (209, 18253), (210, 18256), (211, 18259), (216, 18286), (218, 18304), (219, 18307), (232, 18382), (236, 18403), (237, 18406), (241, 18433), (246, 18457), (251, 18502), (252, 18505), (259, 18556), (270, 18619), (272, 18628), (276, 18652), (296, 18757), (297, 18760), (304, 18811), (305, 18817), (307, 18823), (308, 18826), (315, 18871), (317, 18886), (322, 18913), (325, 18937), (336, 18988), (339, 19006), (340, 19009), (341, 19021), (353, 19075), (375, 19198), (384, 19261), (397, 19324), (407, 19399), (435, 19600), (458, 19828), (464, 19867), (465, 19870),

Gene: Gumball\_29 Start: 24266, Stop: 26536, Start Num: 101

Candidate Starts for Gumball\_29:

(Start: 101 @24266 has 20 MA's), (131, 24401), (133, 24410), (156, 24584), (158, 24590), (160, 24602), (185, 24755), (187, 24770), (190, 24785), (257, 25166), (258, 25172), (266, 25217), (282, 25304), (306, 25430), (318, 25505), (319, 25511), (325, 25559), (331, 25589), (335, 25613), (365, 25802), (372, 25829), (378, 25877), (391, 25949), (399, 25988), (400, 26009), (403, 26024), (406, 26042), (408, 26072), (420, 26156), (451, 26357), (453, 26399), (474, 26525),

Gene: Guppsters\_19 Start: 17584, Stop: 20109, Start Num: 18

Candidate Starts for Guppsters\_19:

(Start: 18 @17584 has 221 MA's), (55, 17674), (71, 17734), (73, 17743), (74, 17746), (81, 17764), (91, 17812), (98, 17857), (119, 17971), (120, 17974), (126, 17995), (132, 18007), (135, 18019), (145, 18097), (152, 18163), (160, 18196), (167, 18250), (169, 18262), (179, 18316), (180, 18319), (181, 18328), (188, 18361), (199, 18403), (202, 18418), (208, 18448), (209, 18454), (210, 18457), (211, 18460), (216, 18487), (218, 18505), (219, 18508), (232, 18583), (236, 18604), (237, 18607), (241, 18634), (246, 18658), (248, 18670), (259, 18757), (270, 18820), (272, 18829), (276, 18853), (296, 18958), (297, 18961), (304, 19012), (305, 19018), (307, 19024), (308, 19027), (315, 19072), (317, 19087), (322, 19114), (325, 19138), (327, 19147), (339, 19207), (340, 19210), (341, 19222), (350, 19264), (353, 19276), (375, 19399), (384, 19462), (397, 19525), (407, 19600), (435, 19801), (453, 19972), (458, 20011), (464, 20050), (465, 20053),

Gene: Hades\_18 Start: 17406, Stop: 19958, Start Num: 18

Candidate Starts for Hades\_18:

(Start: 18 @17406 has 221 MA's), (55, 17496), (71, 17556), (73, 17565), (74, 17568), (81, 17586), (91, 17634), (98, 17679), (119, 17793), (120, 17796), (123, 17808), (132, 17829), (134, 17838), (135, 17841), (145, 17919), (152, 17985), (160, 18018), (165, 18054), (168, 18078), (179, 18138), (180, 18141), (183, 18159), (197, 18222), (199, 18225), (203, 18243), (206, 18264), (211, 18282), (216,

18309), (219, 18330), (225, 18363), (232, 18405), (233, 18411), (234, 18414), (237, 18429), (241, 18456), (242, 18459), (246, 18480), (248, 18492), (251, 18525), (265, 18618), (284, 18726), (287, 18750), (290, 18756), (295, 18774), (296, 18777), (299, 18801), (304, 18831), (310, 18855), (315, 18891), (316, 18897), (317, 18906), (322, 18933), (333, 18996), (336, 19020), (337, 19035), (346, 19077), (355, 19128), (374, 19224), (375, 19239), (377, 19248), (380, 19272), (392, 19335), (399, 19371), (440, 19677), (445, 19722), (453, 19824),

Gene: Hamulus\_18 Start: 17403, Stop: 19940, Start Num: 18

Candidate Starts for Hamulus\_18:

(16, 17391), (Start: 18 @17403 has 221 MA's), (28, 17424), (Start: 38 @17445 has 1 MA's), (48, 17484), (71, 17553), (73, 17562), (74, 17565), (81, 17583), (89, 17616), (91, 17631), (99, 17679), (117, 17784), (119, 17790), (120, 17793), (128, 17823), (134, 17835), (135, 17838), (145, 17916), (148, 17940), (Start: 159 @18006 has 1 MA's), (169, 18081), (170, 18087), (172, 18105), (178, 18129), (180, 18138), (186, 18171), (187, 18177), (193, 18207), (203, 18246), (204, 18258), (206, 18267), (210, 18282), (211, 18285), (230, 18396), (231, 18399), (232, 18408), (233, 18414), (236, 18429), (237, 18432), (240, 18453), (246, 18483), (248, 18495), (251, 18528), (262, 18594), (269, 18639), (270, 18642), (275, 18669), (276, 18675), (284, 18729), (285, 18732), (302, 18819), (304, 18834), (307, 18846), (308, 18849), (320, 18915), (325, 18960), (327, 18969), (339, 19029), (340, 19032), (348, 19068), (350, 19086), (353, 19098), (354, 19107), (359, 19134), (373, 19203), (375, 19221), (377, 19230), (378, 19242), (383, 19278), (388, 19308), (393, 19329), (399, 19353), (405, 19389), (412, 19443), (419, 19503), (425, 19545), (442, 19680), (445, 19704), (450, 19758), (453, 19806), (459, 19848), (461, 19872), (462, 19875),

Gene: HanKaySha\_27 Start: 22026, Stop: 24422, Start Num: 52

Candidate Starts for HanKaySha\_27:

(Start: 52 @22026 has 123 MA's), (97, 22203), (Start: 101 @22224 has 20 MA's), (139, 22371), (164, 22545), (169, 22578), (174, 22614), (193, 22707), (206, 22767), (211, 22785), (234, 22917), (242, 22962), (262, 23094), (269, 23139), (281, 23199), (301, 23313), (304, 23334), (312, 23373), (315, 23394), (317, 23409), (346, 23559), (348, 23565), (350, 23583), (361, 23637), (375, 23721), (392, 23814), (430, 24060), (453, 24276), (462, 24360), (469, 24393),

Gene: Hannaconda\_33 Start: 26378, Stop: 28873, Start Num: 18

Candidate Starts for Hannaconda\_33:

(Start: 18 @26378 has 221 MA's), (81, 26573), (89, 26609), (91, 26624), (108, 26711), (112, 26726), (120, 26762), (121, 26768), (135, 26801), (137, 26813), (162, 26984), (165, 26993), (169, 27017), (179, 27071), (186, 27107), (187, 27113), (193, 27143), (201, 27173), (204, 27194), (206, 27203), (210, 27218), (223, 27287), (237, 27368), (238, 27377), (242, 27398), (243, 27401), (248, 27431), (252, 27467), (259, 27518), (260, 27527), (262, 27530), (265, 27557), (268, 27566), (272, 27587), (284, 27665), (285, 27668), (299, 27740), (305, 27776), (307, 27782), (314, 27824), (315, 27830), (322, 27872), (323, 27875), (325, 27896), (326, 27902), (327, 27905), (334, 27935), (358, 28076), (361, 28085), (362, 28094), (367, 28127), (373, 28151), (374, 28154), (375, 28169), (378, 28190), (383, 28226), (384, 28232), (385, 28238), (390, 28259), (395, 28286), (414, 28421), (424, 28493), (426, 28499), (430, 28517), (442, 28616), (453, 28733), (463, 28814), (465, 28817), (469, 28844),

Gene: Harella\_25 Start: 22416, Stop: 24812, Start Num: 52

Candidate Starts for Harella\_25:

(Start: 52 @22416 has 123 MA's), (97, 22593), (Start: 101 @22614 has 20 MA's), (139, 22761), (160, 22902), (164, 22935), (169, 22968), (174, 23004), (193, 23097), (206, 23157), (211, 23175), (234, 23307), (262, 23484), (269, 23529), (301, 23703), (304, 23724), (312, 23763), (315, 23784), (317, 23799), (348, 23955), (350, 23973), (361, 24027), (375, 24111), (427, 24435), (453, 24666), (462, 24750), (469, 24783),

Gene: Harley\_18 Start: 17393, Stop: 19930, Start Num: 18

Candidate Starts for Harley\_18:

(Start: 18 @17393 has 221 MA's), (28, 17414), (Start: 38 @17435 has 1 MA's), (48, 17474), (71, 17543), (73, 17552), (74, 17555), (81, 17573), (91, 17621), (119, 17780), (120, 17783), (135, 17828), (147, 17927), (148, 17930), (Start: 159 @17996 has 1 MA's), (169, 18071), (170, 18077), (172, 18095), (178, 18119), (179, 18125), (180, 18128), (186, 18161), (187, 18167), (193, 18197), (199, 18218), (203, 18236), (206, 18257), (226, 18365), (229, 18377), (230, 18386), (231, 18389), (232, 18398), (233, 18404), (236, 18419), (237, 18422), (240, 18443), (248, 18485), (251, 18518), (252, 18521), (262, 18584), (269, 18629), (270, 18632), (276, 18665), (284, 18719), (285, 18722), (290, 18749), (304, 18824), (307, 18836), (308, 18839), (320, 18905), (322, 18926), (323, 18929), (325, 18950), (336, 19001), (339, 19019), (340, 19022), (346, 19052), (350, 19076), (353, 19088), (354, 19097), (373, 19193), (375, 19211), (377, 19220), (378, 19232), (383, 19268), (388, 19298), (392, 19307), (393, 19319), (399, 19343), (405, 19379), (419, 19493), (425, 19535), (442, 19670), (445, 19694), (450, 19748), (453, 19796), (456, 19817), (461, 19862), (462, 19865),

Gene: Hawkeye\_32 Start: 24298, Stop: 27204, Start Num: 1

Candidate Starts for Hawkeye\_32:

(Start: 1 @24298 has 1 MA's), (2, 24391), (4, 24412), (5, 24433), (6, 24442), (36, 24658), (111, 25009), (136, 25105), (146, 25180), (186, 25429), (192, 25456), (223, 25609), (226, 25633), (233, 25672), (271, 25903), (272, 25906), (290, 26014), (304, 26089), (316, 26155), (350, 26347), (353, 26359), (362, 26410), (383, 26542), (418, 26761), (446, 26992), (454, 27076),

Gene: Hegedechwinu\_19 Start: 17254, Stop: 19785, Start Num: 18

Candidate Starts for Hegedechwinu\_19:

(16, 17242), (Start: 18 @17254 has 221 MA's), (28, 17275), (Start: 38 @17296 has 1 MA's), (48, 17335), (71, 17404), (73, 17413), (74, 17416), (81, 17434), (89, 17467), (91, 17482), (99, 17524), (119, 17635), (120, 17638), (128, 17668), (135, 17683), (145, 17761), (Start: 159 @17851 has 1 MA's), (165, 17896), (169, 17926), (170, 17932), (172, 17950), (178, 17974), (180, 17983), (186, 18016), (187, 18022), (193, 18052), (203, 18091), (204, 18103), (206, 18112), (210, 18127), (211, 18130), (230, 18241), (231, 18244), (232, 18253), (233, 18259), (236, 18274), (237, 18277), (240, 18298), (246, 18328), (248, 18340), (251, 18373), (269, 18484), (270, 18487), (275, 18514), (276, 18520), (284, 18574), (285, 18577), (304, 18679), (307, 18691), (308, 18694), (320, 18760), (323, 18784), (325, 18805), (327, 18814), (339, 18874), (340, 18877), (348, 18913), (350, 18931), (353, 18943), (354, 18952), (359, 18979), (373, 19048), (375, 19066), (377, 19075), (378, 19087), (383, 19123), (388, 19153), (393, 19174), (399, 19198), (405, 19234), (412, 19288), (419, 19348), (425, 19390), (434, 19468), (442, 19525), (445, 19549), (450, 19603), (453, 19651), (459, 19693), (461, 19717), (462, 19720),

Gene: Helpful\_31 Start: 24316, Stop: 26586, Start Num: 101

Candidate Starts for Helpful\_31:

(Start: 101 @24316 has 20 MA's), (131, 24451), (133, 24460), (156, 24634), (158, 24640), (160, 24652), (185, 24805), (187, 24820), (190, 24835), (257, 25216), (258, 25222), (266, 25267), (282, 25354), (319, 25561), (325, 25609), (331, 25639), (335, 25663), (365, 25852), (372, 25879), (378, 25927), (391, 25999), (399, 26038), (400, 26059), (403, 26074), (406, 26092), (408, 26122), (420, 26206), (451, 26407), (453, 26449), (474, 26575),

Gene: Henry\_26 Start: 22283, Stop: 24679, Start Num: 52

Candidate Starts for Henry\_26:

(Start: 52 @22283 has 123 MA's), (97, 22460), (Start: 101 @22481 has 20 MA's), (139, 22628), (160, 22769), (164, 22802), (169, 22835), (174, 22871), (193, 22964), (206, 23024), (211, 23042), (238, 23198), (242, 23219), (259, 23339), (262, 23351), (269, 23396), (304, 23591), (308, 23606), (315, 23651), (317, 23666), (348, 23822), (350, 23840), (352, 23849), (375, 23978), (376, 23981), (411, 24191), (413, 24203), (430, 24317), (453, 24533), (462, 24617), (467, 24641), (469, 24650),

Gene: Highbury\_27 Start: 21945, Stop: 24341, Start Num: 52

Candidate Starts for Highbury\_27:

(Start: 52 @21945 has 123 MA's), (97, 22122), (Start: 101 @22143 has 20 MA's), (139, 22290), (160, 22431), (164, 22464), (169, 22497), (174, 22533), (193, 22626), (206, 22686), (211, 22704), (234, 22836), (242, 22881), (262, 23013), (269, 23058), (281, 23118), (301, 23232), (304, 23253), (312, 23292), (315, 23313), (317, 23328), (346, 23478), (348, 23484), (350, 23502), (361, 23556), (375, 23640), (392, 23733), (430, 23979), (453, 24195), (462, 24279), (469, 24312),

Gene: Hlubikazi\_18 Start: 17495, Stop: 20032, Start Num: 18

Candidate Starts for Hlubikazi\_18:

(Start: 18 @17495 has 221 MA's), (28, 17516), (Start: 38 @17537 has 1 MA's), (48, 17576), (71, 17645), (73, 17654), (74, 17657), (81, 17675), (91, 17723), (119, 17882), (120, 17885), (134, 17927), (135, 17930), (145, 18008), (147, 18029), (148, 18032), (Start: 159 @18098 has 1 MA's), (169, 18173), (170, 18179), (178, 18221), (179, 18227), (180, 18230), (186, 18263), (187, 18269), (193, 18299), (199, 18320), (204, 18350), (206, 18359), (226, 18467), (229, 18479), (230, 18488), (231, 18491), (232, 18500), (233, 18506), (236, 18521), (237, 18524), (240, 18545), (248, 18587), (251, 18620), (275, 18761), (276, 18767), (284, 18821), (285, 18824), (290, 18851), (304, 18926), (307, 18938), (308, 18941), (320, 19007), (323, 19031), (325, 19052), (327, 19061), (339, 19121), (340, 19124), (348, 19160), (350, 19178), (354, 19199), (359, 19226), (373, 19295), (375, 19313), (377, 19322), (378, 19334), (383, 19370), (388, 19400), (405, 19481), (419, 19595), (425, 19637), (442, 19772), (445, 19796), (450, 19850), (461, 19964), (462, 19967),

Gene: Holt\_27 Start: 21564, Stop: 23960, Start Num: 52

Candidate Starts for Holt\_27:

(Start: 52 @21564 has 123 MA's), (97, 21741), (Start: 101 @21762 has 20 MA's), (139, 21909), (160, 22050), (164, 22083), (169, 22116), (174, 22152), (193, 22245), (206, 22305), (211, 22323), (234, 22455), (242, 22500), (262, 22632), (269, 22677), (281, 22737), (301, 22851), (304, 22872), (312, 22911), (315, 22932), (317, 22947), (346, 23097), (348, 23103), (350, 23121), (361, 23175), (375, 23259), (392, 23352), (430, 23598), (453, 23814), (462, 23898), (469, 23931),

Gene: Hoonter\_28 Start: 22274, Stop: 24670, Start Num: 52

Candidate Starts for Hoonter\_28:

(Start: 52 @22274 has 123 MA's), (97, 22451), (Start: 101 @22472 has 20 MA's), (139, 22619), (164, 22793), (169, 22826), (174, 22862), (193, 22955), (206, 23015), (211, 23033), (234, 23165), (242, 23210), (262, 23342), (269, 23387), (281, 23447), (301, 23561), (304, 23582), (312, 23621), (315, 23642), (317, 23657), (346, 23807), (348, 23813), (350, 23831), (361, 23885), (375, 23969), (392, 24062), (430, 24308), (453, 24524), (462, 24608), (469, 24641),

Gene: Hokey\_28 Start: 22561, Stop: 24957, Start Num: 52

Candidate Starts for Hokey\_28:

(Start: 52 @22561 has 123 MA's), (97, 22738), (Start: 101 @22759 has 20 MA's), (139, 22906), (164, 23080), (169, 23113), (174, 23149), (193, 23242), (206, 23302), (211, 23320), (234, 23452), (242, 23497), (262, 23629), (269, 23674), (281, 23734), (301, 23848), (304, 23869), (312, 23908), (315, 23929), (317, 23944), (346, 24094), (348, 24100), (350, 24118), (361, 24172), (375, 24256), (392, 24349), (430, 24595), (453, 24811), (462, 24895), (469, 24928),

Gene: HufflyPuff\_25 Start: 22268, Stop: 24664, Start Num: 52

Candidate Starts for HufflyPuff\_25:

(Start: 52 @22268 has 123 MA's), (97, 22445), (Start: 101 @22466 has 20 MA's), (139, 22613), (160, 22754), (164, 22787), (169, 22820), (174, 22856), (193, 22949), (206, 23009), (211, 23027), (234, 23159), (242, 23204), (262, 23336), (269, 23381), (281, 23441), (301, 23555), (304, 23576), (312, 23615), (315, 23636), (317, 23651), (346, 23801), (348, 23807), (350, 23825), (361, 23879), (375, 23963), (392, 24056), (430, 24302), (453, 24518), (462, 24602), (469, 24635),

Gene: IHOP\_26 Start: 22460, Stop: 24856, Start Num: 52

Candidate Starts for IHOP\_26:

(Start: 52 @22460 has 123 MA's), (97, 22637), (Start: 101 @22658 has 20 MA's), (139, 22805), (160, 22946), (164, 22979), (169, 23012), (174, 23048), (193, 23141), (206, 23201), (211, 23219), (238, 23375), (242, 23396), (259, 23516), (262, 23528), (269, 23573), (304, 23768), (305, 23774), (308, 23783), (315, 23828), (317, 23843), (348, 23999), (350, 24017), (352, 24026), (362, 24080), (375, 24155), (376, 24158), (411, 24368), (413, 24380), (430, 24494), (453, 24710), (462, 24794), (467, 24818), (469, 24827),

Gene: IMpilo\_18 Start: 17430, Stop: 19967, Start Num: 18

Candidate Starts for IMpilo\_18:

(16, 17418), (Start: 18 @17430 has 221 MA's), (28, 17451), (Start: 38 @17472 has 1 MA's), (48, 17511), (71, 17580), (73, 17589), (74, 17592), (81, 17610), (89, 17643), (91, 17658), (99, 17706), (119, 17817), (120, 17820), (128, 17850), (134, 17862), (135, 17865), (145, 17943), (148, 17967), (Start: 159 @18033 has 1 MA's), (165, 18078), (169, 18108), (170, 18114), (172, 18132), (178, 18156), (180, 18165), (186, 18198), (187, 18204), (193, 18234), (203, 18273), (204, 18285), (206, 18294), (210, 18309), (211, 18312), (230, 18423), (231, 18426), (232, 18435), (233, 18441), (236, 18456), (237, 18459), (240, 18480), (246, 18510), (248, 18522), (251, 18555), (269, 18666), (270, 18669), (275, 18696), (276, 18702), (284, 18756), (285, 18759), (304, 18861), (307, 18873), (308, 18876), (320, 18942), (323, 18966), (325, 18987), (327, 18996), (339, 19056), (340, 19059), (348, 19095), (350, 19113), (353, 19125), (354, 19134), (359, 19161), (373, 19230), (375, 19248), (377, 19257), (378, 19269), (383, 19305), (388, 19335), (393, 19356), (399, 19380), (405, 19416), (412, 19470), (419, 19530), (425, 19572), (434, 19650), (442, 19707), (445, 19731), (450, 19785), (453, 19833), (459, 19875), (461, 19899), (462, 19902),

Gene: IbOuu\_18 Start: 17397, Stop: 19934, Start Num: 18

Candidate Starts for IbOuu\_18:

(16, 17385), (Start: 18 @17397 has 221 MA's), (28, 17418), (Start: 38 @17439 has 1 MA's), (48, 17478), (71, 17547), (73, 17556), (74, 17559), (81, 17577), (91, 17625), (99, 17673), (119, 17784), (120, 17787), (135, 17832), (145, 17910), (148, 17934), (Start: 159 @18000 has 1 MA's), (165, 18045), (169, 18075), (170, 18081), (172, 18099), (178, 18123), (180, 18132), (186, 18165), (187, 18171), (193, 18201), (203, 18240), (204, 18252), (206, 18261), (210, 18276), (211, 18279), (230, 18390), (231, 18393), (232, 18402), (233, 18408), (236, 18423), (237, 18426), (240, 18447), (246, 18477), (248, 18489), (251, 18522), (269, 18633), (270, 18636), (275, 18663), (276, 18669), (284, 18723), (285, 18726), (304, 18828), (307, 18840), (308, 18843), (320, 18909), (323, 18933), (325, 18954), (327, 18963), (339, 19023), (340, 19026), (348, 19062), (350, 19080), (354, 19101), (359, 19128), (373, 19197), (375, 19215), (377, 19224), (378, 19236), (383, 19272), (393, 19323), (397, 19341), (405, 19383), (412, 19437), (425, 19539), (442, 19674), (445, 19698), (450, 19752), (456, 19821), (461, 19866), (462, 19869),

Gene: lbhubesi\_18 Start: 17393, Stop: 19930, Start Num: 18

Candidate Starts for lbhubesi\_18:

(Start: 18 @17393 has 221 MA's), (28, 17414), (Start: 38 @17435 has 1 MA's), (48, 17474), (71, 17543), (73, 17552), (74, 17555), (81, 17573), (91, 17621), (119, 17780), (120, 17783), (135, 17828), (147, 17927), (148, 17930), (Start: 159 @17996 has 1 MA's), (169, 18071), (170, 18077), (172, 18095), (178, 18119), (179, 18125), (180, 18128), (186, 18161), (187, 18167), (193, 18197), (199, 18218), (203, 18236), (206, 18257), (226, 18365), (229, 18377), (230, 18386), (231, 18389), (232, 18398), (233, 18404), (236, 18419), (237, 18422), (240, 18443), (248, 18485), (251, 18518), (252, 18521), (262, 18584), (269, 18629), (270, 18632), (276, 18665), (284, 18719), (285, 18722), (290, 18749), (304, 18824), (307, 18836), (308, 18839), (320, 18905), (322, 18926), (323, 18929), (325, 18950), (336, 19001), (339, 19019), (340, 19022), (346, 19052), (350, 19076), (353, 19088), (354, 19097), (373, 19193), (375, 19211), (377, 19220), (378, 19232), (383, 19268), (388, 19298), (392,

19307), (393, 19319), (399, 19343), (405, 19379), (419, 19493), (425, 19535), (442, 19670), (445, 19694), (450, 19748), (453, 19796), (456, 19817), (461, 19862), (462, 19865),

Gene: Icee\_25 Start: 21943, Stop: 24339, Start Num: 52

Candidate Starts for Icee\_25:

(Start: 52 @21943 has 123 MA's), (97, 22120), (Start: 101 @22141 has 20 MA's), (139, 22288), (160, 22429), (164, 22462), (169, 22495), (174, 22531), (193, 22624), (206, 22684), (211, 22702), (225, 22783), (262, 23011), (269, 23056), (304, 23251), (305, 23257), (308, 23266), (315, 23311), (317, 23326), (348, 23482), (350, 23500), (352, 23509), (375, 23638), (376, 23641), (411, 23851), (413, 23863), (430, 23977), (453, 24193), (462, 24277), (467, 24301), (469, 24310),

Gene: Idergollasper\_58 Start: 36096, Stop: 38606, Start Num: 35

Candidate Starts for Idergollasper\_58:

(Start: 35 @36096 has 27 MA's), (42, 36129), (60, 36198), (61, 36201), (68, 36225), (74, 36249), (83, 36273), (89, 36306), (124, 36513), (127, 36525), (128, 36528), (151, 36675), (152, 36705), (Start: 159 @36729 has 1 MA's), (165, 36759), (166, 36762), (169, 36789), (172, 36813), (179, 36843), (189, 36900), (194, 36924), (203, 36960), (204, 36972), (210, 36996), (211, 36999), (217, 37041), (236, 37137), (237, 37140), (279, 37395), (304, 37539), (315, 37599), (324, 37671), (325, 37674), (344, 37770), (375, 37944), (378, 37965), (395, 38058), (398, 38070), (412, 38160), (423, 38235), (432, 38280), (455, 38481), (460, 38535), (465, 38550),

Gene: Inca\_25 Start: 20963, Stop: 23359, Start Num: 52

Candidate Starts for Inca\_25:

(Start: 52 @20963 has 123 MA's), (97, 21140), (Start: 101 @21161 has 20 MA's), (139, 21308), (160, 21449), (164, 21482), (169, 21515), (174, 21551), (193, 21644), (206, 21704), (211, 21722), (234, 21854), (242, 21899), (262, 22031), (269, 22076), (281, 22136), (301, 22250), (304, 22271), (312, 22310), (315, 22331), (317, 22346), (346, 22496), (348, 22502), (350, 22520), (361, 22574), (375, 22658), (392, 22751), (430, 22997), (453, 23213), (462, 23297), (469, 23330),

Gene: Inventum\_18 Start: 17532, Stop: 20069, Start Num: 18

Candidate Starts for Inventum\_18:

(Start: 18 @17532 has 221 MA's), (28, 17553), (Start: 38 @17574 has 1 MA's), (48, 17613), (71, 17682), (73, 17691), (74, 17694), (81, 17712), (91, 17760), (99, 17808), (119, 17919), (120, 17922), (135, 17967), (145, 18045), (148, 18069), (Start: 159 @18135 has 1 MA's), (169, 18210), (170, 18216), (172, 18234), (178, 18258), (180, 18267), (186, 18300), (187, 18306), (193, 18336), (199, 18357), (204, 18387), (206, 18396), (226, 18504), (229, 18516), (230, 18525), (231, 18528), (233, 18543), (236, 18558), (237, 18561), (240, 18582), (248, 18624), (251, 18657), (269, 18768), (270, 18771), (275, 18798), (276, 18804), (284, 18858), (285, 18861), (290, 18888), (304, 18963), (307, 18975), (308, 18978), (320, 19044), (322, 19065), (323, 19068), (325, 19089), (327, 19098), (336, 19140), (339, 19158), (340, 19161), (346, 19191), (350, 19215), (353, 19227), (354, 19236), (373, 19332), (375, 19350), (377, 19359), (378, 19371), (383, 19407), (388, 19437), (392, 19446), (393, 19458), (405, 19518), (412, 19572), (419, 19632), (425, 19674), (442, 19809), (445, 19833), (450, 19887), (453, 19935), (459, 19977), (461, 20001), (462, 20004),

Gene: IrishSherpFalk\_19 Start: 18757, Stop: 21294, Start Num: 18

Candidate Starts for IrishSherpFalk\_19:

(Start: 18 @18757 has 221 MA's), (28, 18778), (Start: 38 @18799 has 1 MA's), (48, 18838), (71, 18907), (73, 18916), (74, 18919), (81, 18937), (91, 18985), (117, 19138), (120, 19147), (135, 19192), (147, 19291), (148, 19294), (Start: 159 @19360 has 1 MA's), (169, 19435), (170, 19441), (172, 19459), (178, 19483), (179, 19489), (180, 19492), (186, 19525), (187, 19531), (193, 19561), (199, 19582), (204, 19612), (206, 19621), (210, 19636), (211, 19639), (230, 19750), (231, 19753), (232, 19762), (233, 19768), (236, 19783), (237, 19786), (240, 19807), (246, 19837), (248, 19849), (251, 19882), (269, 19993), (270, 19996), (275, 20023), (276, 20029), (284, 20083), (285, 20086), (302,

20173), (304, 20188), (307, 20200), (308, 20203), (320, 20269), (323, 20293), (325, 20314), (327, 20323), (339, 20383), (340, 20386), (348, 20422), (350, 20440), (353, 20452), (354, 20461), (359, 20488), (371, 20545), (373, 20557), (375, 20575), (377, 20584), (378, 20596), (383, 20632), (388, 20662), (392, 20671), (393, 20683), (405, 20743), (412, 20797), (419, 20857), (425, 20899), (442, 21034), (445, 21058), (450, 21112), (453, 21160), (459, 21202), (461, 21226), (462, 21229),

Gene: Island3\_21 Start: 19089, Stop: 21620, Start Num: 27

Candidate Starts for Island3\_21:

(Start: 27 @19089 has 2 MA's), (34, 19113), (63, 19224), (66, 19233), (74, 19260), (100, 19407), (147, 19674), (151, 19689), (152, 19719), (153, 19725), (Start: 159 @19743 has 1 MA's), (178, 19851), (187, 19902), (211, 20013), (212, 20016), (217, 20055), (225, 20088), (237, 20154), (248, 20214), (250, 20241), (251, 20247), (304, 20553), (315, 20613), (321, 20661), (322, 20664), (324, 20685), (325, 20688), (375, 20949), (397, 21072), (398, 21075), (412, 21165), (419, 21222), (423, 21243), (435, 21303), (457, 21504), (460, 21546),

Gene: Jabbawokkie\_26 Start: 17616, Stop: 20168, Start Num: 11

Candidate Starts for Jabbawokkie\_26:

(9, 17607), (Start: 11 @17616 has 7 MA's), (Start: 18 @17676 has 221 MA's), (33, 17712), (66, 17811), (100, 17952), (108, 17991), (112, 18006), (120, 18042), (121, 18048), (122, 18051), (132, 18069), (137, 18093), (141, 18117), (142, 18120), (162, 18264), (165, 18273), (169, 18297), (172, 18321), (178, 18345), (179, 18351), (183, 18372), (184, 18375), (187, 18393), (193, 18426), (201, 18456), (204, 18477), (223, 18570), (225, 18585), (226, 18594), (230, 18615), (231, 18618), (238, 18660), (246, 18702), (247, 18705), (248, 18714), (250, 18741), (252, 18750), (256, 18789), (260, 18810), (262, 18813), (268, 18849), (272, 18870), (284, 18948), (285, 18951), (298, 19005), (307, 19065), (321, 19152), (323, 19158), (325, 19179), (334, 19215), (343, 19269), (346, 19278), (358, 19356), (362, 19374), (368, 19410), (369, 19413), (373, 19431), (375, 19449), (383, 19506), (385, 19518), (399, 19581), (405, 19614), (414, 19701), (422, 19749), (424, 19773), (430, 19809), (433, 19848), (438, 19887), (442, 19911), (444, 19932), (453, 20028), (456, 20049), (463, 20109), (465, 20112), (469, 20139),

Gene: JacoRen57\_20 Start: 18844, Stop: 20730, Start Num: 159

Candidate Starts for JacoRen57\_20:

(Start: 159 @18844 has 1 MA's), (171, 18928), (200, 19060), (218, 19135), (226, 19171), (227, 19174), (245, 19261), (248, 19279), (250, 19306), (258, 19363), (277, 19462), (289, 19543), (300, 19588), (309, 19633), (316, 19684), (317, 19693), (327, 19762), (336, 19816), (345, 19876), (359, 19960), (365, 19996), (370, 20017), (372, 20023), (373, 20032), (378, 20071), (399, 20182), (400, 20203), (408, 20266), (409, 20269), (414, 20311), (420, 20350), (461, 20665), (463, 20671), (466, 20680), (468, 20695), (470, 20704), (474, 20719),

Gene: JalFarm20\_20 Start: 17767, Stop: 20304, Start Num: 18

Candidate Starts for JalFarm20\_20:

(16, 17755), (Start: 18 @17767 has 221 MA's), (28, 17788), (Start: 38 @17809 has 1 MA's), (48, 17848), (71, 17917), (73, 17926), (74, 17929), (81, 17947), (89, 17980), (91, 17995), (99, 18043), (119, 18154), (120, 18157), (128, 18187), (134, 18199), (135, 18202), (145, 18280), (148, 18304), (Start: 159 @18370 has 1 MA's), (165, 18415), (169, 18445), (170, 18451), (172, 18469), (178, 18493), (180, 18502), (186, 18535), (187, 18541), (193, 18571), (203, 18610), (204, 18622), (206, 18631), (210, 18646), (211, 18649), (230, 18760), (231, 18763), (232, 18772), (233, 18778), (236, 18793), (237, 18796), (240, 18817), (246, 18847), (248, 18859), (251, 18892), (269, 19003), (270, 19006), (275, 19033), (276, 19039), (284, 19093), (285, 19096), (302, 19183), (304, 19198), (307, 19210), (308, 19213), (320, 19279), (323, 19303), (325, 19324), (327, 19333), (339, 19393), (340, 19396), (348, 19432), (350, 19450), (353, 19462), (354, 19471), (359, 19498), (373, 19567), (375, 19585), (377, 19594), (378, 19606), (383, 19642), (388, 19672), (393, 19693), (399, 19717), (405, 19753), (412, 19807), (419, 19867), (425, 19909), (434, 19987), (442, 20044), (445, 20068), (450,

20122), (453, 20170), (459, 20212), (461, 20236), (462, 20239),

Gene: James\_18 Start: 17397, Stop: 19922, Start Num: 18

Candidate Starts for James\_18:

(Start: 18 @17397 has 221 MA's), (28, 17418), (Start: 38 @17439 has 1 MA's), (48, 17478), (71, 17547), (73, 17556), (74, 17559), (81, 17577), (91, 17625), (99, 17673), (119, 17784), (120, 17787), (132, 17820), (135, 17832), (145, 17910), (152, 17976), (160, 18009), (167, 18063), (169, 18075), (179, 18129), (180, 18132), (181, 18141), (188, 18174), (197, 18213), (199, 18216), (202, 18231), (203, 18234), (208, 18261), (209, 18267), (210, 18270), (211, 18273), (216, 18300), (218, 18318), (219, 18321), (232, 18396), (236, 18417), (237, 18420), (241, 18447), (246, 18471), (251, 18516), (252, 18519), (259, 18570), (270, 18633), (272, 18642), (276, 18666), (296, 18771), (297, 18774), (304, 18825), (305, 18831), (307, 18837), (308, 18840), (315, 18885), (317, 18900), (322, 18927), (325, 18951), (336, 19002), (339, 19020), (340, 19023), (341, 19035), (353, 19089), (375, 19212), (384, 19275), (397, 19338), (407, 19413), (435, 19614), (458, 19824), (464, 19863), (465, 19866),

Gene: JangDynasty\_58 Start: 36182, Stop: 38692, Start Num: 35

Candidate Starts for JangDynasty\_58:

(Start: 35 @36182 has 27 MA's), (42, 36215), (60, 36284), (61, 36287), (68, 36311), (74, 36335), (83, 36359), (89, 36392), (124, 36599), (127, 36611), (128, 36614), (151, 36761), (152, 36791), (Start: 159 @36815 has 1 MA's), (165, 36845), (166, 36848), (169, 36875), (172, 36899), (179, 36929), (189, 36986), (194, 37010), (203, 37046), (204, 37058), (210, 37082), (211, 37085), (217, 37127), (236, 37223), (237, 37226), (279, 37481), (304, 37625), (315, 37685), (324, 37757), (325, 37760), (344, 37856), (375, 38030), (378, 38051), (395, 38144), (398, 38156), (412, 38246), (423, 38321), (432, 38366), (455, 38567), (460, 38621), (465, 38636),

Gene: Jacob\_18 Start: 17405, Stop: 19957, Start Num: 18

Candidate Starts for Jacob\_18:

(Start: 18 @17405 has 221 MA's), (48, 17486), (71, 17555), (73, 17564), (74, 17567), (81, 17585), (91, 17633), (98, 17678), (119, 17792), (120, 17795), (123, 17807), (132, 17828), (134, 17837), (135, 17840), (142, 17888), (145, 17918), (152, 17984), (160, 18017), (165, 18053), (168, 18077), (179, 18137), (180, 18140), (183, 18158), (197, 18221), (199, 18224), (203, 18242), (206, 18263), (211, 18281), (216, 18308), (219, 18329), (225, 18362), (232, 18404), (233, 18410), (234, 18413), (237, 18428), (241, 18455), (242, 18458), (246, 18479), (248, 18491), (251, 18524), (265, 18617), (284, 18725), (287, 18749), (290, 18755), (295, 18773), (296, 18776), (299, 18800), (304, 18830), (310, 18854), (315, 18890), (316, 18896), (317, 18905), (322, 18932), (333, 18995), (336, 19019), (337, 19034), (346, 19076), (355, 19127), (374, 19223), (375, 19238), (377, 19247), (380, 19271), (392, 19334), (399, 19370), (440, 19676), (445, 19721), (453, 19823),

Gene: JeTaime\_28 Start: 23085, Stop: 25481, Start Num: 52

Candidate Starts for JeTaime\_28:

(Start: 52 @23085 has 123 MA's), (97, 23262), (Start: 101 @23283 has 20 MA's), (139, 23430), (164, 23604), (169, 23637), (174, 23673), (193, 23766), (206, 23826), (211, 23844), (234, 23976), (242, 24021), (262, 24153), (269, 24198), (281, 24258), (301, 24372), (304, 24393), (312, 24432), (315, 24453), (317, 24468), (346, 24618), (348, 24624), (350, 24642), (361, 24696), (375, 24780), (392, 24873), (430, 25119), (453, 25335), (462, 25419), (469, 25452),

Gene: Jinglebell\_17 Start: 17634, Stop: 20171, Start Num: 18

Candidate Starts for Jinglebell\_17:

(Start: 18 @17634 has 221 MA's), (28, 17655), (Start: 38 @17676 has 1 MA's), (48, 17715), (71, 17784), (73, 17793), (74, 17796), (81, 17814), (91, 17862), (119, 18021), (120, 18024), (134, 18066), (135, 18069), (145, 18147), (147, 18168), (148, 18171), (Start: 159 @18237 has 1 MA's), (160, 18246), (165, 18282), (169, 18312), (170, 18318), (178, 18360), (179, 18366), (180, 18369), (186, 18402), (187, 18408), (193, 18438), (199, 18459), (204, 18489), (206, 18498), (226, 18606), (229,

18618), (230, 18627), (231, 18630), (232, 18639), (233, 18645), (236, 18660), (237, 18663), (240, 18684), (248, 18726), (251, 18759), (275, 18900), (276, 18906), (284, 18960), (285, 18963), (290, 18990), (304, 19065), (307, 19077), (308, 19080), (320, 19146), (322, 19167), (323, 19170), (325, 19191), (336, 19242), (339, 19260), (340, 19263), (346, 19293), (350, 19317), (353, 19329), (373, 19434), (375, 19452), (377, 19461), (378, 19473), (383, 19509), (388, 19539), (393, 19560), (399, 19584), (405, 19620), (419, 19734), (425, 19776), (434, 19854), (442, 19911), (445, 19935), (450, 19989), (453, 20037), (459, 20079), (461, 20103), (462, 20106),

Gene: Job42\_21 Start: 19082, Stop: 21619, Start Num: 18

Candidate Starts for Job42\_21:

(Start: 18 @19082 has 221 MA's), (Start: 38 @19124 has 1 MA's), (55, 19172), (71, 19232), (73, 19241), (74, 19244), (81, 19262), (89, 19295), (91, 19310), (99, 19358), (119, 19469), (120, 19472), (128, 19502), (134, 19514), (135, 19517), (145, 19595), (148, 19619), (Start: 159 @19685 has 1 MA's), (165, 19730), (169, 19760), (170, 19766), (172, 19784), (178, 19808), (180, 19817), (186, 19850), (187, 19856), (193, 19886), (203, 19925), (204, 19937), (206, 19946), (210, 19961), (211, 19964), (230, 20075), (231, 20078), (232, 20087), (233, 20093), (236, 20108), (237, 20111), (240, 20132), (246, 20162), (248, 20174), (251, 20207), (269, 20318), (270, 20321), (275, 20348), (276, 20354), (284, 20408), (285, 20411), (304, 20513), (307, 20525), (308, 20528), (320, 20594), (323, 20618), (325, 20639), (327, 20648), (339, 20708), (340, 20711), (348, 20747), (350, 20765), (353, 20777), (354, 20786), (359, 20813), (373, 20882), (375, 20900), (377, 20909), (378, 20921), (383, 20957), (388, 20987), (393, 21008), (399, 21032), (405, 21068), (412, 21122), (419, 21182), (425, 21224), (434, 21302), (442, 21359), (445, 21383), (450, 21437), (453, 21485), (459, 21527), (461, 21551), (462, 21554),

Gene: JoeyJr\_18 Start: 17568, Stop: 20105, Start Num: 18

Candidate Starts for JoeyJr\_18:

(16, 17556), (Start: 18 @17568 has 221 MA's), (28, 17589), (Start: 38 @17610 has 1 MA's), (48, 17649), (71, 17718), (73, 17727), (74, 17730), (81, 17748), (91, 17796), (99, 17844), (119, 17955), (120, 17958), (135, 18003), (145, 18081), (148, 18105), (Start: 159 @18171 has 1 MA's), (165, 18216), (169, 18246), (170, 18252), (172, 18270), (178, 18294), (180, 18303), (186, 18336), (187, 18342), (193, 18372), (203, 18411), (204, 18423), (206, 18432), (210, 18447), (211, 18450), (230, 18561), (231, 18564), (232, 18573), (233, 18579), (236, 18594), (237, 18597), (240, 18618), (246, 18648), (248, 18660), (251, 18693), (269, 18804), (270, 18807), (275, 18834), (276, 18840), (284, 18894), (285, 18897), (304, 18999), (307, 19011), (308, 19014), (320, 19080), (323, 19104), (325, 19125), (327, 19134), (339, 19194), (340, 19197), (348, 19233), (350, 19251), (354, 19272), (359, 19299), (373, 19368), (375, 19386), (377, 19395), (378, 19407), (383, 19443), (393, 19494), (397, 19512), (405, 19554), (412, 19608), (425, 19710), (442, 19845), (445, 19869), (450, 19923), (456, 19992), (461, 20037), (462, 20040),

Gene: Juice456\_20 Start: 18519, Stop: 21056, Start Num: 18

Candidate Starts for Juice456\_20:

(16, 18507), (Start: 18 @18519 has 221 MA's), (28, 18540), (Start: 38 @18561 has 1 MA's), (48, 18600), (71, 18669), (73, 18678), (74, 18681), (81, 18699), (89, 18732), (91, 18747), (99, 18795), (119, 18906), (120, 18909), (128, 18939), (134, 18951), (135, 18954), (145, 19032), (148, 19056), (Start: 159 @19122 has 1 MA's), (165, 19167), (169, 19197), (170, 19203), (172, 19221), (178, 19245), (180, 19254), (186, 19287), (187, 19293), (193, 19323), (203, 19362), (204, 19374), (206, 19383), (210, 19398), (211, 19401), (230, 19512), (231, 19515), (232, 19524), (233, 19530), (236, 19545), (237, 19548), (240, 19569), (246, 19599), (248, 19611), (251, 19644), (269, 19755), (270, 19758), (275, 19785), (276, 19791), (284, 19845), (285, 19848), (302, 19935), (304, 19950), (307, 19962), (308, 19965), (320, 20031), (323, 20055), (325, 20076), (327, 20085), (336, 20127), (339, 20145), (340, 20148), (348, 20184), (350, 20202), (353, 20214), (354, 20223), (359, 20250), (373, 20319), (375, 20337), (377, 20346), (378, 20358), (383, 20394), (388, 20424), (393, 20445), (399, 20469), (405, 20505), (412, 20559), (419, 20619), (425, 20661), (434, 20739), (442, 20796), (445,

20820), (450, 20874), (453, 20922), (459, 20964), (461, 20988), (462, 20991),

Gene: Juniper1\_18 Start: 17394, Stop: 19931, Start Num: 18

Candidate Starts for Juniper1\_18:

(Start: 18 @17394 has 221 MA's), (28, 17415), (Start: 38 @17436 has 1 MA's), (48, 17475), (71, 17544), (73, 17553), (74, 17556), (81, 17574), (89, 17607), (91, 17622), (119, 17781), (120, 17784), (135, 17829), (145, 17907), (148, 17931), (Start: 159 @17997 has 1 MA's), (169, 18072), (170, 18078), (178, 18120), (179, 18126), (180, 18129), (186, 18162), (187, 18168), (193, 18198), (199, 18219), (204, 18249), (206, 18258), (226, 18366), (229, 18378), (230, 18387), (231, 18390), (232, 18399), (233, 18405), (236, 18420), (237, 18423), (240, 18444), (248, 18486), (251, 18519), (269, 18630), (270, 18633), (275, 18660), (276, 18666), (284, 18720), (285, 18723), (290, 18750), (293, 18759), (304, 18825), (307, 18837), (308, 18840), (320, 18906), (322, 18927), (323, 18930), (325, 18951), (336, 19002), (339, 19020), (340, 19023), (346, 19053), (350, 19077), (353, 19089), (354, 19098), (373, 19194), (375, 19212), (377, 19221), (378, 19233), (383, 19269), (388, 19299), (393, 19320), (399, 19344), (405, 19380), (419, 19494), (425, 19536), (442, 19671), (445, 19695), (450, 19749), (456, 19818), (461, 19863), (462, 19866), (464, 19872),

Gene: KandZ\_30 Start: 24416, Stop: 26686, Start Num: 101

Candidate Starts for KandZ\_30:

(Start: 101 @24416 has 20 MA's), (131, 24551), (133, 24560), (156, 24734), (158, 24740), (160, 24752), (185, 24905), (187, 24920), (190, 24935), (257, 25316), (258, 25322), (266, 25367), (282, 25454), (318, 25655), (319, 25661), (325, 25709), (331, 25739), (335, 25763), (365, 25952), (372, 25979), (378, 26027), (391, 26099), (399, 26138), (400, 26159), (403, 26174), (406, 26192), (408, 26222), (420, 26306), (451, 26507), (453, 26549), (474, 26675),

Gene: Kanye\_28 Start: 23270, Stop: 25666, Start Num: 52

Candidate Starts for Kanye\_28:

(Start: 52 @23270 has 123 MA's), (97, 23447), (Start: 101 @23468 has 20 MA's), (139, 23615), (160, 23756), (164, 23789), (169, 23822), (174, 23858), (193, 23951), (206, 24011), (211, 24029), (234, 24161), (242, 24206), (262, 24338), (269, 24383), (281, 24443), (301, 24557), (304, 24578), (312, 24617), (315, 24638), (317, 24653), (346, 24803), (348, 24809), (350, 24827), (361, 24881), (375, 24965), (392, 25058), (430, 25304), (453, 25520), (462, 25604), (469, 25637),

Gene: Karhdo\_18 Start: 17528, Stop: 20065, Start Num: 18

Candidate Starts for Karhdo\_18:

(16, 17516), (Start: 18 @17528 has 221 MA's), (28, 17549), (Start: 38 @17570 has 1 MA's), (48, 17609), (71, 17678), (73, 17687), (74, 17690), (81, 17708), (89, 17741), (91, 17756), (99, 17804), (119, 17915), (120, 17918), (128, 17948), (134, 17960), (135, 17963), (145, 18041), (148, 18065), (Start: 159 @18131 has 1 MA's), (165, 18176), (169, 18206), (170, 18212), (172, 18230), (178, 18254), (180, 18263), (186, 18296), (187, 18302), (193, 18332), (203, 18371), (204, 18383), (206, 18392), (210, 18407), (211, 18410), (230, 18521), (231, 18524), (232, 18533), (233, 18539), (236, 18554), (237, 18557), (240, 18578), (246, 18608), (248, 18620), (251, 18653), (269, 18764), (270, 18767), (275, 18794), (276, 18800), (284, 18854), (285, 18857), (302, 18944), (304, 18959), (307, 18971), (308, 18974), (320, 19040), (323, 19064), (325, 19085), (327, 19094), (336, 19136), (339, 19154), (340, 19157), (346, 19187), (350, 19211), (353, 19223), (354, 19232), (373, 19328), (375, 19346), (377, 19355), (378, 19367), (383, 19403), (388, 19433), (392, 19442), (393, 19454), (405, 19514), (412, 19568), (419, 19628), (425, 19670), (442, 19805), (445, 19829), (450, 19883), (453, 19931), (459, 19973), (461, 19997), (462, 20000),

Gene: KashFlow\_30 Start: 26008, Stop: 28503, Start Num: 18

Candidate Starts for KashFlow\_30:

(Start: 18 @26008 has 221 MA's), (81, 26203), (89, 26239), (91, 26254), (108, 26341), (112, 26356), (120, 26392), (121, 26398), (135, 26431), (137, 26443), (162, 26614), (165, 26623), (169, 26647),

(179, 26701), (186, 26737), (187, 26743), (193, 26773), (201, 26803), (204, 26824), (206, 26833), (210, 26848), (223, 26917), (237, 26998), (238, 27007), (242, 27028), (243, 27031), (248, 27061), (252, 27097), (259, 27148), (260, 27157), (262, 27160), (265, 27187), (268, 27196), (272, 27217), (284, 27295), (285, 27298), (299, 27370), (305, 27406), (307, 27412), (314, 27454), (315, 27460), (322, 27502), (323, 27505), (325, 27526), (326, 27532), (327, 27535), (334, 27565), (358, 27706), (361, 27715), (362, 27724), (367, 27757), (373, 27781), (374, 27784), (375, 27799), (378, 27820), (383, 27856), (384, 27862), (385, 27868), (390, 27889), (395, 27916), (414, 28051), (424, 28123), (426, 28129), (430, 28147), (442, 28246), (453, 28363), (463, 28444), (465, 28447), (469, 28474),

Gene: Kenuha5\_18 Start: 17523, Stop: 20015, Start Num: 18

Candidate Starts for Kenuha5\_18:

(17, 17511), (Start: 18 @17523 has 221 MA's), (28, 17544), (Start: 38 @17565 has 1 MA's), (49, 17604), (71, 17673), (73, 17682), (74, 17685), (81, 17703), (89, 17736), (95, 17769), (100, 17802), (112, 17856), (120, 17892), (121, 17898), (122, 17901), (132, 17919), (135, 17931), (137, 17943), (141, 17967), (150, 18030), (162, 18114), (165, 18123), (169, 18147), (172, 18171), (178, 18195), (179, 18201), (183, 18222), (187, 18243), (193, 18273), (201, 18303), (204, 18324), (223, 18417), (225, 18432), (226, 18441), (230, 18462), (231, 18465), (246, 18549), (247, 18552), (248, 18561), (250, 18588), (252, 18597), (256, 18636), (260, 18657), (262, 18660), (268, 18696), (272, 18717), (284, 18795), (285, 18798), (298, 18852), (307, 18912), (323, 19005), (324, 19023), (325, 19026), (334, 19062), (343, 19116), (346, 19125), (358, 19203), (362, 19221), (368, 19257), (369, 19260), (373, 19278), (374, 19281), (375, 19296), (378, 19317), (383, 19353), (385, 19365), (399, 19428), (405, 19461), (414, 19548), (422, 19596), (424, 19620), (429, 19647), (430, 19656), (433, 19695), (438, 19734), (442, 19758), (444, 19779), (453, 19875), (456, 19896), (465, 19959), (469, 19986), (472, 19995),

Gene: Kersh\_19 Start: 17568, Stop: 20060, Start Num: 18

Candidate Starts for Kersh\_19:

(Start: 18 @17568 has 221 MA's), (28, 17589), (Start: 38 @17610 has 1 MA's), (49, 17649), (71, 17718), (73, 17727), (74, 17730), (81, 17748), (89, 17781), (95, 17814), (100, 17847), (112, 17901), (120, 17937), (122, 17946), (132, 17964), (137, 17988), (141, 18012), (154, 18120), (160, 18144), (162, 18159), (165, 18168), (169, 18192), (170, 18198), (172, 18216), (174, 18228), (176, 18234), (178, 18240), (179, 18246), (180, 18249), (181, 18258), (183, 18267), (186, 18282), (193, 18318), (203, 18357), (204, 18369), (206, 18378), (223, 18462), (237, 18543), (238, 18552), (243, 18576), (248, 18606), (252, 18642), (259, 18693), (260, 18702), (262, 18705), (268, 18741), (272, 18762), (284, 18840), (285, 18843), (298, 18897), (307, 18957), (321, 19044), (323, 19050), (325, 19071), (334, 19107), (343, 19161), (346, 19170), (358, 19248), (362, 19266), (368, 19302), (369, 19305), (373, 19323), (375, 19341), (383, 19398), (385, 19410), (399, 19473), (405, 19506), (414, 19593), (422, 19641), (424, 19665), (429, 19692), (430, 19701), (433, 19740), (438, 19779), (442, 19803), (444, 19824), (453, 19920), (456, 19941), (463, 20001), (465, 20004), (469, 20031),

Gene: Kimberlium\_20 Start: 18519, Stop: 21056, Start Num: 18

Candidate Starts for Kimberlium\_20:

(16, 18507), (Start: 18 @18519 has 221 MA's), (28, 18540), (Start: 38 @18561 has 1 MA's), (48, 18600), (71, 18669), (73, 18678), (74, 18681), (81, 18699), (89, 18732), (91, 18747), (99, 18795), (119, 18906), (120, 18909), (128, 18939), (134, 18951), (135, 18954), (145, 19032), (148, 19056), (Start: 159 @19122 has 1 MA's), (165, 19167), (169, 19197), (170, 19203), (172, 19221), (178, 19245), (180, 19254), (186, 19287), (187, 19293), (193, 19323), (203, 19362), (204, 19374), (206, 19383), (210, 19398), (211, 19401), (230, 19512), (231, 19515), (232, 19524), (233, 19530), (236, 19545), (237, 19548), (240, 19569), (246, 19599), (248, 19611), (251, 19644), (269, 19755), (270, 19758), (275, 19785), (276, 19791), (284, 19845), (285, 19848), (302, 19935), (304, 19950), (307, 19962), (308, 19965), (320, 20031), (323, 20055), (325, 20076), (327, 20085), (336, 20127), (339, 20145), (340, 20148), (348, 20184), (350, 20202), (353, 20214), (354, 20223), (359, 20250), (373, 20319), (375, 20337), (377, 20346), (378, 20358), (383, 20394), (388, 20424), (393, 20445), (399,

20469), (405, 20505), (412, 20559), (419, 20619), (425, 20661), (434, 20739), (442, 20796), (445, 20820), (450, 20874), (453, 20922), (459, 20964), (461, 20988), (462, 20991),

Gene: Kimchi\_28 Start: 22277, Stop: 24673, Start Num: 52

Candidate Starts for Kimchi\_28:

(Start: 52 @22277 has 123 MA's), (97, 22454), (Start: 101 @22475 has 20 MA's), (139, 22622), (160, 22763), (164, 22796), (169, 22829), (174, 22865), (193, 22958), (206, 23018), (211, 23036), (234, 23168), (242, 23213), (262, 23345), (269, 23390), (281, 23450), (301, 23564), (304, 23585), (312, 23624), (315, 23645), (317, 23660), (346, 23810), (348, 23816), (350, 23834), (361, 23888), (375, 23972), (392, 24065), (430, 24311), (453, 24527), (462, 24611), (469, 24644),

Gene: KingMidas\_19 Start: 18701, Stop: 21238, Start Num: 18

Candidate Starts for KingMidas\_19:

(16, 18689), (Start: 18 @18701 has 221 MA's), (28, 18722), (Start: 38 @18743 has 1 MA's), (48, 18782), (71, 18851), (73, 18860), (74, 18863), (81, 18881), (91, 18929), (99, 18977), (119, 19088), (120, 19091), (135, 19136), (145, 19214), (148, 19238), (Start: 159 @19304 has 1 MA's), (165, 19349), (169, 19379), (170, 19385), (172, 19403), (178, 19427), (180, 19436), (186, 19469), (187, 19475), (193, 19505), (203, 19544), (204, 19556), (206, 19565), (210, 19580), (211, 19583), (230, 19694), (231, 19697), (232, 19706), (233, 19712), (236, 19727), (237, 19730), (240, 19751), (246, 19781), (248, 19793), (251, 19826), (269, 19937), (270, 19940), (275, 19967), (276, 19973), (284, 20027), (285, 20030), (304, 20132), (307, 20144), (308, 20147), (320, 20213), (323, 20237), (325, 20258), (327, 20267), (339, 20327), (340, 20330), (348, 20366), (350, 20384), (354, 20405), (359, 20432), (373, 20501), (375, 20519), (377, 20528), (378, 20540), (383, 20576), (393, 20627), (397, 20645), (405, 20687), (412, 20741), (425, 20843), (442, 20978), (445, 21002), (450, 21056), (456, 21125), (461, 21170), (462, 21173),

Gene: Kingsley\_19 Start: 17253, Stop: 19730, Start Num: 18

Candidate Starts for Kingsley\_19:

(17, 17241), (Start: 18 @17253 has 221 MA's), (28, 17274), (Start: 38 @17295 has 1 MA's), (49, 17334), (71, 17403), (73, 17412), (74, 17415), (81, 17433), (89, 17466), (91, 17481), (108, 17568), (112, 17583), (120, 17619), (121, 17625), (135, 17658), (137, 17670), (162, 17841), (165, 17850), (169, 17874), (179, 17928), (186, 17964), (187, 17970), (193, 18000), (201, 18030), (204, 18051), (206, 18060), (223, 18144), (233, 18207), (237, 18225), (238, 18234), (242, 18255), (243, 18258), (246, 18276), (248, 18288), (250, 18315), (252, 18324), (259, 18375), (260, 18384), (262, 18387), (265, 18414), (268, 18423), (272, 18444), (284, 18522), (285, 18525), (305, 18633), (307, 18639), (315, 18687), (322, 18729), (323, 18732), (325, 18753), (326, 18759), (327, 18762), (334, 18792), (358, 18933), (362, 18951), (367, 18984), (373, 19008), (374, 19011), (375, 19026), (378, 19047), (383, 19083), (384, 19089), (390, 19116), (395, 19143), (414, 19278), (422, 19326), (424, 19350), (426, 19356), (430, 19374), (442, 19473), (444, 19494), (446, 19512), (453, 19590), (456, 19611), (465, 19674), (467, 19692), (472, 19710),

Gene: Konstantine\_34 Start: 26883, Stop: 29726, Start Num: 3

Candidate Starts for Konstantine\_34:

(Start: 3 @26883 has 8 MA's), (8, 27015), (9, 27027), (Start: 11 @27036 has 7 MA's), (20, 27105), (40, 27171), (45, 27192), (59, 27240), (70, 27282), (76, 27306), (85, 27339), (92, 27375), (94, 27387), (107, 27480), (120, 27537), (130, 27576), (160, 27771), (163, 27801), (170, 27843), (199, 27984), (203, 28002), (217, 28083), (225, 28122), (229, 28143), (251, 28281), (255, 28320), (268, 28383), (285, 28485), (324, 28710), (389, 29073), (395, 29100), (431, 29343), (432, 29376), (436, 29400), (449, 29520), (457, 29598), (469, 29685), (473, 29700), (475, 29706),

Gene: Kostya\_26 Start: 22283, Stop: 24679, Start Num: 52

Candidate Starts for Kostya\_26:

(Start: 52 @22283 has 123 MA's), (97, 22460), (Start: 101 @22481 has 20 MA's), (139, 22628), (160, 22769), (164, 22802), (169, 22835), (174, 22871), (193, 22964), (206, 23024), (211, 23042), (225, 23123), (262, 23351), (269, 23396), (304, 23591), (305, 23597), (308, 23606), (315, 23651), (317, 23666), (348, 23822), (350, 23840), (352, 23849), (375, 23978), (376, 23981), (411, 24191), (413, 24203), (430, 24317), (453, 24533), (462, 24617), (467, 24641), (469, 24650),

Gene: Krakatau\_19 Start: 18095, Stop: 20632, Start Num: 18

Candidate Starts for Krakatau\_19:

(Start: 18 @18095 has 221 MA's), (28, 18116), (Start: 38 @18137 has 1 MA's), (48, 18176), (71, 18245), (73, 18254), (74, 18257), (81, 18275), (89, 18308), (91, 18323), (99, 18371), (119, 18482), (120, 18485), (128, 18515), (134, 18527), (135, 18530), (148, 18632), (Start: 159 @18698 has 1 MA's), (165, 18743), (169, 18773), (170, 18779), (172, 18797), (178, 18821), (180, 18830), (186, 18863), (187, 18869), (193, 18899), (203, 18938), (204, 18950), (206, 18959), (210, 18974), (212, 18980), (230, 19088), (231, 19091), (232, 19100), (233, 19106), (236, 19121), (237, 19124), (240, 19145), (246, 19175), (248, 19187), (251, 19220), (269, 19331), (270, 19334), (275, 19361), (276, 19367), (284, 19421), (285, 19424), (304, 19526), (307, 19538), (308, 19541), (320, 19607), (323, 19631), (325, 19652), (327, 19661), (339, 19721), (340, 19724), (348, 19760), (350, 19778), (353, 19790), (354, 19799), (359, 19826), (373, 19895), (375, 19913), (377, 19922), (378, 19934), (383, 19970), (388, 20000), (393, 20021), (399, 20045), (405, 20081), (412, 20135), (419, 20195), (425, 20237), (434, 20315), (442, 20372), (445, 20396), (450, 20450), (453, 20498), (461, 20564), (462, 20567),

Gene: Krili\_57 Start: 35606, Stop: 38116, Start Num: 35

Candidate Starts for Krili\_57:

(Start: 35 @35606 has 27 MA's), (42, 35639), (60, 35708), (61, 35711), (68, 35735), (74, 35759), (83, 35783), (89, 35816), (124, 36023), (127, 36035), (128, 36038), (151, 36185), (152, 36215), (Start: 159 @36239 has 1 MA's), (165, 36269), (166, 36272), (169, 36299), (172, 36323), (179, 36353), (189, 36410), (194, 36434), (203, 36470), (204, 36482), (210, 36506), (211, 36509), (217, 36551), (236, 36647), (237, 36650), (279, 36905), (304, 37049), (315, 37109), (324, 37181), (325, 37184), (344, 37280), (375, 37454), (378, 37475), (395, 37568), (398, 37580), (412, 37670), (423, 37745), (432, 37790), (455, 37991), (460, 38045), (465, 38060),

Gene: KristaRAM\_19 Start: 18070, Stop: 20607, Start Num: 18

Candidate Starts for KristaRAM\_19:

(16, 18058), (Start: 18 @18070 has 221 MA's), (28, 18091), (Start: 38 @18112 has 1 MA's), (48, 18151), (71, 18220), (73, 18229), (74, 18232), (81, 18250), (89, 18283), (91, 18298), (99, 18346), (119, 18457), (120, 18460), (128, 18490), (134, 18502), (135, 18505), (145, 18583), (148, 18607), (Start: 159 @18673 has 1 MA's), (165, 18718), (169, 18748), (170, 18754), (172, 18772), (178, 18796), (180, 18805), (186, 18838), (187, 18844), (193, 18874), (203, 18913), (204, 18925), (206, 18934), (210, 18949), (211, 18952), (230, 19063), (231, 19066), (232, 19075), (233, 19081), (236, 19096), (237, 19099), (240, 19120), (246, 19150), (248, 19162), (251, 19195), (269, 19306), (270, 19309), (275, 19336), (276, 19342), (284, 19396), (285, 19399), (302, 19486), (304, 19501), (307, 19513), (308, 19516), (320, 19582), (323, 19606), (325, 19627), (327, 19636), (339, 19696), (340, 19699), (348, 19735), (350, 19753), (353, 19765), (354, 19774), (359, 19801), (373, 19870), (375, 19888), (377, 19897), (378, 19909), (383, 19945), (388, 19975), (393, 19996), (399, 20020), (405, 20056), (412, 20110), (419, 20170), (425, 20212), (434, 20290), (442, 20347), (445, 20371), (450, 20425), (453, 20473), (459, 20515), (461, 20539), (462, 20542),

Gene: Kumao\_30 Start: 23701, Stop: 26268, Start Num: 26

Candidate Starts for Kumao\_30:

(Start: 26 @23701 has 6 MA's), (43, 23767), (81, 23899), (88, 23923), (93, 23956), (102, 24031), (106, 24049), (116, 24100), (134, 24166), (162, 24370), (180, 24469), (186, 24502), (195, 24553), (221, 24676), (222, 24679), (251, 24856), (262, 24922), (273, 24988), (277, 25006), (280, 25021), (283,

25045), (303, 25150), (304, 25162), (328, 25300), (346, 25399), (348, 25405), (351, 25435), (358, 25477), (391, 25660), (392, 25663), (395, 25684), (396, 25690), (412, 25789), (417, 25828), (429, 25915), (441, 26014), (447, 26065), (448, 26083), (452, 26137), (461, 26212),

Gene: Latretium\_19 Start: 18077, Stop: 20614, Start Num: 18

Candidate Starts for Latretium\_19:

(16, 18065), (Start: 18 @18077 has 221 MA's), (28, 18098), (Start: 38 @18119 has 1 MA's), (48, 18158), (71, 18227), (73, 18236), (74, 18239), (81, 18257), (91, 18305), (119, 18464), (120, 18467), (128, 18497), (135, 18512), (145, 18590), (147, 18611), (148, 18614), (Start: 159 @18680 has 1 MA's), (169, 18755), (170, 18761), (172, 18779), (178, 18803), (179, 18809), (180, 18812), (186, 18845), (187, 18851), (193, 18881), (199, 18902), (204, 18932), (206, 18941), (226, 19049), (230, 19070), (231, 19073), (232, 19082), (233, 19088), (236, 19103), (237, 19106), (240, 19127), (248, 19169), (251, 19202), (275, 19343), (276, 19349), (284, 19403), (285, 19406), (290, 19433), (304, 19508), (307, 19520), (308, 19523), (320, 19589), (323, 19613), (325, 19634), (327, 19643), (339, 19703), (340, 19706), (348, 19742), (350, 19760), (354, 19781), (359, 19808), (371, 19865), (373, 19877), (375, 19895), (377, 19904), (378, 19916), (383, 19952), (388, 19982), (405, 20063), (412, 20117), (419, 20177), (425, 20219), (442, 20354), (445, 20378), (450, 20432), (459, 20522), (461, 20546), (462, 20549),

Gene: Leozinho\_19 Start: 17243, Stop: 19780, Start Num: 18

Candidate Starts for Leozinho\_19:

(16, 17231), (Start: 18 @17243 has 221 MA's), (28, 17264), (Start: 38 @17285 has 1 MA's), (48, 17324), (71, 17393), (73, 17402), (74, 17405), (81, 17423), (89, 17456), (91, 17471), (99, 17519), (119, 17630), (120, 17633), (128, 17663), (134, 17675), (135, 17678), (145, 17756), (148, 17780), (Start: 159 @17846 has 1 MA's), (165, 17891), (169, 17921), (170, 17927), (172, 17945), (178, 17969), (180, 17978), (186, 18011), (187, 18017), (193, 18047), (203, 18086), (204, 18098), (206, 18107), (210, 18122), (211, 18125), (230, 18236), (231, 18239), (232, 18248), (233, 18254), (236, 18269), (237, 18272), (240, 18293), (246, 18323), (248, 18335), (251, 18368), (269, 18479), (270, 18482), (275, 18509), (276, 18515), (284, 18569), (285, 18572), (304, 18674), (307, 18686), (308, 18689), (320, 18755), (323, 18779), (325, 18800), (327, 18809), (339, 18869), (340, 18872), (348, 18908), (350, 18926), (353, 18938), (354, 18947), (359, 18974), (373, 19043), (375, 19061), (377, 19070), (378, 19082), (383, 19118), (388, 19148), (393, 19169), (399, 19193), (405, 19229), (412, 19283), (419, 19343), (425, 19385), (434, 19463), (442, 19520), (445, 19544), (450, 19598), (453, 19646), (459, 19688), (461, 19712), (462, 19715),

Gene: Leperchaun\_18 Start: 17387, Stop: 19939, Start Num: 18

Candidate Starts for Leperchaun\_18:

(Start: 18 @17387 has 221 MA's), (28, 17408), (Start: 38 @17429 has 1 MA's), (48, 17468), (71, 17537), (73, 17546), (74, 17549), (81, 17567), (89, 17600), (91, 17615), (99, 17663), (119, 17774), (120, 17777), (132, 17810), (134, 17819), (135, 17822), (145, 17900), (152, 17966), (160, 17999), (167, 18053), (169, 18065), (178, 18113), (180, 18122), (181, 18131), (188, 18164), (199, 18206), (202, 18221), (208, 18251), (209, 18257), (210, 18260), (211, 18263), (216, 18290), (219, 18311), (225, 18344), (232, 18386), (233, 18392), (234, 18395), (236, 18407), (237, 18410), (241, 18437), (246, 18461), (248, 18473), (251, 18506), (254, 18527), (265, 18599), (270, 18620), (287, 18731), (295, 18755), (296, 18758), (299, 18782), (304, 18812), (310, 18836), (315, 18872), (316, 18878), (317, 18887), (333, 18977), (336, 19001), (337, 19016), (346, 19058), (348, 19064), (355, 19109), (374, 19205), (375, 19220), (377, 19229), (380, 19253), (392, 19316), (440, 19658), (445, 19703), (453, 19805),

Gene: LilMoolah\_18 Start: 17531, Stop: 20056, Start Num: 18

Candidate Starts for LilMoolah\_18:

(Start: 18 @17531 has 221 MA's), (28, 17552), (Start: 38 @17573 has 1 MA's), (48, 17612), (71, 17681), (73, 17690), (74, 17693), (81, 17711), (91, 17759), (99, 17807), (119, 17918), (120, 17921),

(132, 17954), (135, 17966), (145, 18044), (152, 18110), (160, 18143), (167, 18197), (169, 18209), (179, 18263), (180, 18266), (181, 18275), (188, 18308), (197, 18347), (199, 18350), (202, 18365), (203, 18368), (208, 18395), (209, 18401), (210, 18404), (211, 18407), (216, 18434), (218, 18452), (219, 18455), (232, 18530), (236, 18551), (237, 18554), (241, 18581), (246, 18605), (251, 18650), (252, 18653), (259, 18704), (270, 18767), (272, 18776), (276, 18800), (296, 18905), (297, 18908), (304, 18959), (305, 18965), (307, 18971), (308, 18974), (315, 19019), (317, 19034), (322, 19061), (325, 19085), (336, 19136), (339, 19154), (340, 19157), (341, 19169), (353, 19223), (375, 19346), (384, 19409), (397, 19472), (407, 19547), (435, 19748), (458, 19958), (464, 19997), (465, 20000),

Gene: Lilac\_28 Start: 21781, Stop: 24177, Start Num: 52

Candidate Starts for Lilac\_28:

(Start: 52 @21781 has 123 MA's), (97, 21958), (Start: 101 @21979 has 20 MA's), (139, 22126), (164, 22300), (169, 22333), (174, 22369), (193, 22462), (206, 22522), (211, 22540), (234, 22672), (242, 22717), (262, 22849), (269, 22894), (281, 22954), (301, 23068), (304, 23089), (312, 23128), (315, 23149), (317, 23164), (346, 23314), (348, 23320), (350, 23338), (361, 23392), (375, 23476), (392, 23569), (430, 23815), (453, 24031), (462, 24115), (469, 24148),

Gene: Lilizi\_28 Start: 21989, Stop: 24385, Start Num: 52

Candidate Starts for Lilizi\_28:

(Start: 52 @21989 has 123 MA's), (97, 22166), (Start: 101 @22187 has 20 MA's), (139, 22334), (164, 22508), (169, 22541), (174, 22577), (193, 22670), (206, 22730), (211, 22748), (234, 22880), (242, 22925), (262, 23057), (269, 23102), (281, 23162), (301, 23276), (304, 23297), (312, 23336), (315, 23357), (317, 23372), (346, 23522), (348, 23528), (350, 23546), (361, 23600), (375, 23684), (392, 23777), (430, 24023), (453, 24239), (462, 24323), (469, 24356),

Gene: Lilpickle\_25 Start: 21491, Stop: 23887, Start Num: 52

Candidate Starts for Lilpickle\_25:

(Start: 52 @21491 has 123 MA's), (97, 21668), (Start: 101 @21689 has 20 MA's), (139, 21836), (164, 22010), (169, 22043), (174, 22079), (193, 22172), (206, 22232), (211, 22250), (234, 22382), (242, 22427), (262, 22559), (269, 22604), (281, 22664), (301, 22778), (304, 22799), (312, 22838), (315, 22859), (317, 22874), (346, 23024), (348, 23030), (350, 23048), (361, 23102), (375, 23186), (392, 23279), (430, 23525), (453, 23741), (462, 23825), (469, 23858),

Gene: LittleE\_39 Start: 30972, Stop: 33527, Start Num: 18

Candidate Starts for LittleE\_39:

(Start: 18 @30972 has 221 MA's), (81, 31167), (89, 31203), (91, 31218), (99, 31266), (119, 31377), (120, 31380), (128, 31410), (135, 31425), (145, 31503), (148, 31527), (Start: 159 @31593 has 1 MA's), (165, 31638), (169, 31668), (170, 31674), (172, 31692), (178, 31716), (180, 31725), (186, 31758), (187, 31764), (193, 31794), (203, 31833), (204, 31845), (206, 31854), (210, 31869), (211, 31872), (230, 31983), (231, 31986), (232, 31995), (233, 32001), (236, 32016), (237, 32019), (246, 32070), (248, 32082), (251, 32115), (262, 32181), (269, 32226), (270, 32229), (275, 32256), (276, 32262), (284, 32316), (285, 32319), (302, 32406), (304, 32421), (307, 32433), (308, 32436), (320, 32502), (325, 32547), (327, 32556), (339, 32616), (340, 32619), (348, 32655), (350, 32673), (353, 32685), (354, 32694), (359, 32721), (373, 32790), (375, 32808), (377, 32817), (378, 32829), (383, 32865), (388, 32895), (393, 32916), (399, 32940), (405, 32976), (412, 33030), (419, 33090), (425, 33132), (442, 33267), (445, 33291), (450, 33345), (453, 33393), (459, 33435), (461, 33459), (462, 33462),

Gene: LittleShirley\_19 Start: 17218, Stop: 19755, Start Num: 18

Candidate Starts for LittleShirley\_19:

(Start: 18 @17218 has 221 MA's), (28, 17239), (Start: 38 @17260 has 1 MA's), (48, 17299), (71, 17368), (73, 17377), (74, 17380), (81, 17398), (91, 17446), (117, 17599), (120, 17608), (135, 17653), (147, 17752), (148, 17755), (Start: 159 @17821 has 1 MA's), (169, 17896), (170, 17902), (172,

17920), (178, 17944), (179, 17950), (180, 17953), (186, 17986), (187, 17992), (193, 18022), (199, 18043), (204, 18073), (206, 18082), (210, 18097), (211, 18100), (230, 18211), (231, 18214), (232, 18223), (233, 18229), (236, 18244), (237, 18247), (240, 18268), (246, 18298), (248, 18310), (251, 18343), (269, 18454), (270, 18457), (275, 18484), (276, 18490), (284, 18544), (285, 18547), (304, 18649), (307, 18661), (308, 18664), (320, 18730), (323, 18754), (325, 18775), (327, 18784), (339, 18844), (340, 18847), (348, 18883), (350, 18901), (353, 18913), (354, 18922), (359, 18949), (371, 19006), (373, 19018), (375, 19036), (377, 19045), (378, 19057), (383, 19093), (388, 19123), (392, 19132), (393, 19144), (405, 19204), (412, 19258), (419, 19318), (425, 19360), (442, 19495), (445, 19519), (450, 19573), (453, 19621), (459, 19663), (461, 19687), (462, 19690),

Gene: Lizziana\_18 Start: 17406, Stop: 19931, Start Num: 18

Candidate Starts for Lizziana\_18:

(Start: 18 @17406 has 221 MA's), (48, 17487), (71, 17556), (73, 17565), (74, 17568), (81, 17586), (91, 17634), (98, 17679), (119, 17793), (120, 17796), (123, 17808), (132, 17829), (134, 17838), (135, 17841), (142, 17889), (145, 17919), (152, 17985), (160, 18018), (165, 18054), (168, 18078), (179, 18138), (180, 18141), (183, 18159), (197, 18222), (199, 18225), (203, 18243), (206, 18264), (211, 18282), (216, 18309), (219, 18330), (225, 18363), (233, 18411), (234, 18414), (236, 18426), (237, 18429), (241, 18456), (246, 18480), (251, 18525), (272, 18651), (276, 18675), (297, 18783), (304, 18834), (307, 18846), (308, 18849), (315, 18894), (317, 18909), (322, 18936), (325, 18960), (336, 19011), (339, 19029), (340, 19032), (341, 19044), (353, 19098), (361, 19140), (384, 19284), (395, 19338), (396, 19344), (397, 19347), (402, 19383), (404, 19386), (406, 19395), (407, 19422), (435, 19623), (453, 19794), (458, 19833), (464, 19872), (465, 19875),

Gene: Llama\_18 Start: 17634, Stop: 20171, Start Num: 18

Candidate Starts for Llama\_18:

(Start: 18 @17634 has 221 MA's), (28, 17655), (Start: 38 @17676 has 1 MA's), (48, 17715), (71, 17784), (73, 17793), (74, 17796), (81, 17814), (91, 17862), (119, 18021), (120, 18024), (134, 18066), (135, 18069), (145, 18147), (147, 18168), (148, 18171), (Start: 159 @18237 has 1 MA's), (160, 18246), (165, 18282), (169, 18312), (170, 18318), (178, 18360), (179, 18366), (180, 18369), (186, 18402), (187, 18408), (193, 18438), (199, 18459), (204, 18489), (206, 18498), (226, 18606), (229, 18618), (230, 18627), (231, 18630), (232, 18639), (233, 18645), (236, 18660), (237, 18663), (240, 18684), (248, 18726), (251, 18759), (275, 18900), (276, 18906), (284, 18960), (285, 18963), (290, 18990), (304, 19065), (307, 19077), (308, 19080), (320, 19146), (322, 19167), (323, 19170), (325, 19191), (336, 19242), (339, 19260), (340, 19263), (346, 19293), (350, 19317), (353, 19329), (373, 19434), (375, 19452), (377, 19461), (378, 19473), (383, 19509), (388, 19539), (393, 19560), (399, 19584), (405, 19620), (419, 19734), (425, 19776), (434, 19854), (442, 19911), (445, 19935), (450, 19989), (453, 20037), (459, 20079), (461, 20103), (462, 20106),

Gene: Llij\_18 Start: 17383, Stop: 19920, Start Num: 18

Candidate Starts for Llij\_18:

(Start: 18 @17383 has 221 MA's), (55, 17473), (71, 17533), (73, 17542), (74, 17545), (81, 17563), (91, 17611), (99, 17659), (117, 17764), (119, 17770), (120, 17773), (134, 17815), (135, 17818), (148, 17920), (Start: 159 @17986 has 1 MA's), (165, 18031), (169, 18061), (170, 18067), (172, 18085), (178, 18109), (180, 18118), (186, 18151), (187, 18157), (199, 18208), (203, 18226), (204, 18238), (206, 18247), (210, 18262), (212, 18268), (230, 18376), (232, 18388), (233, 18394), (236, 18409), (237, 18412), (240, 18433), (246, 18463), (248, 18475), (251, 18508), (262, 18574), (269, 18619), (270, 18622), (275, 18649), (276, 18655), (284, 18709), (285, 18712), (290, 18739), (304, 18814), (307, 18826), (308, 18829), (320, 18895), (322, 18916), (323, 18919), (327, 18949), (336, 18991), (339, 19009), (340, 19012), (346, 19042), (350, 19066), (353, 19078), (354, 19087), (373, 19183), (375, 19201), (377, 19210), (378, 19222), (388, 19288), (392, 19297), (393, 19309), (405, 19369), (425, 19525), (442, 19660), (445, 19684), (450, 19738), (456, 19807), (461, 19852), (462, 19855),

Gene: Lorde\_19 Start: 17219, Stop: 19756, Start Num: 18

Candidate Starts for Lorde\_19:

(16, 17207), (Start: 18 @17219 has 221 MA's), (28, 17240), (Start: 38 @17261 has 1 MA's), (48, 17300), (71, 17369), (73, 17378), (74, 17381), (81, 17399), (89, 17432), (91, 17447), (99, 17495), (117, 17600), (120, 17609), (134, 17651), (135, 17654), (145, 17732), (148, 17756), (Start: 159 @17822 has 1 MA's), (165, 17867), (169, 17897), (170, 17903), (172, 17921), (178, 17945), (180, 17954), (186, 17987), (187, 17993), (193, 18023), (203, 18062), (204, 18074), (206, 18083), (210, 18098), (211, 18101), (230, 18212), (232, 18224), (233, 18230), (236, 18245), (237, 18248), (240, 18269), (246, 18299), (248, 18311), (251, 18344), (262, 18410), (269, 18455), (270, 18458), (275, 18485), (276, 18491), (284, 18545), (285, 18548), (290, 18575), (304, 18650), (307, 18662), (308, 18665), (320, 18731), (323, 18755), (327, 18785), (336, 18827), (339, 18845), (340, 18848), (348, 18884), (350, 18902), (354, 18923), (359, 18950), (373, 19019), (375, 19037), (377, 19046), (378, 19058), (383, 19094), (388, 19124), (392, 19133), (393, 19145), (405, 19205), (412, 19259), (419, 19319), (425, 19361), (434, 19439), (442, 19496), (445, 19520), (450, 19574), (453, 19622), (459, 19664), (461, 19688), (462, 19691),

Gene: Lucky2013\_36 Start: 27869, Stop: 30376, Start Num: 18

Candidate Starts for Lucky2013\_36:

(Start: 18 @27869 has 221 MA's), (81, 28064), (89, 28100), (91, 28115), (108, 28202), (112, 28217), (135, 28292), (137, 28304), (142, 28331), (154, 28436), (162, 28475), (165, 28484), (169, 28508), (170, 28514), (172, 28532), (176, 28550), (180, 28565), (181, 28574), (183, 28583), (186, 28598), (192, 28625), (193, 28634), (203, 28673), (204, 28685), (206, 28694), (223, 28778), (237, 28859), (242, 28889), (243, 28892), (248, 28922), (250, 28949), (252, 28958), (259, 29009), (260, 29018), (262, 29021), (268, 29057), (272, 29078), (278, 29114), (305, 29267), (315, 29321), (323, 29366), (324, 29384), (325, 29387), (334, 29426), (358, 29573), (361, 29582), (374, 29651), (375, 29666), (405, 29831), (414, 29918), (422, 29966), (430, 30017), (438, 30095), (463, 30317), (465, 30320), (469, 30347),

Gene: LunaBlu\_19 Start: 17477, Stop: 20014, Start Num: 18

Candidate Starts for LunaBlu\_19:

(Start: 18 @17477 has 221 MA's), (55, 17567), (71, 17627), (73, 17636), (74, 17639), (81, 17657), (89, 17690), (91, 17705), (99, 17753), (119, 17864), (120, 17867), (128, 17897), (135, 17912), (145, 17990), (Start: 159 @18080 has 1 MA's), (165, 18125), (169, 18155), (170, 18161), (172, 18179), (178, 18203), (180, 18212), (186, 18245), (187, 18251), (193, 18281), (203, 18320), (204, 18332), (206, 18341), (210, 18356), (211, 18359), (230, 18470), (232, 18482), (233, 18488), (236, 18503), (237, 18506), (240, 18527), (246, 18557), (248, 18569), (251, 18602), (262, 18668), (269, 18713), (270, 18716), (275, 18743), (276, 18749), (284, 18803), (285, 18806), (304, 18908), (307, 18920), (308, 18923), (320, 18989), (323, 19013), (327, 19043), (339, 19103), (340, 19106), (348, 19142), (350, 19160), (353, 19172), (354, 19181), (359, 19208), (373, 19277), (375, 19295), (377, 19304), (378, 19316), (383, 19352), (388, 19382), (393, 19403), (399, 19427), (405, 19463), (412, 19517), (419, 19577), (425, 19619), (434, 19697), (442, 19754), (445, 19778), (450, 19832), (453, 19880), (459, 19922), (461, 19946), (462, 19949),

Gene: LunaStella\_20 Start: 17940, Stop: 20417, Start Num: 21

Candidate Starts for LunaStella\_20:

(Start: 21 @17940 has 3 MA's), (28, 17952), (54, 18015), (62, 18042), (77, 18096), (81, 18105), (83, 18111), (89, 18138), (95, 18171), (108, 18243), (112, 18258), (120, 18294), (122, 18303), (132, 18321), (137, 18345), (141, 18369), (162, 18516), (165, 18525), (169, 18549), (172, 18573), (178, 18597), (179, 18603), (183, 18624), (187, 18645), (193, 18675), (201, 18705), (204, 18726), (223, 18819), (225, 18834), (226, 18843), (228, 18852), (230, 18864), (231, 18867), (246, 18951), (247, 18954), (248, 18963), (250, 18990), (252, 18999), (256, 19038), (260, 19059), (262, 19062), (268, 19098), (272, 19119), (284, 19197), (285, 19200), (298, 19254), (307, 19314), (321, 19401), (323, 19407), (324, 19425), (325, 19428), (334, 19464), (343, 19518), (346, 19527), (358, 19605), (362, 19623), (368, 19659), (369, 19662), (373, 19680), (374, 19683), (375, 19698), (383, 19755), (385,

19767), (399, 19830), (405, 19863), (414, 19950), (422, 19998), (424, 20022), (429, 20049), (430, 20058), (433, 20097), (438, 20136), (442, 20160), (444, 20181), (453, 20277), (456, 20298), (465, 20361), (469, 20388), (472, 20397),

Gene: MISSy\_25 Start: 21796, Stop: 24192, Start Num: 52

Candidate Starts for MISSy\_25:

(Start: 52 @21796 has 123 MA's), (97, 21973), (Start: 101 @21994 has 20 MA's), (139, 22141), (160, 22282), (164, 22315), (169, 22348), (174, 22384), (193, 22477), (206, 22537), (211, 22555), (234, 22687), (242, 22732), (262, 22864), (269, 22909), (281, 22969), (301, 23083), (304, 23104), (312, 23143), (315, 23164), (317, 23179), (346, 23329), (348, 23335), (350, 23353), (361, 23407), (375, 23491), (392, 23584), (430, 23830), (453, 24046), (462, 24130), (469, 24163),

Gene: MPhalcon\_25 Start: 21790, Stop: 24186, Start Num: 52

Candidate Starts for MPhalcon\_25:

(Start: 52 @21790 has 123 MA's), (97, 21967), (Start: 101 @21988 has 20 MA's), (139, 22135), (160, 22276), (164, 22309), (169, 22342), (174, 22378), (193, 22471), (206, 22531), (211, 22549), (234, 22681), (242, 22726), (262, 22858), (269, 22903), (281, 22963), (301, 23077), (304, 23098), (312, 23137), (315, 23158), (317, 23173), (346, 23323), (348, 23329), (350, 23347), (361, 23401), (375, 23485), (392, 23578), (430, 23824), (453, 24040), (462, 24124), (469, 24157),

Gene: MadKillah\_59 Start: 35875, Stop: 38385, Start Num: 35

Candidate Starts for MadKillah\_59:

(Start: 35 @35875 has 27 MA's), (42, 35908), (60, 35977), (61, 35980), (68, 36004), (74, 36028), (83, 36052), (89, 36085), (124, 36292), (127, 36304), (128, 36307), (151, 36454), (152, 36484), (Start: 159 @36508 has 1 MA's), (165, 36538), (166, 36541), (169, 36568), (172, 36592), (179, 36622), (189, 36679), (194, 36703), (203, 36739), (204, 36751), (210, 36775), (211, 36778), (217, 36820), (236, 36916), (237, 36919), (279, 37174), (304, 37318), (315, 37378), (324, 37450), (325, 37453), (344, 37549), (375, 37723), (378, 37744), (395, 37837), (398, 37849), (412, 37939), (423, 38014), (432, 38059), (455, 38260), (460, 38314), (465, 38329),

Gene: MadMen\_19 Start: 17637, Stop: 20129, Start Num: 18

Candidate Starts for MadMen\_19:

(Start: 18 @17637 has 221 MA's), (28, 17658), (Start: 38 @17679 has 1 MA's), (49, 17718), (71, 17787), (73, 17796), (74, 17799), (81, 17817), (89, 17850), (95, 17883), (100, 17916), (108, 17955), (112, 17970), (120, 18006), (122, 18015), (132, 18033), (137, 18057), (141, 18081), (162, 18228), (165, 18237), (169, 18261), (172, 18285), (178, 18309), (179, 18315), (183, 18336), (187, 18357), (193, 18387), (201, 18417), (204, 18438), (223, 18531), (225, 18546), (226, 18555), (230, 18576), (231, 18579), (246, 18663), (247, 18666), (248, 18675), (250, 18702), (252, 18711), (256, 18750), (260, 18771), (262, 18774), (268, 18810), (272, 18831), (284, 18909), (285, 18912), (298, 18966), (307, 19026), (323, 19119), (324, 19137), (325, 19140), (334, 19176), (343, 19230), (346, 19239), (358, 19317), (362, 19335), (368, 19371), (369, 19374), (373, 19392), (374, 19395), (375, 19410), (383, 19467), (385, 19479), (405, 19575), (414, 19662), (422, 19710), (424, 19734), (430, 19770), (433, 19809), (438, 19848), (442, 19872), (444, 19893), (453, 19989), (456, 20010), (465, 20073), (469, 20100), (472, 20109),

Gene: MadamMonkfish\_26 Start: 21702, Stop: 24098, Start Num: 52

Candidate Starts for MadamMonkfish\_26:

(Start: 52 @21702 has 123 MA's), (97, 21879), (Start: 101 @21900 has 20 MA's), (139, 22047), (164, 22221), (169, 22254), (174, 22290), (193, 22383), (206, 22443), (211, 22461), (234, 22593), (242, 22638), (262, 22770), (269, 22815), (281, 22875), (301, 22989), (304, 23010), (312, 23049), (315, 23070), (317, 23085), (346, 23235), (348, 23241), (350, 23259), (361, 23313), (375, 23397), (392, 23490), (430, 23736), (453, 23952), (462, 24036), (469, 24069),

Gene: Madiba\_19 Start: 17273, Stop: 19762, Start Num: 18

Candidate Starts for Madiba\_19:

(Start: 18 @17273 has 221 MA's), (28, 17294), (Start: 38 @17315 has 1 MA's), (49, 17354), (71, 17423), (73, 17432), (74, 17435), (81, 17453), (91, 17501), (112, 17603), (120, 17639), (121, 17645), (122, 17648), (132, 17666), (137, 17690), (141, 17714), (150, 17777), (162, 17861), (165, 17870), (169, 17894), (172, 17918), (178, 17942), (179, 17948), (183, 17969), (187, 17990), (193, 18020), (201, 18050), (204, 18071), (223, 18164), (225, 18179), (226, 18188), (230, 18209), (231, 18212), (246, 18296), (247, 18299), (248, 18308), (250, 18335), (252, 18344), (256, 18383), (260, 18404), (262, 18407), (268, 18443), (272, 18464), (284, 18542), (285, 18545), (298, 18599), (307, 18659), (323, 18752), (324, 18770), (325, 18773), (334, 18809), (343, 18863), (346, 18872), (358, 18950), (362, 18968), (368, 19004), (369, 19007), (373, 19025), (374, 19028), (375, 19043), (383, 19100), (385, 19112), (405, 19208), (414, 19295), (422, 19343), (424, 19367), (429, 19394), (430, 19403), (433, 19442), (438, 19481), (442, 19505), (444, 19526), (453, 19622), (456, 19643), (465, 19706), (469, 19733), (472, 19742),

Gene: Mahavrat\_18 Start: 17394, Stop: 19931, Start Num: 18

Candidate Starts for Mahavrat\_18:

(Start: 18 @17394 has 221 MA's), (28, 17415), (Start: 38 @17436 has 1 MA's), (48, 17475), (71, 17544), (73, 17553), (74, 17556), (81, 17574), (89, 17607), (91, 17622), (119, 17781), (120, 17784), (135, 17829), (145, 17907), (148, 17931), (Start: 159 @17997 has 1 MA's), (169, 18072), (170, 18078), (178, 18120), (179, 18126), (180, 18129), (186, 18162), (187, 18168), (193, 18198), (199, 18219), (204, 18249), (206, 18258), (226, 18366), (229, 18378), (230, 18387), (231, 18390), (232, 18399), (233, 18405), (236, 18420), (237, 18423), (240, 18444), (248, 18486), (251, 18519), (269, 18630), (270, 18633), (275, 18660), (276, 18666), (284, 18720), (285, 18723), (290, 18750), (293, 18759), (304, 18825), (307, 18837), (308, 18840), (320, 18906), (322, 18927), (323, 18930), (325, 18951), (336, 19002), (339, 19020), (340, 19023), (346, 19053), (350, 19077), (353, 19089), (354, 19098), (373, 19194), (375, 19212), (377, 19221), (378, 19233), (383, 19269), (388, 19299), (393, 19320), (399, 19344), (405, 19380), (419, 19494), (425, 19536), (442, 19671), (445, 19695), (450, 19749), (456, 19818), (461, 19863), (462, 19866), (464, 19872),

Gene: Manda\_27 Start: 22769, Stop: 25165, Start Num: 52

Candidate Starts for Manda\_27:

(Start: 52 @22769 has 123 MA's), (97, 22946), (Start: 101 @22967 has 20 MA's), (139, 23114), (160, 23255), (164, 23288), (169, 23321), (174, 23357), (193, 23450), (206, 23510), (211, 23528), (234, 23660), (242, 23705), (262, 23837), (269, 23882), (281, 23942), (301, 24056), (304, 24077), (312, 24116), (315, 24137), (317, 24152), (346, 24302), (348, 24308), (350, 24326), (361, 24380), (375, 24464), (392, 24557), (430, 24803), (453, 25019), (462, 25103), (469, 25136),

Gene: Mandlovu\_18 Start: 17495, Stop: 20032, Start Num: 18

Candidate Starts for Mandlovu\_18:

(Start: 18 @17495 has 221 MA's), (28, 17516), (Start: 38 @17537 has 1 MA's), (48, 17576), (71, 17645), (73, 17654), (74, 17657), (81, 17675), (91, 17723), (119, 17882), (120, 17885), (134, 17927), (135, 17930), (145, 18008), (147, 18029), (148, 18032), (Start: 159 @18098 has 1 MA's), (169, 18173), (170, 18179), (178, 18221), (179, 18227), (180, 18230), (186, 18263), (187, 18269), (193, 18299), (199, 18320), (204, 18350), (206, 18359), (226, 18467), (229, 18479), (230, 18488), (231, 18491), (232, 18500), (233, 18506), (236, 18521), (237, 18524), (240, 18545), (248, 18587), (251, 18620), (275, 18761), (276, 18767), (284, 18821), (285, 18824), (290, 18851), (304, 18926), (307, 18938), (308, 18941), (320, 19007), (323, 19031), (325, 19052), (327, 19061), (339, 19121), (340, 19124), (348, 19160), (350, 19178), (354, 19199), (359, 19226), (373, 19295), (375, 19313), (377, 19322), (378, 19334), (383, 19370), (388, 19400), (405, 19481), (419, 19595), (425, 19637), (442, 19772), (445, 19796), (450, 19850), (461, 19964), (462, 19967),

Gene: Mantra\_18 Start: 17496, Stop: 20033, Start Num: 18

Candidate Starts for Mantra\_18:

(Start: 18 @17496 has 221 MA's), (28, 17517), (Start: 38 @17538 has 1 MA's), (48, 17577), (71, 17646), (73, 17655), (74, 17658), (81, 17676), (91, 17724), (117, 17877), (120, 17886), (135, 17931), (147, 18030), (148, 18033), (Start: 159 @18099 has 1 MA's), (169, 18174), (170, 18180), (172, 18198), (178, 18222), (179, 18228), (180, 18231), (186, 18264), (187, 18270), (193, 18300), (199, 18321), (204, 18351), (206, 18360), (210, 18375), (211, 18378), (230, 18489), (231, 18492), (232, 18501), (233, 18507), (236, 18522), (237, 18525), (240, 18546), (246, 18576), (248, 18588), (251, 18621), (269, 18732), (270, 18735), (275, 18762), (276, 18768), (284, 18822), (285, 18825), (302, 18912), (304, 18927), (307, 18939), (308, 18942), (320, 19008), (323, 19032), (325, 19053), (327, 19062), (339, 19122), (340, 19125), (348, 19161), (350, 19179), (353, 19191), (354, 19200), (359, 19227), (371, 19284), (373, 19296), (375, 19314), (377, 19323), (378, 19335), (383, 19371), (388, 19401), (392, 19410), (393, 19422), (405, 19482), (412, 19536), (419, 19596), (425, 19638), (442, 19773), (445, 19797), (450, 19851), (453, 19899), (459, 19941), (461, 19965), (462, 19968),

Gene: Maravista\_18 Start: 17343, Stop: 19880, Start Num: 18

Candidate Starts for Maravista\_18:

(16, 17331), (Start: 18 @17343 has 221 MA's), (28, 17364), (Start: 38 @17385 has 1 MA's), (48, 17424), (71, 17493), (73, 17502), (74, 17505), (81, 17523), (89, 17556), (91, 17571), (99, 17619), (119, 17730), (120, 17733), (128, 17763), (134, 17775), (135, 17778), (145, 17856), (148, 17880), (Start: 159 @17946 has 1 MA's), (165, 17991), (169, 18021), (170, 18027), (172, 18045), (178, 18069), (180, 18078), (186, 18111), (187, 18117), (193, 18147), (203, 18186), (204, 18198), (206, 18207), (210, 18222), (211, 18225), (230, 18336), (231, 18339), (232, 18348), (233, 18354), (236, 18369), (237, 18372), (240, 18393), (246, 18423), (248, 18435), (251, 18468), (269, 18579), (270, 18582), (275, 18609), (276, 18615), (284, 18669), (285, 18672), (304, 18774), (307, 18786), (308, 18789), (320, 18855), (323, 18879), (325, 18900), (327, 18909), (339, 18969), (340, 18972), (348, 19008), (350, 19026), (353, 19038), (354, 19047), (359, 19074), (373, 19143), (375, 19161), (377, 19170), (378, 19182), (383, 19218), (388, 19248), (393, 19269), (399, 19293), (405, 19329), (412, 19383), (419, 19443), (425, 19485), (442, 19620), (445, 19644), (450, 19698), (453, 19746), (456, 19767), (459, 19788), (461, 19812), (462, 19815),

Gene: Marker\_19 Start: 17246, Stop: 19783, Start Num: 18

Candidate Starts for Marker\_19:

(Start: 18 @17246 has 221 MA's), (28, 17267), (Start: 38 @17288 has 1 MA's), (48, 17327), (71, 17396), (73, 17405), (74, 17408), (81, 17426), (91, 17474), (117, 17627), (120, 17636), (135, 17681), (147, 17780), (148, 17783), (Start: 159 @17849 has 1 MA's), (169, 17924), (170, 17930), (172, 17948), (178, 17972), (180, 17981), (186, 18014), (187, 18020), (193, 18050), (199, 18071), (203, 18089), (204, 18101), (206, 18110), (210, 18125), (211, 18128), (230, 18239), (231, 18242), (232, 18251), (233, 18257), (236, 18272), (237, 18275), (240, 18296), (246, 18326), (248, 18338), (251, 18371), (269, 18482), (270, 18485), (275, 18512), (276, 18518), (284, 18572), (285, 18575), (296, 18623), (302, 18662), (304, 18677), (307, 18689), (308, 18692), (311, 18713), (320, 18758), (323, 18782), (327, 18812), (336, 18854), (339, 18872), (340, 18875), (348, 18911), (350, 18929), (353, 18941), (354, 18950), (361, 18983), (373, 19046), (375, 19064), (377, 19073), (378, 19085), (388, 19151), (393, 19172), (399, 19196), (405, 19232), (412, 19286), (419, 19346), (425, 19388), (434, 19466), (442, 19523), (445, 19547), (450, 19601), (453, 19649), (459, 19691), (461, 19715), (462, 19718),

Gene: Marshmallow\_26 Start: 22283, Stop: 24679, Start Num: 52

Candidate Starts for Marshmallow\_26:

(Start: 52 @22283 has 123 MA's), (97, 22460), (Start: 101 @22481 has 20 MA's), (139, 22628), (160, 22769), (164, 22802), (169, 22835), (174, 22871), (193, 22964), (206, 23024), (211, 23042), (225, 23123), (262, 23351), (269, 23396), (304, 23591), (305, 23597), (308, 23606), (315, 23651), (317, 23666), (348, 23822), (350, 23840), (352, 23849), (375, 23978), (376, 23981), (411, 24191), (413, 24203), (430, 24317), (453, 24533), (462, 24617), (467, 24641), (469, 24650),

Gene: Martik\_18 Start: 17406, Stop: 19958, Start Num: 18

Candidate Starts for Martik\_18:

(Start: 18 @17406 has 221 MA's), (48, 17487), (71, 17556), (73, 17565), (74, 17568), (81, 17586), (91, 17634), (98, 17679), (119, 17793), (120, 17796), (123, 17808), (132, 17829), (134, 17838), (135, 17841), (142, 17889), (145, 17919), (152, 17985), (160, 18018), (165, 18054), (168, 18078), (179, 18138), (180, 18141), (183, 18159), (197, 18222), (199, 18225), (203, 18243), (206, 18264), (211, 18282), (216, 18309), (219, 18330), (225, 18363), (232, 18405), (233, 18411), (234, 18414), (237, 18429), (241, 18456), (242, 18459), (246, 18480), (248, 18492), (251, 18525), (265, 18618), (284, 18726), (287, 18750), (290, 18756), (295, 18774), (296, 18777), (299, 18801), (304, 18831), (310, 18855), (315, 18891), (316, 18897), (317, 18906), (322, 18933), (333, 18996), (336, 19020), (337, 19035), (346, 19077), (355, 19128), (374, 19224), (375, 19239), (377, 19248), (380, 19272), (392, 19335), (399, 19371), (440, 19677), (445, 19722), (453, 19824),

Gene: MaryV\_43 Start: 28332, Stop: 30899, Start Num: 26

Candidate Starts for MaryV\_43:

(Start: 26 @28332 has 6 MA's), (43, 28401), (77, 28524), (79, 28530), (81, 28533), (88, 28557), (90, 28578), (116, 28734), (118, 28740), (120, 28746), (128, 28776), (129, 28782), (135, 28803), (136, 28812), (144, 28872), (153, 28950), (170, 29049), (175, 29082), (179, 29097), (180, 29100), (187, 29139), (199, 29190), (203, 29208), (206, 29229), (208, 29235), (214, 29262), (217, 29289), (230, 29358), (235, 29382), (238, 29403), (242, 29424), (244, 29433), (248, 29454), (251, 29487), (252, 29490), (259, 29541), (262, 29553), (273, 29619), (277, 29637), (283, 29676), (304, 29793), (313, 29838), (322, 29895), (325, 29919), (327, 29928), (329, 29946), (339, 29991), (346, 30024), (351, 30060), (382, 30234), (383, 30252), (384, 30258), (396, 30315), (441, 30639), (443, 30657), (448, 30708), (454, 30771), (461, 30846),

Gene: Mattes\_18 Start: 17397, Stop: 19922, Start Num: 18

Candidate Starts for Mattes\_18:

(Start: 18 @17397 has 221 MA's), (28, 17418), (Start: 38 @17439 has 1 MA's), (48, 17478), (71, 17547), (73, 17556), (74, 17559), (81, 17577), (91, 17625), (99, 17673), (119, 17784), (120, 17787), (132, 17820), (135, 17832), (145, 17910), (152, 17976), (160, 18009), (167, 18063), (169, 18075), (179, 18129), (180, 18132), (181, 18141), (188, 18174), (197, 18213), (199, 18216), (202, 18231), (203, 18234), (208, 18261), (209, 18267), (210, 18270), (211, 18273), (216, 18300), (218, 18318), (219, 18321), (232, 18396), (236, 18417), (237, 18420), (241, 18447), (246, 18471), (251, 18516), (252, 18519), (259, 18570), (270, 18633), (272, 18642), (276, 18666), (296, 18771), (297, 18774), (304, 18825), (305, 18831), (307, 18837), (308, 18840), (315, 18885), (317, 18900), (322, 18927), (325, 18951), (336, 19002), (339, 19020), (340, 19023), (341, 19035), (353, 19089), (375, 19212), (384, 19275), (397, 19338), (407, 19413), (435, 19614), (458, 19824), (464, 19863), (465, 19866),

Gene: Maxxinista\_27 Start: 21751, Stop: 24147, Start Num: 52

Candidate Starts for Maxxinista\_27:

(Start: 52 @21751 has 123 MA's), (97, 21928), (Start: 101 @21949 has 20 MA's), (139, 22096), (164, 22270), (169, 22303), (174, 22339), (193, 22432), (206, 22492), (211, 22510), (234, 22642), (242, 22687), (262, 22819), (269, 22864), (281, 22924), (301, 23038), (304, 23059), (312, 23098), (315, 23119), (317, 23134), (346, 23284), (348, 23290), (350, 23308), (361, 23362), (375, 23446), (392, 23539), (430, 23785), (453, 24001), (462, 24085), (469, 24118),

Gene: Megatron06\_31 Start: 26215, Stop: 29058, Start Num: 3

Candidate Starts for Megatron06\_31:

(Start: 3 @26215 has 8 MA's), (8, 26347), (9, 26359), (Start: 11 @26368 has 7 MA's), (20, 26437), (24, 26443), (40, 26503), (45, 26524), (59, 26572), (70, 26614), (76, 26638), (85, 26671), (92, 26707), (94, 26719), (107, 26812), (120, 26869), (130, 26908), (150, 27034), (160, 27103), (163, 27133), (170, 27175), (180, 27226), (199, 27316), (203, 27334), (217, 27415), (225, 27454), (229, 27475), (251,

27613), (255, 27652), (268, 27715), (285, 27817), (324, 28042), (389, 28405), (395, 28432), (431, 28675), (432, 28708), (436, 28732), (449, 28852), (457, 28930), (469, 29017), (473, 29032), (475, 29038),

Gene: Melissauren88\_18 Start: 17470, Stop: 19965, Start Num: 38

Candidate Starts for Melissauren88\_18:

(16, 17416), (Start: 18 @17428 has 221 MA's), (28, 17449), (Start: 38 @17470 has 1 MA's), (48, 17509), (71, 17578), (73, 17587), (74, 17590), (81, 17608), (89, 17641), (91, 17656), (99, 17704), (119, 17815), (120, 17818), (128, 17848), (134, 17860), (135, 17863), (145, 17941), (148, 17965), (Start: 159 @18031 has 1 MA's), (165, 18076), (169, 18106), (170, 18112), (172, 18130), (178, 18154), (180, 18163), (186, 18196), (187, 18202), (193, 18232), (203, 18271), (204, 18283), (206, 18292), (210, 18307), (211, 18310), (230, 18421), (231, 18424), (232, 18433), (233, 18439), (236, 18454), (237, 18457), (240, 18478), (246, 18508), (248, 18520), (251, 18553), (269, 18664), (270, 18667), (275, 18694), (276, 18700), (284, 18754), (285, 18757), (302, 18844), (304, 18859), (307, 18871), (308, 18874), (320, 18940), (323, 18964), (325, 18985), (327, 18994), (339, 19054), (340, 19057), (348, 19093), (350, 19111), (353, 19123), (354, 19132), (359, 19159), (373, 19228), (375, 19246), (377, 19255), (378, 19267), (383, 19303), (388, 19333), (393, 19354), (399, 19378), (405, 19414), (412, 19468), (419, 19528), (425, 19570), (434, 19648), (442, 19705), (445, 19729), (450, 19783), (453, 19831), (459, 19873), (461, 19897), (462, 19900),

Gene: MiaZeal\_36 Start: 27554, Stop: 30061, Start Num: 18

Candidate Starts for MiaZeal\_36:

(Start: 18 @27554 has 221 MA's), (81, 27749), (89, 27785), (91, 27800), (108, 27887), (112, 27902), (135, 27977), (137, 27989), (142, 28016), (154, 28121), (162, 28160), (165, 28169), (169, 28193), (170, 28199), (172, 28217), (180, 28250), (181, 28259), (183, 28268), (186, 28283), (192, 28310), (193, 28319), (203, 28358), (204, 28370), (206, 28379), (223, 28463), (237, 28544), (242, 28574), (243, 28577), (248, 28607), (250, 28634), (252, 28643), (259, 28694), (260, 28703), (262, 28706), (268, 28742), (272, 28763), (278, 28799), (305, 28952), (315, 29006), (323, 29051), (324, 29069), (325, 29072), (334, 29111), (358, 29258), (361, 29267), (374, 29336), (375, 29351), (405, 29516), (414, 29603), (422, 29651), (430, 29702), (438, 29780), (463, 30002), (465, 30005), (469, 30032),

Gene: MilleniumForce\_19 Start: 18211, Stop: 20748, Start Num: 18

Candidate Starts for MilleniumForce\_19:

(16, 18199), (Start: 18 @18211 has 221 MA's), (28, 18232), (Start: 38 @18253 has 1 MA's), (48, 18292), (71, 18361), (73, 18370), (74, 18373), (81, 18391), (89, 18424), (91, 18439), (99, 18487), (119, 18598), (120, 18601), (128, 18631), (134, 18643), (135, 18646), (145, 18724), (148, 18748), (Start: 159 @18814 has 1 MA's), (165, 18859), (169, 18889), (170, 18895), (172, 18913), (178, 18937), (180, 18946), (186, 18979), (187, 18985), (193, 19015), (203, 19054), (204, 19066), (206, 19075), (210, 19090), (211, 19093), (230, 19204), (231, 19207), (232, 19216), (233, 19222), (236, 19237), (237, 19240), (240, 19261), (246, 19291), (248, 19303), (251, 19336), (269, 19447), (270, 19450), (275, 19477), (276, 19483), (284, 19537), (285, 19540), (304, 19642), (307, 19654), (308, 19657), (320, 19723), (323, 19747), (325, 19768), (327, 19777), (339, 19837), (340, 19840), (348, 19876), (350, 19894), (353, 19906), (354, 19915), (359, 19942), (373, 20011), (375, 20029), (377, 20038), (378, 20050), (383, 20086), (388, 20116), (393, 20137), (399, 20161), (405, 20197), (412, 20251), (419, 20311), (425, 20353), (434, 20431), (442, 20488), (445, 20512), (450, 20566), (453, 20614), (459, 20656), (461, 20680), (462, 20683),

Gene: Mindy\_26 Start: 22062, Stop: 24458, Start Num: 52

Candidate Starts for Mindy\_26:

(Start: 52 @22062 has 123 MA's), (97, 22239), (Start: 101 @22260 has 20 MA's), (139, 22407), (160, 22548), (164, 22581), (169, 22614), (174, 22650), (193, 22743), (206, 22803), (211, 22821), (238, 22977), (242, 22998), (259, 23118), (262, 23130), (269, 23175), (304, 23370), (308, 23385), (315, 23430), (317, 23445), (348, 23601), (350, 23619), (352, 23628), (375, 23757), (376, 23760), (411,

23970), (413, 23982), (430, 24096), (453, 24312), (462, 24396), (467, 24420), (469, 24429),

Gene: Minerva\_39 Start: 31221, Stop: 33764, Start Num: 18

Candidate Starts for Minerva\_39:

(12, 31164), (Start: 18 @31221 has 221 MA's), (78, 31410), (91, 31467), (98, 31512), (119, 31626), (120, 31629), (126, 31650), (132, 31662), (135, 31674), (145, 31752), (152, 31818), (160, 31851), (165, 31887), (168, 31911), (179, 31971), (180, 31974), (183, 31992), (197, 32055), (199, 32058), (203, 32076), (206, 32097), (211, 32115), (216, 32142), (219, 32163), (225, 32196), (233, 32244), (234, 32247), (237, 32262), (241, 32289), (246, 32313), (251, 32358), (272, 32484), (284, 32562), (297, 32616), (304, 32667), (305, 32673), (307, 32679), (308, 32682), (315, 32727), (317, 32742), (322, 32769), (325, 32793), (336, 32844), (339, 32862), (340, 32865), (341, 32877), (353, 32931), (361, 32973), (384, 33117), (395, 33171), (396, 33177), (397, 33180), (402, 33216), (404, 33219), (406, 33228), (407, 33255), (435, 33456), (453, 33627), (458, 33666), (465, 33708),

Gene: MinionDave\_19 Start: 18080, Stop: 20617, Start Num: 18

Candidate Starts for MinionDave\_19:

(Start: 18 @18080 has 221 MA's), (55, 18170), (71, 18230), (73, 18239), (74, 18242), (81, 18260), (89, 18293), (91, 18308), (99, 18356), (119, 18467), (120, 18470), (128, 18500), (134, 18512), (135, 18515), (145, 18593), (148, 18617), (Start: 159 @18683 has 1 MA's), (165, 18728), (169, 18758), (170, 18764), (172, 18782), (178, 18806), (180, 18815), (186, 18848), (187, 18854), (193, 18884), (203, 18923), (204, 18935), (206, 18944), (210, 18959), (211, 18962), (230, 19073), (231, 19076), (232, 19085), (233, 19091), (236, 19106), (237, 19109), (240, 19130), (246, 19160), (248, 19172), (251, 19205), (269, 19316), (270, 19319), (275, 19346), (276, 19352), (284, 19406), (285, 19409), (302, 19496), (304, 19511), (307, 19523), (308, 19526), (320, 19592), (323, 19616), (325, 19637), (327, 19646), (339, 19706), (340, 19709), (348, 19745), (350, 19763), (353, 19775), (354, 19784), (359, 19811), (373, 19880), (375, 19898), (377, 19907), (378, 19919), (383, 19955), (388, 19985), (393, 20006), (399, 20030), (405, 20066), (412, 20120), (419, 20180), (425, 20222), (434, 20300), (442, 20357), (445, 20381), (450, 20435), (453, 20483), (459, 20525), (461, 20549), (462, 20552),

Gene: Miniwave\_26 Start: 22481, Stop: 24877, Start Num: 52

Candidate Starts for Miniwave\_26:

(Start: 52 @22481 has 123 MA's), (97, 22658), (Start: 101 @22679 has 20 MA's), (139, 22826), (160, 22967), (164, 23000), (169, 23033), (174, 23069), (193, 23162), (206, 23222), (211, 23240), (234, 23372), (242, 23417), (262, 23549), (269, 23594), (281, 23654), (301, 23768), (304, 23789), (312, 23828), (315, 23849), (317, 23864), (346, 24014), (348, 24020), (350, 24038), (361, 24092), (375, 24176), (392, 24269), (430, 24515), (453, 24731), (462, 24815), (469, 24848),

Gene: Minnie\_19 Start: 17940, Stop: 20477, Start Num: 18

Candidate Starts for Minnie\_19:

(16, 17928), (Start: 18 @17940 has 221 MA's), (28, 17961), (Start: 38 @17982 has 1 MA's), (48, 18021), (71, 18090), (73, 18099), (74, 18102), (81, 18120), (89, 18153), (91, 18168), (99, 18216), (119, 18327), (120, 18330), (128, 18360), (134, 18372), (135, 18375), (145, 18453), (148, 18477), (Start: 159 @18543 has 1 MA's), (165, 18588), (169, 18618), (170, 18624), (172, 18642), (178, 18666), (180, 18675), (186, 18708), (187, 18714), (193, 18744), (203, 18783), (204, 18795), (206, 18804), (210, 18819), (211, 18822), (230, 18933), (231, 18936), (232, 18945), (233, 18951), (236, 18966), (237, 18969), (240, 18990), (246, 19020), (248, 19032), (251, 19065), (269, 19176), (270, 19179), (275, 19206), (276, 19212), (284, 19266), (285, 19269), (304, 19371), (307, 19383), (308, 19386), (320, 19452), (323, 19476), (325, 19497), (327, 19506), (339, 19566), (340, 19569), (348, 19605), (350, 19623), (353, 19635), (354, 19644), (359, 19671), (373, 19740), (375, 19758), (377, 19767), (378, 19779), (383, 19815), (388, 19845), (393, 19866), (399, 19890), (405, 19926), (412, 19980), (419, 20040), (425, 20082), (434, 20160), (442, 20217), (445, 20241), (450, 20295), (453, 20343), (459, 20385), (461, 20409), (462, 20412),

Gene: Misfit\_26 Start: 22371, Stop: 24767, Start Num: 52

Candidate Starts for Misfit\_26:

(Start: 52 @22371 has 123 MA's), (97, 22548), (Start: 101 @22569 has 20 MA's), (139, 22716), (160, 22857), (164, 22890), (169, 22923), (174, 22959), (193, 23052), (206, 23112), (211, 23130), (234, 23262), (242, 23307), (262, 23439), (269, 23484), (281, 23544), (301, 23658), (304, 23679), (312, 23718), (315, 23739), (317, 23754), (346, 23904), (348, 23910), (350, 23928), (361, 23982), (375, 24066), (392, 24159), (430, 24405), (453, 24621), (462, 24705), (469, 24738),

Gene: Misha28\_19 Start: 17273, Stop: 19798, Start Num: 18

Candidate Starts for Misha28\_19:

(Start: 18 @17273 has 221 MA's), (28, 17294), (Start: 38 @17315 has 1 MA's), (48, 17354), (71, 17423), (73, 17432), (74, 17435), (81, 17453), (89, 17486), (91, 17501), (99, 17549), (119, 17660), (120, 17663), (135, 17708), (145, 17786), (148, 17810), (Start: 159 @17876 has 1 MA's), (165, 17921), (169, 17951), (170, 17957), (172, 17975), (178, 17999), (180, 18008), (186, 18041), (187, 18047), (193, 18077), (203, 18116), (204, 18128), (206, 18137), (210, 18152), (211, 18155), (237, 18302), (246, 18353), (261, 18464), (270, 18515), (274, 18539), (290, 18632), (299, 18677), (301, 18686), (304, 18707), (307, 18719), (308, 18722), (315, 18767), (323, 18812), (324, 18830), (325, 18833), (336, 18884), (346, 18935), (348, 18941), (350, 18959), (353, 18971), (354, 18980), (361, 19013), (375, 19094), (385, 19163), (392, 19190), (396, 19217), (406, 19268), (412, 19316), (444, 19559), (453, 19664), (456, 19685), (464, 19739), (468, 19763),

Gene: MisterCuddles\_18 Start: 17371, Stop: 19908, Start Num: 18

Candidate Starts for MisterCuddles\_18:

(Start: 18 @17371 has 221 MA's), (28, 17392), (Start: 38 @17413 has 1 MA's), (48, 17452), (71, 17521), (73, 17530), (74, 17533), (81, 17551), (89, 17584), (91, 17599), (117, 17752), (120, 17761), (135, 17806), (147, 17905), (148, 17908), (Start: 159 @17974 has 1 MA's), (169, 18049), (170, 18055), (178, 18097), (179, 18103), (180, 18106), (186, 18139), (187, 18145), (193, 18175), (199, 18196), (204, 18226), (206, 18235), (210, 18250), (211, 18253), (230, 18364), (231, 18367), (232, 18376), (233, 18382), (236, 18397), (237, 18400), (240, 18421), (246, 18451), (248, 18463), (251, 18496), (269, 18607), (270, 18610), (275, 18637), (276, 18643), (284, 18697), (285, 18700), (302, 18787), (304, 18802), (307, 18814), (308, 18817), (320, 18883), (323, 18907), (325, 18928), (327, 18937), (336, 18979), (339, 18997), (340, 19000), (346, 19030), (350, 19054), (353, 19066), (354, 19075), (373, 19171), (375, 19189), (377, 19198), (378, 19210), (383, 19246), (388, 19276), (392, 19285), (393, 19297), (405, 19357), (412, 19411), (419, 19471), (425, 19513), (442, 19648), (445, 19672), (450, 19726), (453, 19774), (459, 19816), (461, 19840), (462, 19843),

Gene: Modragons\_18 Start: 17634, Stop: 20171, Start Num: 18

Candidate Starts for Modragons\_18:

(Start: 18 @17634 has 221 MA's), (28, 17655), (Start: 38 @17676 has 1 MA's), (48, 17715), (71, 17784), (73, 17793), (74, 17796), (81, 17814), (91, 17862), (119, 18021), (120, 18024), (134, 18066), (135, 18069), (145, 18147), (147, 18168), (148, 18171), (Start: 159 @18237 has 1 MA's), (160, 18246), (165, 18282), (169, 18312), (170, 18318), (178, 18360), (179, 18366), (180, 18369), (186, 18402), (187, 18408), (193, 18438), (199, 18459), (204, 18489), (206, 18498), (226, 18606), (229, 18618), (230, 18627), (231, 18630), (232, 18639), (233, 18645), (236, 18660), (237, 18663), (240, 18684), (248, 18726), (251, 18759), (275, 18900), (276, 18906), (284, 18960), (285, 18963), (290, 18990), (304, 19065), (307, 19077), (308, 19080), (320, 19146), (322, 19167), (323, 19170), (325, 19191), (336, 19242), (339, 19260), (340, 19263), (346, 19293), (350, 19317), (353, 19329), (373, 19434), (375, 19452), (377, 19461), (378, 19473), (383, 19509), (388, 19539), (393, 19560), (399, 19584), (405, 19620), (419, 19734), (425, 19776), (434, 19854), (442, 19911), (445, 19935), (450, 19989), (453, 20037), (459, 20079), (461, 20103), (462, 20106),

Gene: Moldemort\_27 Start: 22026, Stop: 24422, Start Num: 52

Candidate Starts for Moldemort\_27:

(Start: 52 @22026 has 123 MA's), (97, 22203), (Start: 101 @22224 has 20 MA's), (139, 22371), (164, 22545), (169, 22578), (174, 22614), (193, 22707), (206, 22767), (211, 22785), (234, 22917), (242, 22962), (262, 23094), (269, 23139), (281, 23199), (301, 23313), (304, 23334), (312, 23373), (315, 23394), (317, 23409), (346, 23559), (348, 23565), (350, 23583), (361, 23637), (375, 23721), (392, 23814), (430, 24060), (453, 24276), (462, 24360), (469, 24393),

Gene: MooMoo\_18 Start: 17135, Stop: 19570, Start Num: 18

Candidate Starts for MooMoo\_18:

(Start: 18 @17135 has 221 MA's), (23, 17147), (31, 17168), (44, 17213), (50, 17231), (56, 17243), (75, 17318), (97, 17414), (103, 17441), (105, 17450), (109, 17468), (110, 17471), (113, 17480), (137, 17555), (138, 17564), (140, 17573), (155, 17651), (169, 17717), (170, 17723), (176, 17759), (177, 17762), (178, 17765), (179, 17771), (181, 17783), (183, 17792), (186, 17807), (195, 17858), (202, 17879), (203, 17882), (206, 17903), (213, 17927), (220, 17972), (230, 18032), (231, 18035), (235, 18056), (238, 18077), (244, 18110), (246, 18119), (251, 18164), (252, 18167), (253, 18173), (256, 18206), (259, 18218), (260, 18227), (262, 18230), (281, 18335), (285, 18368), (307, 18482), (316, 18536), (321, 18569), (322, 18572), (323, 18575), (324, 18593), (334, 18632), (346, 18695), (358, 18773), (362, 18791), (373, 18848), (374, 18851), (376, 18869), (384, 18929), (387, 18944), (399, 18998), (412, 19085), (424, 19190), (431, 19217), (438, 19289), (442, 19313), (453, 19430), (456, 19451), (463, 19511), (465, 19514), (469, 19541), (472, 19550),

Gene: Moonbeam\_19 Start: 17889, Stop: 20426, Start Num: 18

Candidate Starts for Moonbeam\_19:

(16, 17877), (Start: 18 @17889 has 221 MA's), (28, 17910), (Start: 38 @17931 has 1 MA's), (48, 17970), (71, 18039), (73, 18048), (74, 18051), (81, 18069), (89, 18102), (91, 18117), (99, 18165), (119, 18276), (120, 18279), (128, 18309), (134, 18321), (135, 18324), (145, 18402), (148, 18426), (Start: 159 @18492 has 1 MA's), (165, 18537), (169, 18567), (170, 18573), (172, 18591), (178, 18615), (180, 18624), (186, 18657), (187, 18663), (193, 18693), (203, 18732), (204, 18744), (206, 18753), (210, 18768), (211, 18771), (230, 18882), (231, 18885), (232, 18894), (233, 18900), (236, 18915), (237, 18918), (240, 18939), (246, 18969), (248, 18981), (251, 19014), (269, 19125), (270, 19128), (275, 19155), (276, 19161), (284, 19215), (285, 19218), (302, 19305), (304, 19320), (307, 19332), (308, 19335), (320, 19401), (323, 19425), (325, 19446), (327, 19455), (336, 19497), (339, 19515), (340, 19518), (348, 19554), (350, 19572), (353, 19584), (354, 19593), (359, 19620), (373, 19689), (375, 19707), (377, 19716), (378, 19728), (383, 19764), (388, 19794), (393, 19815), (399, 19839), (405, 19875), (412, 19929), (419, 19989), (425, 20031), (434, 20109), (442, 20166), (445, 20190), (450, 20244), (453, 20292), (459, 20334), (461, 20358), (462, 20361),

Gene: Mopey\_30 Start: 24316, Stop: 26586, Start Num: 101

Candidate Starts for Mopey\_30:

(Start: 101 @24316 has 20 MA's), (131, 24451), (133, 24460), (156, 24634), (158, 24640), (160, 24652), (185, 24805), (187, 24820), (190, 24835), (257, 25216), (258, 25222), (266, 25267), (282, 25354), (318, 25555), (319, 25561), (325, 25609), (331, 25639), (335, 25663), (365, 25852), (372, 25879), (378, 25927), (391, 25999), (399, 26038), (400, 26059), (403, 26074), (406, 26092), (408, 26122), (420, 26206), (451, 26407), (453, 26449), (474, 26575),

Gene: Mori\_58 Start: 36137, Stop: 38647, Start Num: 35

Candidate Starts for Mori\_58:

(Start: 35 @36137 has 27 MA's), (42, 36170), (60, 36239), (61, 36242), (68, 36266), (74, 36290), (83, 36314), (89, 36347), (124, 36554), (127, 36566), (128, 36569), (151, 36716), (152, 36746), (Start: 159 @36770 has 1 MA's), (165, 36800), (166, 36803), (169, 36830), (172, 36854), (179, 36884), (189, 36941), (194, 36965), (203, 37001), (204, 37013), (210, 37037), (211, 37040), (217, 37082), (236, 37178), (237, 37181), (279, 37436), (304, 37580), (315, 37640), (324, 37712), (325, 37715), (344, 37811), (375, 37985), (378, 38006), (395, 38099), (398, 38111), (412, 38201), (423, 38276), (432, 38321), (455, 38522), (460, 38576), (465, 38591),

Gene: Mosby\_25 Start: 21791, Stop: 24187, Start Num: 52

Candidate Starts for Mosby\_25:

(Start: 52 @21791 has 123 MA's), (97, 21968), (Start: 101 @21989 has 20 MA's), (139, 22136), (160, 22277), (164, 22310), (169, 22343), (174, 22379), (193, 22472), (206, 22532), (211, 22550), (234, 22682), (242, 22727), (262, 22859), (269, 22904), (301, 23078), (304, 23099), (312, 23138), (315, 23159), (317, 23174), (348, 23330), (350, 23348), (361, 23402), (375, 23486), (392, 23579), (430, 23825), (453, 24041), (462, 24125), (469, 24158),

Gene: Mova\_19 Start: 17248, Stop: 19785, Start Num: 18

Candidate Starts for Mova\_19:

(Start: 18 @17248 has 221 MA's), (28, 17269), (Start: 38 @17290 has 1 MA's), (48, 17329), (71, 17398), (73, 17407), (74, 17410), (81, 17428), (89, 17461), (91, 17476), (119, 17635), (120, 17638), (135, 17683), (145, 17761), (148, 17785), (Start: 159 @17851 has 1 MA's), (169, 17926), (170, 17932), (172, 17950), (178, 17974), (180, 17983), (186, 18016), (187, 18022), (193, 18052), (199, 18073), (203, 18091), (206, 18112), (210, 18127), (211, 18130), (226, 18220), (230, 18241), (231, 18244), (232, 18253), (233, 18259), (236, 18274), (237, 18277), (240, 18298), (248, 18340), (251, 18373), (262, 18439), (269, 18484), (270, 18487), (275, 18514), (276, 18520), (284, 18574), (285, 18577), (290, 18604), (302, 18664), (304, 18679), (307, 18691), (308, 18694), (320, 18760), (323, 18784), (327, 18814), (336, 18856), (339, 18874), (340, 18877), (348, 18913), (350, 18931), (353, 18943), (354, 18952), (359, 18979), (373, 19048), (375, 19066), (377, 19075), (378, 19087), (383, 19123), (388, 19153), (393, 19174), (399, 19198), (405, 19234), (412, 19288), (425, 19390), (442, 19525), (445, 19549), (450, 19603), (453, 19651), (459, 19693), (461, 19717), (462, 19720),

Gene: Mozy\_19 Start: 17298, Stop: 19835, Start Num: 18

Candidate Starts for Mozy\_19:

(Start: 18 @17298 has 221 MA's), (28, 17319), (Start: 38 @17340 has 1 MA's), (48, 17379), (71, 17448), (73, 17457), (74, 17460), (81, 17478), (89, 17511), (91, 17526), (119, 17685), (120, 17688), (128, 17718), (135, 17733), (145, 17811), (147, 17832), (148, 17835), (Start: 159 @17901 has 1 MA's), (169, 17976), (170, 17982), (178, 18024), (179, 18030), (180, 18033), (186, 18066), (187, 18072), (193, 18102), (199, 18123), (204, 18153), (206, 18162), (230, 18291), (231, 18294), (232, 18303), (233, 18309), (236, 18324), (237, 18327), (240, 18348), (246, 18378), (248, 18390), (251, 18423), (252, 18426), (262, 18489), (275, 18564), (276, 18570), (284, 18624), (285, 18627), (290, 18654), (304, 18729), (307, 18741), (308, 18744), (320, 18810), (323, 18834), (327, 18864), (339, 18924), (340, 18927), (348, 18963), (350, 18981), (354, 19002), (373, 19098), (375, 19116), (377, 19125), (378, 19137), (383, 19173), (393, 19224), (405, 19284), (412, 19338), (425, 19440), (434, 19518), (442, 19575), (445, 19599), (450, 19653), (453, 19701), (459, 19743), (461, 19767), (462, 19770),

Gene: MulchExplorer\_21 Start: 18519, Stop: 21056, Start Num: 18

Candidate Starts for MulchExplorer\_21:

(16, 18507), (Start: 18 @18519 has 221 MA's), (28, 18540), (Start: 38 @18561 has 1 MA's), (48, 18600), (71, 18669), (73, 18678), (74, 18681), (81, 18699), (89, 18732), (91, 18747), (99, 18795), (119, 18906), (120, 18909), (128, 18939), (134, 18951), (135, 18954), (145, 19032), (148, 19056), (Start: 159 @19122 has 1 MA's), (165, 19167), (169, 19197), (170, 19203), (172, 19221), (178, 19245), (180, 19254), (186, 19287), (187, 19293), (193, 19323), (203, 19362), (204, 19374), (206, 19383), (210, 19398), (211, 19401), (230, 19512), (231, 19515), (232, 19524), (233, 19530), (236, 19545), (237, 19548), (240, 19569), (246, 19599), (248, 19611), (251, 19644), (269, 19755), (270, 19758), (275, 19785), (276, 19791), (284, 19845), (285, 19848), (302, 19935), (304, 19950), (307, 19962), (308, 19965), (320, 20031), (323, 20055), (325, 20076), (327, 20085), (336, 20127), (339, 20145), (340, 20148), (348, 20184), (350, 20202), (353, 20214), (354, 20223), (359, 20250), (373, 20319), (375, 20337), (377, 20346), (378, 20358), (383, 20394), (388, 20424), (393, 20445), (399, 20469), (405, 20505), (412, 20559), (419, 20619), (425, 20661), (434, 20739), (442, 20796), (445,

20820), (450, 20874), (453, 20922), (459, 20964), (461, 20988), (462, 20991),

Gene: Murai\_59 Start: 36318, Stop: 38828, Start Num: 35

Candidate Starts for Murai\_59:

(Start: 35 @36318 has 27 MA's), (42, 36351), (60, 36420), (61, 36423), (68, 36447), (74, 36471), (83, 36495), (89, 36528), (124, 36735), (127, 36747), (128, 36750), (151, 36897), (152, 36927), (Start: 159 @36951 has 1 MA's), (165, 36981), (166, 36984), (169, 37011), (172, 37035), (179, 37065), (189, 37122), (203, 37182), (204, 37194), (210, 37218), (211, 37221), (217, 37263), (236, 37359), (237, 37362), (279, 37617), (304, 37761), (315, 37821), (324, 37893), (325, 37896), (344, 37992), (375, 38166), (378, 38187), (395, 38280), (398, 38292), (412, 38382), (423, 38457), (432, 38502), (455, 38703), (460, 38757), (465, 38772),

Gene: Murica\_25 Start: 22268, Stop: 24664, Start Num: 52

Candidate Starts for Murica\_25:

(Start: 52 @22268 has 123 MA's), (97, 22445), (Start: 101 @22466 has 20 MA's), (139, 22613), (160, 22754), (164, 22787), (169, 22820), (174, 22856), (193, 22949), (206, 23009), (211, 23027), (234, 23159), (242, 23204), (262, 23336), (269, 23381), (281, 23441), (301, 23555), (304, 23576), (312, 23615), (315, 23636), (317, 23651), (346, 23801), (348, 23807), (350, 23825), (361, 23879), (375, 23963), (392, 24056), (430, 24302), (453, 24518), (462, 24602), (469, 24635),

Gene: Murphy\_27 Start: 22263, Stop: 24659, Start Num: 52

Candidate Starts for Murphy\_27:

(Start: 52 @22263 has 123 MA's), (97, 22440), (Start: 101 @22461 has 20 MA's), (139, 22608), (160, 22749), (164, 22782), (169, 22815), (174, 22851), (193, 22944), (206, 23004), (211, 23022), (234, 23154), (242, 23199), (262, 23331), (269, 23376), (281, 23436), (301, 23550), (304, 23571), (312, 23610), (315, 23631), (317, 23646), (346, 23796), (348, 23802), (350, 23820), (361, 23874), (375, 23958), (392, 24051), (430, 24297), (453, 24513), (462, 24597), (469, 24630),

Gene: Mutaforma13\_18 Start: 17444, Stop: 19981, Start Num: 18

Candidate Starts for Mutaforma13\_18:

(16, 17432), (Start: 18 @17444 has 221 MA's), (28, 17465), (Start: 38 @17486 has 1 MA's), (47, 17522), (48, 17525), (71, 17594), (73, 17603), (74, 17606), (81, 17624), (89, 17657), (91, 17672), (99, 17720), (117, 17825), (119, 17831), (120, 17834), (128, 17864), (134, 17876), (135, 17879), (148, 17981), (Start: 159 @18047 has 1 MA's), (165, 18092), (169, 18122), (170, 18128), (172, 18146), (178, 18170), (180, 18179), (186, 18212), (187, 18218), (199, 18269), (203, 18287), (204, 18299), (206, 18308), (210, 18323), (212, 18329), (230, 18437), (232, 18449), (233, 18455), (236, 18470), (237, 18473), (240, 18494), (246, 18524), (248, 18536), (251, 18569), (262, 18635), (269, 18680), (270, 18683), (275, 18710), (276, 18716), (284, 18770), (285, 18773), (290, 18800), (304, 18875), (307, 18887), (308, 18890), (320, 18956), (323, 18980), (327, 19010), (336, 19052), (339, 19070), (340, 19073), (348, 19109), (350, 19127), (354, 19148), (359, 19175), (373, 19244), (375, 19262), (377, 19271), (378, 19283), (383, 19319), (393, 19370), (397, 19388), (405, 19430), (412, 19484), (425, 19586), (442, 19721), (445, 19745), (450, 19799), (453, 19847), (459, 19889), (461, 19913), (462, 19916),

Gene: Myrale\_26 Start: 22154, Stop: 24550, Start Num: 52

Candidate Starts for Myrale\_26:

(Start: 52 @22154 has 123 MA's), (97, 22331), (Start: 101 @22352 has 20 MA's), (139, 22499), (160, 22640), (164, 22673), (169, 22706), (174, 22742), (193, 22835), (206, 22895), (211, 22913), (225, 22994), (262, 23222), (269, 23267), (304, 23462), (305, 23468), (308, 23477), (315, 23522), (317, 23537), (348, 23693), (350, 23711), (352, 23720), (362, 23774), (375, 23849), (376, 23852), (411, 24062), (413, 24074), (430, 24188), (453, 24404), (462, 24488), (467, 24512), (469, 24521),

Gene: Nala\_26 Start: 22310, Stop: 24706, Start Num: 52

Candidate Starts for Nala\_26:

(Start: 52 @22310 has 123 MA's), (97, 22487), (Start: 101 @22508 has 20 MA's), (139, 22655), (160, 22796), (164, 22829), (169, 22862), (174, 22898), (193, 22991), (206, 23051), (211, 23069), (234, 23201), (242, 23246), (262, 23378), (269, 23423), (281, 23483), (301, 23597), (304, 23618), (312, 23657), (315, 23678), (317, 23693), (346, 23843), (348, 23849), (350, 23867), (361, 23921), (375, 24005), (392, 24098), (430, 24344), (453, 24560), (462, 24644), (469, 24677),

Gene: Nebkiss\_22 Start: 19932, Stop: 22502, Start Num: 15

Candidate Starts for Nebkiss\_22:

(Start: 15 @19932 has 2 MA's), (30, 19989), (41, 20022), (67, 20100), (69, 20103), (84, 20157), (86, 20169), (96, 20217), (100, 20262), (114, 20334), (120, 20355), (126, 20376), (134, 20397), (135, 20400), (141, 20445), (152, 20544), (162, 20589), (170, 20634), (180, 20685), (183, 20703), (206, 20808), (208, 20814), (210, 20823), (211, 20826), (216, 20853), (219, 20874), (225, 20907), (226, 20916), (230, 20937), (232, 20949), (236, 20970), (246, 21024), (248, 21036), (251, 21069), (263, 21144), (268, 21171), (287, 21294), (296, 21321), (299, 21345), (304, 21375), (310, 21399), (316, 21441), (317, 21450), (337, 21579), (342, 21606), (353, 21657), (374, 21768), (375, 21783), (421, 22074), (442, 22242), (445, 22266), (459, 22410), (462, 22437), (464, 22443), (465, 22446),

Gene: NelitzaMV\_26 Start: 22353, Stop: 24749, Start Num: 52

Candidate Starts for NelitzaMV\_26:

(Start: 52 @22353 has 123 MA's), (97, 22530), (Start: 101 @22551 has 20 MA's), (139, 22698), (160, 22839), (164, 22872), (169, 22905), (174, 22941), (193, 23034), (206, 23094), (211, 23112), (238, 23268), (242, 23289), (259, 23409), (262, 23421), (269, 23466), (304, 23661), (308, 23676), (315, 23721), (317, 23736), (348, 23892), (350, 23910), (352, 23919), (375, 24048), (376, 24051), (411, 24261), (413, 24273), (430, 24387), (453, 24603), (462, 24687), (467, 24711), (469, 24720),

Gene: NiebruSaylor\_57 Start: 35525, Stop: 38035, Start Num: 35

Candidate Starts for NiebruSaylor\_57:

(Start: 35 @35525 has 27 MA's), (42, 35558), (60, 35627), (61, 35630), (68, 35654), (74, 35678), (83, 35702), (89, 35735), (124, 35942), (127, 35954), (128, 35957), (151, 36104), (152, 36134), (Start: 159 @36158 has 1 MA's), (165, 36188), (166, 36191), (169, 36218), (172, 36242), (179, 36272), (189, 36329), (194, 36353), (203, 36389), (204, 36401), (210, 36425), (211, 36428), (217, 36470), (236, 36566), (237, 36569), (279, 36824), (304, 36968), (315, 37028), (324, 37100), (325, 37103), (344, 37199), (375, 37373), (378, 37394), (395, 37487), (398, 37499), (412, 37589), (423, 37664), (432, 37709), (455, 37910), (460, 37964), (465, 37979),

Gene: Nimbo\_18 Start: 17400, Stop: 19937, Start Num: 18

Candidate Starts for Nimbo\_18:

(Start: 18 @17400 has 221 MA's), (28, 17421), (Start: 38 @17442 has 1 MA's), (48, 17481), (71, 17550), (73, 17559), (74, 17562), (81, 17580), (91, 17628), (99, 17676), (119, 17787), (120, 17790), (135, 17835), (145, 17913), (148, 17937), (Start: 159 @18003 has 1 MA's), (169, 18078), (170, 18084), (172, 18102), (178, 18126), (180, 18135), (186, 18168), (187, 18174), (193, 18204), (199, 18225), (204, 18255), (206, 18264), (226, 18372), (229, 18384), (230, 18393), (231, 18396), (233, 18411), (236, 18426), (237, 18429), (240, 18450), (248, 18492), (251, 18525), (269, 18636), (270, 18639), (275, 18666), (276, 18672), (284, 18726), (285, 18729), (290, 18756), (304, 18831), (307, 18843), (308, 18846), (320, 18912), (322, 18933), (323, 18936), (325, 18957), (327, 18966), (336, 19008), (339, 19026), (340, 19029), (346, 19059), (350, 19083), (353, 19095), (354, 19104), (373, 19200), (375, 19218), (377, 19227), (378, 19239), (383, 19275), (388, 19305), (392, 19314), (393, 19326), (405, 19386), (412, 19440), (419, 19500), (425, 19542), (442, 19677), (445, 19701), (450, 19755), (453, 19803), (459, 19845), (461, 19869), (462, 19872),

Gene: Nimrod\_26 Start: 22529, Stop: 24925, Start Num: 52

Candidate Starts for Nimrod\_26:

(Start: 52 @22529 has 123 MA's), (97, 22706), (Start: 101 @22727 has 20 MA's), (139, 22874), (160, 23015), (164, 23048), (169, 23081), (174, 23117), (193, 23210), (206, 23270), (211, 23288), (234, 23420), (242, 23465), (262, 23597), (269, 23642), (281, 23702), (301, 23816), (304, 23837), (312, 23876), (315, 23897), (317, 23912), (346, 24062), (348, 24068), (350, 24086), (361, 24140), (375, 24224), (392, 24317), (430, 24563), (453, 24779), (462, 24863), (469, 24896),

Gene: Nitzel\_19 Start: 18136, Stop: 20673, Start Num: 18

Candidate Starts for Nitzel\_19:

(Start: 18 @18136 has 221 MA's), (28, 18157), (Start: 38 @18178 has 1 MA's), (48, 18217), (71, 18286), (73, 18295), (74, 18298), (81, 18316), (89, 18349), (91, 18364), (99, 18412), (117, 18517), (119, 18523), (120, 18526), (134, 18568), (135, 18571), (148, 18673), (Start: 159 @18739 has 1 MA's), (165, 18784), (169, 18814), (170, 18820), (172, 18838), (178, 18862), (180, 18871), (186, 18904), (187, 18910), (199, 18961), (203, 18979), (204, 18991), (206, 19000), (210, 19015), (212, 19021), (230, 19129), (232, 19141), (233, 19147), (236, 19162), (237, 19165), (240, 19186), (246, 19216), (248, 19228), (251, 19261), (262, 19327), (269, 19372), (270, 19375), (275, 19402), (276, 19408), (284, 19462), (285, 19465), (290, 19492), (304, 19567), (307, 19579), (308, 19582), (320, 19648), (323, 19672), (327, 19702), (336, 19744), (339, 19762), (340, 19765), (348, 19801), (350, 19819), (353, 19831), (354, 19840), (359, 19867), (373, 19936), (375, 19954), (377, 19963), (378, 19975), (383, 20011), (393, 20062), (397, 20080), (405, 20122), (412, 20176), (419, 20236), (425, 20278), (442, 20413), (445, 20437), (450, 20491), (453, 20539), (459, 20581), (461, 20605), (462, 20608),

Gene: Nivrat\_18 Start: 17405, Stop: 19930, Start Num: 18

Candidate Starts for Nivrat\_18:

(Start: 18 @17405 has 221 MA's), (48, 17486), (71, 17555), (73, 17564), (74, 17567), (81, 17585), (91, 17633), (98, 17678), (119, 17792), (120, 17795), (123, 17807), (132, 17828), (134, 17837), (135, 17840), (142, 17888), (145, 17918), (152, 17984), (160, 18017), (165, 18053), (168, 18077), (179, 18137), (180, 18140), (183, 18158), (197, 18221), (199, 18224), (203, 18242), (206, 18263), (211, 18281), (216, 18308), (219, 18329), (225, 18362), (233, 18410), (234, 18413), (236, 18425), (237, 18428), (241, 18455), (246, 18479), (251, 18524), (272, 18650), (276, 18674), (297, 18782), (304, 18833), (307, 18845), (308, 18848), (315, 18893), (317, 18908), (322, 18935), (325, 18959), (336, 19010), (339, 19028), (340, 19031), (341, 19043), (353, 19097), (361, 19139), (384, 19283), (395, 19337), (396, 19343), (397, 19346), (402, 19382), (404, 19385), (406, 19394), (407, 19421), (435, 19622), (453, 19793), (458, 19832), (464, 19871), (465, 19874),

Gene: NoSleep\_27 Start: 22023, Stop: 24419, Start Num: 52

Candidate Starts for NoSleep\_27:

(Start: 52 @22023 has 123 MA's), (97, 22200), (Start: 101 @22221 has 20 MA's), (139, 22368), (164, 22542), (169, 22575), (174, 22611), (193, 22704), (206, 22764), (211, 22782), (234, 22914), (242, 22959), (262, 23091), (269, 23136), (281, 23196), (301, 23310), (304, 23331), (312, 23370), (315, 23391), (317, 23406), (346, 23556), (348, 23562), (350, 23580), (361, 23634), (375, 23718), (392, 23811), (430, 24057), (453, 24273), (462, 24357), (469, 24390),

Gene: NormanBulbieJr\_18 Start: 17393, Stop: 19945, Start Num: 18

Candidate Starts for NormanBulbieJr\_18:

(Start: 18 @17393 has 221 MA's), (48, 17474), (71, 17543), (73, 17552), (74, 17555), (81, 17573), (91, 17621), (98, 17666), (119, 17780), (120, 17783), (123, 17795), (132, 17816), (134, 17825), (135, 17828), (142, 17876), (145, 17906), (152, 17972), (160, 18005), (165, 18041), (168, 18065), (179, 18125), (180, 18128), (183, 18146), (197, 18209), (199, 18212), (203, 18230), (206, 18251), (211, 18269), (216, 18296), (219, 18317), (225, 18350), (232, 18392), (233, 18398), (234, 18401), (237, 18416), (241, 18443), (242, 18446), (246, 18467), (248, 18479), (251, 18512), (265, 18605), (284, 18713), (287, 18737), (290, 18743), (295, 18761), (296, 18764), (299, 18788), (304, 18818), (310, 18842), (315, 18878), (316, 18884), (317, 18893), (322, 18920), (333, 18983), (336, 19007), (337,

19022), (346, 19064), (355, 19115), (374, 19211), (375, 19226), (377, 19235), (380, 19259), (392, 19322), (399, 19358), (440, 19664), (445, 19709), (453, 19811),

Gene: Nova\_30 Start: 24743, Stop: 27013, Start Num: 101

Candidate Starts for Nova\_30:

(Start: 101 @24743 has 20 MA's), (131, 24878), (133, 24887), (156, 25061), (158, 25067), (160, 25079), (185, 25232), (187, 25247), (190, 25262), (215, 25376), (257, 25643), (258, 25649), (266, 25694), (282, 25781), (318, 25982), (319, 25988), (325, 26036), (331, 26066), (335, 26090), (365, 26279), (372, 26306), (378, 26354), (391, 26426), (399, 26465), (400, 26486), (403, 26501), (406, 26519), (408, 26549), (451, 26834), (453, 26876), (474, 27002),

Gene: Oaker\_29 Start: 25939, Stop: 28782, Start Num: 3

Candidate Starts for Oaker\_29:

(Start: 3 @25939 has 8 MA's), (8, 26071), (9, 26083), (Start: 11 @26092 has 7 MA's), (20, 26161), (24, 26167), (40, 26227), (45, 26248), (59, 26296), (70, 26338), (76, 26362), (85, 26395), (92, 26431), (94, 26443), (107, 26536), (120, 26593), (130, 26632), (160, 26827), (163, 26857), (170, 26899), (180, 26950), (199, 27040), (203, 27058), (217, 27139), (225, 27178), (229, 27199), (251, 27337), (255, 27376), (268, 27439), (285, 27541), (324, 27766), (389, 28129), (395, 28156), (431, 28399), (432, 28432), (436, 28456), (449, 28576), (457, 28654), (469, 28741), (473, 28756), (475, 28762),

Gene: Ochi17\_18 Start: 17634, Stop: 20171, Start Num: 18

Candidate Starts for Ochi17\_18:

(Start: 18 @17634 has 221 MA's), (28, 17655), (Start: 38 @17676 has 1 MA's), (48, 17715), (71, 17784), (73, 17793), (74, 17796), (81, 17814), (91, 17862), (119, 18021), (120, 18024), (134, 18066), (135, 18069), (145, 18147), (147, 18168), (148, 18171), (Start: 159 @18237 has 1 MA's), (160, 18246), (165, 18282), (169, 18312), (170, 18318), (178, 18360), (179, 18366), (180, 18369), (186, 18402), (187, 18408), (193, 18438), (199, 18459), (204, 18489), (206, 18498), (226, 18606), (229, 18618), (230, 18627), (231, 18630), (232, 18639), (233, 18645), (236, 18660), (237, 18663), (240, 18684), (248, 18726), (251, 18759), (275, 18900), (276, 18906), (284, 18960), (285, 18963), (290, 18990), (304, 19065), (307, 19077), (308, 19080), (320, 19146), (322, 19167), (323, 19170), (325, 19191), (336, 19242), (339, 19260), (340, 19263), (346, 19293), (350, 19317), (353, 19329), (373, 19434), (375, 19452), (377, 19461), (378, 19473), (383, 19509), (388, 19539), (393, 19560), (399, 19584), (405, 19620), (419, 19734), (425, 19776), (434, 19854), (442, 19911), (445, 19935), (450, 19989), (453, 20037), (459, 20079), (461, 20103), (462, 20106),

Gene: OfUltron\_18 Start: 17634, Stop: 20171, Start Num: 18

Candidate Starts for OfUltron\_18:

(Start: 18 @17634 has 221 MA's), (28, 17655), (Start: 38 @17676 has 1 MA's), (48, 17715), (71, 17784), (73, 17793), (74, 17796), (81, 17814), (91, 17862), (119, 18021), (120, 18024), (134, 18066), (135, 18069), (145, 18147), (147, 18168), (148, 18171), (Start: 159 @18237 has 1 MA's), (160, 18246), (165, 18282), (169, 18312), (170, 18318), (178, 18360), (179, 18366), (180, 18369), (186, 18402), (187, 18408), (193, 18438), (199, 18459), (204, 18489), (206, 18498), (226, 18606), (229, 18618), (230, 18627), (231, 18630), (232, 18639), (233, 18645), (236, 18660), (237, 18663), (240, 18684), (248, 18726), (251, 18759), (275, 18900), (276, 18906), (284, 18960), (285, 18963), (290, 18990), (304, 19065), (307, 19077), (308, 19080), (320, 19146), (322, 19167), (323, 19170), (325, 19191), (336, 19242), (339, 19260), (340, 19263), (346, 19293), (350, 19317), (353, 19329), (373, 19434), (375, 19452), (377, 19461), (378, 19473), (383, 19509), (388, 19539), (393, 19560), (399, 19584), (405, 19620), (419, 19734), (425, 19776), (434, 19854), (442, 19911), (445, 19935), (450, 19989), (453, 20037), (459, 20079), (461, 20103), (462, 20106),

Gene: Ogopogo\_21 Start: 17660, Stop: 20149, Start Num: 18

Candidate Starts for Ogopogo\_21:

(Start: 18 @17660 has 221 MA's), (28, 17681), (Start: 38 @17702 has 1 MA's), (49, 17741), (71, 17810), (73, 17819), (74, 17822), (81, 17840), (91, 17888), (100, 17936), (112, 17990), (120, 18026), (121, 18032), (122, 18035), (132, 18053), (137, 18077), (141, 18101), (150, 18164), (162, 18248), (165, 18257), (169, 18281), (172, 18305), (178, 18329), (179, 18335), (183, 18356), (187, 18377), (193, 18407), (201, 18437), (204, 18458), (223, 18551), (225, 18566), (226, 18575), (230, 18596), (231, 18599), (246, 18683), (247, 18686), (248, 18695), (250, 18722), (252, 18731), (256, 18770), (260, 18791), (262, 18794), (268, 18830), (272, 18851), (284, 18929), (285, 18932), (298, 18986), (307, 19046), (323, 19139), (324, 19157), (325, 19160), (334, 19196), (343, 19250), (346, 19259), (358, 19337), (362, 19355), (368, 19391), (369, 19394), (373, 19412), (374, 19415), (375, 19430), (378, 19451), (383, 19487), (385, 19499), (399, 19562), (405, 19595), (414, 19682), (422, 19730), (424, 19754), (429, 19781), (430, 19790), (433, 19829), (438, 19868), (442, 19892), (444, 19913), (453, 20009), (456, 20030), (465, 20093), (469, 20120), (472, 20129),

Gene: Oksu\_19 Start: 17479, Stop: 20016, Start Num: 18

Candidate Starts for Oksu\_19:

(Start: 18 @17479 has 221 MA's), (28, 17500), (Start: 38 @17521 has 1 MA's), (48, 17560), (71, 17629), (73, 17638), (74, 17641), (81, 17659), (91, 17707), (117, 17860), (120, 17869), (135, 17914), (147, 18013), (148, 18016), (Start: 159 @18082 has 1 MA's), (169, 18157), (170, 18163), (172, 18181), (178, 18205), (179, 18211), (180, 18214), (186, 18247), (187, 18253), (193, 18283), (199, 18304), (204, 18334), (206, 18343), (210, 18358), (211, 18361), (230, 18472), (231, 18475), (232, 18484), (233, 18490), (236, 18505), (237, 18508), (240, 18529), (248, 18571), (251, 18604), (275, 18745), (276, 18751), (284, 18805), (285, 18808), (290, 18835), (304, 18910), (307, 18922), (308, 18925), (320, 18991), (322, 19012), (323, 19015), (325, 19036), (336, 19087), (339, 19105), (340, 19108), (346, 19138), (350, 19162), (353, 19174), (373, 19279), (375, 19297), (377, 19306), (378, 19318), (383, 19354), (388, 19384), (393, 19405), (399, 19429), (405, 19465), (419, 19579), (425, 19621), (434, 19699), (442, 19756), (445, 19780), (450, 19834), (453, 19882), (459, 19924), (461, 19948), (462, 19951),

Gene: OldBen\_18 Start: 17370, Stop: 19907, Start Num: 18

Candidate Starts for OldBen\_18:

(16, 17358), (Start: 18 @17370 has 221 MA's), (28, 17391), (Start: 38 @17412 has 1 MA's), (48, 17451), (71, 17520), (73, 17529), (74, 17532), (81, 17550), (91, 17598), (99, 17646), (119, 17757), (120, 17760), (135, 17805), (145, 17883), (148, 17907), (Start: 159 @17973 has 1 MA's), (165, 18018), (169, 18048), (170, 18054), (172, 18072), (178, 18096), (180, 18105), (186, 18138), (187, 18144), (193, 18174), (203, 18213), (204, 18225), (206, 18234), (210, 18249), (211, 18252), (230, 18363), (231, 18366), (232, 18375), (233, 18381), (236, 18396), (237, 18399), (240, 18420), (246, 18450), (248, 18462), (251, 18495), (269, 18606), (270, 18609), (275, 18636), (276, 18642), (284, 18696), (285, 18699), (304, 18801), (307, 18813), (308, 18816), (320, 18882), (323, 18906), (325, 18927), (327, 18936), (339, 18996), (340, 18999), (348, 19035), (350, 19053), (354, 19074), (359, 19101), (373, 19170), (375, 19188), (377, 19197), (378, 19209), (383, 19245), (393, 19296), (397, 19314), (405, 19356), (412, 19410), (425, 19512), (442, 19647), (445, 19671), (450, 19725), (456, 19794), (461, 19839), (462, 19842),

Gene: OlympiaSaint\_18 Start: 17593, Stop: 20145, Start Num: 18

Candidate Starts for OlympiaSaint\_18:

(Start: 18 @17593 has 221 MA's), (48, 17674), (71, 17743), (73, 17752), (74, 17755), (81, 17773), (91, 17821), (98, 17866), (119, 17980), (120, 17983), (123, 17995), (132, 18016), (134, 18025), (135, 18028), (142, 18076), (145, 18106), (152, 18172), (160, 18205), (165, 18241), (168, 18265), (179, 18325), (180, 18328), (183, 18346), (197, 18409), (199, 18412), (203, 18430), (206, 18451), (211, 18469), (216, 18496), (219, 18517), (225, 18550), (232, 18592), (233, 18598), (234, 18601), (237, 18616), (241, 18643), (242, 18646), (246, 18667), (248, 18679), (251, 18712), (265, 18805), (284, 18913), (287, 18937), (290, 18943), (295, 18961), (296, 18964), (299, 18988), (304, 19018), (310, 19042), (315, 19078), (316, 19084), (317, 19093), (322, 19120), (333, 19183), (336, 19207), (337,

19222), (346, 19264), (355, 19315), (374, 19411), (375, 19426), (377, 19435), (380, 19459), (392, 19522), (399, 19558), (440, 19864), (445, 19909), (453, 20011),

Gene: Omega\_38 Start: 31431, Stop: 33986, Start Num: 18

Candidate Starts for Omega\_38:

(Start: 18 @31431 has 221 MA's), (81, 31626), (89, 31662), (91, 31677), (99, 31725), (119, 31836), (120, 31839), (128, 31869), (135, 31884), (145, 31962), (148, 31986), (Start: 159 @32052 has 1 MA's), (165, 32097), (169, 32127), (170, 32133), (172, 32151), (178, 32175), (180, 32184), (186, 32217), (187, 32223), (193, 32253), (203, 32292), (204, 32304), (206, 32313), (210, 32328), (211, 32331), (230, 32442), (231, 32445), (232, 32454), (233, 32460), (236, 32475), (237, 32478), (240, 32499), (246, 32529), (248, 32541), (251, 32574), (262, 32640), (269, 32685), (270, 32688), (275, 32715), (276, 32721), (284, 32775), (285, 32778), (302, 32865), (304, 32880), (307, 32892), (308, 32895), (320, 32961), (325, 33006), (327, 33015), (339, 33075), (340, 33078), (348, 33114), (350, 33132), (353, 33144), (354, 33153), (359, 33180), (373, 33249), (375, 33267), (377, 33276), (378, 33288), (383, 33324), (388, 33354), (393, 33375), (399, 33399), (405, 33435), (412, 33489), (419, 33549), (425, 33591), (442, 33726), (445, 33750), (450, 33804), (453, 33852), (459, 33894), (461, 33918), (462, 33921),

Gene: Optimus\_37 Start: 30775, Stop: 33330, Start Num: 18

Candidate Starts for Optimus\_37:

(12, 30718), (Start: 18 @30775 has 221 MA's), (81, 30970), (89, 31006), (91, 31021), (99, 31069), (117, 31174), (120, 31183), (135, 31228), (147, 31327), (148, 31330), (Start: 159 @31396 has 1 MA's), (169, 31471), (170, 31477), (172, 31495), (178, 31519), (180, 31528), (186, 31561), (187, 31567), (193, 31597), (203, 31636), (204, 31648), (206, 31657), (230, 31786), (231, 31789), (232, 31798), (233, 31804), (236, 31819), (237, 31822), (240, 31843), (246, 31873), (248, 31885), (251, 31918), (269, 32029), (270, 32032), (275, 32059), (276, 32065), (284, 32119), (285, 32122), (304, 32224), (307, 32236), (308, 32239), (320, 32305), (323, 32329), (325, 32350), (336, 32401), (339, 32419), (340, 32422), (346, 32452), (350, 32476), (353, 32488), (354, 32497), (373, 32593), (375, 32611), (377, 32620), (378, 32632), (388, 32698), (392, 32707), (393, 32719), (405, 32779), (425, 32935), (442, 33070), (445, 33094), (450, 33148), (456, 33217), (461, 33262), (462, 33265),

Gene: OrionPax\_27 Start: 22029, Stop: 24425, Start Num: 52

Candidate Starts for OrionPax\_27:

(Start: 52 @22029 has 123 MA's), (97, 22206), (Start: 101 @22227 has 20 MA's), (139, 22374), (164, 22548), (169, 22581), (174, 22617), (193, 22710), (206, 22770), (211, 22788), (234, 22920), (242, 22965), (262, 23097), (269, 23142), (281, 23202), (301, 23316), (304, 23337), (312, 23376), (315, 23397), (317, 23412), (346, 23562), (348, 23568), (350, 23586), (361, 23640), (375, 23724), (392, 23817), (430, 24063), (453, 24279), (462, 24363), (469, 24396),

Gene: Ovechkin\_18 Start: 17427, Stop: 19964, Start Num: 18

Candidate Starts for Ovechkin\_18:

(Start: 18 @17427 has 221 MA's), (28, 17448), (Start: 38 @17469 has 1 MA's), (47, 17505), (48, 17508), (71, 17577), (73, 17586), (74, 17589), (81, 17607), (89, 17640), (91, 17655), (99, 17703), (119, 17814), (120, 17817), (128, 17847), (134, 17859), (135, 17862), (145, 17940), (148, 17964), (Start: 159 @18030 has 1 MA's), (165, 18075), (169, 18105), (170, 18111), (172, 18129), (178, 18153), (180, 18162), (186, 18195), (187, 18201), (193, 18231), (203, 18270), (204, 18282), (206, 18291), (210, 18306), (211, 18309), (230, 18420), (231, 18423), (232, 18432), (233, 18438), (236, 18453), (237, 18456), (240, 18477), (246, 18507), (248, 18519), (251, 18552), (269, 18663), (270, 18666), (275, 18693), (276, 18699), (284, 18753), (285, 18756), (304, 18858), (307, 18870), (308, 18873), (320, 18939), (323, 18963), (325, 18984), (327, 18993), (339, 19053), (340, 19056), (348, 19092), (350, 19110), (353, 19122), (354, 19131), (359, 19158), (373, 19227), (375, 19245), (377, 19254), (378, 19266), (383, 19302), (388, 19332), (393, 19353), (399, 19377), (405, 19413), (412, 19467), (419, 19527), (425, 19569), (434, 19647), (442, 19704), (445, 19728), (450, 19782), (453,

19830), (459, 19872), (461, 19896), (462, 19899),

Gene: OwlsT2W\_20 Start: 17765, Stop: 20317, Start Num: 18

Candidate Starts for OwlsT2W\_20:

(Start: 18 @17765 has 221 MA's), (55, 17855), (71, 17915), (73, 17924), (74, 17927), (81, 17945), (91, 17993), (98, 18038), (119, 18152), (120, 18155), (123, 18167), (132, 18188), (134, 18197), (135, 18200), (145, 18278), (152, 18344), (160, 18377), (165, 18413), (168, 18437), (179, 18497), (180, 18500), (183, 18518), (197, 18581), (199, 18584), (203, 18602), (206, 18623), (211, 18641), (216, 18668), (219, 18689), (225, 18722), (232, 18764), (233, 18770), (234, 18773), (237, 18788), (241, 18815), (242, 18818), (246, 18839), (248, 18851), (251, 18884), (265, 18977), (284, 19085), (287, 19109), (290, 19115), (295, 19133), (296, 19136), (299, 19160), (304, 19190), (310, 19214), (315, 19250), (316, 19256), (317, 19265), (322, 19292), (333, 19355), (336, 19379), (337, 19394), (346, 19436), (355, 19487), (374, 19583), (375, 19598), (377, 19607), (380, 19631), (392, 19694), (399, 19730), (440, 20036), (445, 20081), (453, 20183),

Gene: PBI1\_30 Start: 24247, Stop: 26517, Start Num: 101

Candidate Starts for PBI1\_30:

(Start: 101 @24247 has 20 MA's), (131, 24382), (133, 24391), (156, 24565), (158, 24571), (160, 24583), (185, 24736), (187, 24751), (190, 24766), (257, 25147), (258, 25153), (266, 25198), (282, 25285), (318, 25486), (319, 25492), (325, 25540), (331, 25570), (335, 25594), (365, 25783), (372, 25810), (378, 25858), (391, 25930), (399, 25969), (400, 25990), (403, 26005), (406, 26023), (408, 26053), (420, 26137), (451, 26338), (453, 26380), (474, 26506),

Gene: PHappiness\_18 Start: 17378, Stop: 19915, Start Num: 18

Candidate Starts for PHappiness\_18:

(16, 17366), (Start: 18 @17378 has 221 MA's), (28, 17399), (Start: 38 @17420 has 1 MA's), (48, 17459), (71, 17528), (73, 17537), (74, 17540), (81, 17558), (91, 17606), (99, 17654), (119, 17765), (120, 17768), (135, 17813), (145, 17891), (148, 17915), (Start: 159 @17981 has 1 MA's), (165, 18026), (169, 18056), (170, 18062), (172, 18080), (178, 18104), (180, 18113), (186, 18146), (187, 18152), (193, 18182), (203, 18221), (204, 18233), (206, 18242), (210, 18257), (211, 18260), (230, 18371), (231, 18374), (232, 18383), (233, 18389), (236, 18404), (237, 18407), (240, 18428), (246, 18458), (248, 18470), (251, 18503), (269, 18614), (270, 18617), (275, 18644), (276, 18650), (284, 18704), (285, 18707), (304, 18809), (307, 18821), (308, 18824), (320, 18890), (323, 18914), (325, 18935), (327, 18944), (339, 19004), (340, 19007), (348, 19043), (350, 19061), (354, 19082), (359, 19109), (373, 19178), (375, 19196), (377, 19205), (378, 19217), (383, 19253), (393, 19304), (397, 19322), (405, 19364), (412, 19418), (425, 19520), (442, 19655), (445, 19679), (450, 19733), (456, 19802), (461, 19847), (462, 19850),

Gene: PLOT\_31 Start: 24319, Stop: 26589, Start Num: 101

Candidate Starts for PLOT\_31:

(Start: 101 @24319 has 20 MA's), (131, 24454), (133, 24463), (156, 24637), (158, 24643), (160, 24655), (185, 24808), (187, 24823), (190, 24838), (257, 25219), (258, 25225), (266, 25270), (282, 25357), (318, 25558), (319, 25564), (325, 25612), (331, 25642), (335, 25666), (365, 25855), (372, 25882), (378, 25930), (391, 26002), (399, 26041), (400, 26062), (403, 26077), (406, 26095), (408, 26125), (420, 26209), (451, 26410), (453, 26452), (474, 26578),

Gene: PMC\_18 Start: 17383, Stop: 19920, Start Num: 18

Candidate Starts for PMC\_18:

(Start: 18 @17383 has 221 MA's), (55, 17473), (71, 17533), (73, 17542), (74, 17545), (81, 17563), (91, 17611), (99, 17659), (117, 17764), (119, 17770), (120, 17773), (134, 17815), (135, 17818), (148, 17920), (Start: 159 @17986 has 1 MA's), (165, 18031), (169, 18061), (170, 18067), (172, 18085), (178, 18109), (180, 18118), (186, 18151), (187, 18157), (199, 18208), (203, 18226), (204, 18238), (206, 18247), (210, 18262), (212, 18268), (230, 18376), (232, 18388), (233, 18394), (236, 18409),

(237, 18412), (240, 18433), (246, 18463), (248, 18475), (251, 18508), (262, 18574), (269, 18619), (270, 18622), (275, 18649), (276, 18655), (284, 18709), (285, 18712), (290, 18739), (304, 18814), (307, 18826), (308, 18829), (320, 18895), (322, 18916), (323, 18919), (327, 18949), (336, 18991), (339, 19009), (340, 19012), (346, 19042), (350, 19066), (353, 19078), (354, 19087), (373, 19183), (375, 19201), (377, 19210), (378, 19222), (388, 19288), (392, 19297), (393, 19309), (405, 19369), (425, 19525), (442, 19660), (445, 19684), (450, 19738), (456, 19807), (461, 19852), (462, 19855),

Gene: Pacc40\_18 Start: 17568, Stop: 20105, Start Num: 18

Candidate Starts for Pacc40\_18:

(16, 17556), (Start: 18 @17568 has 221 MA's), (28, 17589), (Start: 38 @17610 has 1 MA's), (48, 17649), (71, 17718), (73, 17727), (74, 17730), (81, 17748), (91, 17796), (99, 17844), (119, 17955), (120, 17958), (135, 18003), (145, 18081), (148, 18105), (Start: 159 @18171 has 1 MA's), (165, 18216), (169, 18246), (170, 18252), (172, 18270), (178, 18294), (180, 18303), (186, 18336), (187, 18342), (193, 18372), (203, 18411), (204, 18423), (206, 18432), (210, 18447), (211, 18450), (230, 18561), (231, 18564), (232, 18573), (233, 18579), (236, 18594), (237, 18597), (240, 18618), (246, 18648), (248, 18660), (251, 18693), (269, 18804), (270, 18807), (275, 18834), (276, 18840), (284, 18894), (285, 18897), (304, 18999), (307, 19011), (308, 19014), (320, 19080), (323, 19104), (325, 19125), (327, 19134), (339, 19194), (340, 19197), (348, 19233), (350, 19251), (354, 19272), (359, 19299), (373, 19368), (375, 19386), (377, 19395), (378, 19407), (383, 19443), (393, 19494), (397, 19512), (405, 19554), (412, 19608), (425, 19710), (442, 19845), (445, 19869), (450, 19923), (456, 19992), (461, 20037), (462, 20040),

Gene: Palpatine\_26 Start: 22301, Stop: 24697, Start Num: 52

Candidate Starts for Palpatine\_26:

(Start: 52 @22301 has 123 MA's), (97, 22478), (Start: 101 @22499 has 20 MA's), (139, 22646), (160, 22787), (164, 22820), (169, 22853), (174, 22889), (193, 22982), (206, 23042), (211, 23060), (234, 23192), (242, 23237), (262, 23369), (269, 23414), (281, 23474), (301, 23588), (304, 23609), (312, 23648), (315, 23669), (317, 23684), (346, 23834), (348, 23840), (350, 23858), (361, 23912), (375, 23996), (392, 24089), (430, 24335), (453, 24551), (462, 24635), (469, 24668),

Gene: Paperbeatsrock\_28 Start: 23264, Stop: 25660, Start Num: 52

Candidate Starts for Paperbeatsrock\_28:

(Start: 52 @23264 has 123 MA's), (97, 23441), (Start: 101 @23462 has 20 MA's), (139, 23609), (160, 23750), (164, 23783), (169, 23816), (174, 23852), (193, 23945), (206, 24005), (211, 24023), (234, 24155), (242, 24200), (262, 24332), (269, 24377), (281, 24437), (301, 24551), (304, 24572), (312, 24611), (315, 24632), (317, 24647), (346, 24797), (348, 24803), (350, 24821), (361, 24875), (375, 24959), (392, 25052), (430, 25298), (453, 25514), (462, 25598), (469, 25631),

Gene: Pat3\_25 Start: 21010, Stop: 23406, Start Num: 52

Candidate Starts for Pat3\_25:

(Start: 52 @21010 has 123 MA's), (97, 21187), (Start: 101 @21208 has 20 MA's), (139, 21355), (160, 21496), (164, 21529), (169, 21562), (174, 21598), (193, 21691), (206, 21751), (211, 21769), (234, 21901), (242, 21946), (262, 22078), (269, 22123), (301, 22297), (304, 22318), (312, 22357), (315, 22378), (317, 22393), (348, 22549), (350, 22567), (361, 22621), (375, 22705), (427, 23029), (453, 23260), (462, 23344), (469, 23377),

Gene: Penelope2018\_30 Start: 24316, Stop: 26586, Start Num: 101

Candidate Starts for Penelope2018\_30:

(Start: 101 @24316 has 20 MA's), (131, 24451), (133, 24460), (156, 24634), (158, 24640), (160, 24652), (185, 24805), (187, 24820), (190, 24835), (257, 25216), (258, 25222), (266, 25267), (282, 25354), (319, 25561), (325, 25609), (331, 25639), (335, 25663), (365, 25852), (372, 25879), (378, 25927), (391, 25999), (399, 26038), (400, 26059), (403, 26074), (406, 26092), (408, 26122), (420, 26206), (451, 26407), (453, 26449), (474, 26575),

Gene: Petra64142\_28 Start: 22744, Stop: 25140, Start Num: 52

Candidate Starts for Petra64142\_28:

(Start: 52 @22744 has 123 MA's), (97, 22921), (Start: 101 @22942 has 20 MA's), (139, 23089), (160, 23230), (164, 23263), (169, 23296), (174, 23332), (193, 23425), (206, 23485), (211, 23503), (234, 23635), (242, 23680), (262, 23812), (269, 23857), (281, 23917), (301, 24031), (304, 24052), (312, 24091), (315, 24112), (317, 24127), (346, 24277), (348, 24283), (350, 24301), (361, 24355), (375, 24439), (392, 24532), (430, 24778), (453, 24994), (462, 25078), (469, 25111),

Gene: Phaja\_26 Start: 22460, Stop: 24856, Start Num: 52

Candidate Starts for Phaja\_26:

(Start: 52 @22460 has 123 MA's), (97, 22637), (Start: 101 @22658 has 20 MA's), (139, 22805), (160, 22946), (164, 22979), (169, 23012), (174, 23048), (193, 23141), (206, 23201), (211, 23219), (238, 23375), (242, 23396), (259, 23516), (262, 23528), (269, 23573), (304, 23768), (305, 23774), (308, 23783), (315, 23828), (317, 23843), (348, 23999), (350, 24017), (352, 24026), (362, 24080), (375, 24155), (376, 24158), (411, 24368), (413, 24380), (430, 24494), (453, 24710), (462, 24794), (467, 24818), (469, 24827),

Gene: Phalconet\_18 Start: 17448, Stop: 19979, Start Num: 18

Candidate Starts for Phalconet\_18:

(16, 17436), (Start: 18 @17448 has 221 MA's), (28, 17469), (Start: 38 @17490 has 1 MA's), (48, 17529), (71, 17598), (73, 17607), (74, 17610), (89, 17661), (91, 17676), (99, 17718), (119, 17829), (120, 17832), (128, 17862), (135, 17877), (145, 17955), (Start: 159 @18045 has 1 MA's), (165, 18090), (169, 18120), (170, 18126), (172, 18144), (178, 18168), (180, 18177), (186, 18210), (187, 18216), (193, 18246), (203, 18285), (204, 18297), (206, 18306), (210, 18321), (211, 18324), (230, 18435), (231, 18438), (232, 18447), (233, 18453), (236, 18468), (237, 18471), (240, 18492), (246, 18522), (248, 18534), (251, 18567), (262, 18633), (269, 18678), (270, 18681), (275, 18708), (276, 18714), (284, 18768), (285, 18771), (302, 18858), (304, 18873), (307, 18885), (308, 18888), (320, 18954), (325, 18999), (327, 19008), (339, 19068), (340, 19071), (348, 19107), (350, 19125), (353, 19137), (354, 19146), (359, 19173), (373, 19242), (375, 19260), (377, 19269), (378, 19281), (383, 19317), (388, 19347), (393, 19368), (399, 19392), (405, 19428), (412, 19482), (419, 19542), (425, 19584), (434, 19662), (442, 19719), (445, 19743), (450, 19797), (453, 19845), (459, 19887), (461, 19911), (462, 19914),

Gene: Phanphagia\_18 Start: 17450, Stop: 19927, Start Num: 18

Candidate Starts for Phanphagia\_18:

(17, 17438), (Start: 18 @17450 has 221 MA's), (28, 17471), (Start: 38 @17492 has 1 MA's), (49, 17531), (71, 17600), (73, 17609), (74, 17612), (81, 17630), (89, 17663), (91, 17678), (108, 17765), (112, 17780), (120, 17816), (121, 17822), (135, 17855), (137, 17867), (162, 18038), (165, 18047), (169, 18071), (179, 18125), (186, 18161), (187, 18167), (193, 18197), (201, 18227), (204, 18248), (206, 18257), (223, 18341), (233, 18404), (237, 18422), (238, 18431), (242, 18452), (243, 18455), (246, 18473), (248, 18485), (250, 18512), (252, 18521), (259, 18572), (260, 18581), (262, 18584), (265, 18611), (268, 18620), (272, 18641), (284, 18719), (285, 18722), (305, 18830), (307, 18836), (315, 18884), (322, 18926), (323, 18929), (325, 18950), (326, 18956), (327, 18959), (334, 18989), (358, 19130), (362, 19148), (367, 19181), (373, 19205), (374, 19208), (375, 19223), (378, 19244), (383, 19280), (384, 19286), (390, 19313), (395, 19340), (414, 19475), (422, 19523), (424, 19547), (426, 19553), (430, 19571), (442, 19670), (444, 19691), (446, 19709), (453, 19787), (456, 19808), (465, 19871), (467, 19889), (472, 19907),

Gene: Pharsalus\_27 Start: 23064, Stop: 25460, Start Num: 52

Candidate Starts for Pharsalus\_27:

(Start: 52 @23064 has 123 MA's), (97, 23241), (Start: 101 @23262 has 20 MA's), (139, 23409), (160, 23550), (164, 23583), (169, 23616), (174, 23652), (193, 23745), (206, 23805), (211, 23823), (234,

23955), (242, 24000), (262, 24132), (269, 24177), (281, 24237), (301, 24351), (304, 24372), (312, 24411), (315, 24432), (317, 24447), (346, 24597), (348, 24603), (350, 24621), (361, 24675), (375, 24759), (392, 24852), (430, 25098), (453, 25314), (462, 25398), (469, 25431),

Gene: Phasih\_19 Start: 17939, Stop: 20476, Start Num: 18

Candidate Starts for Phasih\_19:

(Start: 18 @17939 has 221 MA's), (28, 17960), (Start: 38 @17981 has 1 MA's), (48, 18020), (71, 18089), (73, 18098), (74, 18101), (81, 18119), (89, 18152), (91, 18167), (117, 18320), (120, 18329), (135, 18374), (147, 18473), (148, 18476), (Start: 159 @18542 has 1 MA's), (169, 18617), (170, 18623), (178, 18665), (179, 18671), (180, 18674), (186, 18707), (187, 18713), (193, 18743), (199, 18764), (204, 18794), (206, 18803), (210, 18818), (211, 18821), (230, 18932), (231, 18935), (232, 18944), (233, 18950), (236, 18965), (237, 18968), (240, 18989), (246, 19019), (248, 19031), (251, 19064), (269, 19175), (270, 19178), (275, 19205), (276, 19211), (284, 19265), (285, 19268), (302, 19355), (304, 19370), (307, 19382), (308, 19385), (320, 19451), (323, 19475), (325, 19496), (327, 19505), (336, 19547), (339, 19565), (340, 19568), (346, 19598), (350, 19622), (353, 19634), (354, 19643), (373, 19739), (375, 19757), (377, 19766), (378, 19778), (383, 19814), (388, 19844), (392, 19853), (393, 19865), (405, 19925), (412, 19979), (419, 20039), (425, 20081), (442, 20216), (445, 20240), (450, 20294), (453, 20342), (459, 20384), (461, 20408), (462, 20411),

Gene: PhatBacter\_26 Start: 22312, Stop: 24708, Start Num: 52

Candidate Starts for PhatBacter\_26:

(Start: 52 @22312 has 123 MA's), (97, 22489), (Start: 101 @22510 has 20 MA's), (139, 22657), (160, 22798), (164, 22831), (169, 22864), (174, 22900), (193, 22993), (206, 23053), (211, 23071), (234, 23203), (242, 23248), (262, 23380), (269, 23425), (281, 23485), (301, 23599), (304, 23620), (312, 23659), (315, 23680), (317, 23695), (346, 23845), (348, 23851), (350, 23869), (361, 23923), (375, 24007), (392, 24100), (430, 24346), (453, 24562), (462, 24646), (469, 24679),

Gene: Phatniss\_19 Start: 17901, Stop: 20438, Start Num: 18

Candidate Starts for Phatniss\_19:

(16, 17889), (Start: 18 @17901 has 221 MA's), (28, 17922), (Start: 38 @17943 has 1 MA's), (48, 17982), (71, 18051), (73, 18060), (74, 18063), (81, 18081), (89, 18114), (91, 18129), (99, 18177), (117, 18282), (120, 18291), (134, 18333), (135, 18336), (145, 18414), (148, 18438), (Start: 159 @18504 has 1 MA's), (165, 18549), (169, 18579), (170, 18585), (172, 18603), (178, 18627), (180, 18636), (186, 18669), (187, 18675), (193, 18705), (203, 18744), (204, 18756), (206, 18765), (210, 18780), (211, 18783), (230, 18894), (232, 18906), (233, 18912), (236, 18927), (237, 18930), (240, 18951), (246, 18981), (248, 18993), (251, 19026), (262, 19092), (269, 19137), (270, 19140), (275, 19167), (276, 19173), (284, 19227), (285, 19230), (290, 19257), (304, 19332), (307, 19344), (308, 19347), (320, 19413), (323, 19437), (327, 19467), (336, 19509), (339, 19527), (340, 19530), (348, 19566), (350, 19584), (354, 19605), (359, 19632), (373, 19701), (375, 19719), (377, 19728), (378, 19740), (383, 19776), (388, 19806), (392, 19815), (393, 19827), (405, 19887), (412, 19941), (419, 20001), (425, 20043), (434, 20121), (442, 20178), (445, 20202), (450, 20256), (453, 20304), (459, 20346), (461, 20370), (462, 20373),

Gene: Phaux\_25 Start: 22310, Stop: 24706, Start Num: 52

Candidate Starts for Phaux\_25:

(Start: 52 @22310 has 123 MA's), (97, 22487), (Start: 101 @22508 has 20 MA's), (139, 22655), (160, 22796), (164, 22829), (169, 22862), (174, 22898), (193, 22991), (206, 23051), (211, 23069), (234, 23201), (242, 23246), (262, 23378), (269, 23423), (281, 23483), (301, 23597), (304, 23618), (312, 23657), (315, 23678), (317, 23693), (346, 23843), (348, 23849), (350, 23867), (361, 23921), (375, 24005), (392, 24098), (430, 24344), (453, 24560), (462, 24644), (469, 24677),

Gene: PhesterPhotato\_18 Start: 17419, Stop: 19956, Start Num: 18

Candidate Starts for PhesterPhotato\_18:

(16, 17407), (Start: 18 @17419 has 221 MA's), (28, 17440), (Start: 38 @17461 has 1 MA's), (48, 17500), (71, 17569), (73, 17578), (74, 17581), (81, 17599), (89, 17632), (91, 17647), (99, 17695), (119, 17806), (120, 17809), (128, 17839), (135, 17854), (145, 17932), (148, 17956), (Start: 159 @18022 has 1 MA's), (165, 18067), (169, 18097), (170, 18103), (172, 18121), (178, 18145), (180, 18154), (186, 18187), (187, 18193), (193, 18223), (203, 18262), (204, 18274), (206, 18283), (210, 18298), (211, 18301), (230, 18412), (231, 18415), (232, 18424), (233, 18430), (236, 18445), (237, 18448), (240, 18469), (246, 18499), (248, 18511), (251, 18544), (269, 18655), (270, 18658), (275, 18685), (276, 18691), (284, 18745), (285, 18748), (304, 18850), (307, 18862), (308, 18865), (320, 18931), (323, 18955), (325, 18976), (327, 18985), (339, 19045), (340, 19048), (348, 19084), (350, 19102), (353, 19114), (354, 19123), (359, 19150), (373, 19219), (375, 19237), (377, 19246), (378, 19258), (383, 19294), (388, 19324), (393, 19345), (399, 19369), (405, 19405), (412, 19459), (419, 19519), (425, 19561), (434, 19639), (442, 19696), (445, 19720), (446, 19735), (450, 19774), (453, 19822), (459, 19864), (461, 19888), (462, 19891),

Gene: Philus\_18 Start: 17405, Stop: 19942, Start Num: 18

Candidate Starts for Philus\_18:

(Start: 18 @17405 has 221 MA's), (28, 17426), (Start: 38 @17447 has 1 MA's), (48, 17486), (71, 17555), (73, 17564), (74, 17567), (81, 17585), (91, 17633), (117, 17786), (120, 17795), (135, 17840), (145, 17918), (148, 17942), (Start: 159 @18008 has 1 MA's), (165, 18053), (169, 18083), (170, 18089), (172, 18107), (178, 18131), (180, 18140), (186, 18173), (187, 18179), (193, 18209), (203, 18248), (206, 18269), (210, 18284), (211, 18287), (231, 18401), (232, 18410), (233, 18416), (237, 18434), (240, 18455), (246, 18485), (248, 18497), (251, 18530), (269, 18641), (270, 18644), (275, 18671), (276, 18677), (284, 18731), (285, 18734), (302, 18821), (304, 18836), (308, 18851), (323, 18941), (325, 18962), (327, 18971), (339, 19031), (340, 19034), (348, 19070), (350, 19088), (353, 19100), (354, 19109), (359, 19136), (373, 19205), (375, 19223), (377, 19232), (378, 19244), (383, 19280), (388, 19310), (393, 19331), (399, 19355), (405, 19391), (412, 19445), (425, 19547), (434, 19625), (442, 19682), (445, 19706), (450, 19760), (453, 19808), (459, 19850), (464, 19883), (465, 19886),

Gene: Phreeze\_29 Start: 25682, Stop: 28525, Start Num: 3

Candidate Starts for Phreeze\_29:

(Start: 3 @25682 has 8 MA's), (8, 25814), (9, 25826), (Start: 11 @25835 has 7 MA's), (20, 25904), (40, 25970), (45, 25991), (59, 26039), (70, 26081), (76, 26105), (85, 26138), (92, 26174), (94, 26186), (107, 26279), (120, 26336), (130, 26375), (160, 26570), (163, 26600), (170, 26642), (199, 26783), (203, 26801), (217, 26882), (225, 26921), (229, 26942), (251, 27080), (255, 27119), (268, 27182), (285, 27284), (324, 27509), (389, 27872), (395, 27899), (431, 28142), (432, 28175), (436, 28199), (449, 28319), (457, 28397), (469, 28484), (473, 28499), (475, 28505),

Gene: Phrux\_26 Start: 22025, Stop: 24421, Start Num: 52

Candidate Starts for Phrux\_26:

(Start: 52 @22025 has 123 MA's), (97, 22202), (Start: 101 @22223 has 20 MA's), (139, 22370), (164, 22544), (169, 22577), (174, 22613), (193, 22706), (206, 22766), (211, 22784), (234, 22916), (242, 22961), (262, 23093), (269, 23138), (281, 23198), (301, 23312), (304, 23333), (312, 23372), (315, 23393), (317, 23408), (346, 23558), (348, 23564), (350, 23582), (361, 23636), (375, 23720), (392, 23813), (430, 24059), (453, 24275), (462, 24359), (469, 24392),

Gene: Piper2020\_19 Start: 17270, Stop: 19795, Start Num: 18

Candidate Starts for Piper2020\_19:

(Start: 18 @17270 has 221 MA's), (28, 17291), (Start: 38 @17312 has 1 MA's), (48, 17351), (71, 17420), (73, 17429), (74, 17432), (81, 17450), (89, 17483), (91, 17498), (99, 17546), (119, 17657), (120, 17660), (135, 17705), (145, 17783), (148, 17807), (Start: 159 @17873 has 1 MA's), (160, 17882), (169, 17948), (170, 17954), (172, 17972), (178, 17996), (179, 18002), (180, 18005), (186, 18038), (187, 18044), (193, 18074), (199, 18095), (206, 18134), (210, 18149), (212, 18155), (237,

18299), (246, 18350), (261, 18461), (270, 18512), (274, 18536), (290, 18629), (299, 18674), (301, 18683), (304, 18704), (307, 18716), (308, 18719), (315, 18764), (323, 18809), (324, 18827), (325, 18830), (336, 18881), (346, 18932), (348, 18938), (350, 18956), (353, 18968), (354, 18977), (361, 19010), (375, 19091), (385, 19160), (392, 19187), (396, 19214), (406, 19265), (412, 19313), (444, 19556), (453, 19661), (456, 19682), (464, 19736), (468, 19760),

Gene: Plumbus\_19 Start: 17226, Stop: 19763, Start Num: 18

Candidate Starts for Plumbus\_19:

(16, 17214), (Start: 18 @17226 has 221 MA's), (28, 17247), (Start: 38 @17268 has 1 MA's), (48, 17307), (71, 17376), (73, 17385), (74, 17388), (81, 17406), (89, 17439), (91, 17454), (99, 17502), (119, 17613), (120, 17616), (128, 17646), (134, 17658), (135, 17661), (145, 17739), (148, 17763), (Start: 159 @17829 has 1 MA's), (165, 17874), (169, 17904), (170, 17910), (172, 17928), (178, 17952), (180, 17961), (186, 17994), (187, 18000), (193, 18030), (203, 18069), (204, 18081), (206, 18090), (210, 18105), (211, 18108), (230, 18219), (231, 18222), (232, 18231), (233, 18237), (236, 18252), (237, 18255), (240, 18276), (246, 18306), (248, 18318), (251, 18351), (262, 18417), (269, 18462), (270, 18465), (275, 18492), (276, 18498), (284, 18552), (285, 18555), (302, 18642), (304, 18657), (307, 18669), (308, 18672), (320, 18738), (323, 18762), (325, 18783), (327, 18792), (339, 18852), (340, 18855), (348, 18891), (350, 18909), (353, 18921), (354, 18930), (359, 18957), (373, 19026), (375, 19044), (377, 19053), (378, 19065), (383, 19101), (388, 19131), (393, 19152), (399, 19176), (405, 19212), (412, 19266), (419, 19326), (425, 19368), (434, 19446), (442, 19503), (445, 19527), (450, 19581), (453, 19629), (459, 19671), (461, 19695), (462, 19698),

Gene: Poenanya\_18 Start: 17534, Stop: 20071, Start Num: 18

Candidate Starts for Poenanya\_18:

(Start: 18 @17534 has 221 MA's), (28, 17555), (Start: 38 @17576 has 1 MA's), (48, 17615), (71, 17684), (73, 17693), (74, 17696), (81, 17714), (91, 17762), (119, 17921), (120, 17924), (135, 17969), (145, 18047), (148, 18071), (Start: 159 @18137 has 1 MA's), (169, 18212), (170, 18218), (172, 18236), (178, 18260), (179, 18266), (180, 18269), (186, 18302), (187, 18308), (193, 18338), (199, 18359), (204, 18389), (206, 18398), (226, 18506), (229, 18518), (230, 18527), (231, 18530), (233, 18545), (236, 18560), (237, 18563), (240, 18584), (248, 18626), (251, 18659), (269, 18770), (270, 18773), (275, 18800), (276, 18806), (284, 18860), (285, 18863), (290, 18890), (304, 18965), (307, 18977), (308, 18980), (320, 19046), (322, 19067), (323, 19070), (325, 19091), (327, 19100), (339, 19160), (340, 19163), (348, 19199), (350, 19217), (353, 19229), (354, 19238), (359, 19265), (371, 19322), (373, 19334), (375, 19352), (377, 19361), (378, 19373), (383, 19409), (388, 19439), (392, 19448), (393, 19460), (405, 19520), (412, 19574), (419, 19634), (425, 19676), (442, 19811), (445, 19835), (450, 19889), (453, 19937), (459, 19979), (461, 20003), (462, 20006),

Gene: Policronamos\_26 Start: 22312, Stop: 24708, Start Num: 52

Candidate Starts for Policronamos\_26:

(Start: 52 @22312 has 123 MA's), (97, 22489), (Start: 101 @22510 has 20 MA's), (139, 22657), (160, 22798), (164, 22831), (169, 22864), (174, 22900), (193, 22993), (206, 23053), (211, 23071), (225, 23152), (262, 23380), (269, 23425), (304, 23620), (305, 23626), (308, 23635), (315, 23680), (317, 23695), (348, 23851), (350, 23869), (352, 23878), (362, 23932), (375, 24007), (411, 24220), (413, 24232), (430, 24346), (453, 24562), (462, 24646), (467, 24670), (469, 24679),

Gene: Polka14\_19 Start: 17940, Stop: 20477, Start Num: 18

Candidate Starts for Polka14\_19:

(16, 17928), (Start: 18 @17940 has 221 MA's), (28, 17961), (Start: 38 @17982 has 1 MA's), (48, 18021), (71, 18090), (73, 18099), (74, 18102), (81, 18120), (91, 18168), (99, 18216), (119, 18327), (120, 18330), (135, 18375), (145, 18453), (148, 18477), (Start: 159 @18543 has 1 MA's), (165, 18588), (169, 18618), (170, 18624), (172, 18642), (178, 18666), (180, 18675), (186, 18708), (187, 18714), (193, 18744), (203, 18783), (204, 18795), (206, 18804), (210, 18819), (211, 18822), (230, 18933), (231, 18936), (232, 18945), (233, 18951), (236, 18966), (237, 18969), (240, 18990), (246,

19020), (248, 19032), (251, 19065), (269, 19176), (270, 19179), (275, 19206), (276, 19212), (284, 19266), (285, 19269), (304, 19371), (307, 19383), (308, 19386), (320, 19452), (323, 19476), (325, 19497), (327, 19506), (339, 19566), (340, 19569), (348, 19605), (350, 19623), (354, 19644), (359, 19671), (373, 19740), (375, 19758), (377, 19767), (378, 19779), (383, 19815), (393, 19866), (397, 19884), (405, 19926), (412, 19980), (425, 20082), (442, 20217), (445, 20241), (450, 20295), (456, 20364), (461, 20409), (462, 20412),

Gene: Pollywog\_21 Start: 18605, Stop: 21094, Start Num: 18

Candidate Starts for Pollywog\_21:

(Start: 18 @18605 has 221 MA's), (28, 18626), (Start: 38 @18647 has 1 MA's), (49, 18686), (71, 18755), (73, 18764), (74, 18767), (81, 18785), (91, 18833), (100, 18881), (112, 18935), (120, 18971), (121, 18977), (122, 18980), (132, 18998), (137, 19022), (141, 19046), (150, 19109), (162, 19193), (165, 19202), (169, 19226), (172, 19250), (178, 19274), (179, 19280), (183, 19301), (187, 19322), (193, 19352), (201, 19382), (204, 19403), (223, 19496), (225, 19511), (226, 19520), (230, 19541), (231, 19544), (246, 19628), (247, 19631), (248, 19640), (250, 19667), (252, 19676), (256, 19715), (260, 19736), (262, 19739), (268, 19775), (272, 19796), (284, 19874), (285, 19877), (298, 19931), (307, 19991), (323, 20084), (324, 20102), (325, 20105), (334, 20141), (343, 20195), (346, 20204), (358, 20282), (362, 20300), (368, 20336), (369, 20339), (373, 20357), (374, 20360), (375, 20375), (378, 20396), (383, 20432), (385, 20444), (399, 20507), (405, 20540), (414, 20627), (422, 20675), (424, 20699), (429, 20726), (430, 20735), (433, 20774), (438, 20813), (442, 20837), (444, 20858), (453, 20954), (456, 20975), (465, 21038), (469, 21065), (472, 21074),

Gene: PopTart\_18 Start: 17445, Stop: 19982, Start Num: 18

Candidate Starts for PopTart\_18:

(16, 17433), (Start: 18 @17445 has 221 MA's), (28, 17466), (Start: 38 @17487 has 1 MA's), (48, 17526), (71, 17595), (73, 17604), (74, 17607), (81, 17625), (89, 17658), (91, 17673), (119, 17832), (120, 17835), (135, 17880), (145, 17958), (148, 17982), (Start: 159 @18048 has 1 MA's), (169, 18123), (170, 18129), (172, 18147), (178, 18171), (179, 18177), (180, 18180), (186, 18213), (187, 18219), (193, 18249), (199, 18270), (204, 18300), (206, 18309), (222, 18390), (232, 18450), (233, 18456), (236, 18471), (237, 18474), (240, 18495), (248, 18537), (251, 18570), (252, 18573), (275, 18711), (276, 18717), (284, 18771), (285, 18774), (290, 18801), (304, 18876), (307, 18888), (308, 18891), (320, 18957), (323, 18981), (325, 19002), (327, 19011), (339, 19071), (340, 19074), (348, 19110), (350, 19128), (354, 19149), (373, 19245), (375, 19263), (377, 19272), (378, 19284), (383, 19320), (388, 19350), (405, 19431), (412, 19485), (425, 19587), (442, 19722), (445, 19746), (450, 19800), (453, 19848), (459, 19890), (461, 19914), (462, 19917),

Gene: Porcelain\_35 Start: 27554, Stop: 30061, Start Num: 18

Candidate Starts for Porcelain\_35:

(Start: 18 @27554 has 221 MA's), (81, 27749), (89, 27785), (91, 27800), (108, 27887), (112, 27902), (135, 27977), (137, 27989), (142, 28016), (154, 28121), (162, 28160), (165, 28169), (169, 28193), (170, 28199), (172, 28217), (176, 28235), (180, 28250), (181, 28259), (183, 28268), (186, 28283), (192, 28310), (193, 28319), (203, 28358), (204, 28370), (206, 28379), (223, 28463), (237, 28544), (242, 28574), (243, 28577), (248, 28607), (250, 28634), (252, 28643), (259, 28694), (260, 28703), (262, 28706), (268, 28742), (272, 28763), (278, 28799), (305, 28952), (315, 29006), (323, 29051), (324, 29069), (325, 29072), (334, 29111), (358, 29258), (361, 29267), (374, 29336), (375, 29351), (405, 29516), (414, 29603), (422, 29651), (430, 29702), (438, 29780), (463, 30002), (465, 30005), (469, 30032),

Gene: Porky\_26 Start: 22121, Stop: 24517, Start Num: 52

Candidate Starts for Porky\_26:

(Start: 52 @22121 has 123 MA's), (97, 22298), (Start: 101 @22319 has 20 MA's), (139, 22466), (160, 22607), (164, 22640), (169, 22673), (174, 22709), (193, 22802), (206, 22862), (211, 22880), (234, 23012), (242, 23057), (262, 23189), (269, 23234), (281, 23294), (301, 23408), (304, 23429), (312,

23468), (315, 23489), (317, 23504), (346, 23654), (348, 23660), (350, 23678), (361, 23732), (375, 23816), (392, 23909), (430, 24155), (453, 24371), (462, 24455), (469, 24488),

Gene: Prager\_30 Start: 24328, Stop: 26598, Start Num: 101

Candidate Starts for Prager\_30:

(Start: 101 @24328 has 20 MA's), (131, 24463), (133, 24472), (156, 24646), (158, 24652), (160, 24664), (185, 24817), (187, 24832), (190, 24847), (257, 25228), (258, 25234), (266, 25279), (282, 25366), (318, 25567), (319, 25573), (325, 25621), (331, 25651), (335, 25675), (365, 25864), (372, 25891), (378, 25939), (391, 26011), (399, 26050), (400, 26071), (403, 26086), (406, 26104), (408, 26134), (420, 26218), (451, 26419), (453, 26461), (474, 26587),

Gene: Priscilla\_18 Start: 17407, Stop: 19959, Start Num: 18

Candidate Starts for Priscilla\_18:

(Start: 18 @17407 has 221 MA's), (48, 17488), (71, 17557), (73, 17566), (74, 17569), (81, 17587), (91, 17635), (98, 17680), (119, 17794), (120, 17797), (123, 17809), (132, 17830), (134, 17839), (135, 17842), (142, 17890), (145, 17920), (152, 17986), (160, 18019), (165, 18055), (168, 18079), (179, 18139), (180, 18142), (183, 18160), (197, 18223), (199, 18226), (203, 18244), (206, 18265), (211, 18283), (216, 18310), (219, 18331), (225, 18364), (232, 18406), (233, 18412), (234, 18415), (237, 18430), (241, 18457), (242, 18460), (246, 18481), (248, 18493), (251, 18526), (265, 18619), (284, 18727), (287, 18751), (290, 18757), (295, 18775), (296, 18778), (299, 18802), (304, 18832), (310, 18856), (315, 18892), (316, 18898), (317, 18907), (322, 18934), (333, 18997), (336, 19021), (337, 19036), (346, 19078), (355, 19129), (374, 19225), (375, 19240), (377, 19249), (380, 19273), (392, 19336), (399, 19372), (440, 19678), (445, 19723), (453, 19825),

Gene: Puissant\_28 Start: 26145, Stop: 28988, Start Num: 3

Candidate Starts for Puissant\_28:

(Start: 3 @26145 has 8 MA's), (7, 26247), (8, 26277), (9, 26289), (Start: 11 @26298 has 7 MA's), (24, 26373), (39, 26427), (40, 26433), (45, 26454), (53, 26475), (59, 26502), (Start: 101 @26715 has 20 MA's), (104, 26727), (122, 26808), (125, 26817), (142, 26904), (143, 26910), (150, 26964), (168, 27093), (170, 27105), (193, 27225), (199, 27246), (225, 27384), (248, 27510), (285, 27747), (299, 27819), (307, 27861), (310, 27873), (324, 27972), (342, 28068), (383, 28308), (405, 28416), (431, 28608), (432, 28641), (436, 28665), (438, 28683), (449, 28785), (457, 28863), (464, 28920), (469, 28950), (473, 28965),

Gene: Pumpkin\_28 Start: 22364, Stop: 24760, Start Num: 52

Candidate Starts for Pumpkin\_28:

(Start: 52 @22364 has 123 MA's), (97, 22541), (Start: 101 @22562 has 20 MA's), (139, 22709), (164, 22883), (169, 22916), (174, 22952), (193, 23045), (206, 23105), (211, 23123), (234, 23255), (242, 23300), (262, 23432), (269, 23477), (281, 23537), (301, 23651), (304, 23672), (312, 23711), (315, 23732), (317, 23747), (346, 23897), (348, 23903), (350, 23921), (361, 23975), (375, 24059), (392, 24152), (430, 24398), (453, 24614), (462, 24698), (469, 24731),

Gene: Pygmy\_20 Start: 18761, Stop: 21265, Start Num: 29

Candidate Starts for Pygmy\_20:

(Start: 29 @18761 has 3 MA's), (32, 18770), (74, 18914), (147, 19319), (151, 19334), (152, 19364), (153, 19370), (Start: 159 @19388 has 1 MA's), (178, 19496), (187, 19547), (211, 19658), (212, 19661), (217, 19700), (225, 19733), (237, 19799), (248, 19859), (250, 19886), (251, 19892), (304, 20198), (315, 20258), (321, 20306), (322, 20309), (324, 20330), (325, 20333), (375, 20594), (397, 20717), (398, 20720), (412, 20810), (419, 20867), (423, 20888), (435, 20948), (457, 21149), (460, 21191),

Gene: Quallification\_27 Start: 22490, Stop: 24886, Start Num: 52

Candidate Starts for Quallification\_27:

(Start: 52 @22490 has 123 MA's), (97, 22667), (Start: 101 @22688 has 20 MA's), (139, 22835), (160, 22976), (164, 23009), (169, 23042), (174, 23078), (193, 23171), (206, 23231), (211, 23249), (234, 23381), (242, 23426), (262, 23558), (269, 23603), (281, 23663), (301, 23777), (304, 23798), (312, 23837), (315, 23858), (317, 23873), (346, 24023), (348, 24029), (350, 24047), (361, 24101), (375, 24185), (392, 24278), (430, 24524), (453, 24740), (462, 24824), (469, 24857),

Gene: QuickMath\_19 Start: 18743, Stop: 21280, Start Num: 18

Candidate Starts for QuickMath\_19:

(16, 18731), (Start: 18 @18743 has 221 MA's), (28, 18764), (Start: 38 @18785 has 1 MA's), (48, 18824), (71, 18893), (73, 18902), (74, 18905), (81, 18923), (89, 18956), (91, 18971), (99, 19019), (119, 19130), (120, 19133), (128, 19163), (134, 19175), (135, 19178), (145, 19256), (148, 19280), (Start: 159 @19346 has 1 MA's), (165, 19391), (169, 19421), (170, 19427), (172, 19445), (178, 19469), (180, 19478), (186, 19511), (187, 19517), (193, 19547), (203, 19586), (204, 19598), (206, 19607), (210, 19622), (211, 19625), (230, 19736), (231, 19739), (232, 19748), (233, 19754), (236, 19769), (237, 19772), (240, 19793), (246, 19823), (248, 19835), (251, 19868), (269, 19979), (270, 19982), (275, 20009), (276, 20015), (284, 20069), (285, 20072), (302, 20159), (304, 20174), (307, 20186), (308, 20189), (320, 20255), (323, 20279), (325, 20300), (327, 20309), (336, 20351), (339, 20369), (340, 20372), (348, 20408), (350, 20426), (353, 20438), (354, 20447), (359, 20474), (373, 20543), (375, 20561), (377, 20570), (378, 20582), (383, 20618), (388, 20648), (393, 20669), (399, 20693), (405, 20729), (412, 20783), (419, 20843), (425, 20885), (434, 20963), (442, 21020), (445, 21044), (450, 21098), (453, 21146), (459, 21188), (461, 21212), (462, 21215),

Gene: Quico\_19 Start: 17227, Stop: 19764, Start Num: 18

Candidate Starts for Quico\_19:

(Start: 18 @17227 has 221 MA's), (28, 17248), (Start: 38 @17269 has 1 MA's), (48, 17308), (71, 17377), (73, 17386), (74, 17389), (81, 17407), (89, 17440), (91, 17455), (99, 17503), (119, 17614), (120, 17617), (128, 17647), (135, 17662), (145, 17740), (148, 17764), (Start: 159 @17830 has 1 MA's), (165, 17875), (169, 17905), (170, 17911), (172, 17929), (178, 17953), (180, 17962), (186, 17995), (187, 18001), (193, 18031), (203, 18070), (206, 18091), (210, 18106), (211, 18109), (231, 18223), (232, 18232), (233, 18238), (237, 18256), (240, 18277), (246, 18307), (248, 18319), (251, 18352), (269, 18463), (270, 18466), (275, 18493), (276, 18499), (284, 18553), (285, 18556), (302, 18643), (304, 18658), (308, 18673), (323, 18763), (325, 18784), (327, 18793), (339, 18853), (340, 18856), (346, 18886), (350, 18910), (354, 18931), (373, 19027), (375, 19045), (377, 19054), (378, 19066), (383, 19102), (388, 19132), (393, 19153), (399, 19177), (405, 19213), (412, 19267), (419, 19327), (425, 19369), (434, 19447), (442, 19504), (445, 19528), (450, 19582), (453, 19630), (459, 19672), (461, 19696), (462, 19699),

Gene: Radiance\_18 Start: 17380, Stop: 19917, Start Num: 18

Candidate Starts for Radiance\_18:

(16, 17368), (Start: 18 @17380 has 221 MA's), (28, 17401), (Start: 38 @17422 has 1 MA's), (48, 17461), (71, 17530), (73, 17539), (74, 17542), (81, 17560), (89, 17593), (91, 17608), (99, 17656), (117, 17761), (119, 17767), (120, 17770), (134, 17812), (135, 17815), (148, 17917), (Start: 159 @17983 has 1 MA's), (165, 18028), (169, 18058), (170, 18064), (172, 18082), (178, 18106), (180, 18115), (186, 18148), (187, 18154), (193, 18184), (204, 18235), (206, 18244), (226, 18352), (229, 18364), (230, 18373), (231, 18376), (233, 18391), (236, 18406), (237, 18409), (240, 18430), (246, 18460), (248, 18472), (251, 18505), (269, 18616), (270, 18619), (275, 18646), (276, 18652), (284, 18706), (285, 18709), (290, 18736), (304, 18811), (307, 18823), (308, 18826), (320, 18892), (322, 18913), (323, 18916), (325, 18937), (327, 18946), (339, 19006), (340, 19009), (346, 19039), (350, 19063), (353, 19075), (354, 19084), (373, 19180), (375, 19198), (377, 19207), (378, 19219), (388, 19285), (392, 19294), (393, 19306), (399, 19330), (405, 19366), (425, 19522), (442, 19657), (445, 19681), (450, 19735), (456, 19804), (461, 19849), (462, 19852),

Gene: Rakim\_27 Start: 22397, Stop: 24793, Start Num: 52

Candidate Starts for Rakim\_27:

(Start: 52 @22397 has 123 MA's), (97, 22574), (Start: 101 @22595 has 20 MA's), (139, 22742), (160, 22883), (164, 22916), (169, 22949), (174, 22985), (193, 23078), (206, 23138), (211, 23156), (225, 23237), (262, 23465), (269, 23510), (304, 23705), (305, 23711), (308, 23720), (315, 23765), (317, 23780), (348, 23936), (350, 23954), (352, 23963), (362, 24017), (375, 24092), (376, 24095), (411, 24305), (413, 24317), (430, 24431), (453, 24647), (462, 24731), (467, 24755), (469, 24764),

Gene: Ramsey\_19 Start: 17429, Stop: 19966, Start Num: 18

Candidate Starts for Ramsey\_19:

(Start: 18 @17429 has 221 MA's), (28, 17450), (Start: 38 @17471 has 1 MA's), (48, 17510), (71, 17579), (73, 17588), (74, 17591), (81, 17609), (91, 17657), (119, 17816), (120, 17819), (135, 17864), (145, 17942), (148, 17966), (Start: 159 @18032 has 1 MA's), (169, 18107), (170, 18113), (172, 18131), (178, 18155), (179, 18161), (180, 18164), (186, 18197), (187, 18203), (193, 18233), (199, 18254), (204, 18284), (206, 18293), (226, 18401), (229, 18413), (230, 18422), (231, 18425), (233, 18440), (236, 18455), (237, 18458), (240, 18479), (248, 18521), (251, 18554), (269, 18665), (270, 18668), (275, 18695), (276, 18701), (284, 18755), (285, 18758), (290, 18785), (304, 18860), (307, 18872), (308, 18875), (320, 18941), (322, 18962), (323, 18965), (325, 18986), (327, 18995), (336, 19037), (339, 19055), (340, 19058), (346, 19088), (350, 19112), (353, 19124), (354, 19133), (373, 19229), (375, 19247), (377, 19256), (378, 19268), (383, 19304), (388, 19334), (392, 19343), (393, 19355), (405, 19415), (412, 19469), (419, 19529), (425, 19571), (442, 19706), (445, 19730), (450, 19784), (453, 19832), (459, 19874), (461, 19898), (462, 19901),

Gene: RedBird\_18 Start: 17357, Stop: 19894, Start Num: 18

Candidate Starts for RedBird\_18:

(Start: 18 @17357 has 221 MA's), (28, 17378), (Start: 38 @17399 has 1 MA's), (48, 17438), (71, 17507), (73, 17516), (74, 17519), (81, 17537), (91, 17585), (117, 17738), (120, 17747), (135, 17792), (147, 17891), (148, 17894), (Start: 159 @17960 has 1 MA's), (169, 18035), (170, 18041), (172, 18059), (178, 18083), (179, 18089), (180, 18092), (186, 18125), (187, 18131), (193, 18161), (199, 18182), (204, 18212), (206, 18221), (210, 18236), (211, 18239), (230, 18350), (231, 18353), (232, 18362), (233, 18368), (236, 18383), (237, 18386), (240, 18407), (246, 18437), (248, 18449), (251, 18482), (269, 18593), (270, 18596), (275, 18623), (276, 18629), (284, 18683), (285, 18686), (302, 18773), (304, 18788), (307, 18800), (308, 18803), (320, 18869), (323, 18893), (325, 18914), (327, 18923), (339, 18983), (340, 18986), (348, 19022), (350, 19040), (353, 19052), (354, 19061), (359, 19088), (371, 19145), (373, 19157), (375, 19175), (377, 19184), (378, 19196), (383, 19232), (388, 19262), (392, 19271), (393, 19283), (405, 19343), (412, 19397), (419, 19457), (425, 19499), (442, 19634), (445, 19658), (450, 19712), (453, 19760), (459, 19802), (461, 19826), (462, 19829),

Gene: Renaud18\_20 Start: 17833, Stop: 20313, Start Num: 21

Candidate Starts for Renaud18\_20:

(Start: 21 @17833 has 3 MA's), (25, 17839), (28, 17845), (Start: 52 @17908 has 123 MA's), (54, 17911), (62, 17938), (77, 17992), (81, 18001), (89, 18034), (95, 18067), (100, 18100), (108, 18139), (112, 18154), (120, 18190), (121, 18196), (122, 18199), (132, 18217), (135, 18229), (137, 18241), (141, 18265), (142, 18268), (162, 18412), (165, 18421), (169, 18445), (172, 18469), (178, 18493), (179, 18499), (183, 18520), (187, 18541), (193, 18571), (201, 18601), (204, 18622), (223, 18715), (225, 18730), (226, 18739), (230, 18760), (231, 18763), (238, 18805), (246, 18847), (247, 18850), (248, 18859), (250, 18886), (256, 18934), (260, 18955), (262, 18958), (268, 18994), (272, 19015), (284, 19093), (285, 19096), (298, 19150), (307, 19210), (323, 19303), (325, 19324), (334, 19360), (343, 19414), (346, 19423), (358, 19501), (362, 19519), (368, 19555), (369, 19558), (373, 19576), (374, 19579), (375, 19594), (378, 19615), (383, 19651), (385, 19663), (399, 19726), (405, 19759), (414, 19846), (422, 19894), (424, 19918), (429, 19945), (430, 19954), (433, 19993), (438, 20032), (442, 20056), (444, 20077), (453, 20173), (456, 20194), (465, 20257), (469, 20284), (472, 20293),

Gene: Rialto\_20 Start: 17909, Stop: 20446, Start Num: 18

Candidate Starts for Rialto\_20:

(Start: 18 @17909 has 221 MA's), (28, 17930), (Start: 38 @17951 has 1 MA's), (48, 17990), (71, 18059), (73, 18068), (74, 18071), (81, 18089), (91, 18137), (117, 18290), (120, 18299), (135, 18344), (147, 18443), (148, 18446), (Start: 159 @18512 has 1 MA's), (169, 18587), (170, 18593), (172, 18611), (178, 18635), (179, 18641), (180, 18644), (186, 18677), (187, 18683), (193, 18713), (199, 18734), (204, 18764), (206, 18773), (210, 18788), (211, 18791), (230, 18902), (231, 18905), (232, 18914), (233, 18920), (236, 18935), (237, 18938), (240, 18959), (246, 18989), (248, 19001), (251, 19034), (269, 19145), (270, 19148), (275, 19175), (276, 19181), (284, 19235), (285, 19238), (304, 19340), (307, 19352), (308, 19355), (320, 19421), (323, 19445), (325, 19466), (327, 19475), (339, 19535), (340, 19538), (348, 19574), (350, 19592), (353, 19604), (354, 19613), (359, 19640), (371, 19697), (373, 19709), (375, 19727), (377, 19736), (378, 19748), (383, 19784), (388, 19814), (392, 19823), (393, 19835), (405, 19895), (412, 19949), (419, 20009), (425, 20051), (442, 20186), (445, 20210), (450, 20264), (453, 20312), (459, 20354), (461, 20378), (462, 20381),

Gene: Rimmer\_25 Start: 21850, Stop: 24246, Start Num: 52

Candidate Starts for Rimmer\_25:

(Start: 52 @21850 has 123 MA's), (97, 22027), (Start: 101 @22048 has 20 MA's), (139, 22195), (160, 22336), (164, 22369), (169, 22402), (174, 22438), (193, 22531), (206, 22591), (211, 22609), (234, 22741), (242, 22786), (262, 22918), (269, 22963), (301, 23137), (304, 23158), (312, 23197), (315, 23218), (317, 23233), (348, 23389), (350, 23407), (361, 23461), (375, 23545), (392, 23638), (430, 23884), (453, 24100), (462, 24184), (469, 24217),

Gene: Rita\_18 Start: 17410, Stop: 19947, Start Num: 18

Candidate Starts for Rita\_18:

(Start: 18 @17410 has 221 MA's), (55, 17500), (71, 17560), (73, 17569), (74, 17572), (81, 17590), (91, 17638), (98, 17683), (119, 17797), (120, 17800), (128, 17830), (134, 17842), (135, 17845), (145, 17923), (148, 17947), (Start: 159 @18013 has 1 MA's), (165, 18058), (169, 18088), (170, 18094), (172, 18112), (178, 18136), (180, 18145), (186, 18178), (187, 18184), (193, 18214), (203, 18253), (204, 18265), (206, 18274), (210, 18289), (211, 18292), (230, 18403), (231, 18406), (232, 18415), (233, 18421), (236, 18436), (237, 18439), (240, 18460), (246, 18490), (248, 18502), (251, 18535), (269, 18646), (270, 18649), (275, 18676), (276, 18682), (284, 18736), (285, 18739), (304, 18841), (307, 18853), (308, 18856), (320, 18922), (323, 18946), (325, 18967), (327, 18976), (339, 19036), (340, 19039), (348, 19075), (350, 19093), (353, 19105), (354, 19114), (359, 19141), (373, 19210), (375, 19228), (377, 19237), (378, 19249), (383, 19285), (388, 19315), (393, 19336), (399, 19360), (405, 19396), (412, 19450), (419, 19510), (425, 19552), (434, 19630), (442, 19687), (445, 19711), (450, 19765), (453, 19813), (459, 19855), (461, 19879), (462, 19882),

Gene: RitaG\_18 Start: 17539, Stop: 20091, Start Num: 18

Candidate Starts for RitaG\_18:

(Start: 18 @17539 has 221 MA's), (28, 17560), (Start: 38 @17581 has 1 MA's), (48, 17620), (71, 17689), (73, 17698), (74, 17701), (81, 17719), (89, 17752), (91, 17767), (99, 17815), (119, 17926), (120, 17929), (132, 17962), (134, 17971), (135, 17974), (145, 18052), (152, 18118), (160, 18151), (167, 18205), (169, 18217), (178, 18265), (180, 18274), (181, 18283), (188, 18316), (199, 18358), (202, 18373), (208, 18403), (209, 18409), (210, 18412), (211, 18415), (216, 18442), (219, 18463), (225, 18496), (232, 18538), (233, 18544), (234, 18547), (236, 18559), (237, 18562), (241, 18589), (246, 18613), (248, 18625), (251, 18658), (254, 18679), (265, 18751), (270, 18772), (287, 18883), (295, 18907), (296, 18910), (299, 18934), (304, 18964), (310, 18988), (315, 19024), (316, 19030), (317, 19039), (333, 19129), (336, 19153), (337, 19168), (346, 19210), (348, 19216), (355, 19261), (374, 19357), (375, 19372), (377, 19381), (380, 19405), (392, 19468), (412, 19594), (440, 19810), (445, 19855), (453, 19957), (465, 20035),

Gene: RiverMonster\_26 Start: 22039, Stop: 24435, Start Num: 52

Candidate Starts for RiverMonster\_26:

(Start: 52 @22039 has 123 MA's), (97, 22216), (Start: 101 @22237 has 20 MA's), (139, 22384), (164, 22558), (169, 22591), (174, 22627), (193, 22720), (206, 22780), (211, 22798), (234, 22930), (242, 22975), (262, 23107), (269, 23152), (281, 23212), (301, 23326), (304, 23347), (312, 23386), (315, 23407), (317, 23422), (346, 23572), (348, 23578), (350, 23596), (361, 23650), (375, 23734), (392, 23827), (430, 24073), (453, 24289), (462, 24373), (469, 24406),

Gene: Rockne\_18 Start: 17383, Stop: 19920, Start Num: 18

Candidate Starts for Rockne\_18:

(Start: 18 @17383 has 221 MA's), (55, 17473), (71, 17533), (73, 17542), (74, 17545), (81, 17563), (91, 17611), (99, 17659), (117, 17764), (119, 17770), (120, 17773), (134, 17815), (135, 17818), (148, 17920), (Start: 159 @17986 has 1 MA's), (165, 18031), (169, 18061), (170, 18067), (172, 18085), (178, 18109), (180, 18118), (186, 18151), (187, 18157), (199, 18208), (203, 18226), (204, 18238), (206, 18247), (210, 18262), (212, 18268), (230, 18376), (232, 18388), (233, 18394), (236, 18409), (237, 18412), (240, 18433), (246, 18463), (248, 18475), (251, 18508), (262, 18574), (269, 18619), (270, 18622), (275, 18649), (276, 18655), (284, 18709), (285, 18712), (290, 18739), (304, 18814), (307, 18826), (308, 18829), (320, 18895), (322, 18916), (323, 18919), (327, 18949), (336, 18991), (339, 19009), (340, 19012), (346, 19042), (350, 19066), (353, 19078), (354, 19087), (373, 19183), (375, 19201), (377, 19210), (378, 19222), (388, 19288), (392, 19297), (393, 19309), (405, 19369), (425, 19525), (442, 19660), (445, 19684), (450, 19738), (456, 19807), (461, 19852), (462, 19855),

Gene: RockyHorror\_19 Start: 17258, Stop: 19795, Start Num: 18

Candidate Starts for RockyHorror\_19:

(Start: 18 @17258 has 221 MA's), (28, 17279), (Start: 38 @17300 has 1 MA's), (48, 17339), (71, 17408), (73, 17417), (74, 17420), (81, 17438), (91, 17486), (117, 17639), (120, 17648), (135, 17693), (147, 17792), (148, 17795), (Start: 159 @17861 has 1 MA's), (169, 17936), (170, 17942), (172, 17960), (178, 17984), (179, 17990), (180, 17993), (186, 18026), (187, 18032), (193, 18062), (199, 18083), (204, 18113), (206, 18122), (210, 18137), (211, 18140), (230, 18251), (231, 18254), (232, 18263), (233, 18269), (236, 18284), (237, 18287), (240, 18308), (246, 18338), (248, 18350), (251, 18383), (269, 18494), (270, 18497), (275, 18524), (276, 18530), (284, 18584), (285, 18587), (302, 18674), (304, 18689), (307, 18701), (308, 18704), (320, 18770), (323, 18794), (325, 18815), (327, 18824), (339, 18884), (340, 18887), (348, 18923), (350, 18941), (353, 18953), (354, 18962), (359, 18989), (371, 19046), (373, 19058), (375, 19076), (377, 19085), (378, 19097), (383, 19133), (388, 19163), (392, 19172), (393, 19184), (405, 19244), (412, 19298), (419, 19358), (425, 19400), (442, 19535), (445, 19559), (450, 19613), (453, 19661), (459, 19703), (461, 19727), (462, 19730),

Gene: Royals2015\_18 Start: 17417, Stop: 19948, Start Num: 18

Candidate Starts for Royals2015\_18:

(Start: 18 @17417 has 221 MA's), (28, 17438), (55, 17507), (71, 17567), (73, 17576), (74, 17579), (81, 17597), (89, 17630), (91, 17645), (98, 17690), (119, 17804), (120, 17807), (123, 17819), (132, 17840), (134, 17849), (135, 17852), (145, 17930), (152, 17996), (160, 18029), (165, 18065), (168, 18089), (179, 18149), (180, 18152), (183, 18170), (196, 18233), (198, 18236), (203, 18254), (206, 18275), (211, 18293), (216, 18320), (219, 18341), (225, 18374), (233, 18422), (234, 18425), (236, 18437), (237, 18440), (240, 18461), (246, 18491), (248, 18503), (251, 18536), (262, 18602), (269, 18647), (270, 18650), (275, 18677), (276, 18683), (284, 18737), (285, 18740), (290, 18767), (304, 18842), (307, 18854), (308, 18857), (320, 18923), (323, 18947), (327, 18977), (336, 19019), (339, 19037), (340, 19040), (348, 19076), (350, 19094), (354, 19115), (359, 19142), (373, 19211), (375, 19229), (377, 19238), (378, 19250), (383, 19286), (393, 19337), (397, 19355), (405, 19397), (412, 19451), (425, 19553), (434, 19631), (442, 19688), (445, 19712), (450, 19766), (453, 19814), (461, 19880), (462, 19883),

Gene: Ruby\_18 Start: 17371, Stop: 19908, Start Num: 18

Candidate Starts for Ruby\_18:

(Start: 18 @17371 has 221 MA's), (28, 17392), (Start: 38 @17413 has 1 MA's), (48, 17452), (71, 17521), (73, 17530), (74, 17533), (81, 17551), (89, 17584), (91, 17599), (117, 17752), (120, 17761), (135, 17806), (147, 17905), (148, 17908), (Start: 159 @17974 has 1 MA's), (169, 18049), (170, 18055), (178, 18097), (179, 18103), (180, 18106), (186, 18139), (187, 18145), (193, 18175), (199, 18196), (204, 18226), (206, 18235), (210, 18250), (211, 18253), (230, 18364), (231, 18367), (232, 18376), (233, 18382), (236, 18397), (237, 18400), (240, 18421), (246, 18451), (248, 18463), (251, 18496), (269, 18607), (270, 18610), (275, 18637), (276, 18643), (284, 18697), (285, 18700), (302, 18787), (304, 18802), (307, 18814), (308, 18817), (320, 18883), (323, 18907), (325, 18928), (327, 18937), (336, 18979), (339, 18997), (340, 19000), (346, 19030), (350, 19054), (353, 19066), (354, 19075), (373, 19171), (375, 19189), (377, 19198), (378, 19210), (383, 19246), (388, 19276), (392, 19285), (393, 19297), (405, 19357), (412, 19411), (419, 19471), (425, 19513), (442, 19648), (445, 19672), (450, 19726), (453, 19774), (459, 19816), (461, 19840), (462, 19843),

Gene: Ryadel\_62 Start: 36906, Stop: 39416, Start Num: 35

Candidate Starts for Ryadel\_62:

(Start: 35 @36906 has 27 MA's), (42, 36939), (60, 37008), (61, 37011), (68, 37035), (74, 37059), (83, 37083), (89, 37116), (124, 37323), (127, 37335), (128, 37338), (151, 37485), (152, 37515), (Start: 159 @37539 has 1 MA's), (165, 37569), (166, 37572), (169, 37599), (172, 37623), (179, 37653), (189, 37710), (203, 37770), (204, 37782), (210, 37806), (211, 37809), (217, 37851), (236, 37947), (237, 37950), (279, 38205), (304, 38349), (315, 38409), (324, 38481), (325, 38484), (344, 38580), (375, 38754), (377, 38763), (378, 38775), (395, 38868), (398, 38880), (412, 38970), (423, 39045), (432, 39090), (455, 39291), (460, 39345), (465, 39360),

Gene: SG4\_18 Start: 17548, Stop: 20085, Start Num: 18

Candidate Starts for SG4\_18:

(Start: 18 @17548 has 221 MA's), (28, 17569), (Start: 38 @17590 has 1 MA's), (47, 17626), (48, 17629), (71, 17698), (73, 17707), (74, 17710), (81, 17728), (89, 17761), (91, 17776), (99, 17824), (119, 17935), (120, 17938), (128, 17968), (134, 17980), (135, 17983), (145, 18061), (148, 18085), (Start: 159 @18151 has 1 MA's), (165, 18196), (169, 18226), (170, 18232), (172, 18250), (178, 18274), (180, 18283), (186, 18316), (187, 18322), (199, 18373), (203, 18391), (204, 18403), (206, 18412), (210, 18427), (211, 18430), (230, 18541), (231, 18544), (232, 18553), (233, 18559), (236, 18574), (237, 18577), (240, 18598), (246, 18628), (248, 18640), (251, 18673), (262, 18739), (269, 18784), (270, 18787), (275, 18814), (276, 18820), (284, 18874), (285, 18877), (304, 18979), (307, 18991), (308, 18994), (320, 19060), (323, 19084), (325, 19105), (327, 19114), (339, 19174), (340, 19177), (348, 19213), (350, 19231), (353, 19243), (354, 19252), (359, 19279), (373, 19348), (375, 19366), (377, 19375), (378, 19387), (383, 19423), (388, 19453), (393, 19474), (399, 19498), (405, 19534), (412, 19588), (419, 19648), (425, 19690), (442, 19825), (445, 19849), (450, 19903), (453, 19951), (461, 20017), (462, 20020),

Gene: Saal\_18 Start: 17383, Stop: 19920, Start Num: 18

Candidate Starts for Saal\_18:

(Start: 18 @17383 has 221 MA's), (28, 17404), (Start: 38 @17425 has 1 MA's), (48, 17464), (71, 17533), (73, 17542), (74, 17545), (81, 17563), (91, 17611), (117, 17764), (120, 17773), (135, 17818), (145, 17896), (148, 17920), (Start: 159 @17986 has 1 MA's), (165, 18031), (169, 18061), (170, 18067), (172, 18085), (178, 18109), (180, 18118), (186, 18151), (187, 18157), (193, 18187), (203, 18226), (206, 18247), (210, 18262), (211, 18265), (231, 18379), (232, 18388), (233, 18394), (237, 18412), (240, 18433), (246, 18463), (248, 18475), (251, 18508), (269, 18619), (270, 18622), (275, 18649), (276, 18655), (284, 18709), (285, 18712), (302, 18799), (304, 18814), (308, 18829), (323, 18919), (325, 18940), (327, 18949), (339, 19009), (340, 19012), (348, 19048), (350, 19066), (353, 19078), (354, 19087), (359, 19114), (373, 19183), (375, 19201), (377, 19210), (378, 19222), (383, 19258), (388, 19288), (393, 19309), (399, 19333), (405, 19369), (412, 19423), (425, 19525), (434, 19603), (442, 19660), (445, 19684), (450, 19738), (453, 19786), (459, 19828), (464, 19861), (465, 19864),

Gene: Sabbb\_19 Start: 17625, Stop: 20168, Start Num: 18

Candidate Starts for Sabbb\_19:

(Start: 18 @17625 has 221 MA's), (28, 17646), (Start: 38 @17667 has 1 MA's), (48, 17706), (71, 17775), (73, 17784), (74, 17787), (81, 17805), (91, 17853), (99, 17901), (119, 18012), (120, 18015), (132, 18048), (135, 18060), (145, 18138), (152, 18204), (160, 18237), (167, 18291), (169, 18303), (179, 18357), (180, 18360), (181, 18369), (188, 18402), (197, 18441), (199, 18444), (202, 18459), (203, 18462), (208, 18489), (209, 18495), (210, 18498), (211, 18501), (216, 18528), (218, 18546), (219, 18549), (232, 18624), (236, 18645), (237, 18648), (241, 18675), (246, 18699), (251, 18744), (252, 18747), (259, 18798), (270, 18861), (272, 18870), (276, 18894), (296, 18999), (297, 19002), (304, 19053), (305, 19059), (307, 19065), (308, 19068), (315, 19113), (317, 19128), (322, 19155), (325, 19179), (336, 19230), (339, 19248), (340, 19251), (341, 19263), (353, 19317), (375, 19440), (384, 19503), (397, 19566), (407, 19641), (435, 19842), (458, 20070), (464, 20109), (465, 20112),

Gene: Saints25\_27 Start: 21945, Stop: 24341, Start Num: 52

Candidate Starts for Saints25\_27:

(Start: 52 @21945 has 123 MA's), (97, 22122), (Start: 101 @22143 has 20 MA's), (139, 22290), (160, 22431), (164, 22464), (169, 22497), (174, 22533), (193, 22626), (206, 22686), (211, 22704), (234, 22836), (242, 22881), (262, 23013), (269, 23058), (281, 23118), (301, 23232), (304, 23253), (312, 23292), (315, 23313), (317, 23328), (346, 23478), (348, 23484), (350, 23502), (361, 23556), (375, 23640), (392, 23733), (430, 23979), (453, 24195), (462, 24279), (469, 24312),

Gene: Sandalphon\_19 Start: 17954, Stop: 20491, Start Num: 18

Candidate Starts for Sandalphon\_19:

(16, 17942), (Start: 18 @17954 has 221 MA's), (28, 17975), (Start: 38 @17996 has 1 MA's), (48, 18035), (71, 18104), (73, 18113), (74, 18116), (89, 18167), (91, 18182), (99, 18230), (119, 18341), (120, 18344), (128, 18374), (134, 18386), (135, 18389), (145, 18467), (148, 18491), (Start: 159 @18557 has 1 MA's), (165, 18602), (169, 18632), (170, 18638), (172, 18656), (178, 18680), (180, 18689), (186, 18722), (187, 18728), (193, 18758), (203, 18797), (204, 18809), (206, 18818), (210, 18833), (211, 18836), (230, 18947), (231, 18950), (232, 18959), (233, 18965), (236, 18980), (237, 18983), (240, 19004), (246, 19034), (248, 19046), (251, 19079), (269, 19190), (270, 19193), (275, 19220), (276, 19226), (284, 19280), (285, 19283), (304, 19385), (307, 19397), (308, 19400), (320, 19466), (323, 19490), (325, 19511), (327, 19520), (339, 19580), (340, 19583), (348, 19619), (350, 19637), (353, 19649), (354, 19658), (359, 19685), (373, 19754), (375, 19772), (377, 19781), (378, 19793), (383, 19829), (388, 19859), (393, 19880), (399, 19904), (405, 19940), (412, 19994), (419, 20054), (425, 20096), (434, 20174), (442, 20231), (445, 20255), (450, 20309), (453, 20357), (459, 20399), (461, 20423), (462, 20426),

Gene: Sassafra\_18 Start: 17532, Stop: 20069, Start Num: 18

Candidate Starts for Sassafra\_18:

(Start: 18 @17532 has 221 MA's), (28, 17553), (Start: 38 @17574 has 1 MA's), (48, 17613), (71, 17682), (73, 17691), (74, 17694), (81, 17712), (91, 17760), (99, 17808), (119, 17919), (120, 17922), (135, 17967), (145, 18045), (148, 18069), (Start: 159 @18135 has 1 MA's), (169, 18210), (170, 18216), (172, 18234), (178, 18258), (180, 18267), (186, 18300), (187, 18306), (193, 18336), (199, 18357), (204, 18387), (206, 18396), (226, 18504), (229, 18516), (230, 18525), (231, 18528), (233, 18543), (236, 18558), (237, 18561), (240, 18582), (248, 18624), (251, 18657), (269, 18768), (270, 18771), (275, 18798), (276, 18804), (284, 18858), (285, 18861), (290, 18888), (304, 18963), (307, 18975), (308, 18978), (320, 19044), (322, 19065), (323, 19068), (325, 19089), (327, 19098), (336, 19140), (339, 19158), (340, 19161), (346, 19191), (350, 19215), (353, 19227), (354, 19236), (373, 19332), (375, 19350), (377, 19359), (378, 19371), (383, 19407), (388, 19437), (392, 19446), (393, 19458), (405, 19518), (412, 19572), (419, 19632), (425, 19674), (442, 19809), (445, 19833), (450, 19887), (453, 19935), (459, 19977), (461, 20001), (462, 20004),

Gene: Sassay\_25 Start: 21788, Stop: 24184, Start Num: 52

Candidate Starts for Sassay\_25:

(Start: 52 @21788 has 123 MA's), (97, 21965), (Start: 101 @21986 has 20 MA's), (139, 22133), (160, 22274), (164, 22307), (169, 22340), (174, 22376), (193, 22469), (206, 22529), (211, 22547), (234, 22679), (242, 22724), (262, 22856), (269, 22901), (281, 22961), (301, 23075), (304, 23096), (312, 23135), (315, 23156), (317, 23171), (346, 23321), (348, 23327), (350, 23345), (361, 23399), (375, 23483), (392, 23576), (430, 23822), (453, 24038), (462, 24122), (469, 24155),

Gene: SassyB\_18 Start: 17445, Stop: 19982, Start Num: 18

Candidate Starts for SassyB\_18:

(16, 17433), (Start: 18 @17445 has 221 MA's), (28, 17466), (Start: 38 @17487 has 1 MA's), (48, 17526), (71, 17595), (73, 17604), (74, 17607), (81, 17625), (89, 17658), (91, 17673), (119, 17832), (120, 17835), (135, 17880), (145, 17958), (148, 17982), (Start: 159 @18048 has 1 MA's), (169, 18123), (170, 18129), (172, 18147), (178, 18171), (179, 18177), (180, 18180), (186, 18213), (187, 18219), (193, 18249), (199, 18270), (204, 18300), (206, 18309), (222, 18390), (232, 18450), (233, 18456), (236, 18471), (237, 18474), (240, 18495), (248, 18537), (251, 18570), (252, 18573), (275, 18711), (276, 18717), (284, 18771), (285, 18774), (290, 18801), (304, 18876), (307, 18888), (308, 18891), (320, 18957), (323, 18981), (325, 19002), (327, 19011), (339, 19071), (340, 19074), (348, 19110), (350, 19128), (354, 19149), (373, 19245), (375, 19263), (377, 19272), (378, 19284), (383, 19320), (388, 19350), (405, 19431), (412, 19485), (425, 19587), (442, 19722), (445, 19746), (450, 19800), (453, 19848), (459, 19890), (461, 19914), (462, 19917),

Gene: SchoolBus\_58 Start: 36090, Stop: 38600, Start Num: 35

Candidate Starts for SchoolBus\_58:

(Start: 35 @36090 has 27 MA's), (42, 36123), (60, 36192), (61, 36195), (68, 36219), (74, 36243), (83, 36267), (89, 36300), (124, 36507), (127, 36519), (128, 36522), (151, 36669), (152, 36699), (Start: 159 @36723 has 1 MA's), (165, 36753), (166, 36756), (169, 36783), (172, 36807), (179, 36837), (189, 36894), (194, 36918), (203, 36954), (204, 36966), (210, 36990), (211, 36993), (217, 37035), (236, 37131), (237, 37134), (279, 37389), (304, 37533), (315, 37593), (324, 37665), (325, 37668), (344, 37764), (375, 37938), (378, 37959), (395, 38052), (398, 38064), (412, 38154), (423, 38229), (432, 38274), (455, 38475), (460, 38529), (465, 38544),

Gene: Schuy\_59 Start: 35881, Stop: 38391, Start Num: 35

Candidate Starts for Schuy\_59:

(Start: 35 @35881 has 27 MA's), (42, 35914), (60, 35983), (61, 35986), (68, 36010), (74, 36034), (83, 36058), (89, 36091), (124, 36298), (127, 36310), (128, 36313), (151, 36460), (152, 36490), (Start: 159 @36514 has 1 MA's), (165, 36544), (166, 36547), (169, 36574), (172, 36598), (179, 36628), (189, 36685), (194, 36709), (203, 36745), (204, 36757), (210, 36781), (211, 36784), (217, 36826), (236, 36922), (237, 36925), (279, 37180), (304, 37324), (315, 37384), (324, 37456), (325, 37459), (344, 37555), (375, 37729), (378, 37750), (395, 37843), (398, 37855), (412, 37945), (423, 38020), (432, 38065), (455, 38266), (460, 38320), (465, 38335),

Gene: Scottish\_19 Start: 18701, Stop: 21238, Start Num: 18

Candidate Starts for Scottish\_19:

(16, 18689), (Start: 18 @18701 has 221 MA's), (28, 18722), (Start: 38 @18743 has 1 MA's), (48, 18782), (71, 18851), (73, 18860), (74, 18863), (81, 18881), (91, 18929), (99, 18977), (119, 19088), (120, 19091), (135, 19136), (145, 19214), (148, 19238), (Start: 159 @19304 has 1 MA's), (165, 19349), (169, 19379), (170, 19385), (172, 19403), (178, 19427), (180, 19436), (186, 19469), (187, 19475), (193, 19505), (203, 19544), (204, 19556), (206, 19565), (210, 19580), (211, 19583), (230, 19694), (231, 19697), (232, 19706), (233, 19712), (236, 19727), (237, 19730), (240, 19751), (246, 19781), (248, 19793), (251, 19826), (269, 19937), (270, 19940), (275, 19967), (276, 19973), (284, 20027), (285, 20030), (304, 20132), (307, 20144), (308, 20147), (320, 20213), (323, 20237), (325, 20258), (327, 20267), (339, 20327), (340, 20330), (348, 20366), (350, 20384), (354, 20405), (359,

20432), (373, 20501), (375, 20519), (377, 20528), (378, 20540), (383, 20576), (393, 20627), (397, 20645), (405, 20687), (412, 20741), (425, 20843), (442, 20978), (445, 21002), (450, 21056), (456, 21125), (461, 21170), (462, 21173),

Gene: Seabastian\_18 Start: 17634, Stop: 20171, Start Num: 18

Candidate Starts for Seabastian\_18:

(Start: 18 @17634 has 221 MA's), (28, 17655), (Start: 38 @17676 has 1 MA's), (48, 17715), (71, 17784), (73, 17793), (74, 17796), (81, 17814), (91, 17862), (119, 18021), (120, 18024), (134, 18066), (135, 18069), (145, 18147), (147, 18168), (148, 18171), (Start: 159 @18237 has 1 MA's), (160, 18246), (165, 18282), (169, 18312), (170, 18318), (178, 18360), (179, 18366), (180, 18369), (186, 18402), (187, 18408), (193, 18438), (199, 18459), (204, 18489), (206, 18498), (226, 18606), (229, 18618), (230, 18627), (231, 18630), (232, 18639), (233, 18645), (236, 18660), (237, 18663), (240, 18684), (248, 18726), (251, 18759), (275, 18900), (276, 18906), (284, 18960), (285, 18963), (290, 18990), (304, 19065), (307, 19077), (308, 19080), (320, 19146), (322, 19167), (323, 19170), (325, 19191), (336, 19242), (339, 19260), (340, 19263), (346, 19293), (350, 19317), (353, 19329), (373, 19434), (375, 19452), (377, 19461), (378, 19473), (383, 19509), (388, 19539), (393, 19560), (399, 19584), (405, 19620), (419, 19734), (425, 19776), (434, 19854), (442, 19911), (445, 19935), (450, 19989), (453, 20037), (459, 20079), (461, 20103), (462, 20106),

Gene: Seagreen\_19 Start: 17241, Stop: 19778, Start Num: 18

Candidate Starts for Seagreen\_19:

(16, 17229), (Start: 18 @17241 has 221 MA's), (28, 17262), (Start: 38 @17283 has 1 MA's), (48, 17322), (71, 17391), (73, 17400), (74, 17403), (81, 17421), (89, 17454), (91, 17469), (99, 17517), (117, 17622), (119, 17628), (120, 17631), (134, 17673), (135, 17676), (145, 17754), (148, 17778), (Start: 159 @17844 has 1 MA's), (165, 17889), (169, 17919), (170, 17925), (172, 17943), (178, 17967), (180, 17976), (186, 18009), (187, 18015), (193, 18045), (203, 18084), (204, 18096), (206, 18105), (210, 18120), (211, 18123), (230, 18234), (231, 18237), (232, 18246), (233, 18252), (236, 18267), (237, 18270), (240, 18291), (246, 18321), (248, 18333), (251, 18366), (269, 18477), (270, 18480), (275, 18507), (276, 18513), (284, 18567), (285, 18570), (304, 18672), (307, 18684), (308, 18687), (320, 18753), (323, 18777), (325, 18798), (327, 18807), (339, 18867), (340, 18870), (348, 18906), (350, 18924), (353, 18936), (354, 18945), (359, 18972), (373, 19041), (375, 19059), (377, 19068), (378, 19080), (383, 19116), (388, 19146), (393, 19167), (399, 19191), (405, 19227), (412, 19281), (419, 19341), (425, 19383), (434, 19461), (442, 19518), (445, 19542), (450, 19596), (453, 19644), (459, 19686), (461, 19710), (462, 19713),

Gene: ShamWow\_26 Start: 22284, Stop: 24680, Start Num: 52

Candidate Starts for ShamWow\_26:

(Start: 52 @22284 has 123 MA's), (97, 22461), (Start: 101 @22482 has 20 MA's), (139, 22629), (160, 22770), (164, 22803), (169, 22836), (174, 22872), (193, 22965), (206, 23025), (211, 23043), (238, 23199), (242, 23220), (259, 23340), (262, 23352), (269, 23397), (304, 23592), (308, 23607), (315, 23652), (317, 23667), (348, 23823), (350, 23841), (352, 23850), (375, 23979), (376, 23982), (411, 24192), (413, 24204), (430, 24318), (453, 24534), (462, 24618), (467, 24642), (469, 24651),

Gene: Shauna1\_18 Start: 17450, Stop: 19927, Start Num: 18

Candidate Starts for Shauna1\_18:

(17, 17438), (Start: 18 @17450 has 221 MA's), (28, 17471), (Start: 38 @17492 has 1 MA's), (49, 17531), (71, 17600), (73, 17609), (74, 17612), (81, 17630), (89, 17663), (91, 17678), (108, 17765), (112, 17780), (120, 17816), (121, 17822), (135, 17855), (137, 17867), (162, 18038), (165, 18047), (169, 18071), (179, 18125), (186, 18161), (187, 18167), (193, 18197), (201, 18227), (204, 18248), (206, 18257), (223, 18341), (233, 18404), (237, 18422), (238, 18431), (242, 18452), (243, 18455), (246, 18473), (248, 18485), (250, 18512), (252, 18521), (259, 18572), (260, 18581), (262, 18584), (265, 18611), (268, 18620), (272, 18641), (284, 18719), (285, 18722), (305, 18830), (307, 18836), (315, 18884), (322, 18926), (323, 18929), (325, 18950), (326, 18956), (327, 18959), (334, 18989),

(358, 19130), (362, 19148), (367, 19181), (373, 19205), (374, 19208), (375, 19223), (378, 19244), (383, 19280), (384, 19286), (390, 19313), (395, 19340), (414, 19475), (422, 19523), (424, 19547), (430, 19571), (442, 19670), (444, 19691), (446, 19709), (453, 19787), (456, 19808), (465, 19871), (467, 19889), (472, 19907),

Gene: ShereKhan\_28 Start: 23267, Stop: 25663, Start Num: 52

Candidate Starts for ShereKhan\_28:

(Start: 52 @23267 has 123 MA's), (97, 23444), (Start: 101 @23465 has 20 MA's), (139, 23612), (160, 23753), (164, 23786), (169, 23819), (174, 23855), (193, 23948), (206, 24008), (211, 24026), (234, 24158), (242, 24203), (262, 24335), (269, 24380), (281, 24440), (301, 24554), (304, 24575), (312, 24614), (315, 24635), (317, 24650), (346, 24800), (348, 24806), (350, 24824), (361, 24878), (375, 24962), (392, 25055), (430, 25301), (453, 25517), (462, 25601), (469, 25634),

Gene: ShiLan\_18 Start: 17405, Stop: 19957, Start Num: 18

Candidate Starts for ShiLan\_18:

(Start: 18 @17405 has 221 MA's), (48, 17486), (71, 17555), (73, 17564), (74, 17567), (81, 17585), (91, 17633), (98, 17678), (119, 17792), (120, 17795), (123, 17807), (132, 17828), (134, 17837), (135, 17840), (142, 17888), (145, 17918), (152, 17984), (160, 18017), (165, 18053), (168, 18077), (179, 18137), (180, 18140), (183, 18158), (197, 18221), (199, 18224), (203, 18242), (206, 18263), (211, 18281), (216, 18308), (219, 18329), (225, 18362), (232, 18404), (233, 18410), (234, 18413), (237, 18428), (241, 18455), (242, 18458), (246, 18479), (248, 18491), (251, 18524), (265, 18617), (284, 18725), (287, 18749), (290, 18755), (295, 18773), (296, 18776), (299, 18800), (304, 18830), (310, 18854), (315, 18890), (316, 18896), (317, 18905), (322, 18932), (333, 18995), (336, 19019), (337, 19034), (346, 19076), (355, 19127), (374, 19223), (375, 19238), (377, 19247), (380, 19271), (392, 19334), (399, 19370), (440, 19676), (445, 19721), (453, 19823),

Gene: Shida\_58 Start: 35788, Stop: 38298, Start Num: 35

Candidate Starts for Shida\_58:

(Start: 35 @35788 has 27 MA's), (42, 35821), (60, 35890), (61, 35893), (68, 35917), (74, 35941), (83, 35965), (89, 35998), (124, 36205), (127, 36217), (128, 36220), (151, 36367), (152, 36397), (Start: 159 @36421 has 1 MA's), (165, 36451), (166, 36454), (169, 36481), (172, 36505), (179, 36535), (189, 36592), (203, 36652), (204, 36664), (210, 36688), (211, 36691), (217, 36733), (236, 36829), (237, 36832), (279, 37087), (304, 37231), (315, 37291), (324, 37363), (325, 37366), (344, 37462), (375, 37636), (378, 37657), (395, 37750), (398, 37762), (412, 37852), (423, 37927), (432, 37972), (455, 38173), (460, 38227), (465, 38242),

Gene: Shipwreck\_20 Start: 18739, Stop: 21243, Start Num: 29

Candidate Starts for Shipwreck\_20:

(Start: 29 @18739 has 3 MA's), (74, 18892), (147, 19297), (151, 19312), (152, 19342), (153, 19348), (Start: 159 @19366 has 1 MA's), (178, 19474), (187, 19525), (211, 19636), (212, 19639), (217, 19678), (225, 19711), (237, 19777), (248, 19837), (250, 19864), (251, 19870), (304, 20176), (315, 20236), (321, 20284), (322, 20287), (324, 20308), (325, 20311), (375, 20572), (397, 20695), (398, 20698), (412, 20788), (419, 20845), (423, 20866), (435, 20926), (457, 21127), (460, 21169),

Gene: ShowerHandel\_18 Start: 17406, Stop: 19958, Start Num: 18

Candidate Starts for ShowerHandel\_18:

(Start: 18 @17406 has 221 MA's), (48, 17487), (71, 17556), (73, 17565), (74, 17568), (81, 17586), (91, 17634), (98, 17679), (119, 17793), (120, 17796), (123, 17808), (132, 17829), (134, 17838), (135, 17841), (142, 17889), (145, 17919), (152, 17985), (160, 18018), (165, 18054), (168, 18078), (179, 18138), (180, 18141), (183, 18159), (197, 18222), (199, 18225), (203, 18243), (206, 18264), (211, 18282), (216, 18309), (219, 18330), (225, 18363), (232, 18405), (233, 18411), (234, 18414), (237, 18429), (241, 18456), (242, 18459), (246, 18480), (248, 18492), (251, 18525), (265, 18618), (284, 18726), (287, 18750), (290, 18756), (295, 18774), (296, 18777), (299, 18801), (304, 18831), (310,

18855), (315, 18891), (316, 18897), (317, 18906), (322, 18933), (333, 18996), (336, 19020), (337, 19035), (346, 19077), (355, 19128), (374, 19224), (375, 19239), (377, 19248), (380, 19272), (392, 19335), (399, 19371), (440, 19677), (445, 19722), (453, 19824),

Gene: ShroomBoi\_18 Start: 17435, Stop: 19912, Start Num: 18

Candidate Starts for ShroomBoi\_18:

(Start: 18 @17435 has 221 MA's), (28, 17456), (Start: 38 @17477 has 1 MA's), (49, 17516), (71, 17585), (73, 17594), (74, 17597), (81, 17615), (91, 17663), (108, 17750), (112, 17765), (120, 17801), (121, 17807), (135, 17840), (137, 17852), (162, 18023), (165, 18032), (169, 18056), (179, 18110), (186, 18146), (187, 18152), (193, 18182), (201, 18212), (204, 18233), (206, 18242), (210, 18257), (223, 18326), (237, 18407), (238, 18416), (243, 18440), (248, 18470), (252, 18506), (259, 18557), (260, 18566), (262, 18569), (265, 18596), (268, 18605), (272, 18626), (284, 18704), (305, 18815), (307, 18821), (315, 18869), (322, 18911), (323, 18914), (325, 18935), (326, 18941), (327, 18944), (334, 18974), (358, 19115), (362, 19133), (367, 19166), (373, 19190), (374, 19193), (375, 19208), (378, 19229), (383, 19265), (384, 19271), (385, 19277), (390, 19298), (395, 19325), (414, 19460), (422, 19508), (424, 19532), (426, 19538), (430, 19556), (442, 19655), (453, 19772), (463, 19853), (465, 19856), (469, 19883),

Gene: SiSi\_18 Start: 17389, Stop: 19926, Start Num: 18

Candidate Starts for SiSi\_18:

(16, 17377), (Start: 18 @17389 has 221 MA's), (28, 17410), (Start: 38 @17431 has 1 MA's), (48, 17470), (71, 17539), (73, 17548), (74, 17551), (81, 17569), (89, 17602), (91, 17617), (99, 17665), (119, 17776), (120, 17779), (128, 17809), (134, 17821), (135, 17824), (145, 17902), (148, 17926), (Start: 159 @17992 has 1 MA's), (165, 18037), (169, 18067), (170, 18073), (172, 18091), (178, 18115), (180, 18124), (186, 18157), (187, 18163), (193, 18193), (203, 18232), (204, 18244), (206, 18253), (210, 18268), (211, 18271), (230, 18382), (232, 18394), (233, 18400), (236, 18415), (237, 18418), (240, 18439), (246, 18469), (248, 18481), (251, 18514), (262, 18580), (269, 18625), (270, 18628), (275, 18655), (276, 18661), (284, 18715), (285, 18718), (290, 18745), (304, 18820), (307, 18832), (308, 18835), (320, 18901), (323, 18925), (327, 18955), (336, 18997), (339, 19015), (340, 19018), (348, 19054), (350, 19072), (354, 19093), (359, 19120), (373, 19189), (375, 19207), (377, 19216), (378, 19228), (383, 19264), (393, 19315), (397, 19333), (405, 19375), (412, 19429), (419, 19489), (425, 19531), (434, 19609), (442, 19666), (445, 19690), (450, 19744), (453, 19792), (461, 19858), (462, 19861),

Gene: Simpliphy\_27 Start: 22029, Stop: 24425, Start Num: 52

Candidate Starts for Simpliphy\_27:

(Start: 52 @22029 has 123 MA's), (97, 22206), (Start: 101 @22227 has 20 MA's), (139, 22374), (164, 22548), (169, 22581), (174, 22617), (193, 22710), (206, 22770), (211, 22788), (234, 22920), (242, 22965), (262, 23097), (269, 23142), (281, 23202), (301, 23316), (304, 23337), (312, 23376), (315, 23397), (317, 23412), (346, 23562), (348, 23568), (350, 23586), (361, 23640), (375, 23724), (392, 23817), (430, 24063), (453, 24279), (462, 24363), (469, 24396),

Gene: SimranZ1\_19 Start: 17257, Stop: 19794, Start Num: 18

Candidate Starts for SimranZ1\_19:

(Start: 18 @17257 has 221 MA's), (28, 17278), (Start: 38 @17299 has 1 MA's), (48, 17338), (71, 17407), (73, 17416), (74, 17419), (81, 17437), (91, 17485), (119, 17644), (120, 17647), (128, 17677), (134, 17689), (135, 17692), (145, 17770), (148, 17794), (Start: 159 @17860 has 1 MA's), (169, 17935), (170, 17941), (172, 17959), (178, 17983), (180, 17992), (186, 18025), (187, 18031), (193, 18061), (199, 18082), (203, 18100), (204, 18112), (206, 18121), (214, 18154), (230, 18250), (231, 18253), (232, 18262), (233, 18268), (236, 18283), (237, 18286), (240, 18307), (248, 18349), (251, 18382), (262, 18448), (269, 18493), (270, 18496), (275, 18523), (276, 18529), (284, 18583), (285, 18586), (290, 18613), (296, 18634), (304, 18688), (307, 18700), (308, 18703), (320, 18769), (323, 18793), (325, 18814), (327, 18823), (336, 18865), (339, 18883), (340, 18886), (348, 18922), (350,

18940), (353, 18952), (354, 18961), (359, 18988), (371, 19045), (373, 19057), (375, 19075), (377, 19084), (378, 19096), (383, 19132), (388, 19162), (393, 19183), (399, 19207), (405, 19243), (425, 19399), (442, 19534), (445, 19558), (450, 19612), (453, 19660), (461, 19726), (462, 19729),

Gene: SirDuracell\_25 Start: 20950, Stop: 23346, Start Num: 52

Candidate Starts for SirDuracell\_25:

(Start: 52 @20950 has 123 MA's), (97, 21127), (Start: 101 @21148 has 20 MA's), (139, 21295), (160, 21436), (164, 21469), (169, 21502), (174, 21538), (193, 21631), (206, 21691), (211, 21709), (225, 21790), (262, 22018), (269, 22063), (304, 22258), (305, 22264), (308, 22273), (315, 22318), (317, 22333), (348, 22489), (350, 22507), (352, 22516), (375, 22645), (376, 22648), (411, 22858), (413, 22870), (430, 22984), (453, 23200), (462, 23284), (467, 23308), (469, 23317),

Gene: SirHarley\_29 Start: 24248, Stop: 26518, Start Num: 101

Candidate Starts for SirHarley\_29:

(Start: 101 @24248 has 20 MA's), (131, 24383), (133, 24392), (156, 24566), (158, 24572), (160, 24584), (185, 24737), (187, 24752), (190, 24767), (257, 25148), (258, 25154), (266, 25199), (282, 25286), (306, 25412), (318, 25487), (319, 25493), (325, 25541), (331, 25571), (335, 25595), (365, 25784), (372, 25811), (378, 25859), (391, 25931), (399, 25970), (400, 25991), (403, 26006), (406, 26024), (408, 26054), (420, 26138), (451, 26339), (453, 26381), (474, 26507),

Gene: Smooch\_61 Start: 37810, Stop: 40320, Start Num: 35

Candidate Starts for Smooch\_61:

(Start: 35 @37810 has 27 MA's), (42, 37843), (60, 37912), (61, 37915), (68, 37939), (74, 37963), (83, 37987), (89, 38020), (124, 38227), (127, 38239), (128, 38242), (151, 38389), (152, 38419), (Start: 159 @38443 has 1 MA's), (165, 38473), (166, 38476), (169, 38503), (172, 38527), (179, 38557), (189, 38614), (203, 38674), (204, 38686), (210, 38710), (211, 38713), (217, 38755), (236, 38851), (237, 38854), (269, 39058), (279, 39109), (304, 39253), (315, 39313), (324, 39385), (325, 39388), (344, 39484), (375, 39658), (378, 39679), (395, 39772), (398, 39784), (412, 39874), (423, 39949), (432, 39994), (455, 40195), (460, 40249), (465, 40264),

Gene: SophKB\_26 Start: 22283, Stop: 24679, Start Num: 52

Candidate Starts for SophKB\_26:

(Start: 52 @22283 has 123 MA's), (97, 22460), (Start: 101 @22481 has 20 MA's), (139, 22628), (160, 22769), (164, 22802), (169, 22835), (174, 22871), (193, 22964), (206, 23024), (211, 23042), (234, 23174), (242, 23219), (262, 23351), (269, 23396), (281, 23456), (301, 23570), (304, 23591), (312, 23630), (315, 23651), (317, 23666), (346, 23816), (348, 23822), (350, 23840), (361, 23894), (375, 23978), (392, 24071), (430, 24317), (453, 24533), (462, 24617), (469, 24650),

Gene: Sotrice96\_26 Start: 22239, Stop: 24635, Start Num: 52

Candidate Starts for Sotrice96\_26:

(Start: 52 @22239 has 123 MA's), (97, 22416), (Start: 101 @22437 has 20 MA's), (139, 22584), (160, 22725), (164, 22758), (169, 22791), (174, 22827), (193, 22920), (206, 22980), (211, 22998), (225, 23079), (262, 23307), (269, 23352), (304, 23547), (305, 23553), (308, 23562), (315, 23607), (317, 23622), (348, 23778), (350, 23796), (352, 23805), (375, 23934), (376, 23937), (411, 24147), (413, 24159), (430, 24273), (453, 24489), (462, 24573), (467, 24597), (469, 24606),

Gene: Soul22\_24 Start: 17091, Stop: 19640, Start Num: 11

Candidate Starts for Soul22\_24:

(9, 17082), (Start: 11 @17091 has 7 MA's), (Start: 18 @17151 has 221 MA's), (33, 17187), (66, 17286), (100, 17427), (108, 17466), (112, 17481), (120, 17517), (121, 17523), (122, 17526), (132, 17544), (137, 17568), (141, 17592), (142, 17595), (162, 17739), (165, 17748), (169, 17772), (172, 17796), (178, 17820), (179, 17826), (183, 17847), (187, 17868), (193, 17898), (201, 17928), (204, 17949), (223, 18042), (225, 18057), (226, 18066), (230, 18087), (231, 18090), (238, 18132), (246,

18174), (247, 18177), (248, 18186), (250, 18213), (252, 18222), (256, 18261), (260, 18282), (262, 18285), (268, 18321), (272, 18342), (284, 18420), (285, 18423), (298, 18477), (307, 18537), (321, 18624), (323, 18630), (324, 18648), (325, 18651), (334, 18687), (343, 18741), (346, 18750), (358, 18828), (362, 18846), (368, 18882), (369, 18885), (373, 18903), (374, 18906), (375, 18921), (383, 18978), (385, 18990), (399, 19053), (405, 19086), (414, 19173), (422, 19221), (424, 19245), (429, 19272), (430, 19281), (433, 19320), (438, 19359), (442, 19383), (444, 19404), (453, 19500), (456, 19521), (465, 19584), (469, 19611), (472, 19620),

Gene: Sparkdehlily\_18 Start: 17429, Stop: 19966, Start Num: 18

Candidate Starts for Sparkdehlily\_18:

(Start: 18 @17429 has 221 MA's), (28, 17450), (Start: 38 @17471 has 1 MA's), (48, 17510), (71, 17579), (73, 17588), (74, 17591), (81, 17609), (91, 17657), (117, 17810), (120, 17819), (135, 17864), (145, 17942), (148, 17966), (Start: 159 @18032 has 1 MA's), (165, 18077), (169, 18107), (170, 18113), (172, 18131), (178, 18155), (180, 18164), (186, 18197), (187, 18203), (193, 18233), (203, 18272), (206, 18293), (210, 18308), (211, 18311), (231, 18425), (232, 18434), (233, 18440), (237, 18458), (240, 18479), (246, 18509), (248, 18521), (251, 18554), (269, 18665), (270, 18668), (275, 18695), (276, 18701), (284, 18755), (285, 18758), (302, 18845), (304, 18860), (308, 18875), (323, 18965), (325, 18986), (327, 18995), (339, 19055), (340, 19058), (348, 19094), (350, 19112), (353, 19124), (354, 19133), (359, 19160), (373, 19229), (375, 19247), (377, 19256), (378, 19268), (383, 19304), (388, 19334), (393, 19355), (399, 19379), (405, 19415), (412, 19469), (425, 19571), (434, 19649), (442, 19706), (445, 19730), (450, 19784), (453, 19832), (459, 19874), (464, 19907), (465, 19910),

Gene: Spartacus\_19 Start: 17481, Stop: 20018, Start Num: 18

Candidate Starts for Spartacus\_19:

(Start: 18 @17481 has 221 MA's), (55, 17571), (71, 17631), (73, 17640), (74, 17643), (81, 17661), (89, 17694), (91, 17709), (99, 17757), (119, 17868), (120, 17871), (128, 17901), (135, 17916), (145, 17994), (Start: 159 @18084 has 1 MA's), (165, 18129), (169, 18159), (170, 18165), (172, 18183), (178, 18207), (180, 18216), (186, 18249), (187, 18255), (193, 18285), (203, 18324), (204, 18336), (206, 18345), (210, 18360), (211, 18363), (230, 18474), (231, 18477), (232, 18486), (233, 18492), (236, 18507), (237, 18510), (240, 18531), (246, 18561), (248, 18573), (251, 18606), (269, 18717), (270, 18720), (275, 18747), (276, 18753), (284, 18807), (285, 18810), (302, 18897), (304, 18912), (307, 18924), (308, 18927), (320, 18993), (325, 19038), (327, 19047), (339, 19107), (340, 19110), (348, 19146), (350, 19164), (353, 19176), (354, 19185), (359, 19212), (373, 19281), (375, 19299), (377, 19308), (378, 19320), (383, 19356), (388, 19386), (393, 19407), (399, 19431), (405, 19467), (412, 19521), (419, 19581), (425, 19623), (434, 19701), (442, 19758), (445, 19782), (450, 19836), (453, 19884), (459, 19926), (461, 19950), (462, 19953),

Gene: Spikelee\_19 Start: 17223, Stop: 19760, Start Num: 18

Candidate Starts for Spikelee\_19:

(Start: 18 @17223 has 221 MA's), (28, 17244), (Start: 38 @17265 has 1 MA's), (48, 17304), (71, 17373), (73, 17382), (74, 17385), (81, 17403), (91, 17451), (117, 17604), (120, 17613), (135, 17658), (147, 17757), (148, 17760), (Start: 159 @17826 has 1 MA's), (169, 17901), (170, 17907), (172, 17925), (178, 17949), (179, 17955), (180, 17958), (186, 17991), (187, 17997), (193, 18027), (199, 18048), (204, 18078), (206, 18087), (210, 18102), (211, 18105), (230, 18216), (231, 18219), (232, 18228), (233, 18234), (236, 18249), (237, 18252), (240, 18273), (246, 18303), (248, 18315), (251, 18348), (269, 18459), (270, 18462), (275, 18489), (276, 18495), (284, 18549), (285, 18552), (302, 18639), (304, 18654), (307, 18666), (308, 18669), (320, 18735), (323, 18759), (325, 18780), (327, 18789), (339, 18849), (340, 18852), (348, 18888), (350, 18906), (353, 18918), (354, 18927), (359, 18954), (371, 19011), (373, 19023), (375, 19041), (377, 19050), (378, 19062), (383, 19098), (388, 19128), (392, 19137), (393, 19149), (405, 19209), (412, 19263), (419, 19323), (425, 19365), (442, 19500), (445, 19524), (450, 19578), (453, 19626), (459, 19668), (461, 19692), (462, 19695),

Gene: Spoonbill\_18 Start: 17404, Stop: 19956, Start Num: 18

Candidate Starts for Spoonbill\_18:

(Start: 18 @17404 has 221 MA's), (48, 17485), (71, 17554), (73, 17563), (74, 17566), (81, 17584), (91, 17632), (98, 17677), (119, 17791), (120, 17794), (123, 17806), (132, 17827), (134, 17836), (135, 17839), (142, 17887), (145, 17917), (152, 17983), (160, 18016), (165, 18052), (168, 18076), (179, 18136), (180, 18139), (183, 18157), (197, 18220), (199, 18223), (203, 18241), (206, 18262), (211, 18280), (216, 18307), (219, 18328), (225, 18361), (232, 18403), (233, 18409), (234, 18412), (237, 18427), (241, 18454), (242, 18457), (246, 18478), (248, 18490), (251, 18523), (265, 18616), (284, 18724), (287, 18748), (290, 18754), (295, 18772), (296, 18775), (299, 18799), (304, 18829), (310, 18853), (315, 18889), (316, 18895), (317, 18904), (322, 18931), (333, 18994), (336, 19018), (337, 19033), (346, 19075), (355, 19126), (374, 19222), (375, 19237), (377, 19246), (380, 19270), (392, 19333), (399, 19369), (440, 19675), (445, 19720), (453, 19822),

Gene: Squint\_35 Start: 27671, Stop: 30178, Start Num: 18

Candidate Starts for Squint\_35:

(Start: 18 @27671 has 221 MA's), (81, 27866), (89, 27902), (91, 27917), (108, 28004), (112, 28019), (135, 28094), (137, 28106), (142, 28133), (154, 28238), (162, 28277), (165, 28286), (169, 28310), (170, 28316), (172, 28334), (176, 28352), (180, 28367), (181, 28376), (183, 28385), (186, 28400), (192, 28427), (193, 28436), (203, 28475), (204, 28487), (206, 28496), (223, 28580), (237, 28661), (242, 28691), (243, 28694), (248, 28724), (250, 28751), (252, 28760), (259, 28811), (260, 28820), (262, 28823), (268, 28859), (272, 28880), (278, 28916), (305, 29069), (315, 29123), (323, 29168), (324, 29186), (325, 29189), (334, 29228), (358, 29375), (361, 29384), (374, 29453), (375, 29468), (405, 29633), (414, 29720), (422, 29768), (430, 29819), (438, 29897), (463, 30119), (465, 30122), (469, 30149),

Gene: StAnnes\_18 Start: 17447, Stop: 19984, Start Num: 18

Candidate Starts for StAnnes\_18:

(16, 17435), (Start: 18 @17447 has 221 MA's), (28, 17468), (Start: 38 @17489 has 1 MA's), (48, 17528), (73, 17606), (74, 17609), (81, 17627), (89, 17660), (91, 17675), (99, 17723), (119, 17834), (120, 17837), (128, 17867), (134, 17879), (135, 17882), (145, 17960), (148, 17984), (Start: 159 @18050 has 1 MA's), (165, 18095), (169, 18125), (170, 18131), (172, 18149), (178, 18173), (180, 18182), (186, 18215), (187, 18221), (193, 18251), (204, 18302), (206, 18311), (210, 18326), (211, 18329), (230, 18440), (231, 18443), (232, 18452), (233, 18458), (236, 18473), (237, 18476), (240, 18497), (246, 18527), (248, 18539), (251, 18572), (269, 18683), (270, 18686), (275, 18713), (276, 18719), (284, 18773), (285, 18776), (302, 18863), (304, 18878), (307, 18890), (308, 18893), (320, 18959), (323, 18983), (325, 19004), (327, 19013), (339, 19073), (340, 19076), (348, 19112), (350, 19130), (353, 19142), (354, 19151), (359, 19178), (373, 19247), (375, 19265), (377, 19274), (378, 19286), (383, 19322), (388, 19352), (393, 19373), (399, 19397), (405, 19433), (412, 19487), (419, 19547), (425, 19589), (434, 19667), (442, 19724), (445, 19748), (450, 19802), (453, 19850), (459, 19892), (461, 19916), (462, 19919),

Gene: StAugustine\_35 Start: 31877, Stop: 33781, Start Num: 157

Candidate Starts for StAugustine\_35:

(157, 31877), (173, 31988), (176, 32006), (191, 32075), (232, 32246), (245, 32321), (258, 32423), (267, 32468), (278, 32528), (282, 32552), (286, 32582), (331, 32846), (338, 32900), (349, 32963), (356, 33011), (363, 33047), (364, 33050), (366, 33062), (372, 33086), (400, 33263), (401, 33269), (408, 33314), (409, 33317), (416, 33368), (439, 33500), (453, 33644), (464, 33725), (474, 33770),

Gene: Stank\_29 Start: 22790, Stop: 25186, Start Num: 52

Candidate Starts for Stank\_29:

(Start: 52 @22790 has 123 MA's), (97, 22967), (Start: 101 @22988 has 20 MA's), (139, 23135), (160, 23276), (164, 23309), (169, 23342), (174, 23378), (193, 23471), (206, 23531), (211, 23549), (234, 23681), (242, 23726), (262, 23858), (269, 23903), (281, 23963), (301, 24077), (304, 24098), (312,

24137), (315, 24158), (317, 24173), (346, 24323), (348, 24329), (350, 24347), (361, 24401), (375, 24485), (392, 24578), (430, 24824), (453, 25040), (462, 25124), (469, 25157),

Gene: Stap\_19 Start: 17430, Stop: 19967, Start Num: 18

Candidate Starts for Stap\_19:

(Start: 18 @17430 has 221 MA's), (28, 17451), (Start: 38 @17472 has 1 MA's), (48, 17511), (71, 17580), (73, 17589), (74, 17592), (81, 17610), (89, 17643), (91, 17658), (99, 17706), (117, 17811), (119, 17817), (120, 17820), (134, 17862), (135, 17865), (148, 17967), (Start: 159 @18033 has 1 MA's), (165, 18078), (169, 18108), (170, 18114), (172, 18132), (178, 18156), (180, 18165), (186, 18198), (187, 18204), (193, 18234), (203, 18273), (204, 18285), (206, 18294), (210, 18309), (211, 18312), (230, 18423), (231, 18426), (232, 18435), (233, 18441), (236, 18456), (237, 18459), (240, 18480), (246, 18510), (248, 18522), (251, 18555), (269, 18666), (270, 18669), (275, 18696), (276, 18702), (284, 18756), (285, 18759), (304, 18861), (307, 18873), (308, 18876), (320, 18942), (323, 18966), (325, 18987), (327, 18996), (339, 19056), (340, 19059), (348, 19095), (350, 19113), (353, 19125), (354, 19134), (359, 19161), (373, 19230), (375, 19248), (377, 19257), (378, 19269), (383, 19305), (393, 19356), (397, 19374), (405, 19416), (412, 19470), (419, 19530), (425, 19572), (434, 19650), (442, 19707), (445, 19731), (450, 19785), (453, 19833), (461, 19899), (462, 19902),

Gene: Starcevich\_19 Start: 17191, Stop: 19728, Start Num: 18

Candidate Starts for Starcevich\_19:

(Start: 18 @17191 has 221 MA's), (28, 17212), (Start: 38 @17233 has 1 MA's), (48, 17272), (71, 17341), (73, 17350), (74, 17353), (81, 17371), (91, 17419), (117, 17572), (120, 17581), (135, 17626), (147, 17725), (148, 17728), (Start: 159 @17794 has 1 MA's), (169, 17869), (170, 17875), (172, 17893), (178, 17917), (179, 17923), (180, 17926), (186, 17959), (187, 17965), (193, 17995), (199, 18016), (204, 18046), (206, 18055), (210, 18070), (211, 18073), (230, 18184), (231, 18187), (232, 18196), (233, 18202), (236, 18217), (237, 18220), (240, 18241), (246, 18271), (248, 18283), (251, 18316), (269, 18427), (270, 18430), (275, 18457), (276, 18463), (284, 18517), (285, 18520), (304, 18622), (307, 18634), (308, 18637), (320, 18703), (323, 18727), (325, 18748), (327, 18757), (339, 18817), (340, 18820), (348, 18856), (350, 18874), (353, 18886), (354, 18895), (359, 18922), (371, 18979), (373, 18991), (375, 19009), (377, 19018), (378, 19030), (383, 19066), (388, 19096), (392, 19105), (393, 19117), (405, 19177), (412, 19231), (419, 19291), (425, 19333), (442, 19468), (445, 19492), (450, 19546), (453, 19594), (459, 19636), (461, 19660), (462, 19663),

Gene: Stark\_27 Start: 22042, Stop: 24438, Start Num: 52

Candidate Starts for Stark\_27:

(Start: 52 @22042 has 123 MA's), (97, 22219), (Start: 101 @22240 has 20 MA's), (139, 22387), (164, 22561), (169, 22594), (174, 22630), (193, 22723), (206, 22783), (211, 22801), (234, 22933), (242, 22978), (262, 23110), (269, 23155), (281, 23215), (301, 23329), (304, 23350), (312, 23389), (315, 23410), (317, 23425), (346, 23575), (348, 23581), (350, 23599), (361, 23653), (375, 23737), (392, 23830), (430, 24076), (453, 24292), (462, 24376), (469, 24409),

Gene: StellaBean\_26 Start: 22283, Stop: 24679, Start Num: 52

Candidate Starts for StellaBean\_26:

(Start: 52 @22283 has 123 MA's), (97, 22460), (Start: 101 @22481 has 20 MA's), (139, 22628), (160, 22769), (164, 22802), (169, 22835), (174, 22871), (193, 22964), (206, 23024), (211, 23042), (234, 23174), (242, 23219), (262, 23351), (269, 23396), (281, 23456), (301, 23570), (304, 23591), (312, 23630), (315, 23651), (317, 23666), (346, 23816), (348, 23822), (350, 23840), (361, 23894), (375, 23978), (392, 24071), (430, 24317), (453, 24533), (462, 24617), (469, 24650),

Gene: StolenFromERC\_28 Start: 22274, Stop: 24670, Start Num: 52

Candidate Starts for StolenFromERC\_28:

(Start: 52 @22274 has 123 MA's), (97, 22451), (Start: 101 @22472 has 20 MA's), (139, 22619), (164, 22793), (169, 22826), (174, 22862), (193, 22955), (206, 23015), (211, 23033), (234, 23165), (242,

23210), (262, 23342), (269, 23387), (281, 23447), (301, 23561), (304, 23582), (312, 23621), (315, 23642), (317, 23657), (346, 23807), (348, 23813), (350, 23831), (361, 23885), (375, 23969), (392, 24062), (430, 24308), (453, 24524), (462, 24608), (469, 24641),

Gene: Strokeseat\_18 Start: 17495, Stop: 20032, Start Num: 18

Candidate Starts for Strokeseat\_18:

(Start: 18 @17495 has 221 MA's), (28, 17516), (Start: 38 @17537 has 1 MA's), (48, 17576), (71, 17645), (73, 17654), (74, 17657), (81, 17675), (91, 17723), (119, 17882), (120, 17885), (134, 17927), (135, 17930), (145, 18008), (147, 18029), (148, 18032), (Start: 159 @18098 has 1 MA's), (169, 18173), (170, 18179), (178, 18221), (179, 18227), (180, 18230), (186, 18263), (187, 18269), (193, 18299), (199, 18320), (204, 18350), (206, 18359), (226, 18467), (229, 18479), (230, 18488), (231, 18491), (232, 18500), (233, 18506), (236, 18521), (237, 18524), (240, 18545), (248, 18587), (251, 18620), (275, 18761), (276, 18767), (284, 18821), (285, 18824), (290, 18851), (304, 18926), (307, 18938), (308, 18941), (320, 19007), (323, 19031), (325, 19052), (327, 19061), (339, 19121), (340, 19124), (348, 19160), (350, 19178), (354, 19199), (359, 19226), (373, 19295), (375, 19313), (377, 19322), (378, 19334), (383, 19370), (388, 19400), (405, 19481), (419, 19595), (425, 19637), (442, 19772), (445, 19796), (450, 19850), (461, 19964), (462, 19967),

Gene: SuperGrey\_19 Start: 18074, Stop: 20611, Start Num: 18

Candidate Starts for SuperGrey\_19:

(Start: 18 @18074 has 221 MA's), (28, 18095), (Start: 38 @18116 has 1 MA's), (48, 18155), (71, 18224), (73, 18233), (74, 18236), (81, 18254), (91, 18302), (119, 18461), (120, 18464), (135, 18509), (147, 18608), (148, 18611), (Start: 159 @18677 has 1 MA's), (169, 18752), (170, 18758), (172, 18776), (178, 18800), (179, 18806), (180, 18809), (186, 18842), (187, 18848), (193, 18878), (199, 18899), (204, 18929), (206, 18938), (210, 18953), (211, 18956), (230, 19067), (231, 19070), (232, 19079), (233, 19085), (236, 19100), (237, 19103), (240, 19124), (246, 19154), (248, 19166), (251, 19199), (269, 19310), (270, 19313), (275, 19340), (276, 19346), (284, 19400), (285, 19403), (302, 19490), (304, 19505), (307, 19517), (308, 19520), (320, 19586), (323, 19610), (325, 19631), (327, 19640), (339, 19700), (340, 19703), (348, 19739), (350, 19757), (353, 19769), (354, 19778), (359, 19805), (371, 19862), (373, 19874), (375, 19892), (377, 19901), (378, 19913), (383, 19949), (388, 19979), (392, 19988), (393, 20000), (405, 20060), (412, 20114), (419, 20174), (425, 20216), (434, 20294), (442, 20351), (445, 20375), (450, 20429), (453, 20477), (459, 20519), (461, 20543), (462, 20546),

Gene: Superphikiman\_36 Start: 27736, Stop: 30243, Start Num: 18

Candidate Starts for Superphikiman\_36:

(Start: 18 @27736 has 221 MA's), (81, 27931), (89, 27967), (91, 27982), (108, 28069), (112, 28084), (135, 28159), (137, 28171), (142, 28198), (154, 28303), (162, 28342), (165, 28351), (169, 28375), (170, 28381), (172, 28399), (176, 28417), (180, 28432), (181, 28441), (183, 28450), (186, 28465), (192, 28492), (193, 28501), (203, 28540), (204, 28552), (206, 28561), (223, 28645), (237, 28726), (242, 28756), (243, 28759), (248, 28789), (250, 28816), (252, 28825), (259, 28876), (260, 28885), (262, 28888), (268, 28924), (272, 28945), (278, 28981), (305, 29134), (315, 29188), (323, 29233), (324, 29251), (325, 29254), (334, 29293), (358, 29440), (361, 29449), (374, 29518), (375, 29533), (405, 29698), (414, 29785), (422, 29833), (430, 29884), (438, 29962), (463, 30184), (465, 30187), (469, 30214),

Gene: SwagPiggett\_18 Start: 17406, Stop: 19943, Start Num: 18

Candidate Starts for SwagPiggett\_18:

(Start: 18 @17406 has 221 MA's), (28, 17427), (Start: 38 @17448 has 1 MA's), (48, 17487), (71, 17556), (73, 17565), (74, 17568), (81, 17586), (91, 17634), (117, 17787), (120, 17796), (135, 17841), (145, 17919), (148, 17943), (Start: 159 @18009 has 1 MA's), (165, 18054), (169, 18084), (170, 18090), (172, 18108), (178, 18132), (180, 18141), (186, 18174), (187, 18180), (193, 18210), (203, 18249), (206, 18270), (210, 18285), (211, 18288), (231, 18402), (232, 18411), (233, 18417), (237,

18435), (240, 18456), (246, 18486), (248, 18498), (251, 18531), (269, 18642), (270, 18645), (275, 18672), (276, 18678), (284, 18732), (285, 18735), (302, 18822), (304, 18837), (308, 18852), (323, 18942), (325, 18963), (327, 18972), (339, 19032), (340, 19035), (348, 19071), (350, 19089), (353, 19101), (354, 19110), (359, 19137), (373, 19206), (375, 19224), (377, 19233), (378, 19245), (383, 19281), (388, 19311), (393, 19332), (399, 19356), (405, 19392), (412, 19446), (425, 19548), (434, 19626), (442, 19683), (445, 19707), (450, 19761), (453, 19809), (459, 19851), (464, 19884), (465, 19887),

Gene: TBrady12\_28 Start: 22274, Stop: 24670, Start Num: 52

Candidate Starts for TBrady12\_28:

(Start: 52 @22274 has 123 MA's), (97, 22451), (Start: 101 @22472 has 20 MA's), (139, 22619), (160, 22760), (164, 22793), (169, 22826), (174, 22862), (193, 22955), (206, 23015), (211, 23033), (234, 23165), (242, 23210), (262, 23342), (269, 23387), (281, 23447), (301, 23561), (304, 23582), (312, 23621), (315, 23642), (317, 23657), (346, 23807), (348, 23813), (350, 23831), (361, 23885), (375, 23969), (392, 24062), (430, 24308), (453, 24524), (462, 24608), (469, 24641),

Gene: TDanisky\_18 Start: 17429, Stop: 19966, Start Num: 18

Candidate Starts for TDanisky\_18:

(Start: 18 @17429 has 221 MA's), (28, 17450), (Start: 38 @17471 has 1 MA's), (48, 17510), (71, 17579), (73, 17588), (74, 17591), (81, 17609), (91, 17657), (117, 17810), (120, 17819), (135, 17864), (145, 17942), (148, 17966), (Start: 159 @18032 has 1 MA's), (165, 18077), (169, 18107), (170, 18113), (172, 18131), (178, 18155), (180, 18164), (186, 18197), (187, 18203), (193, 18233), (203, 18272), (206, 18293), (210, 18308), (211, 18311), (231, 18425), (232, 18434), (233, 18440), (237, 18458), (240, 18479), (246, 18509), (248, 18521), (251, 18554), (269, 18665), (270, 18668), (275, 18695), (276, 18701), (284, 18755), (285, 18758), (302, 18845), (304, 18860), (308, 18875), (323, 18965), (325, 18986), (327, 18995), (339, 19055), (340, 19058), (348, 19094), (350, 19112), (353, 19124), (354, 19133), (359, 19160), (373, 19229), (375, 19247), (377, 19256), (378, 19268), (383, 19304), (388, 19334), (393, 19355), (399, 19379), (405, 19415), (412, 19469), (425, 19571), (434, 19649), (442, 19706), (445, 19730), (450, 19784), (453, 19832), (459, 19874), (464, 19907), (465, 19910),

Gene: Taj\_18 Start: 17430, Stop: 19967, Start Num: 18

Candidate Starts for Taj\_18:

(16, 17418), (Start: 18 @17430 has 221 MA's), (28, 17451), (Start: 38 @17472 has 1 MA's), (48, 17511), (71, 17580), (73, 17589), (74, 17592), (81, 17610), (89, 17643), (91, 17658), (99, 17706), (117, 17811), (119, 17817), (120, 17820), (134, 17862), (135, 17865), (145, 17943), (Start: 159 @18033 has 1 MA's), (165, 18078), (169, 18108), (170, 18114), (172, 18132), (178, 18156), (180, 18165), (186, 18198), (187, 18204), (193, 18234), (203, 18273), (204, 18285), (206, 18294), (210, 18309), (211, 18312), (230, 18423), (231, 18426), (232, 18435), (233, 18441), (236, 18456), (237, 18459), (240, 18480), (246, 18510), (248, 18522), (251, 18555), (269, 18666), (270, 18669), (275, 18696), (276, 18702), (284, 18756), (285, 18759), (302, 18846), (304, 18861), (307, 18873), (308, 18876), (320, 18942), (323, 18966), (325, 18987), (327, 18996), (339, 19056), (340, 19059), (348, 19095), (350, 19113), (353, 19125), (354, 19134), (359, 19161), (373, 19230), (375, 19248), (377, 19257), (378, 19269), (383, 19305), (388, 19335), (393, 19356), (399, 19380), (405, 19416), (412, 19470), (419, 19530), (425, 19572), (442, 19707), (445, 19731), (450, 19785), (453, 19833), (459, 19875), (461, 19899), (462, 19902),

Gene: Tarkin\_28 Start: 23273, Stop: 25669, Start Num: 52

Candidate Starts for Tarkin\_28:

(Start: 52 @23273 has 123 MA's), (97, 23450), (Start: 101 @23471 has 20 MA's), (139, 23618), (160, 23759), (164, 23792), (169, 23825), (174, 23861), (193, 23954), (206, 24014), (211, 24032), (234, 24164), (242, 24209), (262, 24341), (269, 24386), (281, 24446), (301, 24560), (304, 24581), (312, 24620), (315, 24641), (317, 24656), (346, 24806), (348, 24812), (350, 24830), (361, 24884), (375,

24968), (392, 25061), (430, 25307), (453, 25523), (462, 25607), (469, 25640),

Gene: TeardropMSU\_25 Start: 22191, Stop: 24587, Start Num: 52

Candidate Starts for TeardropMSU\_25:

(Start: 52 @22191 has 123 MA's), (97, 22368), (Start: 101 @22389 has 20 MA's), (139, 22536), (160, 22677), (164, 22710), (169, 22743), (174, 22779), (193, 22872), (206, 22932), (211, 22950), (225, 23031), (262, 23259), (269, 23304), (304, 23499), (305, 23505), (308, 23514), (315, 23559), (317, 23574), (348, 23730), (350, 23748), (352, 23757), (362, 23811), (375, 23886), (376, 23889), (411, 24099), (413, 24111), (430, 24225), (453, 24441), (462, 24525), (467, 24549), (469, 24558),

Gene: Teaspoon\_27 Start: 22237, Stop: 24633, Start Num: 52

Candidate Starts for Teaspoon\_27:

(Start: 52 @22237 has 123 MA's), (97, 22414), (Start: 101 @22435 has 20 MA's), (139, 22582), (160, 22723), (164, 22756), (169, 22789), (174, 22825), (193, 22918), (206, 22978), (211, 22996), (234, 23128), (242, 23173), (262, 23305), (269, 23350), (281, 23410), (301, 23524), (304, 23545), (312, 23584), (315, 23605), (317, 23620), (346, 23770), (348, 23776), (350, 23794), (361, 23848), (375, 23932), (392, 24025), (430, 24271), (453, 24487), (462, 24571), (469, 24604),

Gene: TelAviv\_55 Start: 36063, Stop: 38573, Start Num: 35

Candidate Starts for TelAviv\_55:

(Start: 35 @36063 has 27 MA's), (42, 36096), (60, 36165), (61, 36168), (68, 36192), (74, 36216), (83, 36240), (89, 36273), (124, 36480), (127, 36492), (128, 36495), (151, 36642), (152, 36672), (Start: 159 @36696 has 1 MA's), (165, 36726), (166, 36729), (169, 36756), (172, 36780), (179, 36810), (189, 36867), (194, 36891), (203, 36927), (204, 36939), (210, 36963), (211, 36966), (217, 37008), (236, 37104), (237, 37107), (279, 37362), (304, 37506), (315, 37566), (324, 37638), (325, 37641), (344, 37737), (375, 37911), (378, 37932), (395, 38025), (398, 38037), (412, 38127), (423, 38202), (432, 38247), (455, 38448), (460, 38502), (465, 38517),

Gene: Terminus\_26 Start: 22371, Stop: 24767, Start Num: 52

Candidate Starts for Terminus\_26:

(Start: 52 @22371 has 123 MA's), (97, 22548), (Start: 101 @22569 has 20 MA's), (139, 22716), (160, 22857), (164, 22890), (169, 22923), (174, 22959), (193, 23052), (206, 23112), (211, 23130), (234, 23262), (242, 23307), (262, 23439), (269, 23484), (281, 23544), (301, 23658), (304, 23679), (312, 23718), (315, 23739), (317, 23754), (346, 23904), (348, 23910), (350, 23928), (361, 23982), (375, 24066), (392, 24159), (430, 24405), (453, 24621), (462, 24705), (469, 24738),

Gene: ThetaBob\_20 Start: 17751, Stop: 20231, Start Num: 21

Candidate Starts for ThetaBob\_20:

(Start: 21 @17751 has 3 MA's), (25, 17757), (28, 17763), (Start: 52 @17826 has 123 MA's), (54, 17829), (62, 17856), (77, 17910), (81, 17919), (89, 17952), (95, 17985), (100, 18018), (108, 18057), (112, 18072), (120, 18108), (121, 18114), (122, 18117), (132, 18135), (135, 18147), (137, 18159), (141, 18183), (142, 18186), (162, 18330), (165, 18339), (169, 18363), (172, 18387), (178, 18411), (179, 18417), (183, 18438), (184, 18441), (187, 18459), (193, 18489), (201, 18519), (204, 18540), (223, 18633), (225, 18648), (226, 18657), (230, 18678), (231, 18681), (238, 18723), (246, 18765), (247, 18768), (248, 18777), (250, 18804), (252, 18813), (256, 18852), (260, 18873), (262, 18876), (268, 18912), (272, 18933), (284, 19011), (285, 19014), (298, 19068), (307, 19128), (323, 19221), (325, 19242), (334, 19278), (343, 19332), (346, 19341), (358, 19419), (362, 19437), (368, 19473), (369, 19476), (373, 19494), (374, 19497), (375, 19512), (378, 19533), (383, 19569), (385, 19581), (399, 19644), (405, 19677), (414, 19764), (422, 19812), (424, 19836), (429, 19863), (430, 19872), (433, 19911), (438, 19950), (442, 19974), (444, 19995), (453, 20091), (456, 20112), (465, 20175), (469, 20202), (472, 20211),

Gene: Thoth\_30 Start: 24313, Stop: 26583, Start Num: 101

Candidate Starts for Thoth\_30:

(Start: 101 @24313 has 20 MA's), (131, 24448), (133, 24457), (156, 24631), (158, 24637), (160, 24649), (185, 24802), (187, 24817), (190, 24832), (257, 25213), (258, 25219), (266, 25264), (282, 25351), (318, 25552), (319, 25558), (325, 25606), (331, 25636), (335, 25660), (365, 25849), (372, 25876), (378, 25924), (391, 25996), (399, 26035), (400, 26056), (403, 26071), (406, 26089), (408, 26119), (420, 26203), (451, 26404), (453, 26446), (474, 26572),

Gene: Thresher\_27 Start: 23038, Stop: 25434, Start Num: 52

Candidate Starts for Thresher\_27:

(Start: 52 @23038 has 123 MA's), (97, 23215), (Start: 101 @23236 has 20 MA's), (139, 23383), (164, 23557), (169, 23590), (174, 23626), (193, 23719), (206, 23779), (211, 23797), (234, 23929), (242, 23974), (262, 24106), (269, 24151), (301, 24325), (304, 24346), (312, 24385), (315, 24406), (317, 24421), (346, 24571), (348, 24577), (350, 24595), (361, 24649), (375, 24733), (392, 24826), (430, 25072), (453, 25288), (462, 25372), (469, 25405),

Gene: Thumb\_29 Start: 25682, Stop: 28525, Start Num: 3

Candidate Starts for Thumb\_29:

(Start: 3 @25682 has 8 MA's), (8, 25814), (9, 25826), (Start: 11 @25835 has 7 MA's), (20, 25904), (40, 25970), (45, 25991), (59, 26039), (70, 26081), (76, 26105), (85, 26138), (92, 26174), (94, 26186), (107, 26279), (120, 26336), (130, 26375), (160, 26570), (163, 26600), (170, 26642), (199, 26783), (203, 26801), (217, 26882), (225, 26921), (229, 26942), (251, 27080), (255, 27119), (285, 27284), (299, 27356), (307, 27398), (310, 27410), (324, 27509), (389, 27872), (431, 28142), (432, 28175), (436, 28199), (449, 28319), (457, 28397), (469, 28484), (473, 28499), (475, 28505),

Gene: Tomaszewski\_25 Start: 21884, Stop: 24280, Start Num: 52

Candidate Starts for Tomaszewski\_25:

(Start: 52 @21884 has 123 MA's), (97, 22061), (Start: 101 @22082 has 20 MA's), (139, 22229), (160, 22370), (164, 22403), (169, 22436), (174, 22472), (193, 22565), (206, 22625), (211, 22643), (234, 22775), (242, 22820), (262, 22952), (269, 22997), (301, 23171), (304, 23192), (312, 23231), (315, 23252), (317, 23267), (348, 23423), (350, 23441), (361, 23495), (375, 23579), (392, 23672), (430, 23918), (453, 24134), (462, 24218), (469, 24251),

Gene: TootsiePop\_19 Start: 17273, Stop: 19798, Start Num: 18

Candidate Starts for TootsiePop\_19:

(Start: 18 @17273 has 221 MA's), (28, 17294), (Start: 38 @17315 has 1 MA's), (48, 17354), (71, 17423), (73, 17432), (74, 17435), (81, 17453), (89, 17486), (91, 17501), (99, 17549), (119, 17660), (120, 17663), (135, 17708), (145, 17786), (148, 17810), (Start: 159 @17876 has 1 MA's), (165, 17921), (169, 17951), (170, 17957), (172, 17975), (178, 17999), (180, 18008), (186, 18041), (187, 18047), (193, 18077), (203, 18116), (204, 18128), (206, 18137), (210, 18152), (211, 18155), (237, 18302), (246, 18353), (261, 18464), (270, 18515), (274, 18539), (290, 18632), (299, 18677), (301, 18686), (304, 18707), (307, 18719), (308, 18722), (315, 18767), (323, 18812), (324, 18830), (325, 18833), (336, 18884), (346, 18935), (348, 18941), (350, 18959), (353, 18971), (354, 18980), (361, 19013), (375, 19094), (385, 19163), (392, 19190), (396, 19217), (406, 19268), (412, 19316), (444, 19559), (453, 19664), (456, 19685), (464, 19739), (468, 19763),

Gene: Tootsieroll\_19 Start: 17239, Stop: 19776, Start Num: 18

Candidate Starts for Tootsieroll\_19:

(16, 17227), (Start: 18 @17239 has 221 MA's), (28, 17260), (Start: 38 @17281 has 1 MA's), (48, 17320), (71, 17389), (73, 17398), (74, 17401), (81, 17419), (89, 17452), (91, 17467), (99, 17515), (117, 17620), (119, 17626), (120, 17629), (134, 17671), (135, 17674), (148, 17776), (Start: 159 @17842 has 1 MA's), (165, 17887), (169, 17917), (170, 17923), (172, 17941), (178, 17965), (180, 17974), (186, 18007), (187, 18013), (193, 18043), (204, 18094), (206, 18103), (226, 18211), (229, 18223), (230, 18232), (231, 18235), (233, 18250), (236, 18265), (237, 18268), (240, 18289), (246,

18319), (248, 18331), (251, 18364), (269, 18475), (270, 18478), (275, 18505), (276, 18511), (284, 18565), (285, 18568), (290, 18595), (304, 18670), (307, 18682), (308, 18685), (320, 18751), (322, 18772), (323, 18775), (325, 18796), (327, 18805), (339, 18865), (340, 18868), (346, 18898), (350, 18922), (353, 18934), (354, 18943), (373, 19039), (375, 19057), (377, 19066), (378, 19078), (388, 19144), (392, 19153), (393, 19165), (399, 19189), (405, 19225), (425, 19381), (442, 19516), (445, 19540), (450, 19594), (456, 19663), (461, 19708), (462, 19711),

Gene: Toron\_20 Start: 17872, Stop: 20292, Start Num: 46

Candidate Starts for Toron\_20:

(46, 17872), (51, 17878), (54, 17884), (72, 17947), (80, 17971), (82, 17974), (96, 18037), (115, 18145), (120, 18154), (135, 18175), (136, 18184), (147, 18274), (152, 18319), (162, 18379), (180, 18475), (191, 18532), (197, 18556), (208, 18604), (210, 18613), (211, 18616), (219, 18664), (226, 18706), (231, 18730), (232, 18739), (233, 18745), (237, 18763), (240, 18784), (243, 18796), (246, 18814), (248, 18826), (251, 18859), (260, 18922), (262, 18925), (264, 18940), (265, 18952), (284, 19060), (287, 19084), (296, 19111), (298, 19117), (304, 19165), (310, 19189), (315, 19225), (316, 19231), (317, 19240), (336, 19354), (337, 19369), (353, 19447), (374, 19558), (375, 19573), (377, 19582), (392, 19669), (399, 19705), (405, 19741), (412, 19795), (442, 20032), (445, 20056), (456, 20179), (461, 20224), (468, 20257),

Gene: Totinger\_19 Start: 17189, Stop: 19726, Start Num: 18

Candidate Starts for Totinger\_19:

(Start: 18 @17189 has 221 MA's), (28, 17210), (Start: 38 @17231 has 1 MA's), (48, 17270), (71, 17339), (73, 17348), (74, 17351), (81, 17369), (91, 17417), (117, 17570), (120, 17579), (135, 17624), (147, 17723), (148, 17726), (Start: 159 @17792 has 1 MA's), (169, 17867), (170, 17873), (172, 17891), (178, 17915), (179, 17921), (180, 17924), (186, 17957), (187, 17963), (193, 17993), (199, 18014), (204, 18044), (206, 18053), (210, 18068), (211, 18071), (230, 18182), (231, 18185), (232, 18194), (233, 18200), (236, 18215), (237, 18218), (240, 18239), (246, 18269), (248, 18281), (251, 18314), (269, 18425), (270, 18428), (275, 18455), (276, 18461), (284, 18515), (285, 18518), (304, 18620), (307, 18632), (308, 18635), (320, 18701), (323, 18725), (325, 18746), (327, 18755), (339, 18815), (340, 18818), (348, 18854), (350, 18872), (353, 18884), (354, 18893), (359, 18920), (371, 18977), (373, 18989), (375, 19007), (377, 19016), (378, 19028), (383, 19064), (388, 19094), (392, 19103), (393, 19115), (405, 19175), (412, 19229), (419, 19289), (425, 19331), (442, 19466), (445, 19490), (450, 19544), (453, 19592), (459, 19634), (461, 19658), (462, 19661),

Gene: Toto\_26 Start: 22284, Stop: 24680, Start Num: 52

Candidate Starts for Toto\_26:

(Start: 52 @22284 has 123 MA's), (97, 22461), (Start: 101 @22482 has 20 MA's), (139, 22629), (160, 22770), (164, 22803), (169, 22836), (174, 22872), (193, 22965), (206, 23025), (211, 23043), (238, 23199), (242, 23220), (259, 23340), (262, 23352), (269, 23397), (304, 23592), (308, 23607), (315, 23652), (317, 23667), (348, 23823), (350, 23841), (352, 23850), (375, 23979), (376, 23982), (411, 24192), (413, 24204), (430, 24318), (453, 24534), (462, 24618), (467, 24642), (469, 24651),

Gene: Traaww1\_24 Start: 21929, Stop: 24325, Start Num: 52

Candidate Starts for Traaww1\_24:

(Start: 52 @21929 has 123 MA's), (97, 22106), (Start: 101 @22127 has 20 MA's), (139, 22274), (160, 22415), (164, 22448), (169, 22481), (174, 22517), (193, 22610), (206, 22670), (211, 22688), (225, 22769), (262, 22997), (269, 23042), (304, 23237), (305, 23243), (308, 23252), (315, 23297), (317, 23312), (348, 23468), (350, 23486), (352, 23495), (362, 23549), (375, 23624), (376, 23627), (411, 23837), (413, 23849), (430, 23963), (453, 24179), (462, 24263), (467, 24287), (469, 24296),

Gene: Troll4\_30 Start: 24317, Stop: 26587, Start Num: 101

Candidate Starts for Troll4\_30:

(Start: 101 @24317 has 20 MA's), (131, 24452), (133, 24461), (156, 24635), (158, 24641), (160, 24653), (185, 24806), (187, 24821), (190, 24836), (257, 25217), (258, 25223), (266, 25268), (282, 25355), (318, 25556), (319, 25562), (325, 25610), (331, 25640), (335, 25664), (365, 25853), (372, 25880), (378, 25928), (391, 26000), (399, 26039), (400, 26060), (403, 26075), (406, 26093), (408, 26123), (420, 26207), (451, 26408), (453, 26450), (474, 26576),

Gene: Tuco\_27 Start: 22799, Stop: 25195, Start Num: 52

Candidate Starts for Tuco\_27:

(Start: 52 @22799 has 123 MA's), (97, 22976), (Start: 101 @22997 has 20 MA's), (139, 23144), (160, 23285), (164, 23318), (169, 23351), (174, 23387), (193, 23480), (206, 23540), (211, 23558), (225, 23639), (262, 23867), (269, 23912), (304, 24107), (305, 24113), (308, 24122), (315, 24167), (317, 24182), (348, 24338), (350, 24356), (352, 24365), (362, 24419), (375, 24494), (376, 24497), (411, 24707), (413, 24719), (430, 24833), (453, 25049), (462, 25133), (467, 25157), (469, 25166),

Gene: Tweety\_18 Start: 17451, Stop: 19988, Start Num: 18

Candidate Starts for Tweety\_18:

(16, 17439), (Start: 18 @17451 has 221 MA's), (28, 17472), (Start: 38 @17493 has 1 MA's), (48, 17532), (71, 17601), (73, 17610), (74, 17613), (81, 17631), (89, 17664), (91, 17679), (99, 17727), (119, 17838), (120, 17841), (128, 17871), (135, 17886), (145, 17964), (148, 17988), (Start: 159 @18054 has 1 MA's), (165, 18099), (169, 18129), (170, 18135), (172, 18153), (178, 18177), (180, 18186), (186, 18219), (187, 18225), (193, 18255), (203, 18294), (204, 18306), (206, 18315), (210, 18330), (211, 18333), (230, 18444), (231, 18447), (232, 18456), (233, 18462), (236, 18477), (237, 18480), (240, 18501), (246, 18531), (248, 18543), (251, 18576), (262, 18642), (269, 18687), (270, 18690), (275, 18717), (276, 18723), (284, 18777), (285, 18780), (302, 18867), (304, 18882), (307, 18894), (308, 18897), (320, 18963), (323, 18987), (325, 19008), (327, 19017), (336, 19059), (339, 19077), (340, 19080), (348, 19116), (350, 19134), (353, 19146), (354, 19155), (359, 19182), (373, 19251), (375, 19269), (377, 19278), (378, 19290), (383, 19326), (388, 19356), (393, 19377), (399, 19401), (405, 19437), (412, 19491), (419, 19551), (425, 19593), (442, 19728), (445, 19752), (450, 19806), (453, 19854), (459, 19896), (461, 19920), (462, 19923),

Gene: Ukulele\_26 Start: 22042, Stop: 24438, Start Num: 52

Candidate Starts for Ukulele\_26:

(Start: 52 @22042 has 123 MA's), (97, 22219), (Start: 101 @22240 has 20 MA's), (139, 22387), (164, 22561), (169, 22594), (174, 22630), (193, 22723), (206, 22783), (211, 22801), (234, 22933), (242, 22978), (262, 23110), (269, 23155), (281, 23215), (301, 23329), (304, 23350), (312, 23389), (315, 23410), (317, 23425), (346, 23575), (348, 23581), (350, 23599), (361, 23653), (375, 23737), (392, 23830), (430, 24076), (453, 24292), (462, 24376), (469, 24409),

Gene: UncleRicky\_19 Start: 17219, Stop: 19756, Start Num: 18

Candidate Starts for UncleRicky\_19:

(16, 17207), (Start: 18 @17219 has 221 MA's), (28, 17240), (Start: 38 @17261 has 1 MA's), (48, 17300), (71, 17369), (73, 17378), (74, 17381), (81, 17399), (89, 17432), (91, 17447), (99, 17495), (117, 17600), (120, 17609), (134, 17651), (135, 17654), (145, 17732), (148, 17756), (Start: 159 @17822 has 1 MA's), (165, 17867), (169, 17897), (170, 17903), (172, 17921), (178, 17945), (180, 17954), (186, 17987), (187, 17993), (193, 18023), (203, 18062), (204, 18074), (206, 18083), (210, 18098), (211, 18101), (230, 18212), (232, 18224), (233, 18230), (236, 18245), (237, 18248), (240, 18269), (246, 18299), (248, 18311), (251, 18344), (262, 18410), (269, 18455), (270, 18458), (275, 18485), (276, 18491), (284, 18545), (285, 18548), (290, 18575), (304, 18650), (307, 18662), (308, 18665), (320, 18731), (323, 18755), (327, 18785), (336, 18827), (339, 18845), (340, 18848), (348, 18884), (350, 18902), (354, 18923), (359, 18950), (373, 19019), (375, 19037), (377, 19046), (378, 19058), (383, 19094), (388, 19124), (392, 19133), (393, 19145), (405, 19205), (412, 19259), (419, 19319), (425, 19361), (434, 19439), (442, 19496), (445, 19520), (450, 19574), (453, 19622), (459, 19664), (461, 19688), (462, 19691),

Gene: VRedHorse\_18 Start: 17564, Stop: 20101, Start Num: 18

Candidate Starts for VRedHorse\_18:

(16, 17552), (Start: 18 @17564 has 221 MA's), (28, 17585), (Start: 38 @17606 has 1 MA's), (47, 17642), (48, 17645), (71, 17714), (73, 17723), (74, 17726), (81, 17744), (89, 17777), (91, 17792), (99, 17840), (117, 17945), (119, 17951), (120, 17954), (134, 17996), (135, 17999), (148, 18101), (Start: 159 @18167 has 1 MA's), (165, 18212), (169, 18242), (170, 18248), (172, 18266), (178, 18290), (180, 18299), (186, 18332), (187, 18338), (199, 18389), (203, 18407), (204, 18419), (206, 18428), (210, 18443), (212, 18449), (230, 18557), (232, 18569), (233, 18575), (236, 18590), (237, 18593), (240, 18614), (246, 18644), (248, 18656), (251, 18689), (262, 18755), (269, 18800), (270, 18803), (275, 18830), (276, 18836), (284, 18890), (285, 18893), (304, 18995), (307, 19007), (308, 19010), (320, 19076), (323, 19100), (325, 19121), (327, 19130), (339, 19190), (340, 19193), (348, 19229), (350, 19247), (354, 19268), (359, 19295), (373, 19364), (375, 19382), (377, 19391), (378, 19403), (383, 19439), (393, 19490), (397, 19508), (405, 19550), (412, 19604), (425, 19706), (434, 19784), (442, 19841), (445, 19865), (450, 19919), (453, 19967), (461, 20033), (462, 20036),

Gene: Vagabond\_56 Start: 35926, Stop: 38436, Start Num: 35

Candidate Starts for Vagabond\_56:

(Start: 35 @35926 has 27 MA's), (42, 35959), (60, 36028), (61, 36031), (68, 36055), (74, 36079), (83, 36103), (89, 36136), (124, 36343), (127, 36355), (128, 36358), (151, 36505), (152, 36535), (Start: 159 @36559 has 1 MA's), (165, 36589), (166, 36592), (169, 36619), (172, 36643), (179, 36673), (189, 36730), (194, 36754), (203, 36790), (204, 36802), (210, 36826), (211, 36829), (217, 36871), (236, 36967), (237, 36970), (279, 37225), (304, 37369), (315, 37429), (324, 37501), (325, 37504), (344, 37600), (375, 37774), (378, 37795), (395, 37888), (398, 37900), (412, 37990), (423, 38065), (432, 38110), (455, 38311), (460, 38365), (465, 38380),

Gene: Veteran\_18 Start: 17402, Stop: 19939, Start Num: 18

Candidate Starts for Veteran\_18:

(Start: 18 @17402 has 221 MA's), (28, 17423), (Start: 38 @17444 has 1 MA's), (48, 17483), (71, 17552), (73, 17561), (74, 17564), (81, 17582), (89, 17615), (91, 17630), (117, 17783), (120, 17792), (135, 17837), (147, 17936), (148, 17939), (Start: 159 @18005 has 1 MA's), (169, 18080), (170, 18086), (178, 18128), (179, 18134), (180, 18137), (186, 18170), (187, 18176), (193, 18206), (199, 18227), (204, 18257), (206, 18266), (210, 18281), (211, 18284), (230, 18395), (231, 18398), (232, 18407), (233, 18413), (236, 18428), (237, 18431), (240, 18452), (246, 18482), (248, 18494), (251, 18527), (269, 18638), (270, 18641), (275, 18668), (276, 18674), (284, 18728), (285, 18731), (302, 18818), (304, 18833), (307, 18845), (308, 18848), (320, 18914), (323, 18938), (325, 18959), (327, 18968), (336, 19010), (339, 19028), (340, 19031), (346, 19061), (350, 19085), (353, 19097), (354, 19106), (373, 19202), (375, 19220), (377, 19229), (378, 19241), (383, 19277), (388, 19307), (392, 19316), (393, 19328), (405, 19388), (412, 19442), (419, 19502), (425, 19544), (442, 19679), (445, 19703), (450, 19757), (453, 19805), (459, 19847), (461, 19871), (462, 19874),

Gene: Visconti\_30 Start: 24326, Stop: 26596, Start Num: 101

Candidate Starts for Visconti\_30:

(Start: 101 @24326 has 20 MA's), (131, 24461), (133, 24470), (156, 24644), (158, 24650), (160, 24662), (185, 24815), (187, 24830), (190, 24845), (257, 25226), (258, 25232), (266, 25277), (282, 25364), (318, 25565), (319, 25571), (325, 25619), (331, 25649), (335, 25673), (365, 25862), (372, 25889), (378, 25937), (391, 26009), (399, 26048), (400, 26069), (403, 26084), (406, 26102), (408, 26132), (420, 26216), (451, 26417), (453, 26459), (474, 26585),

Gene: Vorrps\_58 Start: 36138, Stop: 38648, Start Num: 35

Candidate Starts for Vorrps\_58:

(Start: 35 @36138 has 27 MA's), (42, 36171), (60, 36240), (61, 36243), (68, 36267), (74, 36291), (83, 36315), (89, 36348), (124, 36555), (127, 36567), (128, 36570), (151, 36717), (152, 36747), (Start: 159

@36771 has 1 MA's), (165, 36801), (166, 36804), (169, 36831), (172, 36855), (179, 36885), (189, 36942), (194, 36966), (203, 37002), (204, 37014), (210, 37038), (211, 37041), (217, 37083), (236, 37179), (237, 37182), (279, 37437), (304, 37581), (315, 37641), (324, 37713), (325, 37716), (344, 37812), (375, 37986), (378, 38007), (395, 38100), (398, 38112), (412, 38202), (423, 38277), (432, 38322), (455, 38523), (460, 38577), (465, 38592),

Gene: Wachhund\_18 Start: 17422, Stop: 19959, Start Num: 18

Candidate Starts for Wachhund\_18:

(Start: 18 @17422 has 221 MA's), (28, 17443), (Start: 38 @17464 has 1 MA's), (48, 17503), (71, 17572), (73, 17581), (74, 17584), (81, 17602), (91, 17650), (119, 17809), (120, 17812), (135, 17857), (145, 17935), (147, 17956), (148, 17959), (Start: 159 @18025 has 1 MA's), (169, 18100), (170, 18106), (178, 18148), (179, 18154), (180, 18157), (186, 18190), (187, 18196), (193, 18226), (199, 18247), (204, 18277), (206, 18286), (226, 18394), (230, 18415), (231, 18418), (232, 18427), (233, 18433), (236, 18448), (237, 18451), (240, 18472), (246, 18502), (248, 18514), (251, 18547), (269, 18658), (270, 18661), (275, 18688), (276, 18694), (284, 18748), (285, 18751), (302, 18838), (304, 18853), (307, 18865), (308, 18868), (320, 18934), (325, 18979), (327, 18988), (339, 19048), (340, 19051), (348, 19087), (350, 19105), (353, 19117), (354, 19126), (359, 19153), (373, 19222), (375, 19240), (377, 19249), (378, 19261), (383, 19297), (388, 19327), (393, 19348), (399, 19372), (405, 19408), (412, 19462), (419, 19522), (425, 19564), (442, 19699), (445, 19723), (450, 19777), (453, 19825), (459, 19867), (461, 19891), (462, 19894),

Gene: WaldoWhy\_31 Start: 24322, Stop: 26592, Start Num: 101

Candidate Starts for WaldoWhy\_31:

(Start: 101 @24322 has 20 MA's), (131, 24457), (133, 24466), (156, 24640), (158, 24646), (160, 24658), (185, 24811), (187, 24826), (190, 24841), (257, 25222), (258, 25228), (266, 25273), (282, 25360), (318, 25561), (319, 25567), (325, 25615), (331, 25645), (335, 25669), (365, 25858), (372, 25885), (378, 25933), (391, 26005), (399, 26044), (400, 26065), (403, 26080), (406, 26098), (408, 26128), (420, 26212), (451, 26413), (453, 26455), (474, 26581),

Gene: Wanda\_39 Start: 29807, Stop: 32362, Start Num: 18

Candidate Starts for Wanda\_39:

(Start: 18 @29807 has 221 MA's), (81, 30002), (89, 30038), (91, 30053), (99, 30101), (119, 30212), (120, 30215), (128, 30245), (135, 30260), (145, 30338), (148, 30362), (Start: 159 @30428 has 1 MA's), (165, 30473), (169, 30503), (170, 30509), (172, 30527), (178, 30551), (180, 30560), (186, 30593), (187, 30599), (193, 30629), (203, 30668), (204, 30680), (206, 30689), (210, 30704), (211, 30707), (230, 30818), (231, 30821), (232, 30830), (233, 30836), (236, 30851), (237, 30854), (240, 30875), (246, 30905), (248, 30917), (251, 30950), (262, 31016), (269, 31061), (270, 31064), (275, 31091), (276, 31097), (284, 31151), (285, 31154), (302, 31241), (304, 31256), (307, 31268), (308, 31271), (320, 31337), (325, 31382), (327, 31391), (339, 31451), (340, 31454), (348, 31490), (350, 31508), (353, 31520), (354, 31529), (359, 31556), (373, 31625), (375, 31643), (377, 31652), (378, 31664), (383, 31700), (388, 31730), (393, 31751), (399, 31775), (405, 31811), (412, 31865), (419, 31925), (425, 31967), (442, 32102), (445, 32126), (450, 32180), (453, 32228), (459, 32270), (461, 32294), (462, 32297),

Gene: Wee\_19 Start: 17971, Stop: 20508, Start Num: 18

Candidate Starts for Wee\_19:

(16, 17959), (Start: 18 @17971 has 221 MA's), (28, 17992), (Start: 38 @18013 has 1 MA's), (48, 18052), (71, 18121), (73, 18130), (74, 18133), (81, 18151), (89, 18184), (91, 18199), (99, 18247), (117, 18352), (119, 18358), (120, 18361), (134, 18403), (135, 18406), (145, 18484), (Start: 159 @18574 has 1 MA's), (165, 18619), (169, 18649), (170, 18655), (172, 18673), (178, 18697), (180, 18706), (186, 18739), (187, 18745), (193, 18775), (203, 18814), (204, 18826), (206, 18835), (210, 18850), (211, 18853), (230, 18964), (231, 18967), (232, 18976), (233, 18982), (236, 18997), (237, 19000), (240, 19021), (246, 19051), (248, 19063), (251, 19096), (262, 19162), (269, 19207), (270,

19210), (275, 19237), (276, 19243), (284, 19297), (285, 19300), (302, 19387), (304, 19402), (307, 19414), (308, 19417), (320, 19483), (325, 19528), (327, 19537), (339, 19597), (340, 19600), (348, 19636), (350, 19654), (353, 19666), (354, 19675), (359, 19702), (373, 19771), (375, 19789), (377, 19798), (378, 19810), (383, 19846), (388, 19876), (393, 19897), (399, 19921), (405, 19957), (412, 20011), (419, 20071), (425, 20113), (442, 20248), (445, 20272), (450, 20326), (453, 20374), (459, 20416), (461, 20440), (462, 20443),

Gene: Weirido19\_22 Start: 19521, Stop: 21416, Start Num: 162

Candidate Starts for Weirido19\_22:

(161, 19515), (162, 19521), (182, 19635), (184, 19647), (207, 19758), (213, 19779), (216, 19800), (218, 19818), (244, 19962), (246, 19971), (248, 19986), (258, 20070), (278, 20175), (286, 20232), (288, 20247), (291, 20256), (292, 20259), (294, 20265), (309, 20337), (312, 20361), (314, 20376), (332, 20490), (335, 20511), (352, 20616), (360, 20667), (362, 20679), (366, 20703), (386, 20808), (391, 20829), (404, 20898), (413, 20964), (415, 20988), (451, 21234), (456, 21297), (464, 21357), (469, 21387), (471, 21393), (474, 21405),

Gene: Whatsapiecost\_18 Start: 17447, Stop: 19984, Start Num: 18

Candidate Starts for Whatsapiecost\_18:

(16, 17435), (Start: 18 @17447 has 221 MA's), (28, 17468), (Start: 38 @17489 has 1 MA's), (48, 17528), (71, 17597), (73, 17606), (74, 17609), (81, 17627), (89, 17660), (91, 17675), (99, 17723), (119, 17834), (120, 17837), (128, 17867), (134, 17879), (135, 17882), (145, 17960), (148, 17984), (Start: 159 @18050 has 1 MA's), (165, 18095), (169, 18125), (170, 18131), (172, 18149), (178, 18173), (180, 18182), (186, 18215), (187, 18221), (193, 18251), (203, 18290), (204, 18302), (206, 18311), (210, 18326), (211, 18329), (230, 18440), (231, 18443), (232, 18452), (233, 18458), (236, 18473), (237, 18476), (240, 18497), (246, 18527), (248, 18539), (251, 18572), (269, 18683), (270, 18686), (275, 18713), (276, 18719), (284, 18773), (285, 18776), (304, 18878), (307, 18890), (308, 18893), (320, 18959), (323, 18983), (325, 19004), (327, 19013), (339, 19073), (340, 19076), (348, 19112), (350, 19130), (353, 19142), (354, 19151), (359, 19178), (373, 19247), (375, 19265), (377, 19274), (378, 19286), (383, 19322), (388, 19352), (393, 19373), (399, 19397), (405, 19433), (412, 19487), (419, 19547), (425, 19589), (434, 19667), (442, 19724), (445, 19748), (450, 19802), (453, 19850), (459, 19892), (461, 19916), (462, 19919),

Gene: Whouxphf\_18 Start: 17504, Stop: 20041, Start Num: 18

Candidate Starts for Whouxphf\_18:

(Start: 18 @17504 has 221 MA's), (28, 17525), (Start: 38 @17546 has 1 MA's), (48, 17585), (71, 17654), (73, 17663), (74, 17666), (81, 17684), (91, 17732), (119, 17891), (120, 17894), (135, 17939), (147, 18038), (148, 18041), (169, 18182), (170, 18188), (178, 18230), (179, 18236), (180, 18239), (186, 18272), (187, 18278), (193, 18308), (199, 18329), (204, 18359), (206, 18368), (226, 18476), (229, 18488), (230, 18497), (231, 18500), (232, 18509), (233, 18515), (236, 18530), (237, 18533), (240, 18554), (248, 18596), (251, 18629), (275, 18770), (276, 18776), (284, 18830), (285, 18833), (290, 18860), (304, 18935), (307, 18947), (308, 18950), (320, 19016), (323, 19040), (325, 19061), (327, 19070), (336, 19112), (339, 19130), (340, 19133), (346, 19163), (350, 19187), (354, 19208), (373, 19304), (375, 19322), (377, 19331), (378, 19343), (383, 19379), (388, 19409), (392, 19418), (393, 19430), (405, 19490), (425, 19646), (434, 19724), (442, 19781), (445, 19805), (450, 19859), (453, 19907), (456, 19928), (461, 19973), (462, 19976),

Gene: Wiggin\_29 Start: 22788, Stop: 25184, Start Num: 52

Candidate Starts for Wiggin\_29:

(Start: 52 @22788 has 123 MA's), (97, 22965), (Start: 101 @22986 has 20 MA's), (139, 23133), (164, 23307), (169, 23340), (174, 23376), (193, 23469), (206, 23529), (211, 23547), (234, 23679), (242, 23724), (262, 23856), (269, 23901), (281, 23961), (301, 24075), (304, 24096), (312, 24135), (315, 24156), (317, 24171), (346, 24321), (348, 24327), (350, 24345), (361, 24399), (375, 24483), (392, 24576), (430, 24822), (453, 25038), (462, 25122), (469, 25155),

Gene: Wildcat\_43 Start: 28342, Stop: 30909, Start Num: 26

Candidate Starts for Wildcat\_43:

(Start: 26 @28342 has 6 MA's), (43, 28411), (77, 28534), (79, 28540), (81, 28543), (88, 28567), (90, 28588), (116, 28744), (118, 28750), (120, 28756), (128, 28786), (129, 28792), (135, 28813), (136, 28822), (144, 28882), (153, 28960), (170, 29059), (175, 29092), (179, 29107), (180, 29110), (187, 29149), (199, 29200), (203, 29218), (206, 29239), (208, 29245), (214, 29272), (217, 29299), (230, 29368), (235, 29392), (238, 29413), (242, 29434), (244, 29443), (248, 29464), (251, 29497), (252, 29500), (259, 29551), (262, 29563), (273, 29629), (277, 29647), (283, 29686), (304, 29803), (313, 29848), (322, 29905), (325, 29929), (327, 29938), (329, 29956), (339, 30001), (346, 30034), (351, 30070), (382, 30244), (383, 30262), (384, 30268), (396, 30325), (441, 30649), (443, 30667), (448, 30718), (454, 30781), (461, 30856),

Gene: Wildflower\_58 Start: 35650, Stop: 38160, Start Num: 35

Candidate Starts for Wildflower\_58:

(Start: 35 @35650 has 27 MA's), (42, 35683), (60, 35752), (61, 35755), (68, 35779), (74, 35803), (83, 35827), (89, 35860), (124, 36067), (127, 36079), (128, 36082), (151, 36229), (152, 36259), (Start: 159 @36283 has 1 MA's), (165, 36313), (166, 36316), (169, 36343), (172, 36367), (179, 36397), (189, 36454), (203, 36514), (204, 36526), (210, 36550), (211, 36553), (217, 36595), (236, 36691), (237, 36694), (279, 36949), (304, 37093), (315, 37153), (324, 37225), (325, 37228), (344, 37324), (375, 37498), (378, 37519), (395, 37612), (398, 37624), (412, 37714), (423, 37789), (432, 37834), (455, 38035), (460, 38089), (465, 38104),

Gene: WillSterrel\_19 Start: 18757, Stop: 21294, Start Num: 18

Candidate Starts for WillSterrel\_19:

(Start: 18 @18757 has 221 MA's), (28, 18778), (Start: 38 @18799 has 1 MA's), (48, 18838), (71, 18907), (73, 18916), (74, 18919), (81, 18937), (91, 18985), (117, 19138), (120, 19147), (135, 19192), (147, 19291), (148, 19294), (Start: 159 @19360 has 1 MA's), (169, 19435), (170, 19441), (172, 19459), (178, 19483), (179, 19489), (180, 19492), (186, 19525), (187, 19531), (193, 19561), (199, 19582), (204, 19612), (206, 19621), (210, 19636), (211, 19639), (230, 19750), (231, 19753), (232, 19762), (233, 19768), (236, 19783), (237, 19786), (240, 19807), (246, 19837), (248, 19849), (251, 19882), (269, 19993), (270, 19996), (275, 20023), (276, 20029), (284, 20083), (285, 20086), (302, 20173), (304, 20188), (307, 20200), (308, 20203), (320, 20269), (323, 20293), (325, 20314), (327, 20323), (339, 20383), (340, 20386), (348, 20422), (350, 20440), (353, 20452), (354, 20461), (359, 20488), (371, 20545), (373, 20557), (375, 20575), (377, 20584), (378, 20596), (383, 20632), (388, 20662), (392, 20671), (393, 20683), (405, 20743), (412, 20797), (419, 20857), (425, 20899), (442, 21034), (445, 21058), (450, 21112), (453, 21160), (459, 21202), (461, 21226), (462, 21229),

Gene: Willez\_25 Start: 21788, Stop: 24184, Start Num: 52

Candidate Starts for Willez\_25:

(Start: 52 @21788 has 123 MA's), (97, 21965), (Start: 101 @21986 has 20 MA's), (139, 22133), (160, 22274), (164, 22307), (169, 22340), (174, 22376), (193, 22469), (206, 22529), (211, 22547), (234, 22679), (242, 22724), (262, 22856), (269, 22901), (281, 22961), (301, 23075), (304, 23096), (312, 23135), (315, 23156), (317, 23171), (346, 23321), (348, 23327), (350, 23345), (361, 23399), (375, 23483), (392, 23576), (430, 23822), (453, 24038), (462, 24122), (469, 24155),

Gene: Winget\_59 Start: 36356, Stop: 38866, Start Num: 35

Candidate Starts for Winget\_59:

(Start: 35 @36356 has 27 MA's), (42, 36389), (60, 36458), (61, 36461), (68, 36485), (74, 36509), (83, 36533), (89, 36566), (124, 36773), (127, 36785), (128, 36788), (151, 36935), (152, 36965), (Start: 159 @36989 has 1 MA's), (165, 37019), (166, 37022), (169, 37049), (172, 37073), (179, 37103), (189, 37160), (194, 37184), (203, 37220), (204, 37232), (210, 37256), (211, 37259), (217, 37301), (236, 37397), (237, 37400), (279, 37655), (304, 37799), (315, 37859), (324, 37931), (325, 37934), (344,

38030), (375, 38204), (378, 38225), (395, 38318), (398, 38330), (412, 38420), (423, 38495), (432, 38540), (455, 38741), (460, 38795), (465, 38810),

Gene: XFactor\_18 Start: 17403, Stop: 19940, Start Num: 18

Candidate Starts for XFactor\_18:

(16, 17391), (Start: 18 @17403 has 221 MA's), (28, 17424), (Start: 38 @17445 has 1 MA's), (48, 17484), (71, 17553), (73, 17562), (74, 17565), (81, 17583), (89, 17616), (91, 17631), (99, 17679), (119, 17790), (120, 17793), (128, 17823), (135, 17838), (145, 17916), (148, 17940), (Start: 159 @18006 has 1 MA's), (165, 18051), (169, 18081), (170, 18087), (172, 18105), (178, 18129), (180, 18138), (186, 18171), (187, 18177), (193, 18207), (203, 18246), (204, 18258), (206, 18267), (210, 18282), (211, 18285), (230, 18396), (231, 18399), (232, 18408), (233, 18414), (236, 18429), (237, 18432), (240, 18453), (246, 18483), (248, 18495), (251, 18528), (269, 18639), (270, 18642), (275, 18669), (276, 18675), (284, 18729), (285, 18732), (304, 18834), (307, 18846), (308, 18849), (320, 18915), (323, 18939), (325, 18960), (327, 18969), (339, 19029), (340, 19032), (348, 19068), (350, 19086), (353, 19098), (354, 19107), (359, 19134), (373, 19203), (375, 19221), (377, 19230), (378, 19242), (383, 19278), (388, 19308), (393, 19329), (399, 19353), (405, 19389), (412, 19443), (419, 19503), (425, 19545), (434, 19623), (442, 19680), (445, 19704), (450, 19758), (453, 19806), (459, 19848), (461, 19872), (462, 19875),

Gene: Xandras\_28 Start: 22274, Stop: 24670, Start Num: 52

Candidate Starts for Xandras\_28:

(Start: 52 @22274 has 123 MA's), (97, 22451), (Start: 101 @22472 has 20 MA's), (139, 22619), (164, 22793), (169, 22826), (174, 22862), (193, 22955), (206, 23015), (211, 23033), (234, 23165), (242, 23210), (262, 23342), (269, 23387), (281, 23447), (301, 23561), (304, 23582), (312, 23621), (315, 23642), (317, 23657), (346, 23807), (348, 23813), (350, 23831), (361, 23885), (375, 23969), (392, 24062), (430, 24308), (453, 24524), (462, 24608), (469, 24641),

Gene: YassJohnny\_27 Start: 22799, Stop: 25195, Start Num: 52

Candidate Starts for YassJohnny\_27:

(Start: 52 @22799 has 123 MA's), (97, 22976), (Start: 101 @22997 has 20 MA's), (139, 23144), (160, 23285), (164, 23318), (169, 23351), (174, 23387), (193, 23480), (206, 23540), (211, 23558), (234, 23690), (242, 23735), (262, 23867), (269, 23912), (301, 24086), (304, 24107), (312, 24146), (315, 24167), (317, 24182), (348, 24338), (350, 24356), (361, 24410), (375, 24494), (392, 24587), (430, 24833), (453, 25049), (462, 25133), (469, 25166),

Gene: Yorick\_18 Start: 17404, Stop: 19956, Start Num: 18

Candidate Starts for Yorick\_18:

(Start: 18 @17404 has 221 MA's), (48, 17485), (71, 17554), (73, 17563), (74, 17566), (81, 17584), (91, 17632), (98, 17677), (119, 17791), (120, 17794), (123, 17806), (132, 17827), (134, 17836), (135, 17839), (142, 17887), (145, 17917), (152, 17983), (160, 18016), (165, 18052), (168, 18076), (179, 18136), (180, 18139), (183, 18157), (197, 18220), (199, 18223), (203, 18241), (206, 18262), (211, 18280), (216, 18307), (219, 18328), (225, 18361), (232, 18403), (233, 18409), (234, 18412), (237, 18427), (241, 18454), (242, 18457), (246, 18478), (248, 18490), (251, 18523), (265, 18616), (284, 18724), (287, 18748), (290, 18754), (295, 18772), (296, 18775), (299, 18799), (304, 18829), (310, 18853), (315, 18889), (316, 18895), (317, 18904), (322, 18931), (333, 18994), (336, 19018), (337, 19033), (346, 19075), (355, 19126), (374, 19222), (375, 19237), (377, 19246), (380, 19270), (392, 19333), (399, 19369), (440, 19675), (445, 19720), (453, 19822),

Gene: Yoshi\_24 Start: 17092, Stop: 19641, Start Num: 11

Candidate Starts for Yoshi\_24:

(9, 17083), (Start: 11 @17092 has 7 MA's), (Start: 18 @17152 has 221 MA's), (31, 17185), (33, 17188), (58, 17257), (66, 17287), (108, 17467), (112, 17482), (120, 17518), (121, 17524), (132, 17545), (137, 17569), (141, 17593), (162, 17740), (165, 17749), (169, 17773), (172, 17797), (178,

17821), (179, 17827), (183, 17848), (187, 17869), (193, 17899), (201, 17929), (204, 17950), (223, 18043), (225, 18058), (226, 18067), (230, 18088), (231, 18091), (246, 18175), (247, 18178), (248, 18187), (252, 18223), (256, 18262), (260, 18283), (262, 18286), (268, 18322), (272, 18343), (284, 18421), (285, 18424), (298, 18478), (307, 18538), (321, 18625), (323, 18631), (324, 18649), (325, 18652), (334, 18688), (343, 18742), (346, 18751), (358, 18829), (362, 18847), (368, 18883), (369, 18886), (373, 18904), (374, 18907), (375, 18922), (383, 18979), (385, 18991), (399, 19054), (405, 19087), (414, 19174), (422, 19222), (424, 19246), (429, 19273), (430, 19282), (433, 19321), (438, 19360), (442, 19384), (444, 19405), (453, 19501), (456, 19522), (465, 19585), (469, 19612), (472, 19621),

Gene: Youngblood\_26 Start: 22452, Stop: 24848, Start Num: 52

Candidate Starts for Youngblood\_26:

(Start: 52 @22452 has 123 MA's), (97, 22629), (Start: 101 @22650 has 20 MA's), (139, 22797), (160, 22938), (164, 22971), (169, 23004), (174, 23040), (193, 23133), (206, 23193), (211, 23211), (234, 23343), (242, 23388), (262, 23520), (269, 23565), (281, 23625), (301, 23739), (304, 23760), (312, 23799), (315, 23820), (317, 23835), (348, 23991), (350, 24009), (361, 24063), (375, 24147), (392, 24240), (430, 24486), (453, 24702), (462, 24786), (469, 24819),

Gene: YungJamal\_63 Start: 37548, Stop: 40058, Start Num: 35

Candidate Starts for YungJamal\_63:

(Start: 35 @37548 has 27 MA's), (42, 37581), (60, 37650), (61, 37653), (68, 37677), (74, 37701), (83, 37725), (89, 37758), (124, 37965), (127, 37977), (128, 37980), (151, 38127), (152, 38157), (Start: 159 @38181 has 1 MA's), (165, 38211), (166, 38214), (169, 38241), (172, 38265), (179, 38295), (189, 38352), (203, 38412), (204, 38424), (210, 38448), (211, 38451), (217, 38493), (236, 38589), (237, 38592), (279, 38847), (304, 38991), (315, 39051), (324, 39123), (325, 39126), (344, 39222), (375, 39396), (378, 39417), (395, 39510), (398, 39522), (412, 39612), (423, 39687), (432, 39732), (455, 39933), (460, 39987), (465, 40002),

Gene: Zakhe101\_58 Start: 36194, Stop: 38704, Start Num: 35

Candidate Starts for Zakhe101\_58:

(Start: 35 @36194 has 27 MA's), (42, 36227), (60, 36296), (61, 36299), (68, 36323), (74, 36347), (83, 36371), (89, 36404), (124, 36611), (127, 36623), (128, 36626), (151, 36773), (152, 36803), (Start: 159 @36827 has 1 MA's), (165, 36857), (166, 36860), (169, 36887), (172, 36911), (179, 36941), (189, 36998), (203, 37058), (204, 37070), (210, 37094), (211, 37097), (217, 37139), (236, 37235), (237, 37238), (279, 37493), (304, 37637), (315, 37697), (324, 37769), (325, 37772), (344, 37868), (375, 38042), (378, 38063), (395, 38156), (398, 38168), (412, 38258), (423, 38333), (432, 38378), (455, 38579), (460, 38633), (465, 38648),

Gene: Zapner\_25 Start: 17617, Stop: 20169, Start Num: 11

Candidate Starts for Zapner\_25:

(9, 17608), (Start: 11 @17617 has 7 MA's), (Start: 18 @17677 has 221 MA's), (33, 17713), (66, 17812), (100, 17953), (108, 17992), (112, 18007), (120, 18043), (121, 18049), (122, 18052), (132, 18070), (137, 18094), (141, 18118), (142, 18121), (162, 18265), (165, 18274), (169, 18298), (172, 18322), (178, 18346), (179, 18352), (183, 18373), (184, 18376), (187, 18394), (193, 18427), (201, 18457), (204, 18478), (223, 18571), (225, 18586), (226, 18595), (230, 18616), (231, 18619), (238, 18661), (246, 18703), (247, 18706), (248, 18715), (250, 18742), (252, 18751), (256, 18790), (260, 18811), (262, 18814), (268, 18850), (272, 18871), (284, 18949), (285, 18952), (298, 19006), (307, 19066), (321, 19153), (323, 19159), (325, 19180), (334, 19216), (343, 19270), (346, 19279), (358, 19357), (362, 19375), (368, 19411), (369, 19414), (373, 19432), (375, 19450), (383, 19507), (385, 19519), (399, 19582), (405, 19615), (414, 19702), (422, 19750), (424, 19774), (430, 19810), (433, 19849), (438, 19888), (442, 19912), (444, 19933), (453, 20029), (456, 20050), (463, 20110), (465, 20113), (469, 20140),

Gene: Zerg\_18 Start: 17367, Stop: 19904, Start Num: 18

Candidate Starts for Zerg\_18:

(Start: 18 @17367 has 221 MA's), (55, 17457), (71, 17517), (73, 17526), (74, 17529), (81, 17547), (91, 17595), (117, 17748), (120, 17757), (135, 17802), (147, 17901), (148, 17904), (Start: 159 @17970 has 1 MA's), (169, 18045), (170, 18051), (172, 18069), (178, 18093), (179, 18099), (180, 18102), (186, 18135), (187, 18141), (193, 18171), (199, 18192), (204, 18222), (206, 18231), (210, 18246), (211, 18249), (230, 18360), (231, 18363), (232, 18372), (233, 18378), (236, 18393), (237, 18396), (240, 18417), (246, 18447), (248, 18459), (251, 18492), (269, 18603), (270, 18606), (275, 18633), (276, 18639), (284, 18693), (285, 18696), (302, 18783), (304, 18798), (307, 18810), (308, 18813), (320, 18879), (323, 18903), (325, 18924), (327, 18933), (339, 18993), (340, 18996), (348, 19032), (350, 19050), (353, 19062), (354, 19071), (359, 19098), (371, 19155), (373, 19167), (375, 19185), (377, 19194), (378, 19206), (383, 19242), (388, 19272), (392, 19281), (393, 19293), (405, 19353), (412, 19407), (419, 19467), (425, 19509), (442, 19644), (445, 19668), (450, 19722), (453, 19770), (459, 19812), (461, 19836), (462, 19839),

Gene: Zizzle\_18 Start: 17375, Stop: 19900, Start Num: 18

Candidate Starts for Zizzle\_18:

(Start: 18 @17375 has 221 MA's), (48, 17456), (71, 17525), (73, 17534), (74, 17537), (81, 17555), (91, 17603), (98, 17648), (119, 17762), (120, 17765), (132, 17798), (135, 17810), (145, 17888), (152, 17954), (160, 17987), (167, 18041), (169, 18053), (179, 18107), (180, 18110), (181, 18119), (188, 18152), (197, 18191), (199, 18194), (202, 18209), (203, 18212), (208, 18239), (209, 18245), (210, 18248), (211, 18251), (216, 18278), (218, 18296), (219, 18299), (232, 18374), (236, 18395), (237, 18398), (241, 18425), (246, 18449), (251, 18494), (252, 18497), (259, 18548), (270, 18611), (272, 18620), (276, 18644), (296, 18749), (297, 18752), (304, 18803), (305, 18809), (307, 18815), (308, 18818), (315, 18863), (317, 18878), (322, 18905), (325, 18929), (336, 18980), (339, 18998), (340, 19001), (341, 19013), (353, 19067), (375, 19190), (384, 19253), (397, 19316), (407, 19391), (435, 19592), (458, 19802), (464, 19841), (465, 19844),

Gene: xkcd\_27 Start: 22453, Stop: 24849, Start Num: 52

Candidate Starts for xkcd\_27:

(Start: 52 @22453 has 123 MA's), (97, 22630), (Start: 101 @22651 has 20 MA's), (139, 22798), (160, 22939), (164, 22972), (169, 23005), (174, 23041), (193, 23134), (206, 23194), (211, 23212), (234, 23344), (242, 23389), (262, 23521), (269, 23566), (301, 23740), (304, 23761), (312, 23800), (315, 23821), (317, 23836), (348, 23992), (350, 24010), (361, 24064), (375, 24148), (392, 24241), (430, 24487), (453, 24703), (462, 24787), (469, 24820),