

Pham 224222

|                       |    |    |         |                 |                             |                                     |             |     |             |         |     |     |     |         |
|-----------------------|----|----|---------|-----------------|-----------------------------|-------------------------------------|-------------|-----|-------------|---------|-----|-----|-----|---------|
| 1: Marsha_24          | 7  | 88 | 130,142 | 168,161,174,164 | 222,209,221,222,212,201,202 | 313,310,314                         | 360,357,376 | 388 | 411         | 484     | 463 | 485 | 499 | 507,513 |
| 2: Paraselene_23      | 7  | 88 | 130,142 | 168,161,164     | 222,209,221,222,212,201,202 | 313,310,314                         | 360,357,376 | 388 | 408,411     | 484     | 463 | 485 | 499 | 507,513 |
| 3: STLScum_25         | 7  | 88 | 130,142 | 168,161,164     | 222,209,221,222,212,201,202 | 313,310,314                         | 360,357,376 | 388 | 408,411     | 484     | 463 | 485 | 499 | 507,513 |
| 4: Paphu_23           | 7  | 88 | 130,142 | 168,161,164     | 222,209,221,222,212,201,202 | 313,310,314                         | 360,357,376 | 388 | 408,411     | 484     | 463 | 485 | 499 | 507,513 |
| 5: Gwendoluna_26 + 2  | 7  | 88 | 130,142 | 168,161,164     | 222,209,221,222,212,201,202 | 313,310,314                         | 360,357,376 | 388 | 408,411     | 484     | 463 | 485 | 499 | 507,513 |
| 6: Ruotula_23         | 19 | 83 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 7: Steam_27           | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 8: Pharaoh_26         | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 9: Zimmer_26          | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 10: Dartnigader       | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 11: Refugee_29        | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 12: 40AC_29           | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 13: Kimona_22         | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 14: SemperFi_28 + 5   | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 15: AbbyPaige_28      | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 16: Daimatian_26 + 1  | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 17: JoshKayV_28       | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 18: AN18_29 + 3       | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 19: StarStuff_29      | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 20: MajorMajor_25 + 2 | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 21: DudeLittle_26     | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 22: Miko_29           | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 23: AnnaL29_29        | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 24: GaugeLDP_28       | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 25: Trooper_26        | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 26: Baehexic_27 + 6   | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 27: Tomathan_29 + 1   | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 28: BenVoito_26 + 1   | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 29: BengiVuitton_27   | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 30: Turbido_28        | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 31: Naji_29 + 3       | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 32: Bugsy_28 + 1      | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 33: AN3_26 + 1        | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 34: Superchunk_25     | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 35: Kaipine_29        | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 36: Jsquared_26       | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 37: DBQu4n_29 + 1     | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 38: Sknot_27          | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 39: Odin_25           | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 40: Larenn_27         | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 41: Delons_27         | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 42: Drake55_28        | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 43: NaSiTaire_26      | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 44: KingCyrus_28 + 1  | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 45: Loser_29          | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 46: Anselm_26         | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 47: Malec_27          | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 48: NicoleTera_30     | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 49: LadyBird_26       | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |
| 50: Centaur_28        | 7  | 88 | 93,91   | 116             | 130,142,150,161,164         | 201,213,222,209,221,222,212,201,202 | 303,333,310 | 370 | 388,391,406 | 410,423 | 484 | 463 | 499 | 507,513 |









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 224222 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224222 has 303 members, 41 are drafts.

Phages represented in each track:

- Track 1 : Marsha\_24
- Track 2 : Paraselene\_23
- Track 3 : STLscum\_25
- Track 4 : Paphu\_23
- Track 5 : Gwendoluna\_26, Blue\_24, LilBib\_25
- Track 6 : Ruotula\_23
- Track 7 : Steamy\_27
- Track 8 : Pharaoh\_26
- Track 9 : Zimmer\_28
- Track 10 : DARTHPhader\_27
- Track 11 : Refuge\_29
- Track 12 : 40AC\_29
- Track 13 : Kimona\_22
- Track 14 : SemperFi\_28, SweetiePie\_26, QueenBeesly\_26, Georgie2\_27, Crucio\_26, FiringLine\_26
- Track 15 : AbbyPaige\_28
- Track 16 : Dalmatian\_26, Retro23\_26
- Track 17 : JoshKayV\_28
- Track 18 : ANI8\_29, AN9\_29, C3\_24, VC3\_29
- Track 19 : StarStuff\_29
- Track 20 : MajorMajor\_25, Bradman\_25, Quokka\_24
- Track 21 : DudeLittle\_26
- Track 22 : Miko\_29
- Track 23 : AnnaL29\_29
- Track 24 : GaugeLDP\_28
- Track 25 : Trooper\_26
- Track 26 : Baehexic\_27, Gratitude\_27, Terrific\_30, Equemioh13\_28, MiculUcigas\_26, WideWale\_28, Updawg\_28
- Track 27 : Tomathan\_29, Kerberos\_29
- Track 28 : Benvolio\_26, Echild\_26
- Track 29 : BengiVuitton\_27
- Track 30 : Turbido\_28
- Track 31 : Naji\_29, D29\_26, D32\_29, Travvers\_29
- Track 32 : Buggy\_28, Agape74\_28
- Track 33 : AN3\_26, VA6\_26
- Track 34 : Superchunk\_25
- Track 35 : Kalpine\_29

- Track 36 : Jsquared\_25
- Track 37 : DBQu4n\_29, Duplo\_29
- Track 38 : Sknot\_27
- Track 39 : Odin\_25
- Track 40 : Larenn\_27
- Track 41 : Deloris\_27
- Track 42 : Drake55\_28
- Track 43 : NaSiaTalie\_26
- Track 44 : KingCyrus\_28, ChipMunk\_28
- Track 45 : Loser\_29
- Track 46 : Anselm\_26
- Track 47 : Malec\_27
- Track 48 : NicoleTera\_30
- Track 49 : LadyBird\_26
- Track 50 : Centaur\_28
- Track 51 : Dignity\_28
- Track 52 : Leogania\_28
- Track 53 : RedRock\_29
- Track 54 : Koduck\_26
- Track 55 : Fameo\_26, QueenB2\_26
- Track 56 : Journey13\_24
- Track 57 : Acolyte\_26
- Track 58 : EvilGenius\_28
- Track 59 : LionsBait\_27
- Track 60 : 20ES\_26
- Track 61 : Colin\_30
- Track 62 : Rachaly\_29
- Track 63 : Lokk\_29
- Track 64 : Caraxes\_25
- Track 65 : Adzzy\_27
- Track 66 : Serenity\_25
- Track 67 : BiancaTri92\_28
- Track 68 : EZMoney23\_30
- Track 69 : WeiHuaDA\_32
- Track 70 : Changeling\_28
- Track 71 : Leviathan\_28
- Track 72 : Flare16\_26
- Track 73 : ArcherNM\_28
- Track 74 : Pomar16\_29
- Track 75 : LilTurb\_28
- Track 76 : SwirlSquare\_28
- Track 77 : L5\_26
- Track 78 : Smeagan\_28
- Track 79 : MissWhite\_26
- Track 80 : TarsusIV\_26
- Track 81 : Heffalump\_28
- Track 82 : Ph8s\_27
- Track 83 : NothingSpecial\_28
- Track 84 : Power\_26
- Track 85 : BabyBack\_28
- Track 86 : Piro94\_27
- Track 87 : Che12\_28
- Track 88 : HarryHoudini\_28

- Track 89 : CRB1\_26
- Track 90 : Trixie\_29
- Track 91 : BobSwaget\_29
- Track 92 : TopsytheTRex\_25
- Track 93 : SnapTap\_26
- Track 94 : Jerm\_28
- Track 95 : XianYue\_26
- Track 96 : First\_0026
- Track 97 : Whabigail7\_28
- Track 98 : AgronaGT15\_27, HashRod\_28, Sabinator\_27, Fernando\_27, MarQuardt\_27, Hercules11\_27, Wooldri\_29, Misomonster\_29, Penny1\_27, Dieselweasel\_27, EpicPhail\_27, Vix\_27, BuzzBuzz\_26, LarryKay\_27, Colbster\_27, PotatoSplit\_28, KADY\_28, Daishi\_26, Anubis\_29, SoYo\_27, Cullens\_27, Tiffany\_27, GtownJaz\_27, Beauxregard13\_27, JenCasNa\_27, GingkoMaracino\_27, JHC117\_27, Marie\_27, Methuselah\_26, TinyPebbles\_27, Bxz2\_26, Louie6\_27, Soshari\_29, MoneyMay\_27, Taurus\_27, Bigflo\_27, LugYA\_29
- Track 99 : Texage\_25, Norbert\_25, Noella\_26, ResDef\_26, Popcicle\_26, Hookmount\_26, Lambert1\_26, Pocahontas\_26, Panamaxus\_25
- Track 100 : LBerry\_27
- Track 101 : Kalb97\_28, Phranny\_28, Reba\_28, PurpleHaze\_27, Marius\_28, Calvinny\_28, HaveUMetTed\_28, Manu\_28, Pawn\_27, Heliosoles\_27, Gemma\_27, Groupthink\_28, Kalnoky\_28
- Track 102 : StepMih\_27, MuchMore\_29, DaHudson\_27, Lowa\_27, Grub\_27, Sabia\_27, AugsMagnumOpus\_29, Mainiac\_27, Watson\_27, Lilith\_27, BreSam8\_27, Malinsilva\_29, Stagni\_27, Pembroke\_27, Phoebe\_27, Microwolf\_27, MadMarie\_27, Farber\_27, PGHhamlin\_29
- Track 103 : Grum1\_27
- Track 104 : B1\_23, JF4\_25, JF2\_25, MK4\_25, Isca\_25, Rockstar\_25
- Track 105 : Phoxy\_27, Spike509\_27
- Track 106 : Phantastic\_25
- Track 107 : Bugatti\_25, Puppy\_26, Pistachio\_26, Giroux\_25, TNguyen7\_25, Idleandcovert\_25, BlueBird\_26, SaturnRing\_25
- Track 108 : BabyRay\_25
- Track 109 : Grif\_27
- Track 110 : Fred313\_25, HelDan\_25, Kachowdy\_25, Heathen\_25
- Track 111 : DropBear\_25, Marchesa\_25
- Track 112 : PhishRPhriends\_26
- Track 113 : Scout\_25
- Track 114 : Jobu08\_27, SoilDragon\_27
- Track 115 : Todacoro\_26, Caviar\_26, Margo\_26, Veracruz\_25, QuinnKiro\_25
- Track 116 : MA5\_25
- Track 117 : Zetzy\_26
- Track 118 : Aglet\_27
- Track 119 : ACFishhook\_27
- Track 120 : BabyJohn\_24, Chiqui\_24
- Track 121 : JeppNRM\_28
- Track 122 : P28Green\_27
- Track 123 : OlanP\_27
- Track 124 : Ollie\_27
- Track 125 : Rummer\_27
- Track 126 : Snickers\_27
- Track 127 : Koko\_29
- Track 128 : Sheen\_27

- Track 129 : Toro\_28, FlyCatcher\_29
- Track 130 : DroogsArmy\_26
- Track 131 : HINdeR\_25
- Track 132 : PP\_35
- Track 133 : Timshel\_26
- Track 134 : Jiawan\_26
- Track 135 : Darrell\_28
- Track 136 : Qobbit\_27, ExplosioNervosa\_27, Pioneer\_27, Phonnegut\_27, Beemo\_27
- Track 137 : Charm\_26
- Track 138 : Elephantoon\_27
- Track 139 : Keziacharles14\_25
- Track 140 : BogosyJay\_27
- Track 141 : Ugenie5\_24, Scherzo\_27
- Track 142 : Catalina\_27
- Track 143 : Maminiaina\_27
- Track 144 : RyeScarlet\_28, Hanray\_26
- Track 145 : EdogawaKiddo\_25, Sachima\_25
- Track 146 : Onglai\_26
- Track 147 : LoneWolf\_27
- Track 148 : Eidsmoe\_27, Alma\_27, Spouty\_27, Priya\_27
- Track 149 : DreamTeam1\_26
- Track 150 : EmyBug\_27
- Track 151 : SheaKeira\_26
- Track 152 : Aliter\_27, Fayely\_27, Phaeder\_27, Tubs\_27, PackMan\_27, Myxus\_27, HortumSL17\_27
- Track 153 : Arissanae\_25
- Track 154 : Conquerage\_27
- Track 155 : Lilleskat\_25
- Track 156 : Rahalelujah\_25
- Track 157 : Vanisoa\_25
- Track 158 : Halex\_26
- Track 159 : Yecey3\_26
- Track 160 : Toaka\_25

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

The start number called the most often in the published annotations is 60, it was called in 89 of the 262 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES\_26, AN3\_26, AN9\_29, ANI8\_29, AbbyPaige\_28, Agape74\_28, AnnaL29\_29, Anselm\_26, ArcherNM\_28, BabyBack\_28, Baehexic\_27, BengiVuitton\_27, Benvolio\_26, BiancaTri92\_28, BobSwaget\_29, Bradman\_25, Buggy\_28, C3\_24, CRB1\_26, Centaur\_28, Changeling\_28, ChipMunk\_28, Colin\_30, Crucio\_26, D29\_26, D32\_29, DBQu4n\_29, Dalmatian\_26, Deloris\_27, Dignity\_28, Drake55\_28, DudeLittle\_26, Duplo\_29, EZMoney23\_30, Echild\_26, Equemioh13\_28, EvilGenius\_28, Fameo\_26, FiringLine\_26, First\_0026, Flare16\_26, GaugeLDP\_28, Georgie2\_27, Gratitude\_27, HarryHoudini\_28, Heffalump\_28, Jerm\_28, JoshKayV\_28, Journey13\_24, Jsquared\_25, Kalpine\_29, Kerberos\_29,



KingCyrus\_28, Koduck\_26, Koko\_29, L5\_26, LadyBird\_26, Larenn\_27, Leogania\_28, Leviathan\_28, LilTurb\_28, LionsBait\_27, Lokk\_29, Loser\_29, MajorMajor\_25, Malec\_27, MiculUcigas\_26, Miko\_29, MissWhite\_26, NaSiaTalie\_26, Naji\_29, NicoleTera\_30, NothingSpecial\_28, Piro94\_27, Pomar16\_29, Power\_26, QueenB2\_26, QueenBeesly\_26, Quokka\_24, Rachaly\_29, RedRock\_29, Retro23\_26, SemperFi\_28, Serenity\_25, Sknot\_27, Smeagan\_28, SnapTap\_26, StarStuff\_29, SweetiePie\_26, TarsusIV\_26, Terrific\_30, TipsytheTRex\_25, Tomathan\_29, Travvers\_29, Trixie\_29, Trooper\_26, Turbido\_28, Updawg\_28, VA6\_26, VC3\_29, WeiHuaDA\_32, Whabigail7\_28, WideWale\_28, XianYue\_26,

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

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

- 40AC\_29, ACFishhook\_27, Acolyte\_26, Adzzy\_27, Aglet\_27, AgronaGT15\_27, Aliter\_27, Alma\_27, Anubis\_29, Arissanae\_25, AugsMagnumOpus\_29, B1\_23, BabyJohn\_24, BabyRay\_25, Beauxregard13\_27, Beemo\_27, Bigflo\_27, BlueBird\_26, Blue\_24, BogosyJay\_27, BreSam8\_27, Bugatti\_25, BuzzBuzz\_26, Bxz2\_26, Calvinny\_28, Caraxes\_25, Catalina\_27, Caviar\_26, Charm\_26, Che12\_28, Chiqui\_24, Colbster\_27, Conquerage\_27, Cullens\_27, DaHudson\_27, Daishi\_26, Darrell\_28, DarthPhader\_27, Dieselweasel\_27, DreamTeam1\_26, DroogsArmy\_26, DropBear\_25, EdogawaKiddo\_25, Eidsmoe\_27, Elephantoon\_27, EmyBug\_27, EpicPhail\_27, ExplosioNervosa\_27, Farber\_27, Fayely\_27, Fernando\_27, FlyCatcher\_29, Fred313\_25, Gemma\_27, GingkoMaracino\_27, Giroux\_25, Grif\_27, Groupthink\_28, Grub\_27, Grum1\_27, GtownJaz\_27, Gwendoluna\_26, HINdeR\_25, Hanray\_26, HashRod\_28, HaveUMetTed\_28, Heathen\_25, HelDan\_25, Heliosoles\_27, Hercules11\_27, Horex\_26, Hookmount\_26, HortumSL17\_27, Idleandcovert\_25, Isca\_25, JF2\_25, JF4\_25, JHC117\_27, JenCasNa\_27, JeppNRM\_28, Jiawan\_26, Jobu08\_27, KADY\_28, Kachowdy\_25, Kalb97\_28, Kalnoky\_28, Keziacharles14\_25, Kimona\_22, LBerry\_27, Lambert1\_26, LarryKay\_27, LilBib\_25, Lilith\_27, Lilleskat\_25, LoneWolf\_27, Louie6\_27, Iowa\_27, LugYA\_29, MA5\_25, MK4\_25, MadMarie\_27, Mainiac\_27, Malinsilva\_29, Maminiaina\_27, Manu\_28, MarQuardt\_27, Marchesa\_25, Margo\_26, Marie\_27, Marius\_28, Marsha\_24, Methuselah\_26, Microwolf\_27, Misomonster\_29, MoneyMay\_27, MuchMore\_29, Myxus\_27, Noella\_26, Norbert\_25, Odin\_25, OlanP\_27, Ollie\_27, Onglai\_26, P28Green\_27, PGHhamlin\_29, PP\_35, PackMan\_27, Panamaxus\_25, Paphu\_23, Paraselene\_23, Pawn\_27, Pembroke\_27, Penny1\_27, Ph8s\_27, Phaeder\_27, Phantastic\_25, Pharaoh\_26, PhishRPhriends\_26, Phoebe\_27, Phonnegut\_27, Phoxy\_27, Phranny\_28, Pioneer\_27, Pistachio\_26, Pocahontas\_26, Popcicle\_26, PotatoSplit\_28, Priya\_27, Puppy\_26, PurpleHaze\_27, Qobbit\_27, QuinnKiro\_25, Rahalelujah\_25, Reba\_28, Refuge\_29, ResDef\_26, Rockstar\_25, Rummer\_27, Ruotula\_23, RyeScarlet\_28, STLscum\_25, Sabia\_27, Sabinator\_27, Sachima\_25, SaturnRing\_25, Scherzo\_27, Scout\_25, SheaKeira\_26, Sheen\_27, Snickers\_27, SoYo\_27, SoilDragon\_27, Soshari\_29, Spike509\_27, Spouty\_27, Stagni\_27, Steamy\_27, StepMih\_27, Superchunk\_25, SwirlSquare\_28, TNguyen7\_25, Taurus\_27, Texage\_25, Tiffany\_27, Timshel\_26, TinyPebbles\_27, Toaka\_25, Todacoro\_26, Toro\_28, Tubs\_27, Ugenie5\_24, Vanisoa\_25, Veracruz\_25, Vix\_27, Watson\_27, Wooldri\_29, Yecey3\_26, Zetzy\_26, Zimmer\_28,

### Summary by start number:

Start 3:

- Found in 6 of 303 ( 2.0% ) of genes in pham

- Manual Annotations of this start: 4 of 262
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DroogsArmy\_26 (A7), FlyCatcher\_29 (A7), HINdeR\_25 (A7), Sheen\_27 (A7), Timshel\_26 (A7), Toro\_28 (A7),

#### Start 6:

- Found in 2 of 303 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 262
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Charm\_26 (A9),

#### Start 8:

- Found in 1 of 303 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 262
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acolyte\_26 (A2),

#### Start 9:

- Found in 5 of 303 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 5 of 262
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DARTHPhader\_27 (A12), Pharaoh\_26 (A12), Refuge\_29 (A12), Steamy\_27 (A12), Zimmer\_28 (A12),

#### Start 12:

- Found in 2 of 303 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 262
- Called 50.0% of time when present
- Phage (with cluster) where this start called: LoneWolf\_27 (A9),

#### Start 14:

- Found in 40 of 303 ( 13.2% ) of genes in pham
- Manual Annotations of this start: 32 of 262
- Called 100.0% of time when present
- Phage (with cluster) where this start called: B1\_23 (A3), BabyJohn\_24 (A3), BabyRay\_25 (A3), BlueBird\_26 (A3), Bugatti\_25 (A3), Caviar\_26 (A3), Chiqui\_24 (A3), DropBear\_25 (A3), Fred313\_25 (A3), Giroux\_25 (A3), Heathen\_25 (A3), HelDan\_25 (A3), Hookmount\_26 (A3), Idleandcovert\_25 (A3), Isca\_25 (A3), JF2\_25 (A3), JF4\_25 (A3), Kachowdy\_25 (A3), Lambert1\_26 (A3), MA5\_25 (A3), MK4\_25 (A3), Marchesa\_25 (A3), Margo\_26 (A3), Noella\_26 (A3), Norbert\_25 (A3), Panamaxus\_25 (A3), Phantastic\_25 (A3), Pistachio\_26 (A3), Pocahontas\_26 (A3), Popcicle\_26 (A3), Puppy\_26 (A3), QuinnKiro\_25 (A3), ResDef\_26 (A3), Rockstar\_25 (A3), SaturnRing\_25 (A3), Scout\_25 (A3), TNguyen7\_25 (A3), Texage\_25 (A3), Todacoro\_26 (A3), Veracruz\_25 (A3),

#### Start 15:

- Found in 88 of 303 ( 29.0% ) of genes in pham
- Manual Annotations of this start: 81 of 262
- Called 97.7% of time when present
- Phage (with cluster) where this start called: ACFishhook\_27 (A3), Aglet\_27 (A3), AgronaGT15\_27 (A3), Anubis\_29 (A3), AugsMagnumOpus\_29 (A3), Beauxregard13\_27 (A3), Bigflo\_27 (A3), BreSam8\_27 (A3), BuzzBuzz\_26 (A3), Bxz2\_26 (A3), Calvinny\_28 (A3), Colbster\_27 (A3), Cullens\_27 (A3), DaHudson\_27

(A3), Daishi\_26 (A3), Dieselweasel\_27 (A3), EpicPhail\_27 (A3), Farber\_27 (A3), Fernando\_27 (A3), Gemma\_27 (A3), GingkoMaracino\_27 (A3), Grif\_27 (A3), Groupthink\_28 (A3), Grub\_27 (A3), Grum1\_27 (A3), GtownJaz\_27 (A3), HashRod\_28 (A3), HaveUMetTed\_28 (A3), Heliosoles\_27 (A3), Hercules11\_27 (A3), JHC117\_27 (A3), JenCasNa\_27 (A3), JeppNRM\_28 (A3), Jobu08\_27 (A3), KADY\_28 (A3), Kalb97\_28 (A3), Kalnoky\_28 (A3), LBerry\_27 (A3), LarryKay\_27 (A3), Liliith\_27 (A3), Louie6\_27 (A3), Lowa\_27 (A3), LugYA\_29 (A3), MadMarie\_27 (A3), Mainiac\_27 (A3), Malinsilva\_29 (A3), Manu\_28 (A3), MarQuardt\_27 (A3), Marie\_27 (A3), Marius\_28 (A3), Methuselah\_26 (A3), Microwolf\_27 (A3), Misomonster\_29 (A3), MoneyMay\_27 (A3), MuchMore\_29 (A3), OlanP\_27 (A3), Ollie\_27 (A3), P28Green\_27 (A3), PGHhamlin\_29 (A3), Pawn\_27 (A3), Pembroke\_27 (A3), Penny1\_27 (A3), PhishRPhriends\_26 (A3), Phoebe\_27 (A3), Phoxy\_27 (A3), Phranny\_28 (A3), PotatoSplit\_28 (A3), PurpleHaze\_27 (A3), Reba\_28 (A3), Rummer\_27 (A3), Sabia\_27 (A3), Sabinator\_27 (A3), Snickers\_27 (A3), SoYo\_27 (A3), SoilDragon\_27 (A3), Soshari\_29 (A3), Spike509\_27 (A3), Stagni\_27 (A3), StepMih\_27 (A3), Taurus\_27 (A3), Tiffany\_27 (A3), TinyPebbles\_27 (A3), Vix\_27 (A3), Watson\_27 (A3), Wooldri\_29 (A3), Zetzy\_26 (A3),

#### Start 16:

- Found in 4 of 303 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 262
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Kimona\_22 (A19),

#### Start 22:

- Found in 48 of 303 ( 15.8% ) of genes in pham
- Manual Annotations of this start: 33 of 262
- Called 85.4% of time when present
- Phage (with cluster) where this start called: Aliter\_27 (A9), Alma\_27 (A9), Arissanee\_25 (A9), Beemo\_27 (A9), BogosyJay\_27 (A9), Catalina\_27 (A9), Conquerage\_27 (A9), Darrell\_28 (A9), DreamTeam1\_26 (A9), EdogawaKiddo\_25 (A9), Eidsmoe\_27 (A9), Elephantoon\_27 (A9), EmyBug\_27 (A9), ExplosioNervosa\_27 (A9), Fayely\_27 (A9), Hanray\_26 (A9), Halex\_26 (A9), HortumSL17\_27 (A9), Jiawan\_26 (A9), Keziacharles14\_25 (A9), Lilleskat\_25 (A9), Maminiana\_27 (A9), Myxus\_27 (A9), Onglai\_26 (A9), PackMan\_27 (A9), Phaeder\_27 (A9), Phonnegut\_27 (A9), Pioneer\_27 (A9), Priya\_27 (A9), Qobbit\_27 (A9), Rahalelujah\_25 (A9), RyeScarlet\_28 (A9), Sachima\_25 (A9), Scherzo\_27 (A9), SheaKeira\_26 (A9), Spouty\_27 (A9), Toaka\_25 (A9), Tubs\_27 (A9), Ugenie5\_24 (A9), Vanisoa\_25 (A9), Yecey3\_26 (A9),

#### Start 27:

- Found in 1 of 303 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 262
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PP\_35 (A7),

#### Start 55:

- Found in 1 of 303 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 40AC\_29 (A17),

#### Start 57:

- Found in 1 of 303 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 262
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Odin\_25 (A2),

#### Start 58:

- Found in 6 of 303 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 4 of 262
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Adzzy\_27 (A2), Che12\_28 (A2), Ph8s\_27 (A2), Superchunk\_25 (A2),

#### Start 60:

- Found in 104 of 303 ( 34.3% ) of genes in pham
- Manual Annotations of this start: 89 of 262
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 20ES\_26 (A2), AN3\_26 (A2), AN9\_29 (A2), AN18\_29 (A2), AbbyPaige\_28 (A2), Agape74\_28 (A2), AnnaL29\_29 (A2), Anselm\_26 (A2), ArcherNM\_28 (A2), BabyBack\_28 (A2), Baehexic\_27 (A2), BengiVuitton\_27 (A2), Benvolio\_26 (A2), BiancaTri92\_28 (A2), BobSwaget\_29 (A2), Bradman\_25 (A2), Buggy\_28 (A2), C3\_24 (A2), CRB1\_26 (A2), Centaur\_28 (A2), Changeling\_28 (A2), ChipMunk\_28 (A2), Colin\_30 (A2), Crucio\_26 (A2), D29\_26 (A2), D32\_29 (A2), DBQu4n\_29 (A2), Dalmatian\_26 (A2), Deloris\_27 (A2), Dignity\_28 (A2), Drake55\_28 (A2), DudeLittle\_26 (A2), Duplo\_29 (A2), EZMoney23\_30 (A2), Echild\_26 (A2), Equemioh13\_28 (A2), EvilGenius\_28 (A2), Fameo\_26 (A2), FiringLine\_26 (A2), First\_0026 (A2), Flare16\_26 (A2), GaugeLDP\_28 (A2), Georgie2\_27 (A2), Gratitude\_27 (A2), HarryHoudini\_28 (A2), Heffalump\_28 (A2), Jerm\_28 (A2), JoshKayV\_28 (A2), Journey13\_24 (A2), Jsquared\_25 (A2), Kalpine\_29 (A2), Kerberos\_29 (A2), KingCyrus\_28 (A2), Koduck\_26 (A2), Koko\_29 (A6), L5\_26 (A2), LadyBird\_26 (A2), Larenn\_27 (A2), Leogania\_28 (A2), Leviathan\_28 (A2), LilTurb\_28 (A2), LionsBait\_27 (A2), Lokk\_29 (A2), Loser\_29 (A2), MajorMajor\_25 (A2), Malec\_27 (A2), MiculUcigas\_26 (A2), Miko\_29 (A2), MissWhite\_26 (A2), NaSiaTalie\_26 (A2), Naji\_29 (A2), NicoleTera\_30 (A2), NothingSpecial\_28 (A2), Piro94\_27 (A2), Pomar16\_29 (A2), Power\_26 (A2), QueenB2\_26 (A2), QueenBeesly\_26 (A2), Quokka\_24 (A2), Rachaly\_29 (A2), RedRock\_29 (A2), Retro23\_26 (A2), SemperFi\_28 (A2), Serenity\_25 (A2), Sknot\_27 (A2), Smeagan\_28 (A2), SnapTap\_26 (A2), StarStuff\_29 (A2), SweetiePie\_26 (A2), TarsusIV\_26 (A2), Terrific\_30 (A2), TipsytheTRex\_25 (A2), Tomathan\_29 (A2), Travvers\_29 (A2), Trixie\_29 (A2), Trooper\_26 (A2), Turbido\_28 (A2), Updawg\_28 (A2), VA6\_26 (A2), VC3\_29 (A2), WeiHuaDA\_32 (A2), Whabigail7\_28 (A2), WideWale\_28 (A2), XianYue\_26 (A2),

#### Start 61:

- Found in 7 of 303 ( 2.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Caraxes\_25 (A2), SwirlSquare\_28 (A2),

#### Start 77:

- Found in 9 of 303 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 8 of 262
- Called 88.9% of time when present



- Phage (with cluster) where this start called: Blue\_24 (A1), Gwendoluna\_26 (A1), LilBib\_25 (A1), Marsha\_24 (A1), Paphu\_23 (A1), Paraselene\_23 (A1), Ruotula\_23 (A1), STLscum\_25 (A1),

### **Summary by clusters:**

There are 9 clusters represented in this pham: A17, A12, A19, A1, A3, A2, A7, A6, A9,

Info for manual annotations of cluster A1:

- Start number 77 was manually annotated 8 times for cluster A1.

Info for manual annotations of cluster A12:

- Start number 9 was manually annotated 5 times for cluster A12.

Info for manual annotations of cluster A19:

- Start number 16 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A2:

- Start number 8 was manually annotated 1 time for cluster A2.
- Start number 57 was manually annotated 1 time for cluster A2.
- Start number 58 was manually annotated 4 times for cluster A2.
- Start number 60 was manually annotated 88 times for cluster A2.

Info for manual annotations of cluster A3:

- Start number 14 was manually annotated 32 times for cluster A3.
- Start number 15 was manually annotated 81 times for cluster A3.

Info for manual annotations of cluster A6:

- Start number 60 was manually annotated 1 time for cluster A6.

Info for manual annotations of cluster A7:

- Start number 3 was manually annotated 4 times for cluster A7.
- Start number 27 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A9:

- Start number 6 was manually annotated 1 time for cluster A9.
- Start number 12 was manually annotated 1 time for cluster A9.
- Start number 22 was manually annotated 33 times for cluster A9.

### **Gene Information:**

Gene: 20ES\_26 Start: 16642, Stop: 19185, Start Num: 60

Candidate Starts for 20ES\_26:

(18, 16390), (Start: 60 @16642 has 89 MA's), (92, 16822), (93, 16825), (98, 16855), (119, 16990), (121, 16999), (124, 17020), (126, 17029), (135, 17050), (142, 17083), (146, 17116), (164, 17209), (171, 17257), (174, 17275), (177, 17287), (181, 17308), (185, 17329), (188, 17350), (189, 17353), (216, 17539), (223, 17581), (224, 17590), (227, 17599), (238, 17656), (249, 17722), (255, 17761), (266, 17848), (283, 17947), (303, 18067), (305, 18076), (307, 18082), (309, 18091), (313, 18112), (319, 18136), (323, 18157), (329, 18178), (335, 18187), (342, 18217), (345, 18229), (349, 18244), (359, 18286), (381, 18379), (382, 18388), (388, 18415), (398, 18478), (419, 18661), (451, 18751),

(458, 18760), (478, 18871), (482, 18901), (495, 18985),

Gene: 40AC\_29 Start: 18647, Stop: 21385, Start Num: 55

Candidate Starts for 40AC\_29:

(55, 18647), (79, 18758), (95, 18836), (98, 18860), (104, 18884), (118, 18989), (119, 18998), (125, 19028), (138, 19064), (150, 19145), (152, 19151), (153, 19154), (154, 19157), (170, 19265), (186, 19352), (190, 19364), (192, 19373), (207, 19457), (213, 19499), (225, 19595), (231, 19631), (240, 19673), (245, 19709), (250, 19736), (259, 19796), (297, 20042), (311, 20111), (315, 20123), (348, 20273), (371, 20399), (397, 20549), (399, 20561), (409, 20645), (434, 20831), (457, 20936), (463, 20966), (465, 20975), (478, 21074), (482, 21104), (492, 21170), (495, 21182), (510, 21323),

Gene: ACFishhook\_27 Start: 16138, Stop: 19164, Start Num: 15

Candidate Starts for ACFishhook\_27:

(11, 16084), (Start: 15 @16138 has 81 MA's), (26, 16252), (34, 16318), (35, 16321), (37, 16330), (45, 16366), (54, 16417), (66, 16489), (78, 16561), (99, 16681), (101, 16684), (111, 16753), (112, 16798), (126, 16891), (130, 16900), (142, 16945), (148, 16984), (152, 17008), (155, 17020), (159, 17053), (164, 17071), (167, 17092), (175, 17140), (176, 17146), (179, 17161), (181, 17170), (183, 17182), (185, 17191), (202, 17284), (215, 17371), (216, 17401), (217, 17404), (222, 17431), (223, 17443), (233, 17497), (238, 17518), (242, 17548), (249, 17584), (266, 17710), (277, 17764), (283, 17809), (292, 17857), (298, 17899), (299, 17908), (305, 17938), (321, 18010), (322, 18016), (328, 18037), (329, 18040), (336, 18052), (363, 18169), (364, 18178), (382, 18250), (383, 18253), (391, 18289), (393, 18310), (398, 18340), (399, 18343), (401, 18352), (420, 18535), (432, 18601), (434, 18613), (448, 18655), (459, 18718), (472, 18775), (477, 18844), (483, 18880), (496, 18961), (509, 19096), (510, 19108),

Gene: AN3\_26 Start: 16626, Stop: 19163, Start Num: 60

Candidate Starts for AN3\_26:

(Start: 60 @16626 has 89 MA's), (92, 16806), (93, 16809), (103, 16857), (119, 16968), (121, 16977), (124, 16998), (126, 17007), (135, 17028), (142, 17061), (146, 17094), (164, 17187), (171, 17235), (174, 17253), (177, 17265), (181, 17286), (185, 17307), (188, 17328), (189, 17331), (216, 17517), (223, 17559), (224, 17568), (238, 17634), (249, 17700), (252, 17727), (255, 17739), (266, 17826), (283, 17925), (303, 18045), (305, 18054), (307, 18060), (309, 18069), (313, 18090), (319, 18114), (323, 18135), (329, 18156), (334, 18162), (342, 18195), (345, 18207), (359, 18264), (382, 18366), (388, 18393), (398, 18456), (451, 18729), (458, 18738), (478, 18849), (482, 18879), (495, 18963),

Gene: AN9\_29 Start: 16651, Stop: 19164, Start Num: 60

Candidate Starts for AN9\_29:

(Start: 60 @16651 has 89 MA's), (92, 16831), (93, 16834), (115, 16945), (142, 17080), (151, 17140), (155, 17155), (158, 17185), (159, 17188), (174, 17272), (179, 17296), (184, 17320), (188, 17347), (189, 17350), (209, 17461), (216, 17536), (221, 17563), (223, 17578), (233, 17632), (238, 17653), (249, 17719), (251, 17737), (252, 17746), (266, 17845), (272, 17878), (274, 17887), (283, 17944), (287, 17959), (303, 18064), (329, 18175), (336, 18187), (338, 18193), (345, 18226), (375, 18346), (398, 18475), (402, 18490), (406, 18520), (408, 18532), (410, 18568), (427, 18682), (435, 18694), (449, 18736), (490, 18943), (494, 18961), (495, 18964), (516, 19150),

Gene: ANI8\_29 Start: 16651, Stop: 19164, Start Num: 60

Candidate Starts for ANI8\_29:

(Start: 60 @16651 has 89 MA's), (92, 16831), (93, 16834), (115, 16945), (142, 17080), (151, 17140), (155, 17155), (158, 17185), (159, 17188), (174, 17272), (179, 17296), (184, 17320), (188, 17347), (189, 17350), (209, 17461), (216, 17536), (221, 17563), (223, 17578), (233, 17632), (238, 17653), (249, 17719), (251, 17737), (252, 17746), (266, 17845), (272, 17878), (274, 17887), (283, 17944), (287, 17959), (303, 18064), (329, 18175), (336, 18187), (338, 18193), (345, 18226), (375, 18346), (398, 18475), (402, 18490), (406, 18520), (408, 18532), (410, 18568), (427, 18682), (435, 18694),

(449, 18736), (490, 18943), (494, 18961), (495, 18964), (516, 19150),

Gene: AbbyPaige\_28 Start: 17120, Stop: 19663, Start Num: 60

Candidate Starts for AbbyPaige\_28:

(Start: 60 @17120 has 89 MA's), (92, 17300), (93, 17303), (98, 17333), (120, 17471), (121, 17477), (124, 17498), (126, 17507), (130, 17516), (135, 17528), (144, 17573), (146, 17594), (155, 17636), (164, 17687), (169, 17732), (171, 17735), (174, 17753), (181, 17786), (183, 17798), (185, 17807), (188, 17828), (189, 17831), (205, 17918), (216, 18017), (223, 18059), (224, 18068), (227, 18077), (238, 18134), (249, 18200), (255, 18239), (268, 18332), (274, 18368), (283, 18425), (295, 18491), (299, 18524), (302, 18539), (303, 18545), (305, 18554), (309, 18569), (313, 18590), (318, 18611), (322, 18632), (323, 18635), (328, 18653), (329, 18656), (345, 18707), (359, 18764), (362, 18782), (370, 18806), (382, 18866), (388, 18893), (398, 18956), (406, 19001), (419, 19139), (451, 19229), (458, 19238), (467, 19262), (476, 19340), (478, 19349), (482, 19379), (495, 19463),

Gene: Acolyte\_26 Start: 16749, Stop: 19700, Start Num: 8

Candidate Starts for Acolyte\_26:

(Start: 8 @16749 has 1 MA's), (10, 16767), (17, 16872), (21, 16929), (23, 16941), (25, 16959), (36, 17031), (52, 17115), (87, 17310), (97, 17358), (103, 17382), (120, 17523), (124, 17550), (130, 17565), (139, 17598), (142, 17610), (151, 17670), (155, 17685), (161, 17727), (169, 17781), (171, 17784), (181, 17835), (183, 17847), (185, 17856), (188, 17877), (216, 18066), (221, 18093), (223, 18108), (233, 18162), (238, 18183), (249, 18249), (253, 18279), (260, 18324), (277, 18429), (279, 18441), (286, 18486), (292, 18522), (301, 18585), (313, 18639), (322, 18681), (328, 18702), (329, 18705), (339, 18726), (358, 18810), (359, 18813), (370, 18855), (398, 19005), (404, 19038), (406, 19050), (408, 19062), (410, 19098), (427, 19212), (451, 19281),

Gene: Adzzy\_27 Start: 15361, Stop: 17886, Start Num: 58

Candidate Starts for Adzzy\_27:

(Start: 58 @15361 has 4 MA's), (61, 15379), (79, 15484), (91, 15550), (92, 15553), (93, 15556), (98, 15586), (136, 15775), (142, 15805), (146, 15838), (147, 15841), (155, 15880), (164, 15931), (169, 15976), (174, 15997), (181, 16030), (184, 16045), (185, 16051), (188, 16072), (216, 16261), (221, 16288), (223, 16303), (233, 16357), (236, 16369), (238, 16378), (249, 16444), (283, 16669), (287, 16684), (293, 16726), (301, 16780), (303, 16789), (310, 16816), (313, 16834), (321, 16870), (328, 16897), (329, 16900), (342, 16939), (345, 16951), (364, 17038), (382, 17110), (388, 17137), (395, 17179), (398, 17200), (406, 17245), (427, 17407), (451, 17470), (479, 17596), (490, 17668), (495, 17689), (500, 17764), (508, 17800),

Gene: Agape74\_28 Start: 17096, Stop: 19639, Start Num: 60

Candidate Starts for Agape74\_28:

(Start: 60 @17096 has 89 MA's), (92, 17276), (93, 17279), (120, 17447), (121, 17453), (124, 17474), (126, 17483), (130, 17492), (135, 17504), (144, 17549), (146, 17570), (155, 17612), (164, 17663), (169, 17708), (171, 17711), (174, 17729), (181, 17762), (183, 17774), (185, 17783), (188, 17804), (189, 17807), (205, 17894), (216, 17993), (223, 18035), (224, 18044), (227, 18053), (238, 18110), (249, 18176), (255, 18215), (268, 18308), (274, 18344), (283, 18401), (295, 18467), (299, 18500), (302, 18515), (303, 18521), (305, 18530), (309, 18545), (313, 18566), (318, 18587), (322, 18608), (323, 18611), (328, 18629), (329, 18632), (345, 18683), (359, 18740), (362, 18758), (370, 18782), (382, 18842), (388, 18869), (398, 18932), (406, 18977), (419, 19115), (451, 19205), (458, 19214), (467, 19238), (478, 19325), (482, 19355), (495, 19439),

Gene: Aglet\_27 Start: 15980, Stop: 19006, Start Num: 15

Candidate Starts for Aglet\_27:

(11, 15926), (Start: 15 @15980 has 81 MA's), (26, 16094), (34, 16160), (35, 16163), (37, 16172), (45, 16208), (54, 16259), (66, 16331), (78, 16403), (99, 16523), (101, 16526), (111, 16595), (112, 16640), (126, 16733), (130, 16742), (137, 16760), (142, 16787), (152, 16850), (155, 16862), (159, 16895),

(164, 16913), (174, 16979), (175, 16982), (176, 16988), (179, 17003), (181, 17012), (183, 17024), (185, 17033), (202, 17126), (216, 17243), (217, 17246), (222, 17273), (223, 17285), (233, 17339), (238, 17360), (249, 17426), (255, 17465), (268, 17558), (277, 17606), (283, 17651), (292, 17699), (298, 17741), (299, 17750), (305, 17780), (306, 17783), (309, 17795), (321, 17852), (322, 17858), (328, 17879), (329, 17882), (364, 18020), (370, 18032), (382, 18092), (391, 18131), (412, 18287), (414, 18308), (416, 18332), (420, 18377), (424, 18395), (432, 18443), (434, 18455), (448, 18497), (459, 18560), (472, 18617), (477, 18686), (483, 18722), (496, 18803), (509, 18938),

Gene: AgronaGT15\_27 Start: 15887, Stop: 18913, Start Num: 15

Candidate Starts for AgronaGT15\_27:

(11, 15833), (Start: 15 @15887 has 81 MA's), (26, 16001), (34, 16067), (35, 16070), (37, 16079), (45, 16115), (54, 16166), (66, 16238), (78, 16310), (99, 16430), (101, 16433), (111, 16502), (112, 16547), (126, 16640), (130, 16649), (137, 16667), (142, 16694), (152, 16757), (155, 16769), (159, 16802), (164, 16820), (174, 16886), (175, 16889), (176, 16895), (179, 16910), (181, 16919), (183, 16931), (185, 16940), (199, 17018), (202, 17033), (216, 17150), (217, 17153), (222, 17180), (223, 17192), (233, 17246), (238, 17267), (249, 17333), (255, 17372), (268, 17465), (277, 17513), (283, 17558), (292, 17606), (298, 17648), (299, 17657), (305, 17687), (306, 17690), (309, 17702), (321, 17759), (322, 17765), (328, 17786), (329, 17789), (364, 17927), (370, 17939), (382, 17999), (392, 18056), (412, 18194), (414, 18215), (416, 18239), (420, 18284), (424, 18302), (432, 18350), (434, 18362), (448, 18404), (459, 18467), (472, 18524), (477, 18593), (483, 18629), (496, 18710), (509, 18845),

Gene: Aliter\_27 Start: 17518, Stop: 20427, Start Num: 22

Candidate Starts for Aliter\_27:

(Start: 22 @17518 has 33 MA's), (24, 17530), (32, 17590), (62, 17749), (74, 17812), (83, 17875), (89, 17917), (101, 17974), (127, 18184), (130, 18190), (136, 18205), (151, 18295), (152, 18298), (155, 18310), (161, 18352), (169, 18406), (185, 18481), (188, 18502), (189, 18505), (194, 18523), (204, 18586), (213, 18652), (216, 18691), (221, 18718), (223, 18733), (229, 18763), (233, 18787), (236, 18799), (238, 18808), (249, 18874), (255, 18913), (264, 18979), (268, 19006), (272, 19033), (283, 19099), (291, 19144), (303, 19219), (313, 19264), (318, 19285), (322, 19306), (323, 19309), (328, 19327), (329, 19330), (340, 19357), (359, 19438), (370, 19480), (398, 19630), (402, 19645), (406, 19675), (411, 19726), (419, 19813), (421, 19822), (429, 19873), (448, 19936), (452, 19957), (458, 19993), (467, 20029), (468, 20035), (477, 20113), (481, 20140), (489, 20200), (499, 20269), (500, 20299), (505, 20326), (510, 20365), (514, 20407),

Gene: Alma\_27 Start: 17597, Stop: 20506, Start Num: 22

Candidate Starts for Alma\_27:

(Start: 22 @17597 has 33 MA's), (24, 17609), (32, 17669), (74, 17891), (83, 17954), (89, 17996), (99, 18050), (101, 18053), (107, 18092), (127, 18263), (130, 18269), (136, 18284), (151, 18374), (152, 18377), (155, 18389), (161, 18431), (169, 18485), (174, 18506), (185, 18560), (188, 18581), (189, 18584), (194, 18602), (204, 18665), (213, 18731), (216, 18770), (221, 18797), (223, 18812), (229, 18842), (233, 18866), (236, 18878), (238, 18887), (249, 18953), (255, 18992), (264, 19058), (268, 19085), (272, 19112), (291, 19223), (303, 19298), (309, 19322), (313, 19343), (318, 19364), (322, 19385), (323, 19388), (328, 19406), (329, 19409), (340, 19436), (355, 19496), (361, 19526), (370, 19559), (379, 19589), (380, 19601), (398, 19709), (402, 19724), (406, 19754), (411, 19805), (419, 19892), (421, 19901), (429, 19952), (448, 20015), (452, 20036), (458, 20072), (467, 20108), (468, 20114), (477, 20192), (481, 20219), (499, 20348), (500, 20378), (505, 20405), (510, 20444), (514, 20486),

Gene: AnnaL29\_29 Start: 18479, Stop: 20977, Start Num: 60

Candidate Starts for AnnaL29\_29:

(Start: 60 @18479 has 89 MA's), (82, 18608), (90, 18647), (98, 18692), (121, 18794), (124, 18815), (130, 18833), (140, 18869), (155, 18953), (164, 19004), (175, 19073), (176, 19079), (179, 19094), (181, 19103), (183, 19115), (185, 19124), (216, 19334), (221, 19361), (223, 19376), (233, 19430),



(238, 19451), (249, 19517), (255, 19556), (259, 19589), (263, 19619), (283, 19742), (287, 19757), (290, 19784), (302, 19856), (305, 19871), (307, 19877), (309, 19886), (318, 19928), (321, 19943), (323, 19952), (329, 19973), (334, 19979), (342, 20012), (349, 20039), (356, 20069), (359, 20081), (364, 20111), (370, 20123), (388, 20210), (393, 20243), (398, 20273), (404, 20306), (406, 20318), (408, 20330), (419, 20456), (449, 20537), (451, 20546), (458, 20555), (478, 20666), (482, 20696), (495, 20777), (510, 20918),

Gene: Anselm\_26 Start: 16722, Stop: 19259, Start Num: 60

Candidate Starts for Anselm\_26:

(Start: 60 @16722 has 89 MA's), (92, 16902), (93, 16905), (98, 16935), (121, 17073), (124, 17094), (126, 17103), (135, 17124), (142, 17157), (155, 17232), (164, 17283), (169, 17328), (171, 17331), (174, 17349), (181, 17382), (183, 17394), (185, 17403), (188, 17424), (189, 17427), (216, 17613), (223, 17655), (224, 17664), (227, 17673), (238, 17730), (249, 17796), (255, 17835), (268, 17928), (283, 18021), (299, 18120), (302, 18135), (303, 18141), (305, 18150), (309, 18165), (313, 18186), (318, 18207), (319, 18210), (323, 18231), (329, 18252), (334, 18258), (342, 18291), (345, 18303), (370, 18402), (382, 18462), (388, 18489), (398, 18552), (406, 18597), (419, 18735), (451, 18825), (458, 18834), (467, 18858), (478, 18945), (482, 18975), (495, 19059),

Gene: Anubis\_29 Start: 15865, Stop: 18891, Start Num: 15

Candidate Starts for Anubis\_29:

(11, 15811), (Start: 15 @15865 has 81 MA's), (26, 15979), (34, 16045), (35, 16048), (37, 16057), (45, 16093), (54, 16144), (66, 16216), (78, 16288), (99, 16408), (101, 16411), (111, 16480), (112, 16525), (126, 16618), (130, 16627), (137, 16645), (142, 16672), (152, 16735), (155, 16747), (159, 16780), (164, 16798), (174, 16864), (175, 16867), (176, 16873), (179, 16888), (181, 16897), (183, 16909), (185, 16918), (199, 16996), (202, 17011), (216, 17128), (217, 17131), (222, 17158), (223, 17170), (233, 17224), (238, 17245), (249, 17311), (255, 17350), (268, 17443), (277, 17491), (283, 17536), (292, 17584), (298, 17626), (299, 17635), (305, 17665), (306, 17668), (309, 17680), (321, 17737), (322, 17743), (328, 17764), (329, 17767), (364, 17905), (370, 17917), (382, 17977), (392, 18034), (412, 18172), (414, 18193), (416, 18217), (420, 18262), (424, 18280), (432, 18328), (434, 18340), (448, 18382), (459, 18445), (472, 18502), (477, 18571), (483, 18607), (496, 18688), (509, 18823),

Gene: ArcherNM\_28 Start: 18421, Stop: 20922, Start Num: 60

Candidate Starts for ArcherNM\_28:

(39, 18337), (Start: 60 @18421 has 89 MA's), (79, 18532), (82, 18550), (92, 18604), (96, 18619), (98, 18637), (100, 18643), (119, 18730), (124, 18760), (130, 18778), (155, 18898), (164, 18949), (175, 19018), (176, 19024), (179, 19039), (181, 19048), (183, 19060), (185, 19069), (216, 19279), (221, 19306), (223, 19321), (233, 19375), (238, 19396), (249, 19462), (255, 19501), (283, 19687), (290, 19729), (299, 19786), (302, 19801), (303, 19807), (305, 19816), (309, 19831), (313, 19852), (318, 19873), (328, 19915), (336, 19930), (342, 19957), (356, 20014), (359, 20026), (370, 20068), (382, 20128), (388, 20155), (392, 20185), (398, 20218), (406, 20263), (408, 20275), (449, 20482), (451, 20491), (458, 20500), (478, 20611), (482, 20641), (495, 20722), (509, 20851),

Gene: Arissanae\_25 Start: 15680, Stop: 18592, Start Num: 22

Candidate Starts for Arissanae\_25:

(Start: 22 @15680 has 33 MA's), (24, 15692), (28, 15716), (31, 15728), (51, 15848), (59, 15890), (62, 15911), (89, 16079), (99, 16133), (101, 16136), (123, 16328), (127, 16346), (132, 16358), (135, 16364), (142, 16397), (146, 16430), (154, 16466), (155, 16472), (156, 16493), (164, 16523), (169, 16568), (174, 16589), (179, 16613), (180, 16616), (183, 16634), (185, 16643), (186, 16655), (197, 16703), (204, 16748), (216, 16853), (232, 16946), (233, 16949), (235, 16955), (238, 16970), (239, 16979), (241, 16991), (244, 17015), (247, 17027), (249, 17036), (261, 17120), (263, 17138), (264, 17141), (301, 17372), (303, 17381), (313, 17426), (318, 17447), (321, 17462), (322, 17468), (328, 17489), (329, 17492), (340, 17519), (346, 17546), (359, 17600), (370, 17642), (380, 17684), (398, 17792), (411, 17888), (419, 17975), (421, 17984), (429, 18035), (448, 18098), (458, 18158), (467,

18194), (468, 18200), (477, 18278), (481, 18305), (483, 18314), (500, 18464), (508, 18500), (509, 18518), (510, 18530),

Gene: AugsMagnumOpus\_29 Start: 15971, Stop: 18997, Start Num: 15

Candidate Starts for AugsMagnumOpus\_29:

(11, 15917), (Start: 15 @15971 has 81 MA's), (26, 16085), (34, 16151), (35, 16154), (37, 16163), (45, 16199), (54, 16250), (66, 16322), (78, 16394), (99, 16514), (101, 16517), (111, 16586), (112, 16631), (126, 16724), (130, 16733), (137, 16751), (142, 16778), (152, 16841), (155, 16853), (159, 16886), (164, 16904), (174, 16970), (175, 16973), (176, 16979), (179, 16994), (181, 17003), (183, 17015), (185, 17024), (202, 17117), (216, 17234), (217, 17237), (222, 17264), (223, 17276), (233, 17330), (238, 17351), (249, 17417), (252, 17444), (268, 17549), (277, 17597), (283, 17642), (292, 17690), (298, 17732), (299, 17741), (305, 17771), (306, 17774), (309, 17786), (321, 17843), (322, 17849), (328, 17870), (329, 17873), (364, 18011), (370, 18023), (382, 18083), (393, 18143), (398, 18173), (399, 18176), (401, 18185), (412, 18278), (420, 18368), (432, 18434), (434, 18446), (448, 18488), (459, 18551), (472, 18608), (477, 18677), (483, 18713), (496, 18794), (509, 18929),

Gene: B1\_23 Start: 15174, Stop: 18218, Start Num: 14

Candidate Starts for B1\_23:

(Start: 14 @15174 has 32 MA's), (33, 15348), (35, 15360), (78, 15603), (99, 15723), (101, 15726), (129, 15948), (142, 15993), (155, 16068), (159, 16101), (164, 16119), (166, 16131), (177, 16197), (183, 16230), (185, 16239), (194, 16281), (202, 16332), (216, 16449), (223, 16491), (233, 16545), (238, 16566), (247, 16623), (249, 16632), (266, 16758), (268, 16764), (272, 16791), (283, 16857), (287, 16872), (291, 16902), (292, 16905), (299, 16956), (301, 16968), (306, 16989), (309, 17001), (313, 17022), (321, 17058), (328, 17085), (341, 17118), (343, 17130), (353, 17172), (370, 17238), (382, 17298), (391, 17337), (398, 17388), (399, 17391), (401, 17400), (405, 17424), (412, 17493), (414, 17514), (420, 17583), (424, 17601), (432, 17649), (434, 17661), (448, 17703), (450, 17715), (458, 17763), (483, 17934), (491, 17994), (496, 18015), (509, 18150), (510, 18162), (513, 18198),

Gene: BabyBack\_28 Start: 18230, Stop: 20749, Start Num: 60

Candidate Starts for BabyBack\_28:

(Start: 60 @18230 has 89 MA's), (79, 18341), (92, 18410), (95, 18419), (103, 18461), (124, 18584), (126, 18593), (130, 18602), (140, 18638), (142, 18647), (143, 18656), (164, 18773), (173, 18830), (175, 18842), (176, 18848), (179, 18863), (183, 18884), (185, 18893), (216, 19103), (222, 19133), (223, 19145), (233, 19199), (238, 19220), (247, 19277), (249, 19286), (283, 19511), (287, 19526), (290, 19553), (299, 19610), (302, 19625), (305, 19640), (309, 19655), (312, 19670), (313, 19676), (318, 19697), (329, 19742), (342, 19781), (349, 19808), (364, 19880), (382, 19952), (388, 19979), (392, 20009), (393, 20012), (398, 20042), (408, 20099), (410, 20135), (417, 20204), (449, 20303), (451, 20312), (458, 20321), (478, 20432), (487, 20519), (494, 20546), (495, 20549), (513, 20726),

Gene: BabyJohn\_24 Start: 15764, Stop: 18802, Start Num: 14

Candidate Starts for BabyJohn\_24:

(Start: 14 @15764 has 32 MA's), (33, 15938), (41, 15983), (78, 16193), (101, 16316), (126, 16523), (142, 16577), (155, 16652), (159, 16685), (164, 16703), (166, 16715), (177, 16781), (181, 16802), (183, 16814), (185, 16823), (194, 16865), (202, 16916), (216, 17033), (217, 17036), (223, 17075), (233, 17129), (238, 17150), (249, 17216), (252, 17243), (268, 17348), (277, 17396), (283, 17441), (287, 17456), (292, 17489), (298, 17531), (299, 17540), (305, 17570), (309, 17585), (313, 17606), (321, 17642), (328, 17669), (329, 17672), (339, 17693), (342, 17711), (353, 17756), (362, 17798), (363, 17801), (382, 17882), (391, 17921), (398, 17972), (399, 17975), (401, 17984), (405, 18008), (412, 18077), (414, 18098), (420, 18167), (424, 18185), (432, 18233), (434, 18245), (444, 18275), (448, 18287), (450, 18299), (458, 18347), (483, 18518), (491, 18578), (496, 18599), (505, 18695), (509, 18734), (513, 18782),

Gene: BabyRay\_25 Start: 15740, Stop: 18778, Start Num: 14

Candidate Starts for BabyRay\_25:

(Start: 14 @15740 has 32 MA's), (33, 15914), (35, 15926), (78, 16169), (85, 16214), (101, 16292), (126, 16499), (142, 16553), (152, 16616), (155, 16628), (159, 16661), (166, 16691), (170, 16724), (177, 16757), (183, 16790), (185, 16799), (202, 16892), (216, 17009), (219, 17021), (223, 17051), (233, 17105), (238, 17126), (249, 17192), (268, 17324), (269, 17333), (277, 17372), (283, 17417), (287, 17432), (298, 17507), (299, 17516), (305, 17546), (309, 17561), (310, 17564), (313, 17582), (318, 17603), (319, 17606), (322, 17624), (328, 17645), (329, 17648), (353, 17732), (363, 17777), (370, 17798), (382, 17858), (392, 17915), (393, 17918), (398, 17948), (399, 17951), (401, 17960), (412, 18053), (414, 18074), (420, 18143), (424, 18161), (432, 18209), (434, 18221), (448, 18263), (450, 18275), (458, 18323), (483, 18494), (491, 18554), (494, 18566), (495, 18569), (496, 18575), (509, 18710), (510, 18722), (513, 18758),

Gene: Baehexic\_27 Start: 17134, Stop: 19641, Start Num: 60

Candidate Starts for Baehexic\_27:

(Start: 60 @17134 has 89 MA's), (79, 17245), (90, 17302), (124, 17488), (142, 17551), (146, 17584), (148, 17590), (179, 17770), (181, 17779), (185, 17800), (188, 17821), (189, 17824), (194, 17842), (203, 17902), (216, 18010), (223, 18052), (233, 18106), (238, 18127), (248, 18190), (249, 18193), (251, 18211), (255, 18232), (283, 18418), (287, 18433), (290, 18460), (299, 18517), (302, 18532), (303, 18538), (305, 18547), (307, 18553), (313, 18583), (318, 18604), (329, 18649), (334, 18655), (342, 18688), (349, 18715), (364, 18787), (370, 18799), (382, 18859), (388, 18886), (398, 18949), (406, 18994), (408, 19006), (410, 19042), (415, 19078), (417, 19111), (439, 19174), (447, 19198), (479, 19342), (495, 19441), (503, 19528), (516, 19627),

Gene: Beauxregard13\_27 Start: 15979, Stop: 19005, Start Num: 15

Candidate Starts for Beauxregard13\_27:

(11, 15925), (Start: 15 @15979 has 81 MA's), (26, 16093), (34, 16159), (35, 16162), (37, 16171), (45, 16207), (54, 16258), (66, 16330), (78, 16402), (99, 16522), (101, 16525), (111, 16594), (112, 16639), (126, 16732), (130, 16741), (137, 16759), (142, 16786), (152, 16849), (155, 16861), (159, 16894), (164, 16912), (174, 16978), (175, 16981), (176, 16987), (179, 17002), (181, 17011), (183, 17023), (185, 17032), (199, 17110), (202, 17125), (216, 17242), (217, 17245), (222, 17272), (223, 17284), (233, 17338), (238, 17359), (249, 17425), (255, 17464), (268, 17557), (277, 17605), (283, 17650), (292, 17698), (298, 17740), (299, 17749), (305, 17779), (306, 17782), (309, 17794), (321, 17851), (322, 17857), (328, 17878), (329, 17881), (364, 18019), (370, 18031), (382, 18091), (392, 18148), (412, 18286), (414, 18307), (416, 18331), (420, 18376), (424, 18394), (432, 18442), (434, 18454), (448, 18496), (459, 18559), (472, 18616), (477, 18685), (483, 18721), (496, 18802), (509, 18937),

Gene: Beemo\_27 Start: 17624, Stop: 20533, Start Num: 22

Candidate Starts for Beemo\_27:

(Start: 22 @17624 has 33 MA's), (24, 17636), (32, 17696), (62, 17855), (74, 17918), (83, 17981), (89, 18023), (101, 18080), (107, 18119), (127, 18290), (130, 18296), (136, 18311), (151, 18401), (152, 18404), (155, 18416), (161, 18458), (169, 18512), (185, 18587), (188, 18608), (189, 18611), (194, 18629), (204, 18692), (213, 18758), (216, 18797), (221, 18824), (223, 18839), (229, 18869), (233, 18893), (236, 18905), (238, 18914), (249, 18980), (255, 19019), (264, 19085), (268, 19112), (272, 19139), (291, 19250), (303, 19325), (313, 19370), (318, 19391), (322, 19412), (323, 19415), (328, 19433), (329, 19436), (340, 19463), (346, 19490), (359, 19544), (398, 19736), (402, 19751), (406, 19781), (411, 19832), (419, 19919), (421, 19928), (429, 19979), (448, 20042), (452, 20063), (458, 20099), (467, 20135), (468, 20141), (477, 20219), (481, 20246), (489, 20306), (499, 20375), (500, 20405), (505, 20432), (510, 20471), (514, 20513),

Gene: BengiVuitton\_27 Start: 17042, Stop: 19579, Start Num: 60

Candidate Starts for BengiVuitton\_27:

(Start: 60 @17042 has 89 MA's), (92, 17222), (93, 17225), (103, 17273), (121, 17393), (124, 17414), (126, 17423), (135, 17444), (142, 17477), (146, 17510), (155, 17552), (164, 17603), (167, 17624),

(169, 17648), (171, 17651), (174, 17669), (181, 17702), (183, 17714), (185, 17723), (188, 17744), (189, 17747), (205, 17834), (216, 17933), (223, 17975), (224, 17984), (227, 17993), (238, 18050), (249, 18116), (255, 18155), (303, 18461), (305, 18470), (307, 18476), (309, 18485), (313, 18506), (319, 18530), (323, 18551), (329, 18572), (334, 18578), (342, 18611), (345, 18623), (370, 18722), (382, 18782), (388, 18809), (398, 18872), (406, 18917), (408, 18929), (451, 19145), (458, 19154), (478, 19265), (482, 19295), (495, 19379),

Gene: Benvolio\_26 Start: 16721, Stop: 19258, Start Num: 60

Candidate Starts for Benvolio\_26:

(Start: 60 @16721 has 89 MA's), (92, 16901), (98, 16934), (120, 17066), (121, 17072), (124, 17093), (126, 17102), (146, 17189), (155, 17231), (164, 17282), (168, 17318), (171, 17330), (174, 17348), (181, 17381), (183, 17393), (184, 17396), (185, 17402), (188, 17423), (189, 17426), (216, 17612), (223, 17654), (224, 17663), (227, 17672), (238, 17729), (249, 17795), (255, 17834), (279, 17987), (303, 18140), (305, 18149), (307, 18155), (309, 18164), (313, 18185), (319, 18209), (323, 18230), (329, 18251), (342, 18290), (345, 18302), (370, 18401), (382, 18461), (388, 18488), (398, 18551), (406, 18596), (410, 18644), (451, 18824), (458, 18833), (478, 18944), (482, 18974), (495, 19058),

Gene: BiancaTri92\_28 Start: 18408, Stop: 20945, Start Num: 60

Candidate Starts for BiancaTri92\_28:

(Start: 60 @18408 has 89 MA's), (92, 18588), (93, 18591), (103, 18639), (121, 18759), (124, 18780), (126, 18789), (135, 18810), (142, 18843), (146, 18876), (155, 18918), (161, 18960), (164, 18969), (171, 19017), (174, 19035), (181, 19068), (183, 19080), (185, 19089), (186, 19101), (188, 19110), (216, 19299), (221, 19326), (223, 19341), (233, 19395), (238, 19416), (249, 19482), (255, 19521), (266, 19608), (303, 19827), (307, 19842), (313, 19872), (318, 19893), (319, 19896), (321, 19908), (328, 19935), (342, 19977), (349, 20004), (359, 20046), (364, 20076), (370, 20088), (382, 20148), (388, 20175), (398, 20238), (406, 20283), (408, 20295), (425, 20433), (449, 20502), (451, 20511), (458, 20520), (478, 20631), (482, 20661), (487, 20715), (495, 20745),

Gene: Bigflo\_27 Start: 15978, Stop: 19004, Start Num: 15

Candidate Starts for Bigflo\_27:

(11, 15924), (Start: 15 @15978 has 81 MA's), (26, 16092), (34, 16158), (35, 16161), (37, 16170), (45, 16206), (54, 16257), (66, 16329), (78, 16401), (99, 16521), (101, 16524), (111, 16593), (112, 16638), (126, 16731), (130, 16740), (137, 16758), (142, 16785), (152, 16848), (155, 16860), (159, 16893), (164, 16911), (174, 16977), (175, 16980), (176, 16986), (179, 17001), (181, 17010), (183, 17022), (185, 17031), (199, 17109), (202, 17124), (216, 17241), (217, 17244), (222, 17271), (223, 17283), (233, 17337), (238, 17358), (249, 17424), (255, 17463), (268, 17556), (277, 17604), (283, 17649), (292, 17697), (298, 17739), (299, 17748), (305, 17778), (306, 17781), (309, 17793), (321, 17850), (322, 17856), (328, 17877), (329, 17880), (364, 18018), (370, 18030), (382, 18090), (392, 18147), (412, 18285), (414, 18306), (416, 18330), (420, 18375), (424, 18393), (432, 18441), (434, 18453), (448, 18495), (459, 18558), (472, 18615), (477, 18684), (483, 18720), (496, 18801), (509, 18936),

Gene: Blue\_24 Start: 16469, Stop: 19303, Start Num: 77

Candidate Starts for Blue\_24:

(Start: 77 @16469 has 8 MA's), (88, 16541), (124, 16784), (130, 16799), (142, 16844), (162, 16964), (163, 16982), (167, 17030), (174, 17075), (183, 17120), (184, 17123), (194, 17171), (220, 17354), (223, 17381), (239, 17465), (249, 17522), (251, 17540), (258, 17585), (262, 17621), (272, 17681), (281, 17729), (291, 17792), (292, 17795), (308, 17888), (313, 17912), (321, 17948), (326, 17975), (329, 17987), (332, 18005), (333, 18020), (344, 18083), (366, 18212), (373, 18257), (377, 18290), (378, 18302), (398, 18431), (411, 18527), (419, 18614), (420, 18617), (424, 18635), (463, 18839), (485, 19016), (499, 19127), (507, 19214), (511, 19253), (512, 19268),

Gene: BlueBird\_26 Start: 15495, Stop: 18530, Start Num: 14

Candidate Starts for BlueBird\_26:



(Start: 14 @15495 has 32 MA's), (33, 15669), (35, 15681), (41, 15714), (78, 15924), (99, 16044), (101, 16047), (126, 16251), (135, 16272), (141, 16302), (142, 16305), (152, 16368), (155, 16380), (159, 16413), (164, 16431), (175, 16500), (176, 16506), (179, 16521), (181, 16530), (183, 16542), (185, 16551), (202, 16644), (216, 16761), (217, 16764), (221, 16788), (222, 16791), (223, 16803), (233, 16857), (238, 16878), (241, 16899), (249, 16944), (252, 16971), (255, 16983), (277, 17124), (283, 17169), (287, 17184), (298, 17259), (299, 17268), (305, 17298), (309, 17313), (310, 17316), (313, 17334), (318, 17355), (319, 17358), (328, 17397), (329, 17400), (353, 17484), (370, 17550), (375, 17571), (382, 17610), (391, 17649), (393, 17670), (398, 17700), (399, 17703), (401, 17712), (405, 17736), (412, 17805), (414, 17826), (420, 17895), (424, 17913), (432, 17961), (434, 17973), (448, 18015), (450, 18027), (458, 18075), (483, 18246), (485, 18276), (491, 18306), (496, 18327), (509, 18462), (513, 18510),

Gene: BobSwaget\_29 Start: 18249, Stop: 20777, Start Num: 60

Candidate Starts for BobSwaget\_29:

(Start: 60 @18249 has 89 MA's), (79, 18360), (80, 18372), (92, 18429), (93, 18432), (124, 18621), (142, 18684), (161, 18801), (164, 18810), (167, 18831), (169, 18855), (183, 18921), (185, 18930), (188, 18951), (189, 18954), (216, 19140), (223, 19182), (238, 19257), (249, 19323), (255, 19362), (283, 19548), (299, 19647), (303, 19668), (313, 19713), (328, 19776), (342, 19818), (349, 19845), (364, 19917), (370, 19929), (387, 20013), (388, 20016), (398, 20079), (406, 20124), (408, 20136), (416, 20220), (425, 20274), (444, 20325), (458, 20358), (467, 20382), (482, 20499), (495, 20577),

Gene: BogosyJay\_27 Start: 17339, Stop: 20263, Start Num: 22

Candidate Starts for BogosyJay\_27:

(Start: 22 @17339 has 33 MA's), (24, 17351), (28, 17375), (31, 17387), (62, 17576), (74, 17639), (83, 17702), (89, 17744), (101, 17801), (102, 17807), (127, 18017), (130, 18023), (136, 18038), (145, 18089), (151, 18128), (155, 18143), (161, 18185), (164, 18194), (169, 18239), (175, 18263), (185, 18314), (188, 18335), (189, 18338), (194, 18356), (213, 18485), (216, 18524), (221, 18551), (223, 18566), (229, 18596), (233, 18620), (238, 18641), (249, 18707), (255, 18746), (268, 18839), (272, 18866), (283, 18932), (291, 18977), (303, 19052), (313, 19097), (318, 19118), (322, 19139), (323, 19142), (328, 19160), (329, 19163), (340, 19190), (341, 19193), (346, 19217), (360, 19277), (362, 19289), (380, 19355), (398, 19463), (406, 19508), (408, 19520), (410, 19556), (411, 19559), (416, 19604), (418, 19640), (421, 19655), (429, 19706), (448, 19769), (458, 19829), (468, 19871), (477, 19949), (481, 19976), (483, 19985), (489, 20036), (500, 20135), (505, 20162), (510, 20201), (514, 20243),

Gene: Bradman\_25 Start: 15528, Stop: 18041, Start Num: 60

Candidate Starts for Bradman\_25:

(Start: 60 @15528 has 89 MA's), (79, 15639), (91, 15705), (92, 15708), (93, 15711), (124, 15897), (126, 15906), (130, 15915), (155, 16035), (164, 16086), (173, 16143), (175, 16155), (176, 16161), (179, 16176), (183, 16197), (185, 16206), (195, 16254), (216, 16416), (222, 16446), (223, 16458), (230, 16497), (233, 16512), (238, 16533), (247, 16590), (249, 16599), (252, 16626), (266, 16725), (283, 16824), (287, 16839), (299, 16923), (303, 16944), (313, 16989), (328, 17052), (329, 17055), (345, 17106), (349, 17121), (382, 17265), (388, 17292), (398, 17355), (402, 17370), (406, 17400), (416, 17496), (427, 17562), (451, 17625), (489, 17820), (490, 17823), (495, 17844),

Gene: BreSam8\_27 Start: 15972, Stop: 18998, Start Num: 15

Candidate Starts for BreSam8\_27:

(11, 15918), (Start: 15 @15972 has 81 MA's), (26, 16086), (34, 16152), (35, 16155), (37, 16164), (45, 16200), (54, 16251), (66, 16323), (78, 16395), (99, 16515), (101, 16518), (111, 16587), (112, 16632), (126, 16725), (130, 16734), (137, 16752), (142, 16779), (152, 16842), (155, 16854), (159, 16887), (164, 16905), (174, 16971), (175, 16974), (176, 16980), (179, 16995), (181, 17004), (183, 17016), (185, 17025), (202, 17118), (216, 17235), (217, 17238), (222, 17265), (223, 17277), (233, 17331), (238, 17352), (249, 17418), (252, 17445), (268, 17550), (277, 17598), (283, 17643), (292, 17691),

(298, 17733), (299, 17742), (305, 17772), (306, 17775), (309, 17787), (321, 17844), (322, 17850), (328, 17871), (329, 17874), (364, 18012), (370, 18024), (382, 18084), (393, 18144), (398, 18174), (399, 18177), (401, 18186), (412, 18279), (420, 18369), (432, 18435), (434, 18447), (448, 18489), (459, 18552), (472, 18609), (477, 18678), (483, 18714), (496, 18795), (509, 18930),

Gene: Bugatti\_25 Start: 15495, Stop: 18530, Start Num: 14

Candidate Starts for Bugatti\_25:

(Start: 14 @15495 has 32 MA's), (33, 15669), (35, 15681), (41, 15714), (78, 15924), (99, 16044), (101, 16047), (126, 16251), (135, 16272), (141, 16302), (142, 16305), (152, 16368), (155, 16380), (159, 16413), (164, 16431), (175, 16500), (176, 16506), (179, 16521), (181, 16530), (183, 16542), (185, 16551), (202, 16644), (216, 16761), (217, 16764), (221, 16788), (222, 16791), (223, 16803), (233, 16857), (238, 16878), (241, 16899), (249, 16944), (252, 16971), (255, 16983), (277, 17124), (283, 17169), (287, 17184), (298, 17259), (299, 17268), (305, 17298), (309, 17313), (310, 17316), (313, 17334), (318, 17355), (319, 17358), (328, 17397), (329, 17400), (353, 17484), (370, 17550), (375, 17571), (382, 17610), (391, 17649), (393, 17670), (398, 17700), (399, 17703), (401, 17712), (405, 17736), (412, 17805), (414, 17826), (420, 17895), (424, 17913), (432, 17961), (434, 17973), (448, 18015), (450, 18027), (458, 18075), (483, 18246), (485, 18276), (491, 18306), (496, 18327), (509, 18462), (513, 18510),

Gene: Buggy\_28 Start: 17119, Stop: 19662, Start Num: 60

Candidate Starts for Buggy\_28:

(Start: 60 @17119 has 89 MA's), (92, 17299), (93, 17302), (120, 17470), (121, 17476), (124, 17497), (126, 17506), (130, 17515), (135, 17527), (144, 17572), (146, 17593), (155, 17635), (164, 17686), (169, 17731), (171, 17734), (174, 17752), (181, 17785), (183, 17797), (185, 17806), (188, 17827), (189, 17830), (205, 17917), (216, 18016), (223, 18058), (224, 18067), (227, 18076), (238, 18133), (249, 18199), (255, 18238), (268, 18331), (274, 18367), (283, 18424), (295, 18490), (299, 18523), (302, 18538), (303, 18544), (305, 18553), (309, 18568), (313, 18589), (318, 18610), (322, 18631), (323, 18634), (328, 18652), (329, 18655), (345, 18706), (359, 18763), (362, 18781), (370, 18805), (382, 18865), (388, 18892), (398, 18955), (406, 19000), (419, 19138), (451, 19228), (458, 19237), (467, 19261), (478, 19348), (482, 19378), (495, 19462),

Gene: BuzzBuzz\_26 Start: 16063, Stop: 19089, Start Num: 15

Candidate Starts for BuzzBuzz\_26:

(11, 16009), (Start: 15 @16063 has 81 MA's), (26, 16177), (34, 16243), (35, 16246), (37, 16255), (45, 16291), (54, 16342), (66, 16414), (78, 16486), (99, 16606), (101, 16609), (111, 16678), (112, 16723), (126, 16816), (130, 16825), (137, 16843), (142, 16870), (152, 16933), (155, 16945), (159, 16978), (164, 16996), (174, 17062), (175, 17065), (176, 17071), (179, 17086), (181, 17095), (183, 17107), (185, 17116), (199, 17194), (202, 17209), (216, 17326), (217, 17329), (222, 17356), (223, 17368), (233, 17422), (238, 17443), (249, 17509), (255, 17548), (268, 17641), (277, 17689), (283, 17734), (292, 17782), (298, 17824), (299, 17833), (305, 17863), (306, 17866), (309, 17878), (321, 17935), (322, 17941), (328, 17962), (329, 17965), (364, 18103), (370, 18115), (382, 18175), (392, 18232), (412, 18370), (414, 18391), (416, 18415), (420, 18460), (424, 18478), (432, 18526), (434, 18538), (448, 18580), (459, 18643), (472, 18700), (477, 18769), (483, 18805), (496, 18886), (509, 19021),

Gene: Bxz2\_26 Start: 16073, Stop: 19099, Start Num: 15

Candidate Starts for Bxz2\_26:

(11, 16019), (Start: 15 @16073 has 81 MA's), (26, 16187), (34, 16253), (35, 16256), (37, 16265), (45, 16301), (54, 16352), (66, 16424), (78, 16496), (99, 16616), (101, 16619), (111, 16688), (112, 16733), (126, 16826), (130, 16835), (137, 16853), (142, 16880), (152, 16943), (155, 16955), (159, 16988), (164, 17006), (174, 17072), (175, 17075), (176, 17081), (179, 17096), (181, 17105), (183, 17117), (185, 17126), (199, 17204), (202, 17219), (216, 17336), (217, 17339), (222, 17366), (223, 17378), (233, 17432), (238, 17453), (249, 17519), (255, 17558), (268, 17651), (277, 17699), (283, 17744), (292, 17792), (298, 17834), (299, 17843), (305, 17873), (306, 17876), (309, 17888), (321, 17945),

(322, 17951), (328, 17972), (329, 17975), (364, 18113), (370, 18125), (382, 18185), (392, 18242), (412, 18380), (414, 18401), (416, 18425), (420, 18470), (424, 18488), (432, 18536), (434, 18548), (448, 18590), (459, 18653), (472, 18710), (477, 18779), (483, 18815), (496, 18896), (509, 19031),

Gene: C3\_24 Start: 16651, Stop: 19164, Start Num: 60

Candidate Starts for C3\_24:

(Start: 60 @16651 has 89 MA's), (92, 16831), (93, 16834), (115, 16945), (142, 17080), (151, 17140), (155, 17155), (158, 17185), (159, 17188), (174, 17272), (179, 17296), (184, 17320), (188, 17347), (189, 17350), (209, 17461), (216, 17536), (221, 17563), (223, 17578), (233, 17632), (238, 17653), (249, 17719), (251, 17737), (252, 17746), (266, 17845), (272, 17878), (274, 17887), (283, 17944), (287, 17959), (303, 18064), (329, 18175), (336, 18187), (338, 18193), (345, 18226), (375, 18346), (398, 18475), (402, 18490), (406, 18520), (408, 18532), (410, 18568), (427, 18682), (435, 18694), (449, 18736), (490, 18943), (494, 18961), (495, 18964), (516, 19150),

Gene: CRB1\_26 Start: 16605, Stop: 19142, Start Num: 60

Candidate Starts for CRB1\_26:

(Start: 60 @16605 has 89 MA's), (92, 16785), (93, 16788), (103, 16836), (120, 16950), (121, 16956), (124, 16977), (126, 16986), (132, 17001), (146, 17073), (155, 17115), (164, 17166), (171, 17214), (174, 17232), (181, 17265), (183, 17277), (185, 17286), (216, 17496), (223, 17538), (224, 17547), (227, 17556), (238, 17613), (248, 17676), (249, 17679), (255, 17718), (279, 17871), (280, 17877), (283, 17904), (291, 17949), (303, 18024), (305, 18033), (309, 18048), (313, 18069), (319, 18093), (323, 18114), (329, 18135), (345, 18186), (359, 18243), (370, 18285), (381, 18336), (382, 18345), (388, 18372), (398, 18435), (419, 18618), (451, 18708), (458, 18717), (478, 18828), (482, 18858), (495, 18942),

Gene: Calvinny\_28 Start: 16057, Stop: 19083, Start Num: 15

Candidate Starts for Calvinny\_28:

(11, 16003), (Start: 15 @16057 has 81 MA's), (26, 16171), (34, 16237), (35, 16240), (37, 16249), (45, 16285), (54, 16336), (66, 16408), (78, 16480), (99, 16600), (101, 16603), (111, 16672), (112, 16717), (126, 16810), (130, 16819), (142, 16864), (148, 16903), (152, 16927), (155, 16939), (159, 16972), (164, 16990), (167, 17011), (175, 17059), (176, 17065), (179, 17080), (181, 17089), (183, 17101), (185, 17110), (202, 17203), (215, 17290), (216, 17320), (217, 17323), (222, 17350), (223, 17362), (233, 17416), (238, 17437), (242, 17467), (249, 17503), (266, 17629), (277, 17683), (283, 17728), (292, 17776), (298, 17818), (299, 17827), (305, 17857), (321, 17929), (322, 17935), (328, 17956), (329, 17959), (336, 17971), (363, 18088), (364, 18097), (382, 18169), (383, 18172), (391, 18208), (398, 18259), (399, 18262), (401, 18271), (420, 18454), (432, 18520), (434, 18532), (448, 18574), (459, 18637), (472, 18694), (477, 18763), (483, 18799), (496, 18880), (509, 19015), (510, 19027),

Gene: Caraxes\_25 Start: 15288, Stop: 17795, Start Num: 61

Candidate Starts for Caraxes\_25:

(Start: 58 @15270 has 4 MA's), (61, 15288), (79, 15393), (91, 15459), (92, 15462), (93, 15465), (116, 15585), (130, 15666), (142, 15711), (155, 15786), (161, 15828), (169, 15882), (174, 15903), (181, 15936), (185, 15957), (188, 15978), (189, 15981), (216, 16167), (221, 16194), (223, 16209), (233, 16263), (238, 16284), (249, 16350), (283, 16575), (287, 16590), (290, 16617), (291, 16620), (303, 16695), (309, 16719), (310, 16722), (313, 16740), (328, 16803), (329, 16806), (342, 16845), (345, 16857), (364, 16944), (370, 16956), (382, 17016), (383, 17019), (388, 17043), (392, 17073), (398, 17106), (416, 17247), (427, 17313), (451, 17376), (490, 17574), (495, 17595), (500, 17670), (508, 17706), (515, 17781),

Gene: Catalina\_27 Start: 17591, Stop: 20500, Start Num: 22

Candidate Starts for Catalina\_27:

(Start: 22 @17591 has 33 MA's), (24, 17603), (32, 17663), (62, 17822), (74, 17885), (83, 17948), (89, 17990), (99, 18044), (101, 18047), (107, 18086), (127, 18257), (130, 18263), (136, 18278), (151,

18368), (152, 18371), (155, 18383), (161, 18425), (169, 18479), (174, 18500), (185, 18554), (188, 18575), (189, 18578), (194, 18596), (204, 18659), (213, 18725), (216, 18764), (221, 18791), (223, 18806), (229, 18836), (233, 18860), (236, 18872), (238, 18881), (249, 18947), (255, 18986), (264, 19052), (268, 19079), (272, 19106), (283, 19172), (291, 19217), (303, 19292), (313, 19337), (318, 19358), (322, 19379), (323, 19382), (328, 19400), (329, 19403), (340, 19430), (359, 19511), (370, 19553), (398, 19703), (402, 19718), (406, 19748), (411, 19799), (419, 19886), (421, 19895), (429, 19946), (448, 20009), (452, 20030), (458, 20066), (467, 20102), (468, 20108), (477, 20186), (481, 20213), (489, 20273), (499, 20342), (500, 20372), (505, 20399), (510, 20438), (514, 20480),

Gene: Caviar\_26 Start: 16043, Stop: 19081, Start Num: 14

Candidate Starts for Caviar\_26:

(Start: 14 @16043 has 32 MA's), (33, 16217), (35, 16229), (41, 16262), (78, 16469), (82, 16490), (99, 16589), (101, 16592), (126, 16802), (130, 16811), (135, 16823), (142, 16856), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (249, 17495), (255, 17534), (277, 17675), (283, 17720), (298, 17810), (299, 17819), (305, 17849), (318, 17906), (321, 17921), (328, 17948), (329, 17951), (338, 17969), (363, 18080), (382, 18161), (392, 18218), (400, 18260), (412, 18356), (414, 18377), (416, 18401), (420, 18446), (424, 18464), (432, 18512), (434, 18524), (448, 18566), (450, 18578), (458, 18626), (483, 18797), (491, 18857), (494, 18869), (498, 18896), (499, 18917), (509, 19013), (513, 19061),

Gene: Centaur\_28 Start: 17112, Stop: 19619, Start Num: 60

Candidate Starts for Centaur\_28:

(Start: 60 @17112 has 89 MA's), (79, 17223), (90, 17280), (124, 17466), (142, 17529), (146, 17562), (148, 17568), (179, 17748), (181, 17757), (184, 17772), (185, 17778), (188, 17799), (189, 17802), (194, 17820), (202, 17871), (203, 17880), (216, 17988), (223, 18030), (224, 18039), (227, 18048), (233, 18084), (238, 18105), (248, 18168), (249, 18171), (251, 18189), (255, 18210), (283, 18396), (287, 18411), (290, 18438), (299, 18495), (302, 18510), (303, 18516), (305, 18525), (307, 18531), (313, 18561), (318, 18582), (329, 18627), (334, 18633), (342, 18666), (349, 18693), (358, 18732), (364, 18765), (370, 18777), (382, 18837), (388, 18864), (398, 18927), (406, 18972), (408, 18984), (410, 19020), (415, 19056), (417, 19089), (439, 19152), (447, 19176), (479, 19320), (495, 19419), (503, 19506), (516, 19605),

Gene: Changeling\_28 Start: 18472, Stop: 20976, Start Num: 60

Candidate Starts for Changeling\_28:

(Start: 60 @18472 has 89 MA's), (79, 18583), (82, 18601), (90, 18640), (95, 18661), (98, 18685), (119, 18781), (124, 18811), (130, 18829), (155, 18949), (164, 19000), (175, 19069), (176, 19075), (179, 19090), (181, 19099), (183, 19111), (185, 19120), (216, 19330), (221, 19357), (223, 19372), (233, 19426), (238, 19447), (249, 19513), (255, 19552), (283, 19738), (287, 19753), (299, 19837), (302, 19852), (303, 19858), (305, 19867), (309, 19882), (313, 19903), (318, 19924), (328, 19966), (336, 19981), (342, 20008), (346, 20023), (356, 20065), (359, 20077), (370, 20119), (382, 20179), (388, 20206), (392, 20236), (398, 20269), (406, 20314), (408, 20326), (427, 20476), (449, 20533), (451, 20542), (458, 20551), (478, 20662), (482, 20692), (495, 20776), (509, 20905),

Gene: Charm\_26 Start: 15553, Stop: 18648, Start Num: 6

Candidate Starts for Charm\_26:

(Start: 6 @15553 has 1 MA's), (Start: 16 @15655 has 1 MA's), (Start: 22 @15742 has 33 MA's), (24, 15754), (46, 15886), (51, 15907), (53, 15928), (62, 15970), (63, 15982), (74, 16033), (83, 16096), (89, 16138), (101, 16195), (127, 16405), (130, 16411), (151, 16516), (155, 16531), (160, 16570), (161, 16573), (174, 16648), (175, 16651), (185, 16702), (188, 16723), (189, 16726), (194, 16744), (216, 16912), (221, 16939), (223, 16954), (233, 17008), (238, 17029), (248, 17092), (249, 17095), (255, 17134), (268, 17227), (272, 17254), (292, 17368), (293, 17377), (300, 17422), (305, 17449), (313,

17485), (318, 17506), (321, 17521), (328, 17548), (329, 17551), (339, 17572), (346, 17605), (360, 17665), (370, 17701), (398, 17851), (406, 17896), (411, 17947), (417, 18013), (420, 18037), (424, 18055), (427, 18076), (429, 18094), (439, 18124), (448, 18157), (452, 18178), (456, 18208), (468, 18259), (477, 18337), (483, 18373), (489, 18424), (495, 18448), (500, 18523), (510, 18589), (514, 18631),

Gene: Che12\_28 Start: 15530, Stop: 18055, Start Num: 58

Candidate Starts for Che12\_28:

(Start: 58 @15530 has 4 MA's), (61, 15548), (79, 15653), (91, 15719), (92, 15722), (93, 15725), (142, 15974), (146, 16007), (147, 16010), (155, 16049), (164, 16100), (169, 16145), (174, 16166), (181, 16199), (184, 16214), (185, 16220), (188, 16241), (216, 16430), (221, 16457), (223, 16472), (233, 16526), (238, 16547), (249, 16613), (266, 16739), (283, 16838), (287, 16853), (290, 16880), (292, 16886), (303, 16958), (309, 16982), (310, 16985), (313, 17003), (321, 17039), (328, 17066), (329, 17069), (345, 17120), (346, 17123), (364, 17207), (382, 17279), (388, 17306), (392, 17336), (398, 17369), (402, 17384), (427, 17576), (451, 17639), (490, 17837), (495, 17858), (500, 17933), (508, 17969),

Gene: ChipMunk\_28 Start: 17023, Stop: 19566, Start Num: 60

Candidate Starts for ChipMunk\_28:

(Start: 60 @17023 has 89 MA's), (91, 17200), (92, 17203), (93, 17206), (119, 17371), (121, 17380), (124, 17401), (126, 17410), (135, 17431), (142, 17464), (146, 17497), (155, 17539), (164, 17590), (169, 17635), (171, 17638), (174, 17656), (181, 17689), (183, 17701), (185, 17710), (188, 17731), (189, 17734), (216, 17920), (223, 17962), (224, 17971), (227, 17980), (238, 18037), (249, 18103), (255, 18142), (268, 18235), (274, 18271), (283, 18328), (295, 18394), (299, 18427), (302, 18442), (303, 18448), (305, 18457), (309, 18472), (313, 18493), (318, 18514), (322, 18535), (323, 18538), (328, 18556), (329, 18559), (342, 18598), (345, 18610), (359, 18667), (362, 18685), (370, 18709), (382, 18769), (388, 18796), (398, 18859), (419, 19042), (449, 19123), (451, 19132), (458, 19141), (478, 19252), (482, 19282), (495, 19366),

Gene: Chiqui\_24 Start: 15764, Stop: 18802, Start Num: 14

Candidate Starts for Chiqui\_24:

(Start: 14 @15764 has 32 MA's), (33, 15938), (41, 15983), (78, 16193), (101, 16316), (126, 16523), (142, 16577), (155, 16652), (159, 16685), (164, 16703), (166, 16715), (177, 16781), (181, 16802), (183, 16814), (185, 16823), (194, 16865), (202, 16916), (216, 17033), (217, 17036), (223, 17075), (233, 17129), (238, 17150), (249, 17216), (252, 17243), (268, 17348), (277, 17396), (283, 17441), (287, 17456), (292, 17489), (298, 17531), (299, 17540), (305, 17570), (309, 17585), (313, 17606), (321, 17642), (328, 17669), (329, 17672), (339, 17693), (342, 17711), (353, 17756), (362, 17798), (363, 17801), (382, 17882), (391, 17921), (398, 17972), (399, 17975), (401, 17984), (405, 18008), (412, 18077), (414, 18098), (420, 18167), (424, 18185), (432, 18233), (434, 18245), (444, 18275), (448, 18287), (450, 18299), (458, 18347), (483, 18518), (491, 18578), (496, 18599), (505, 18695), (509, 18734), (513, 18782),

Gene: Colbster\_27 Start: 15979, Stop: 19005, Start Num: 15

Candidate Starts for Colbster\_27:

(11, 15925), (Start: 15 @15979 has 81 MA's), (26, 16093), (34, 16159), (35, 16162), (37, 16171), (45, 16207), (54, 16258), (66, 16330), (78, 16402), (99, 16522), (101, 16525), (111, 16594), (112, 16639), (126, 16732), (130, 16741), (137, 16759), (142, 16786), (152, 16849), (155, 16861), (159, 16894), (164, 16912), (174, 16978), (175, 16981), (176, 16987), (179, 17002), (181, 17011), (183, 17023), (185, 17032), (199, 17110), (202, 17125), (216, 17242), (217, 17245), (222, 17272), (223, 17284), (233, 17338), (238, 17359), (249, 17425), (255, 17464), (268, 17557), (277, 17605), (283, 17650), (292, 17698), (298, 17740), (299, 17749), (305, 17779), (306, 17782), (309, 17794), (321, 17851), (322, 17857), (328, 17878), (329, 17881), (364, 18019), (370, 18031), (382, 18091), (392, 18148), (412, 18286), (414, 18307), (416, 18331), (420, 18376), (424, 18394), (432, 18442), (434, 18454),

(448, 18496), (459, 18559), (472, 18616), (477, 18685), (483, 18721), (496, 18802), (509, 18937),

Gene: Colin\_30 Start: 18311, Stop: 20851, Start Num: 60

Candidate Starts for Colin\_30:

(Start: 60 @18311 has 89 MA's), (92, 18491), (103, 18542), (121, 18662), (124, 18683), (126, 18692), (132, 18707), (135, 18713), (142, 18746), (146, 18779), (148, 18785), (155, 18821), (179, 18965), (181, 18974), (184, 18989), (185, 18995), (188, 19016), (194, 19037), (203, 19097), (216, 19205), (223, 19247), (224, 19256), (227, 19265), (233, 19301), (236, 19313), (238, 19322), (249, 19388), (255, 19427), (275, 19559), (283, 19613), (292, 19661), (303, 19733), (307, 19748), (313, 19778), (323, 19823), (329, 19844), (342, 19883), (349, 19910), (370, 19994), (382, 20054), (388, 20081), (398, 20144), (406, 20189), (410, 20237), (449, 20408), (451, 20417), (458, 20426), (478, 20537), (482, 20567), (494, 20648), (495, 20651),

Gene: Conquerage\_27 Start: 17620, Stop: 20529, Start Num: 22

Candidate Starts for Conquerage\_27:

(Start: 22 @17620 has 33 MA's), (24, 17632), (32, 17692), (74, 17914), (83, 17977), (89, 18019), (99, 18073), (101, 18076), (107, 18115), (127, 18286), (130, 18292), (136, 18307), (151, 18397), (152, 18400), (155, 18412), (161, 18454), (169, 18508), (174, 18529), (185, 18583), (188, 18604), (189, 18607), (194, 18625), (204, 18688), (213, 18754), (216, 18793), (221, 18820), (223, 18835), (229, 18865), (233, 18889), (236, 18901), (238, 18910), (249, 18976), (255, 19015), (264, 19081), (268, 19108), (272, 19135), (291, 19246), (303, 19321), (309, 19345), (313, 19366), (318, 19387), (322, 19408), (323, 19411), (328, 19429), (329, 19432), (340, 19459), (355, 19519), (361, 19549), (370, 19582), (379, 19612), (380, 19624), (398, 19732), (402, 19747), (406, 19777), (411, 19828), (419, 19915), (421, 19924), (429, 19975), (448, 20038), (452, 20059), (458, 20095), (467, 20131), (468, 20137), (477, 20215), (481, 20242), (499, 20371), (500, 20401), (505, 20428), (510, 20467), (514, 20509),

Gene: Crucio\_26 Start: 16547, Stop: 19084, Start Num: 60

Candidate Starts for Crucio\_26:

(Start: 60 @16547 has 89 MA's), (91, 16724), (92, 16727), (93, 16730), (98, 16760), (121, 16898), (124, 16919), (126, 16928), (135, 16949), (142, 16982), (151, 17042), (155, 17057), (164, 17108), (171, 17156), (174, 17174), (181, 17207), (183, 17219), (184, 17222), (185, 17228), (188, 17249), (189, 17252), (205, 17339), (216, 17438), (223, 17480), (224, 17489), (227, 17498), (236, 17546), (238, 17555), (249, 17621), (255, 17660), (283, 17846), (287, 17861), (292, 17894), (299, 17945), (303, 17966), (307, 17981), (309, 17990), (312, 18005), (328, 18074), (370, 18227), (375, 18248), (398, 18377), (406, 18422), (408, 18434), (410, 18470), (451, 18650), (458, 18659), (478, 18770), (482, 18800), (495, 18884),

Gene: Cullens\_27 Start: 15978, Stop: 19004, Start Num: 15

Candidate Starts for Cullens\_27:

(11, 15924), (Start: 15 @15978 has 81 MA's), (26, 16092), (34, 16158), (35, 16161), (37, 16170), (45, 16206), (54, 16257), (66, 16329), (78, 16401), (99, 16521), (101, 16524), (111, 16593), (112, 16638), (126, 16731), (130, 16740), (137, 16758), (142, 16785), (152, 16848), (155, 16860), (159, 16893), (164, 16911), (174, 16977), (175, 16980), (176, 16986), (179, 17001), (181, 17010), (183, 17022), (185, 17031), (199, 17109), (202, 17124), (216, 17241), (217, 17244), (222, 17271), (223, 17283), (233, 17337), (238, 17358), (249, 17424), (255, 17463), (268, 17556), (277, 17604), (283, 17649), (292, 17697), (298, 17739), (299, 17748), (305, 17778), (306, 17781), (309, 17793), (321, 17850), (322, 17856), (328, 17877), (329, 17880), (364, 18018), (370, 18030), (382, 18090), (392, 18147), (412, 18285), (414, 18306), (416, 18330), (420, 18375), (424, 18393), (432, 18441), (434, 18453), (448, 18495), (459, 18558), (472, 18615), (477, 18684), (483, 18720), (496, 18801), (509, 18936),

Gene: D29\_26 Start: 16508, Stop: 19021, Start Num: 60

Candidate Starts for D29\_26:

(Start: 60 @16508 has 89 MA's), (92, 16688), (93, 16691), (141, 16934), (142, 16937), (151, 16997), (155, 17012), (158, 17042), (159, 17045), (174, 17129), (179, 17153), (184, 17177), (188, 17204), (189, 17207), (209, 17318), (216, 17393), (221, 17420), (223, 17435), (233, 17489), (238, 17510), (249, 17576), (251, 17594), (252, 17603), (266, 17702), (272, 17735), (274, 17744), (283, 17801), (287, 17816), (303, 17921), (329, 18032), (336, 18044), (338, 18050), (345, 18083), (346, 18086), (375, 18203), (398, 18332), (402, 18347), (406, 18377), (408, 18389), (410, 18425), (427, 18539), (435, 18551), (449, 18593), (490, 18800), (494, 18818), (495, 18821), (516, 19007),

Gene: D32\_29 Start: 16508, Stop: 19021, Start Num: 60

Candidate Starts for D32\_29:

(Start: 60 @16508 has 89 MA's), (92, 16688), (93, 16691), (141, 16934), (142, 16937), (151, 16997), (155, 17012), (158, 17042), (159, 17045), (174, 17129), (179, 17153), (184, 17177), (188, 17204), (189, 17207), (209, 17318), (216, 17393), (221, 17420), (223, 17435), (233, 17489), (238, 17510), (249, 17576), (251, 17594), (252, 17603), (266, 17702), (272, 17735), (274, 17744), (283, 17801), (287, 17816), (303, 17921), (329, 18032), (336, 18044), (338, 18050), (345, 18083), (346, 18086), (375, 18203), (398, 18332), (402, 18347), (406, 18377), (408, 18389), (410, 18425), (427, 18539), (435, 18551), (449, 18593), (490, 18800), (494, 18818), (495, 18821), (516, 19007),

Gene: DBQu4n\_29 Start: 16508, Stop: 19021, Start Num: 60

Candidate Starts for DBQu4n\_29:

(Start: 60 @16508 has 89 MA's), (92, 16688), (93, 16691), (142, 16937), (151, 16997), (155, 17012), (158, 17042), (159, 17045), (174, 17129), (179, 17153), (184, 17177), (188, 17204), (189, 17207), (208, 17312), (216, 17393), (221, 17420), (223, 17435), (233, 17489), (238, 17510), (249, 17576), (251, 17594), (252, 17603), (266, 17702), (272, 17735), (274, 17744), (283, 17801), (287, 17816), (303, 17921), (329, 18032), (336, 18044), (338, 18050), (345, 18083), (375, 18203), (398, 18332), (402, 18347), (406, 18377), (408, 18389), (410, 18425), (427, 18539), (435, 18551), (449, 18593), (490, 18800), (494, 18818), (495, 18821), (516, 19007),

Gene: DaHudson\_27 Start: 15971, Stop: 18997, Start Num: 15

Candidate Starts for DaHudson\_27:

(11, 15917), (Start: 15 @15971 has 81 MA's), (26, 16085), (34, 16151), (35, 16154), (37, 16163), (45, 16199), (54, 16250), (66, 16322), (78, 16394), (99, 16514), (101, 16517), (111, 16586), (112, 16631), (126, 16724), (130, 16733), (137, 16751), (142, 16778), (152, 16841), (155, 16853), (159, 16886), (164, 16904), (174, 16970), (175, 16973), (176, 16979), (179, 16994), (181, 17003), (183, 17015), (185, 17024), (202, 17117), (216, 17234), (217, 17237), (222, 17264), (223, 17276), (233, 17330), (238, 17351), (249, 17417), (252, 17444), (268, 17549), (277, 17597), (283, 17642), (292, 17690), (298, 17732), (299, 17741), (305, 17771), (306, 17774), (309, 17786), (321, 17843), (322, 17849), (328, 17870), (329, 17873), (364, 18011), (370, 18023), (382, 18083), (393, 18143), (398, 18173), (399, 18176), (401, 18185), (412, 18278), (420, 18368), (432, 18434), (434, 18446), (448, 18488), (459, 18551), (472, 18608), (477, 18677), (483, 18713), (496, 18794), (509, 18929),

Gene: Daishi\_26 Start: 14904, Stop: 17930, Start Num: 15

Candidate Starts for Daishi\_26:

(11, 14850), (Start: 15 @14904 has 81 MA's), (26, 15018), (34, 15084), (35, 15087), (37, 15096), (45, 15132), (54, 15183), (66, 15255), (78, 15327), (99, 15447), (101, 15450), (111, 15519), (112, 15564), (126, 15657), (130, 15666), (137, 15684), (142, 15711), (152, 15774), (155, 15786), (159, 15819), (164, 15837), (174, 15903), (175, 15906), (176, 15912), (179, 15927), (181, 15936), (183, 15948), (185, 15957), (199, 16035), (202, 16050), (216, 16167), (217, 16170), (222, 16197), (223, 16209), (233, 16263), (238, 16284), (249, 16350), (255, 16389), (268, 16482), (277, 16530), (283, 16575), (292, 16623), (298, 16665), (299, 16674), (305, 16704), (306, 16707), (309, 16719), (321, 16776), (322, 16782), (328, 16803), (329, 16806), (364, 16944), (370, 16956), (382, 17016), (392, 17073), (412, 17211), (414, 17232), (416, 17256), (420, 17301), (424, 17319), (432, 17367), (434, 17379), (448, 17421), (459, 17484), (472, 17541), (477, 17610), (483, 17646), (496, 17727), (509, 17862),



Gene: Dalmatian\_26 Start: 16688, Stop: 19231, Start Num: 60

Candidate Starts for Dalmatian\_26:

(Start: 60 @16688 has 89 MA's), (91, 16865), (92, 16868), (93, 16871), (120, 17039), (121, 17045), (124, 17066), (126, 17075), (135, 17096), (142, 17129), (146, 17162), (164, 17255), (171, 17303), (174, 17321), (179, 17345), (181, 17354), (183, 17366), (184, 17369), (185, 17375), (188, 17396), (189, 17399), (205, 17486), (216, 17585), (223, 17627), (227, 17645), (230, 17666), (236, 17693), (238, 17702), (249, 17768), (255, 17807), (283, 17993), (287, 18008), (292, 18041), (299, 18092), (303, 18113), (307, 18128), (309, 18137), (312, 18152), (328, 18221), (370, 18374), (375, 18395), (398, 18524), (402, 18539), (406, 18569), (408, 18581), (410, 18617), (451, 18797), (458, 18806), (478, 18917), (482, 18947), (495, 19031),

Gene: Darrell\_28 Start: 17782, Stop: 20697, Start Num: 22

Candidate Starts for Darrell\_28:

(Start: 22 @17782 has 33 MA's), (24, 17794), (32, 17854), (62, 18013), (74, 18076), (83, 18139), (89, 18181), (101, 18238), (127, 18451), (130, 18457), (136, 18472), (151, 18562), (152, 18565), (155, 18577), (160, 18616), (161, 18619), (169, 18673), (174, 18694), (185, 18748), (188, 18769), (189, 18772), (194, 18790), (204, 18853), (213, 18919), (216, 18958), (221, 18985), (223, 19000), (229, 19030), (233, 19054), (238, 19075), (249, 19141), (255, 19180), (268, 19273), (275, 19312), (303, 19486), (305, 19495), (313, 19531), (318, 19552), (321, 19567), (322, 19573), (328, 19594), (329, 19597), (346, 19651), (359, 19705), (360, 19711), (379, 19777), (380, 19789), (393, 19867), (398, 19897), (406, 19942), (411, 19993), (419, 20080), (421, 20089), (429, 20140), (439, 20170), (448, 20203), (458, 20263), (468, 20305), (477, 20383), (481, 20410), (489, 20470), (500, 20569), (508, 20605), (510, 20635), (514, 20677),

Gene: DARTHPhader\_27 Start: 17575, Stop: 20688, Start Num: 9

Candidate Starts for DARTHPhader\_27:

(1, 17329), (5, 17545), (Start: 9 @17575 has 5 MA's), (Start: 22 @17752 has 33 MA's), (24, 17764), (31, 17800), (74, 18034), (83, 18097), (99, 18193), (101, 18196), (107, 18235), (124, 18397), (126, 18406), (127, 18409), (132, 18421), (142, 18460), (146, 18493), (156, 18556), (164, 18586), (169, 18631), (174, 18652), (175, 18655), (179, 18676), (185, 18706), (186, 18718), (196, 18757), (197, 18766), (200, 18787), (204, 18811), (226, 18973), (234, 19015), (238, 19033), (239, 19042), (241, 19054), (248, 19096), (249, 19099), (255, 19138), (269, 19240), (272, 19258), (283, 19324), (301, 19435), (303, 19444), (313, 19489), (317, 19504), (323, 19534), (327, 19546), (328, 19552), (334, 19561), (336, 19567), (347, 19615), (349, 19621), (351, 19627), (364, 19693), (382, 19765), (383, 19768), (393, 19825), (398, 19855), (401, 19867), (405, 19891), (406, 19900), (420, 20056), (426, 20092), (428, 20101), (448, 20176), (461, 20257), (463, 20266), (483, 20413), (488, 20461), (489, 20464), (495, 20488), (509, 20617), (510, 20629),

Gene: Deloris\_27 Start: 17042, Stop: 19579, Start Num: 60

Candidate Starts for Deloris\_27:

(Start: 60 @17042 has 89 MA's), (92, 17222), (93, 17225), (103, 17273), (121, 17393), (124, 17414), (126, 17423), (135, 17444), (142, 17477), (146, 17510), (155, 17552), (164, 17603), (167, 17624), (169, 17648), (171, 17651), (174, 17669), (181, 17702), (183, 17714), (185, 17723), (188, 17744), (189, 17747), (205, 17834), (216, 17933), (223, 17975), (224, 17984), (227, 17993), (238, 18050), (249, 18116), (255, 18155), (303, 18461), (305, 18470), (307, 18476), (309, 18485), (313, 18506), (319, 18530), (323, 18551), (329, 18572), (334, 18578), (342, 18611), (345, 18623), (370, 18722), (382, 18782), (388, 18809), (398, 18872), (451, 19145), (458, 19154), (478, 19265), (482, 19295), (495, 19379),

Gene: Dieselweasel\_27 Start: 15980, Stop: 19006, Start Num: 15

Candidate Starts for Dieselweasel\_27:

(11, 15926), (Start: 15 @15980 has 81 MA's), (26, 16094), (34, 16160), (35, 16163), (37, 16172), (45, 16208), (54, 16259), (66, 16331), (78, 16403), (99, 16523), (101, 16526), (111, 16595), (112, 16640), (126, 16733), (130, 16742), (137, 16760), (142, 16787), (152, 16850), (155, 16862), (159, 16895), (164, 16913), (174, 16979), (175, 16982), (176, 16988), (179, 17003), (181, 17012), (183, 17024), (185, 17033), (199, 17111), (202, 17126), (216, 17243), (217, 17246), (222, 17273), (223, 17285), (233, 17339), (238, 17360), (249, 17426), (255, 17465), (268, 17558), (277, 17606), (283, 17651), (292, 17699), (298, 17741), (299, 17750), (305, 17780), (306, 17783), (309, 17795), (321, 17852), (322, 17858), (328, 17879), (329, 17882), (364, 18020), (370, 18032), (382, 18092), (392, 18149), (412, 18287), (414, 18308), (416, 18332), (420, 18377), (424, 18395), (432, 18443), (434, 18455), (448, 18497), (459, 18560), (472, 18617), (477, 18686), (483, 18722), (496, 18803), (509, 18938),

Gene: Dignity\_28 Start: 17064, Stop: 19607, Start Num: 60

Candidate Starts for Dignity\_28:

(Start: 60 @17064 has 89 MA's), (92, 17244), (93, 17247), (120, 17415), (121, 17421), (124, 17442), (126, 17451), (130, 17460), (135, 17472), (144, 17517), (146, 17538), (155, 17580), (164, 17631), (169, 17676), (171, 17679), (174, 17697), (181, 17730), (183, 17742), (185, 17751), (188, 17772), (189, 17775), (205, 17862), (216, 17961), (223, 18003), (224, 18012), (227, 18021), (238, 18078), (249, 18144), (255, 18183), (266, 18270), (268, 18276), (274, 18312), (283, 18369), (295, 18435), (299, 18468), (302, 18483), (303, 18489), (305, 18498), (309, 18513), (313, 18534), (318, 18555), (322, 18576), (323, 18579), (328, 18597), (329, 18600), (345, 18651), (359, 18708), (362, 18726), (370, 18750), (382, 18810), (388, 18837), (398, 18900), (406, 18945), (419, 19083), (451, 19173), (458, 19182), (467, 19206), (476, 19284), (478, 19293), (482, 19323), (495, 19407),

Gene: Drake55\_28 Start: 17129, Stop: 19636, Start Num: 60

Candidate Starts for Drake55\_28:

(Start: 60 @17129 has 89 MA's), (79, 17240), (90, 17297), (119, 17453), (124, 17483), (126, 17492), (142, 17546), (146, 17579), (148, 17585), (179, 17765), (181, 17774), (184, 17789), (185, 17795), (188, 17816), (189, 17819), (194, 17837), (202, 17888), (203, 17897), (216, 18005), (223, 18047), (224, 18056), (233, 18101), (238, 18122), (249, 18188), (255, 18227), (283, 18413), (287, 18428), (290, 18455), (299, 18512), (302, 18527), (303, 18533), (305, 18542), (309, 18557), (313, 18578), (318, 18599), (323, 18623), (334, 18650), (336, 18656), (342, 18683), (364, 18782), (370, 18794), (388, 18881), (398, 18944), (406, 18989), (410, 19037), (415, 19073), (417, 19106), (439, 19169), (447, 19193), (479, 19337), (495, 19436), (503, 19523), (516, 19622),

Gene: DreamTeam1\_26 Start: 15742, Stop: 18648, Start Num: 22

Candidate Starts for DreamTeam1\_26:

(Start: 6 @15553 has 1 MA's), (Start: 16 @15655 has 1 MA's), (Start: 22 @15742 has 33 MA's), (24, 15754), (46, 15886), (51, 15907), (53, 15928), (62, 15970), (63, 15982), (74, 16033), (83, 16096), (89, 16138), (101, 16195), (107, 16234), (127, 16405), (130, 16411), (151, 16516), (155, 16531), (160, 16570), (161, 16573), (174, 16648), (175, 16651), (185, 16702), (188, 16723), (189, 16726), (194, 16744), (216, 16912), (221, 16939), (223, 16954), (233, 17008), (238, 17029), (248, 17092), (249, 17095), (255, 17134), (268, 17227), (272, 17254), (292, 17368), (293, 17377), (300, 17422), (305, 17449), (313, 17485), (318, 17506), (321, 17521), (328, 17548), (329, 17551), (339, 17572), (346, 17605), (360, 17665), (370, 17701), (398, 17851), (406, 17896), (411, 17947), (417, 18013), (420, 18037), (424, 18055), (427, 18076), (429, 18094), (439, 18124), (448, 18157), (452, 18178), (456, 18208), (468, 18259), (477, 18337), (483, 18373), (489, 18424), (495, 18448), (500, 18523), (510, 18589), (514, 18631),

Gene: DroogsArmy\_26 Start: 17266, Stop: 20634, Start Num: 3

Candidate Starts for DroogsArmy\_26:

(Start: 3 @17266 has 4 MA's), (11, 17395), (Start: 15 @17449 has 81 MA's), (20, 17491), (38, 17653), (64, 17803), (82, 17905), (106, 18040), (135, 18238), (146, 18304), (151, 18331), (152, 18334), (155, 18346), (166, 18409), (167, 18418), (169, 18442), (176, 18472), (185, 18517), (189, 18541), (212,

18685), (216, 18727), (221, 18754), (223, 18769), (230, 18808), (233, 18823), (238, 18844), (247, 18901), (249, 18910), (250, 18919), (270, 19060), (284, 19138), (293, 19192), (303, 19255), (307, 19270), (313, 19300), (316, 19312), (317, 19315), (320, 19333), (322, 19342), (325, 19357), (329, 19375), (333, 19408), (338, 19426), (352, 19489), (363, 19555), (364, 19564), (365, 19567), (366, 19576), (367, 19579), (368, 19588), (370, 19597), (379, 19630), (380, 19642), (384, 19666), (390, 19696), (401, 19774), (403, 19786), (404, 19795), (405, 19798), (406, 19807), (407, 19816), (414, 19894), (416, 19918), (420, 19963), (424, 19981), (433, 20038), (437, 20056), (440, 20080), (443, 20089), (448, 20110), (452, 20131), (454, 20143), (456, 20164), (463, 20203), (470, 20236), (478, 20317), (483, 20350), (489, 20401), (494, 20422), (497, 20446), (503, 20512), (505, 20527), (506, 20533),

Gene: DropBear\_25 Start: 15555, Stop: 18593, Start Num: 14

Candidate Starts for DropBear\_25:

(Start: 14 @15555 has 32 MA's), (33, 15729), (35, 15741), (41, 15774), (78, 15984), (101, 16107), (105, 16128), (126, 16314), (142, 16368), (152, 16431), (155, 16443), (159, 16476), (164, 16494), (175, 16563), (176, 16569), (179, 16584), (181, 16593), (183, 16605), (185, 16614), (202, 16707), (216, 16824), (217, 16827), (222, 16854), (223, 16866), (233, 16920), (238, 16941), (241, 16962), (249, 17007), (255, 17046), (277, 17187), (283, 17232), (287, 17247), (298, 17322), (299, 17331), (305, 17361), (309, 17376), (310, 17379), (313, 17397), (318, 17418), (319, 17421), (322, 17439), (328, 17460), (329, 17463), (353, 17547), (370, 17613), (375, 17634), (382, 17673), (391, 17712), (398, 17763), (399, 17766), (401, 17775), (405, 17799), (412, 17868), (414, 17889), (420, 17958), (424, 17976), (432, 18024), (434, 18036), (448, 18078), (450, 18090), (458, 18138), (483, 18309), (485, 18339), (491, 18369), (496, 18390), (509, 18525), (510, 18537), (513, 18573),

Gene: DudeLittle\_26 Start: 16690, Stop: 19233, Start Num: 60

Candidate Starts for DudeLittle\_26:

(Start: 60 @16690 has 89 MA's), (91, 16867), (92, 16870), (93, 16873), (120, 17041), (121, 17047), (124, 17068), (126, 17077), (135, 17098), (142, 17131), (146, 17164), (164, 17257), (171, 17305), (174, 17323), (179, 17347), (181, 17356), (183, 17368), (184, 17371), (185, 17377), (188, 17398), (189, 17401), (205, 17488), (216, 17587), (223, 17629), (227, 17647), (236, 17695), (238, 17704), (249, 17770), (255, 17809), (283, 17995), (287, 18010), (292, 18043), (299, 18094), (303, 18115), (307, 18130), (309, 18139), (312, 18154), (328, 18223), (370, 18376), (375, 18397), (398, 18526), (406, 18571), (408, 18583), (410, 18619), (451, 18799), (458, 18808), (478, 18919), (482, 18949), (495, 19033),

Gene: Duplo\_29 Start: 16546, Stop: 19059, Start Num: 60

Candidate Starts for Duplo\_29:

(Start: 60 @16546 has 89 MA's), (92, 16726), (93, 16729), (142, 16975), (151, 17035), (155, 17050), (158, 17080), (159, 17083), (174, 17167), (179, 17191), (184, 17215), (188, 17242), (189, 17245), (208, 17350), (216, 17431), (221, 17458), (223, 17473), (233, 17527), (238, 17548), (249, 17614), (251, 17632), (252, 17641), (266, 17740), (272, 17773), (274, 17782), (283, 17839), (287, 17854), (303, 17959), (329, 18070), (336, 18082), (338, 18088), (345, 18121), (375, 18241), (398, 18370), (402, 18385), (406, 18415), (408, 18427), (410, 18463), (427, 18577), (435, 18589), (449, 18631), (490, 18838), (494, 18856), (495, 18859), (516, 19045),

Gene: EZMoney23\_30 Start: 18597, Stop: 21101, Start Num: 60

Candidate Starts for EZMoney23\_30:

(Start: 60 @18597 has 89 MA's), (79, 18708), (82, 18726), (90, 18765), (95, 18786), (98, 18810), (124, 18939), (126, 18948), (155, 19077), (164, 19128), (175, 19197), (176, 19203), (179, 19218), (181, 19227), (183, 19239), (185, 19248), (216, 19458), (221, 19485), (223, 19500), (233, 19554), (238, 19575), (249, 19641), (255, 19680), (283, 19866), (299, 19965), (302, 19980), (303, 19986), (305, 19995), (309, 20010), (313, 20031), (318, 20052), (328, 20094), (336, 20109), (342, 20136), (356, 20193), (359, 20205), (370, 20247), (382, 20307), (388, 20334), (392, 20364), (398, 20397), (406,

20442), (408, 20454), (449, 20661), (451, 20670), (458, 20679), (475, 20760), (478, 20790), (482, 20820), (495, 20901),

Gene: Echild\_26 Start: 16721, Stop: 19258, Start Num: 60

Candidate Starts for Echild\_26:

(Start: 60 @16721 has 89 MA's), (92, 16901), (98, 16934), (120, 17066), (121, 17072), (124, 17093), (126, 17102), (146, 17189), (155, 17231), (164, 17282), (168, 17318), (171, 17330), (174, 17348), (181, 17381), (183, 17393), (184, 17396), (185, 17402), (188, 17423), (189, 17426), (216, 17612), (223, 17654), (224, 17663), (227, 17672), (238, 17729), (249, 17795), (255, 17834), (279, 17987), (303, 18140), (305, 18149), (307, 18155), (309, 18164), (313, 18185), (319, 18209), (323, 18230), (329, 18251), (342, 18290), (345, 18302), (370, 18401), (382, 18461), (388, 18488), (398, 18551), (406, 18596), (410, 18644), (451, 18824), (458, 18833), (478, 18944), (482, 18974), (495, 19058),

Gene: EdogawaKiddo\_25 Start: 17590, Stop: 20499, Start Num: 22

Candidate Starts for EdogawaKiddo\_25:

(Start: 22 @17590 has 33 MA's), (24, 17602), (32, 17662), (74, 17884), (83, 17947), (89, 17989), (101, 18046), (107, 18085), (127, 18256), (130, 18262), (136, 18277), (151, 18367), (152, 18370), (155, 18382), (161, 18424), (169, 18478), (185, 18553), (188, 18574), (189, 18577), (194, 18595), (204, 18658), (213, 18724), (216, 18763), (221, 18790), (223, 18805), (229, 18835), (233, 18859), (238, 18880), (249, 18946), (255, 18985), (264, 19051), (268, 19078), (272, 19105), (283, 19171), (291, 19216), (303, 19291), (313, 19336), (318, 19357), (322, 19378), (323, 19381), (328, 19399), (329, 19402), (340, 19429), (346, 19456), (359, 19510), (398, 19702), (402, 19717), (406, 19747), (411, 19798), (419, 19885), (421, 19894), (429, 19945), (448, 20008), (452, 20029), (458, 20065), (467, 20101), (468, 20107), (477, 20185), (481, 20212), (489, 20272), (499, 20341), (500, 20371), (505, 20398), (510, 20437), (514, 20479),

Gene: Eidsmoe\_27 Start: 17620, Stop: 20529, Start Num: 22

Candidate Starts for Eidsmoe\_27:

(Start: 22 @17620 has 33 MA's), (24, 17632), (32, 17692), (74, 17914), (83, 17977), (89, 18019), (99, 18073), (101, 18076), (107, 18115), (127, 18286), (130, 18292), (136, 18307), (151, 18397), (152, 18400), (155, 18412), (161, 18454), (169, 18508), (174, 18529), (185, 18583), (188, 18604), (189, 18607), (194, 18625), (204, 18688), (213, 18754), (216, 18793), (221, 18820), (223, 18835), (229, 18865), (233, 18889), (236, 18901), (238, 18910), (249, 18976), (255, 19015), (264, 19081), (268, 19108), (272, 19135), (291, 19246), (303, 19321), (309, 19345), (313, 19366), (318, 19387), (322, 19408), (323, 19411), (328, 19429), (329, 19432), (340, 19459), (355, 19519), (361, 19549), (370, 19582), (379, 19612), (380, 19624), (398, 19732), (402, 19747), (406, 19777), (411, 19828), (419, 19915), (421, 19924), (429, 19975), (448, 20038), (452, 20059), (458, 20095), (467, 20131), (468, 20137), (477, 20215), (481, 20242), (499, 20371), (500, 20401), (505, 20428), (510, 20467), (514, 20509),

Gene: Elephantoon\_27 Start: 17214, Stop: 20141, Start Num: 22

Candidate Starts for Elephantoon\_27:

(Start: 22 @17214 has 33 MA's), (24, 17226), (31, 17262), (32, 17286), (74, 17508), (83, 17571), (89, 17613), (99, 17667), (101, 17670), (127, 17883), (130, 17889), (136, 17904), (151, 17994), (152, 17997), (155, 18009), (160, 18048), (169, 18105), (183, 18171), (185, 18180), (188, 18201), (189, 18204), (194, 18222), (204, 18285), (216, 18390), (217, 18393), (219, 18402), (221, 18417), (223, 18432), (233, 18486), (238, 18507), (248, 18570), (249, 18573), (255, 18612), (268, 18705), (303, 18918), (313, 18963), (322, 19005), (328, 19026), (329, 19029), (339, 19050), (349, 19095), (362, 19155), (370, 19179), (382, 19239), (383, 19242), (393, 19299), (398, 19329), (401, 19341), (405, 19365), (406, 19374), (412, 19440), (417, 19506), (420, 19530), (448, 19650), (452, 19671), (458, 19707), (468, 19749), (471, 19764), (477, 19827), (481, 19854), (489, 19914), (500, 20013), (508, 20049), (510, 20079), (514, 20121),

Gene: EmyBug\_27 Start: 17620, Stop: 20529, Start Num: 22

Candidate Starts for EmyBug\_27:

(Start: 22 @17620 has 33 MA's), (24, 17632), (32, 17692), (74, 17914), (83, 17977), (89, 18019), (99, 18073), (101, 18076), (107, 18115), (127, 18286), (130, 18292), (136, 18307), (151, 18397), (152, 18400), (155, 18412), (161, 18454), (169, 18508), (174, 18529), (185, 18583), (188, 18604), (189, 18607), (194, 18625), (204, 18688), (213, 18754), (216, 18793), (221, 18820), (223, 18835), (229, 18865), (233, 18889), (236, 18901), (238, 18910), (249, 18976), (255, 19015), (264, 19081), (268, 19108), (272, 19135), (291, 19246), (303, 19321), (313, 19366), (318, 19387), (322, 19408), (323, 19411), (328, 19429), (329, 19432), (340, 19459), (346, 19486), (359, 19540), (398, 19732), (402, 19747), (406, 19777), (411, 19828), (419, 19915), (421, 19924), (429, 19975), (448, 20038), (452, 20059), (458, 20095), (467, 20131), (468, 20137), (477, 20215), (481, 20242), (499, 20371), (500, 20401), (505, 20428), (510, 20467), (514, 20509),

Gene: EpicPhail\_27 Start: 15979, Stop: 19005, Start Num: 15

Candidate Starts for EpicPhail\_27:

(11, 15925), (Start: 15 @15979 has 81 MA's), (26, 16093), (34, 16159), (35, 16162), (37, 16171), (45, 16207), (54, 16258), (66, 16330), (78, 16402), (99, 16522), (101, 16525), (111, 16594), (112, 16639), (126, 16732), (130, 16741), (137, 16759), (142, 16786), (152, 16849), (155, 16861), (159, 16894), (164, 16912), (174, 16978), (175, 16981), (176, 16987), (179, 17002), (181, 17011), (183, 17023), (185, 17032), (199, 17110), (202, 17125), (216, 17242), (217, 17245), (222, 17272), (223, 17284), (233, 17338), (238, 17359), (249, 17425), (255, 17464), (268, 17557), (277, 17605), (283, 17650), (292, 17698), (298, 17740), (299, 17749), (305, 17779), (306, 17782), (309, 17794), (321, 17851), (322, 17857), (328, 17878), (329, 17881), (364, 18019), (370, 18031), (382, 18091), (392, 18148), (412, 18286), (414, 18307), (416, 18331), (420, 18376), (424, 18394), (432, 18442), (434, 18454), (448, 18496), (459, 18559), (472, 18616), (477, 18685), (483, 18721), (496, 18802), (509, 18937),

Gene: Equemioh13\_28 Start: 17115, Stop: 19622, Start Num: 60

Candidate Starts for Equemioh13\_28:

(Start: 60 @17115 has 89 MA's), (79, 17226), (90, 17283), (124, 17469), (142, 17532), (146, 17565), (148, 17571), (179, 17751), (181, 17760), (185, 17781), (188, 17802), (189, 17805), (194, 17823), (203, 17883), (216, 17991), (223, 18033), (233, 18087), (238, 18108), (248, 18171), (249, 18174), (251, 18192), (255, 18213), (283, 18399), (287, 18414), (290, 18441), (299, 18498), (302, 18513), (303, 18519), (305, 18528), (307, 18534), (313, 18564), (318, 18585), (329, 18630), (334, 18636), (342, 18669), (349, 18696), (364, 18768), (370, 18780), (382, 18840), (388, 18867), (398, 18930), (406, 18975), (408, 18987), (410, 19023), (415, 19059), (417, 19092), (439, 19155), (447, 19179), (479, 19323), (495, 19422), (503, 19509), (516, 19608),

Gene: EvilGenius\_28 Start: 17032, Stop: 19575, Start Num: 60

Candidate Starts for EvilGenius\_28:

(Start: 60 @17032 has 89 MA's), (91, 17209), (92, 17212), (93, 17215), (119, 17380), (121, 17389), (124, 17410), (126, 17419), (135, 17440), (142, 17473), (146, 17506), (155, 17548), (164, 17599), (166, 17611), (169, 17644), (171, 17647), (174, 17665), (181, 17698), (183, 17710), (185, 17719), (188, 17740), (189, 17743), (216, 17929), (223, 17971), (224, 17980), (227, 17989), (238, 18046), (249, 18112), (255, 18151), (268, 18244), (274, 18280), (283, 18337), (295, 18403), (299, 18436), (302, 18451), (303, 18457), (305, 18466), (309, 18481), (313, 18502), (318, 18523), (322, 18544), (323, 18547), (328, 18565), (329, 18568), (342, 18607), (345, 18619), (359, 18676), (362, 18694), (370, 18718), (382, 18778), (388, 18805), (398, 18868), (419, 19051), (449, 19132), (451, 19141), (458, 19150), (478, 19261), (482, 19291), (495, 19375),

Gene: ExplosioNervosa\_27 Start: 17623, Stop: 20532, Start Num: 22

Candidate Starts for ExplosioNervosa\_27:

(Start: 22 @17623 has 33 MA's), (24, 17635), (32, 17695), (62, 17854), (74, 17917), (83, 17980), (89, 18022), (101, 18079), (107, 18118), (127, 18289), (130, 18295), (136, 18310), (151, 18400), (152,

18403), (155, 18415), (161, 18457), (169, 18511), (185, 18586), (188, 18607), (189, 18610), (194, 18628), (204, 18691), (213, 18757), (216, 18796), (221, 18823), (223, 18838), (229, 18868), (233, 18892), (236, 18904), (238, 18913), (249, 18979), (255, 19018), (264, 19084), (268, 19111), (272, 19138), (291, 19249), (303, 19324), (313, 19369), (318, 19390), (322, 19411), (323, 19414), (328, 19432), (329, 19435), (340, 19462), (346, 19489), (359, 19543), (398, 19735), (402, 19750), (406, 19780), (411, 19831), (419, 19918), (421, 19927), (429, 19978), (448, 20041), (452, 20062), (458, 20098), (467, 20134), (468, 20140), (477, 20218), (481, 20245), (489, 20305), (499, 20374), (500, 20404), (505, 20431), (510, 20470), (514, 20512),

Gene: Fameo\_26 Start: 16665, Stop: 19202, Start Num: 60

Candidate Starts for Fameo\_26:

(Start: 60 @16665 has 89 MA's), (91, 16842), (92, 16845), (93, 16848), (120, 17010), (121, 17016), (124, 17037), (126, 17046), (135, 17067), (142, 17100), (146, 17133), (164, 17226), (171, 17274), (174, 17292), (181, 17325), (183, 17337), (184, 17340), (185, 17346), (188, 17367), (189, 17370), (216, 17556), (223, 17598), (224, 17607), (236, 17664), (238, 17673), (249, 17739), (255, 17778), (268, 17871), (270, 17889), (283, 17964), (299, 18063), (302, 18078), (303, 18084), (305, 18093), (309, 18108), (313, 18129), (318, 18150), (323, 18174), (329, 18195), (334, 18201), (342, 18234), (345, 18246), (347, 18255), (370, 18345), (382, 18405), (388, 18432), (398, 18495), (406, 18540), (419, 18678), (451, 18768), (458, 18777), (478, 18888), (482, 18918), (495, 19002),

Gene: Farber\_27 Start: 15972, Stop: 18998, Start Num: 15

Candidate Starts for Farber\_27:

(11, 15918), (Start: 15 @15972 has 81 MA's), (26, 16086), (34, 16152), (35, 16155), (37, 16164), (45, 16200), (54, 16251), (66, 16323), (78, 16395), (99, 16515), (101, 16518), (111, 16587), (112, 16632), (126, 16725), (130, 16734), (137, 16752), (142, 16779), (152, 16842), (155, 16854), (159, 16887), (164, 16905), (174, 16971), (175, 16974), (176, 16980), (179, 16995), (181, 17004), (183, 17016), (185, 17025), (202, 17118), (216, 17235), (217, 17238), (222, 17265), (223, 17277), (233, 17331), (238, 17352), (249, 17418), (252, 17445), (268, 17550), (277, 17598), (283, 17643), (292, 17691), (298, 17733), (299, 17742), (305, 17772), (306, 17775), (309, 17787), (321, 17844), (322, 17850), (328, 17871), (329, 17874), (364, 18012), (370, 18024), (382, 18084), (393, 18144), (398, 18174), (399, 18177), (401, 18186), (412, 18279), (420, 18369), (432, 18435), (434, 18447), (448, 18489), (459, 18552), (472, 18609), (477, 18678), (483, 18714), (496, 18795), (509, 18930),

Gene: Fayely\_27 Start: 17623, Stop: 20532, Start Num: 22

Candidate Starts for Fayely\_27:

(Start: 22 @17623 has 33 MA's), (24, 17635), (32, 17695), (62, 17854), (74, 17917), (83, 17980), (89, 18022), (101, 18079), (127, 18289), (130, 18295), (136, 18310), (151, 18400), (152, 18403), (155, 18415), (161, 18457), (169, 18511), (185, 18586), (188, 18607), (189, 18610), (194, 18628), (204, 18691), (213, 18757), (216, 18796), (221, 18823), (223, 18838), (229, 18868), (233, 18892), (236, 18904), (238, 18913), (249, 18979), (255, 19018), (264, 19084), (268, 19111), (272, 19138), (283, 19204), (291, 19249), (303, 19324), (313, 19369), (318, 19390), (322, 19411), (323, 19414), (328, 19432), (329, 19435), (340, 19462), (359, 19543), (370, 19585), (398, 19735), (402, 19750), (406, 19780), (411, 19831), (419, 19918), (421, 19927), (429, 19978), (448, 20041), (452, 20062), (458, 20098), (467, 20134), (468, 20140), (477, 20218), (481, 20245), (489, 20305), (499, 20374), (500, 20404), (505, 20431), (510, 20470), (514, 20512),

Gene: Fernando\_27 Start: 15978, Stop: 19004, Start Num: 15

Candidate Starts for Fernando\_27:

(11, 15924), (Start: 15 @15978 has 81 MA's), (26, 16092), (34, 16158), (35, 16161), (37, 16170), (45, 16206), (54, 16257), (66, 16329), (78, 16401), (99, 16521), (101, 16524), (111, 16593), (112, 16638), (126, 16731), (130, 16740), (137, 16758), (142, 16785), (152, 16848), (155, 16860), (159, 16893), (164, 16911), (174, 16977), (175, 16980), (176, 16986), (179, 17001), (181, 17010), (183, 17022), (185, 17031), (199, 17109), (202, 17124), (216, 17241), (217, 17244), (222, 17271), (223, 17283),

(233, 17337), (238, 17358), (249, 17424), (255, 17463), (268, 17556), (277, 17604), (283, 17649), (292, 17697), (298, 17739), (299, 17748), (305, 17778), (306, 17781), (309, 17793), (321, 17850), (322, 17856), (328, 17877), (329, 17880), (364, 18018), (370, 18030), (382, 18090), (392, 18147), (412, 18285), (414, 18306), (416, 18330), (420, 18375), (424, 18393), (432, 18441), (434, 18453), (448, 18495), (459, 18558), (472, 18615), (477, 18684), (483, 18720), (496, 18801), (509, 18936),

Gene: FiringLine\_26 Start: 16547, Stop: 19084, Start Num: 60

Candidate Starts for FiringLine\_26:

(Start: 60 @16547 has 89 MA's), (91, 16724), (92, 16727), (93, 16730), (98, 16760), (121, 16898), (124, 16919), (126, 16928), (135, 16949), (142, 16982), (151, 17042), (155, 17057), (164, 17108), (171, 17156), (174, 17174), (181, 17207), (183, 17219), (184, 17222), (185, 17228), (188, 17249), (189, 17252), (205, 17339), (216, 17438), (223, 17480), (224, 17489), (227, 17498), (236, 17546), (238, 17555), (249, 17621), (255, 17660), (283, 17846), (287, 17861), (292, 17894), (299, 17945), (303, 17966), (307, 17981), (309, 17990), (312, 18005), (328, 18074), (370, 18227), (375, 18248), (398, 18377), (406, 18422), (408, 18434), (410, 18470), (451, 18650), (458, 18659), (478, 18770), (482, 18800), (495, 18884),

Gene: First\_0026 Start: 16642, Stop: 19185, Start Num: 60

Candidate Starts for First\_0026:

(18, 16390), (Start: 60 @16642 has 89 MA's), (92, 16822), (93, 16825), (98, 16855), (119, 16990), (121, 16999), (124, 17020), (126, 17029), (135, 17050), (142, 17083), (146, 17116), (164, 17209), (171, 17257), (174, 17275), (177, 17287), (181, 17308), (185, 17329), (188, 17350), (189, 17353), (216, 17539), (223, 17581), (224, 17590), (227, 17599), (238, 17656), (249, 17722), (255, 17761), (266, 17848), (283, 17947), (303, 18067), (305, 18076), (307, 18082), (309, 18091), (313, 18112), (319, 18136), (323, 18157), (329, 18178), (335, 18187), (342, 18217), (345, 18229), (349, 18244), (359, 18286), (381, 18379), (382, 18388), (388, 18415), (398, 18478), (451, 18751), (458, 18760), (478, 18871), (482, 18901), (495, 18985),

Gene: Flare16\_26 Start: 16673, Stop: 19180, Start Num: 60

Candidate Starts for Flare16\_26:

(Start: 60 @16673 has 89 MA's), (79, 16784), (90, 16841), (119, 16997), (124, 17027), (142, 17090), (146, 17123), (148, 17129), (179, 17309), (181, 17318), (185, 17339), (188, 17360), (189, 17363), (194, 17381), (203, 17441), (216, 17549), (223, 17591), (233, 17645), (238, 17666), (248, 17729), (249, 17732), (251, 17750), (255, 17771), (283, 17957), (287, 17972), (290, 17999), (299, 18056), (302, 18071), (303, 18077), (305, 18086), (307, 18092), (313, 18122), (318, 18143), (329, 18188), (334, 18194), (342, 18227), (349, 18254), (364, 18326), (370, 18338), (382, 18398), (388, 18425), (398, 18488), (406, 18533), (410, 18581), (415, 18617), (417, 18650), (439, 18713), (447, 18737), (479, 18881), (495, 18980), (503, 19067), (516, 19166),

Gene: FlyCatcher\_29 Start: 17560, Stop: 20943, Start Num: 3

Candidate Starts for FlyCatcher\_29:

(Start: 3 @17560 has 4 MA's), (38, 17947), (50, 18004), (73, 18136), (76, 18148), (82, 18199), (108, 18346), (132, 18529), (135, 18535), (142, 18568), (144, 18580), (158, 18673), (164, 18694), (166, 18706), (195, 18862), (198, 18886), (209, 18949), (216, 19024), (223, 19066), (233, 19120), (238, 19141), (247, 19198), (248, 19204), (249, 19207), (261, 19291), (262, 19306), (266, 19333), (268, 19339), (283, 19432), (286, 19444), (287, 19447), (313, 19597), (317, 19612), (320, 19630), (325, 19654), (329, 19672), (330, 19675), (352, 19786), (362, 19849), (363, 19852), (372, 19909), (374, 19915), (384, 19963), (390, 19993), (401, 20071), (403, 20083), (404, 20092), (407, 20113), (414, 20191), (420, 20260), (424, 20278), (430, 20329), (437, 20365), (438, 20377), (446, 20410), (452, 20440), (455, 20461), (463, 20512), (470, 20545), (478, 20626), (483, 20659), (485, 20689), (494, 20731), (497, 20755), (503, 20821), (505, 20836), (506, 20842), (511, 20893),

Gene: Fred313\_25 Start: 15240, Stop: 18278, Start Num: 14



Candidate Starts for Fred313\_25:

(Start: 14 @15240 has 32 MA's), (33, 15414), (35, 15426), (41, 15459), (78, 15669), (101, 15792), (105, 15813), (126, 15999), (135, 16020), (142, 16053), (152, 16116), (155, 16128), (159, 16161), (164, 16179), (175, 16248), (176, 16254), (179, 16269), (181, 16278), (183, 16290), (185, 16299), (202, 16392), (216, 16509), (217, 16512), (222, 16539), (223, 16551), (233, 16605), (238, 16626), (241, 16647), (249, 16692), (255, 16731), (268, 16824), (277, 16872), (283, 16917), (287, 16932), (298, 17007), (299, 17016), (301, 17028), (305, 17046), (309, 17061), (321, 17118), (328, 17145), (329, 17148), (339, 17169), (370, 17298), (375, 17319), (382, 17358), (391, 17397), (393, 17418), (398, 17448), (399, 17451), (401, 17460), (405, 17484), (412, 17553), (414, 17574), (420, 17643), (424, 17661), (432, 17709), (434, 17721), (448, 17763), (450, 17775), (458, 17823), (483, 17994), (485, 18024), (491, 18054), (496, 18075), (509, 18210), (510, 18222), (513, 18258),

Gene: GaugeLDP\_28 Start: 17905, Stop: 20424, Start Num: 60

Candidate Starts for GaugeLDP\_28:

(Start: 60 @17905 has 89 MA's), (79, 18016), (92, 18085), (93, 18088), (104, 18142), (124, 18259), (126, 18268), (130, 18277), (142, 18322), (143, 18331), (164, 18448), (173, 18505), (175, 18517), (176, 18523), (179, 18538), (183, 18559), (185, 18568), (216, 18778), (222, 18808), (223, 18820), (233, 18874), (238, 18895), (249, 18961), (252, 18988), (255, 19000), (277, 19141), (283, 19186), (287, 19201), (290, 19228), (291, 19231), (299, 19285), (307, 19321), (309, 19330), (313, 19351), (319, 19375), (321, 19387), (328, 19414), (329, 19417), (342, 19456), (345, 19468), (349, 19483), (382, 19627), (388, 19654), (392, 19684), (393, 19687), (398, 19717), (406, 19762), (408, 19774), (410, 19810), (417, 19879), (449, 19978), (451, 19987), (458, 19996), (478, 20107), (487, 20194), (495, 20224), (513, 20401),

Gene: Gemma\_27 Start: 16053, Stop: 19079, Start Num: 15

Candidate Starts for Gemma\_27:

(11, 15999), (Start: 15 @16053 has 81 MA's), (26, 16167), (34, 16233), (35, 16236), (37, 16245), (45, 16281), (54, 16332), (66, 16404), (78, 16476), (99, 16596), (101, 16599), (111, 16668), (112, 16713), (126, 16806), (130, 16815), (142, 16860), (148, 16899), (152, 16923), (155, 16935), (159, 16968), (164, 16986), (167, 17007), (175, 17055), (176, 17061), (179, 17076), (181, 17085), (183, 17097), (185, 17106), (202, 17199), (215, 17286), (216, 17316), (217, 17319), (222, 17346), (223, 17358), (233, 17412), (238, 17433), (242, 17463), (249, 17499), (266, 17625), (277, 17679), (283, 17724), (292, 17772), (298, 17814), (299, 17823), (305, 17853), (321, 17925), (322, 17931), (328, 17952), (329, 17955), (336, 17967), (363, 18084), (364, 18093), (382, 18165), (383, 18168), (391, 18204), (398, 18255), (399, 18258), (401, 18267), (420, 18450), (432, 18516), (434, 18528), (448, 18570), (459, 18633), (472, 18690), (477, 18759), (483, 18795), (496, 18876), (509, 19011), (510, 19023),

Gene: Georgie2\_27 Start: 16538, Stop: 19075, Start Num: 60

Candidate Starts for Georgie2\_27:

(Start: 60 @16538 has 89 MA's), (91, 16715), (92, 16718), (93, 16721), (98, 16751), (121, 16889), (124, 16910), (126, 16919), (135, 16940), (142, 16973), (151, 17033), (155, 17048), (164, 17099), (171, 17147), (174, 17165), (181, 17198), (183, 17210), (184, 17213), (185, 17219), (188, 17240), (189, 17243), (205, 17330), (216, 17429), (223, 17471), (224, 17480), (227, 17489), (236, 17537), (238, 17546), (249, 17612), (255, 17651), (283, 17837), (287, 17852), (292, 17885), (299, 17936), (303, 17957), (307, 17972), (309, 17981), (312, 17996), (328, 18065), (370, 18218), (375, 18239), (398, 18368), (406, 18413), (408, 18425), (410, 18461), (451, 18641), (458, 18650), (478, 18761), (482, 18791), (495, 18875),

Gene: GingkoMaracino\_27 Start: 15865, Stop: 18891, Start Num: 15

Candidate Starts for GingkoMaracino\_27:

(11, 15811), (Start: 15 @15865 has 81 MA's), (26, 15979), (34, 16045), (35, 16048), (37, 16057), (45, 16093), (54, 16144), (66, 16216), (78, 16288), (99, 16408), (101, 16411), (111, 16480), (112, 16525), (126, 16618), (130, 16627), (137, 16645), (142, 16672), (152, 16735), (155, 16747), (159, 16780),

(164, 16798), (174, 16864), (175, 16867), (176, 16873), (179, 16888), (181, 16897), (183, 16909), (185, 16918), (199, 16996), (202, 17011), (216, 17128), (217, 17131), (222, 17158), (223, 17170), (233, 17224), (238, 17245), (249, 17311), (255, 17350), (268, 17443), (277, 17491), (283, 17536), (292, 17584), (298, 17626), (299, 17635), (305, 17665), (306, 17668), (309, 17680), (321, 17737), (322, 17743), (328, 17764), (329, 17767), (364, 17905), (370, 17917), (382, 17977), (392, 18034), (412, 18172), (414, 18193), (416, 18217), (420, 18262), (424, 18280), (432, 18328), (434, 18340), (448, 18382), (459, 18445), (472, 18502), (477, 18571), (483, 18607), (496, 18688), (509, 18823),

Gene: Giroux\_25 Start: 15495, Stop: 18530, Start Num: 14

Candidate Starts for Giroux\_25:

(Start: 14 @15495 has 32 MA's), (33, 15669), (35, 15681), (41, 15714), (78, 15924), (99, 16044), (101, 16047), (126, 16251), (135, 16272), (141, 16302), (142, 16305), (152, 16368), (155, 16380), (159, 16413), (164, 16431), (175, 16500), (176, 16506), (179, 16521), (181, 16530), (183, 16542), (185, 16551), (202, 16644), (216, 16761), (217, 16764), (221, 16788), (222, 16791), (223, 16803), (233, 16857), (238, 16878), (241, 16899), (249, 16944), (252, 16971), (255, 16983), (277, 17124), (283, 17169), (287, 17184), (298, 17259), (299, 17268), (305, 17298), (309, 17313), (310, 17316), (313, 17334), (318, 17355), (319, 17358), (328, 17397), (329, 17400), (353, 17484), (370, 17550), (375, 17571), (382, 17610), (391, 17649), (393, 17670), (398, 17700), (399, 17703), (401, 17712), (405, 17736), (412, 17805), (414, 17826), (420, 17895), (424, 17913), (432, 17961), (434, 17973), (448, 18015), (450, 18027), (458, 18075), (483, 18246), (485, 18276), (491, 18306), (496, 18327), (509, 18462), (513, 18510),

Gene: Gratitude\_27 Start: 17115, Stop: 19622, Start Num: 60

Candidate Starts for Gratitude\_27:

(Start: 60 @17115 has 89 MA's), (79, 17226), (90, 17283), (124, 17469), (142, 17532), (146, 17565), (148, 17571), (179, 17751), (181, 17760), (185, 17781), (188, 17802), (189, 17805), (194, 17823), (203, 17883), (216, 17991), (223, 18033), (233, 18087), (238, 18108), (248, 18171), (249, 18174), (251, 18192), (255, 18213), (283, 18399), (287, 18414), (290, 18441), (299, 18498), (302, 18513), (303, 18519), (305, 18528), (307, 18534), (313, 18564), (318, 18585), (329, 18630), (334, 18636), (342, 18669), (349, 18696), (364, 18768), (370, 18780), (382, 18840), (388, 18867), (398, 18930), (406, 18975), (408, 18987), (410, 19023), (415, 19059), (417, 19092), (439, 19155), (447, 19179), (479, 19323), (495, 19422), (503, 19509), (516, 19608),

Gene: Grif\_27 Start: 16062, Stop: 19088, Start Num: 15

Candidate Starts for Grif\_27:

(11, 16008), (Start: 15 @16062 has 81 MA's), (26, 16176), (34, 16242), (35, 16245), (37, 16254), (45, 16290), (54, 16341), (66, 16413), (78, 16485), (99, 16605), (101, 16608), (111, 16677), (112, 16722), (126, 16815), (130, 16824), (137, 16842), (142, 16869), (152, 16932), (155, 16944), (159, 16977), (164, 16995), (174, 17061), (175, 17064), (176, 17070), (179, 17085), (181, 17094), (183, 17106), (185, 17115), (202, 17208), (216, 17325), (217, 17328), (222, 17355), (223, 17367), (233, 17421), (238, 17442), (249, 17508), (255, 17547), (268, 17640), (277, 17688), (283, 17733), (292, 17781), (298, 17823), (299, 17832), (305, 17862), (306, 17865), (309, 17877), (321, 17934), (322, 17940), (328, 17961), (329, 17964), (364, 18102), (370, 18114), (382, 18174), (393, 18234), (398, 18264), (399, 18267), (401, 18276), (412, 18369), (416, 18414), (420, 18459), (424, 18477), (432, 18525), (434, 18537), (448, 18579), (459, 18642), (472, 18699), (477, 18768), (483, 18804), (496, 18885), (509, 19020),

Gene: Groupthink\_28 Start: 16057, Stop: 19083, Start Num: 15

Candidate Starts for Groupthink\_28:

(11, 16003), (Start: 15 @16057 has 81 MA's), (26, 16171), (34, 16237), (35, 16240), (37, 16249), (45, 16285), (54, 16336), (66, 16408), (78, 16480), (99, 16600), (101, 16603), (111, 16672), (112, 16717), (126, 16810), (130, 16819), (142, 16864), (148, 16903), (152, 16927), (155, 16939), (159, 16972), (164, 16990), (167, 17011), (175, 17059), (176, 17065), (179, 17080), (181, 17089), (183, 17101),

(185, 17110), (202, 17203), (215, 17290), (216, 17320), (217, 17323), (222, 17350), (223, 17362), (233, 17416), (238, 17437), (242, 17467), (249, 17503), (266, 17629), (277, 17683), (283, 17728), (292, 17776), (298, 17818), (299, 17827), (305, 17857), (321, 17929), (322, 17935), (328, 17956), (329, 17959), (336, 17971), (363, 18088), (364, 18097), (382, 18169), (383, 18172), (391, 18208), (398, 18259), (399, 18262), (401, 18271), (420, 18454), (432, 18520), (434, 18532), (448, 18574), (459, 18637), (472, 18694), (477, 18763), (483, 18799), (496, 18880), (509, 19015), (510, 19027),

Gene: Grub\_27 Start: 15971, Stop: 18997, Start Num: 15

Candidate Starts for Grub\_27:

(11, 15917), (Start: 15 @15971 has 81 MA's), (26, 16085), (34, 16151), (35, 16154), (37, 16163), (45, 16199), (54, 16250), (66, 16322), (78, 16394), (99, 16514), (101, 16517), (111, 16586), (112, 16631), (126, 16724), (130, 16733), (137, 16751), (142, 16778), (152, 16841), (155, 16853), (159, 16886), (164, 16904), (174, 16970), (175, 16973), (176, 16979), (179, 16994), (181, 17003), (183, 17015), (185, 17024), (202, 17117), (216, 17234), (217, 17237), (222, 17264), (223, 17276), (233, 17330), (238, 17351), (249, 17417), (252, 17444), (268, 17549), (277, 17597), (283, 17642), (292, 17690), (298, 17732), (299, 17741), (305, 17771), (306, 17774), (309, 17786), (321, 17843), (322, 17849), (328, 17870), (329, 17873), (364, 18011), (370, 18023), (382, 18083), (393, 18143), (398, 18173), (399, 18176), (401, 18185), (412, 18278), (420, 18368), (432, 18434), (434, 18446), (448, 18488), (459, 18551), (472, 18608), (477, 18677), (483, 18713), (496, 18794), (509, 18929),

Gene: Grum1\_27 Start: 15972, Stop: 18998, Start Num: 15

Candidate Starts for Grum1\_27:

(11, 15918), (Start: 15 @15972 has 81 MA's), (26, 16086), (34, 16152), (35, 16155), (37, 16164), (45, 16200), (54, 16251), (66, 16323), (78, 16395), (99, 16515), (101, 16518), (111, 16587), (112, 16632), (126, 16725), (130, 16734), (137, 16752), (142, 16779), (152, 16842), (155, 16854), (159, 16887), (164, 16905), (174, 16971), (175, 16974), (176, 16980), (179, 16995), (181, 17004), (183, 17016), (185, 17025), (202, 17118), (216, 17235), (217, 17238), (222, 17265), (223, 17277), (233, 17331), (238, 17352), (249, 17418), (255, 17457), (268, 17550), (277, 17598), (283, 17643), (292, 17691), (298, 17733), (299, 17742), (305, 17772), (306, 17775), (309, 17787), (321, 17844), (322, 17850), (328, 17871), (329, 17874), (364, 18012), (370, 18024), (382, 18084), (392, 18141), (412, 18279), (414, 18300), (416, 18324), (420, 18369), (424, 18387), (432, 18435), (434, 18447), (448, 18489), (459, 18552), (472, 18609), (477, 18678), (483, 18714), (496, 18795), (509, 18930),

Gene: GtownJaz\_27 Start: 15980, Stop: 19006, Start Num: 15

Candidate Starts for GtownJaz\_27:

(11, 15926), (Start: 15 @15980 has 81 MA's), (26, 16094), (34, 16160), (35, 16163), (37, 16172), (45, 16208), (54, 16259), (66, 16331), (78, 16403), (99, 16523), (101, 16526), (111, 16595), (112, 16640), (126, 16733), (130, 16742), (137, 16760), (142, 16787), (152, 16850), (155, 16862), (159, 16895), (164, 16913), (174, 16979), (175, 16982), (176, 16988), (179, 17003), (181, 17012), (183, 17024), (185, 17033), (199, 17111), (202, 17126), (216, 17243), (217, 17246), (222, 17273), (223, 17285), (233, 17339), (238, 17360), (249, 17426), (255, 17465), (268, 17558), (277, 17606), (283, 17651), (292, 17699), (298, 17741), (299, 17750), (305, 17780), (306, 17783), (309, 17795), (321, 17852), (322, 17858), (328, 17879), (329, 17882), (364, 18020), (370, 18032), (382, 18092), (392, 18149), (412, 18287), (414, 18308), (416, 18332), (420, 18377), (424, 18395), (432, 18443), (434, 18455), (448, 18497), (459, 18560), (472, 18617), (477, 18686), (483, 18722), (496, 18803), (509, 18938),

Gene: Gwendoluna\_26 Start: 17874, Stop: 20708, Start Num: 77

Candidate Starts for Gwendoluna\_26:

(Start: 77 @17874 has 8 MA's), (88, 17946), (124, 18189), (130, 18204), (142, 18249), (162, 18369), (163, 18387), (167, 18435), (174, 18480), (183, 18525), (184, 18528), (194, 18576), (220, 18759), (223, 18786), (239, 18870), (249, 18927), (251, 18945), (258, 18990), (262, 19026), (272, 19086), (281, 19134), (291, 19197), (292, 19200), (308, 19293), (313, 19317), (321, 19353), (326, 19380), (329, 19392), (332, 19410), (333, 19425), (344, 19488), (366, 19617), (373, 19662), (377, 19695),

(378, 19707), (398, 19836), (411, 19932), (419, 20019), (420, 20022), (424, 20040), (463, 20244), (485, 20421), (499, 20532), (507, 20619), (511, 20658), (512, 20673),

Gene: HINdeR\_25 Start: 17367, Stop: 20738, Start Num: 3

Candidate Starts for HINdeR\_25:

(Start: 3 @17367 has 4 MA's), (13, 17529), (29, 17679), (38, 17754), (64, 17904), (76, 17955), (82, 18006), (106, 18141), (135, 18342), (142, 18375), (151, 18435), (152, 18438), (155, 18450), (157, 18477), (167, 18522), (169, 18546), (175, 18570), (185, 18621), (189, 18645), (216, 18831), (221, 18858), (223, 18873), (230, 18912), (233, 18927), (238, 18948), (243, 18990), (247, 19005), (248, 19011), (249, 19014), (261, 19098), (262, 19113), (266, 19140), (267, 19143), (273, 19176), (280, 19212), (283, 19239), (284, 19242), (286, 19251), (313, 19404), (316, 19416), (317, 19419), (320, 19437), (322, 19446), (324, 19452), (325, 19461), (329, 19479), (331, 19488), (333, 19512), (338, 19530), (352, 19593), (356, 19626), (363, 19659), (364, 19668), (365, 19671), (366, 19680), (367, 19683), (370, 19701), (379, 19734), (384, 19770), (390, 19800), (396, 19845), (403, 19890), (404, 19899), (405, 19902), (406, 19911), (407, 19920), (420, 20067), (424, 20085), (433, 20142), (437, 20160), (438, 20172), (440, 20184), (443, 20193), (448, 20214), (452, 20235), (454, 20247), (459, 20280), (460, 20292), (461, 20298), (467, 20322), (470, 20340), (471, 20343), (478, 20421), (485, 20484), (489, 20505), (494, 20526), (497, 20550), (503, 20616), (505, 20631), (506, 20637),

Gene: Hanray\_26 Start: 17594, Stop: 20503, Start Num: 22

Candidate Starts for Hanray\_26:

(Start: 22 @17594 has 33 MA's), (24, 17606), (32, 17666), (62, 17825), (74, 17888), (83, 17951), (89, 17993), (101, 18050), (107, 18089), (127, 18260), (130, 18266), (136, 18281), (151, 18371), (152, 18374), (155, 18386), (161, 18428), (169, 18482), (185, 18557), (188, 18578), (189, 18581), (194, 18599), (204, 18662), (213, 18728), (216, 18767), (221, 18794), (223, 18809), (229, 18839), (233, 18863), (238, 18884), (249, 18950), (255, 18989), (264, 19055), (268, 19082), (272, 19109), (283, 19175), (291, 19220), (303, 19295), (313, 19340), (318, 19361), (322, 19382), (323, 19385), (328, 19403), (329, 19406), (340, 19433), (346, 19460), (359, 19514), (398, 19706), (402, 19721), (406, 19751), (411, 19802), (419, 19889), (421, 19898), (429, 19949), (448, 20012), (452, 20033), (458, 20069), (467, 20105), (468, 20111), (477, 20189), (481, 20216), (489, 20276), (499, 20345), (500, 20375), (505, 20402), (510, 20441), (514, 20483),

Gene: HarryHoudini\_28 Start: 17132, Stop: 19639, Start Num: 60

Candidate Starts for HarryHoudini\_28:

(Start: 60 @17132 has 89 MA's), (79, 17243), (90, 17300), (95, 17321), (98, 17345), (113, 17411), (124, 17486), (142, 17549), (146, 17582), (148, 17588), (179, 17768), (181, 17777), (185, 17798), (188, 17819), (189, 17822), (194, 17840), (202, 17891), (203, 17900), (216, 18008), (223, 18050), (224, 18059), (233, 18104), (238, 18125), (249, 18191), (251, 18209), (255, 18230), (256, 18239), (283, 18416), (287, 18431), (290, 18458), (299, 18515), (302, 18530), (303, 18536), (305, 18545), (307, 18551), (309, 18560), (313, 18581), (318, 18602), (329, 18647), (334, 18653), (342, 18686), (358, 18752), (364, 18785), (370, 18797), (382, 18857), (388, 18884), (398, 18947), (406, 18992), (410, 19040), (415, 19076), (439, 19172), (447, 19196), (479, 19340), (495, 19439), (516, 19625),

Gene: HashRod\_28 Start: 16063, Stop: 19089, Start Num: 15

Candidate Starts for HashRod\_28:

(11, 16009), (Start: 15 @16063 has 81 MA's), (26, 16177), (34, 16243), (35, 16246), (37, 16255), (45, 16291), (54, 16342), (66, 16414), (78, 16486), (99, 16606), (101, 16609), (111, 16678), (112, 16723), (126, 16816), (130, 16825), (137, 16843), (142, 16870), (152, 16933), (155, 16945), (159, 16978), (164, 16996), (174, 17062), (175, 17065), (176, 17071), (179, 17086), (181, 17095), (183, 17107), (185, 17116), (199, 17194), (202, 17209), (216, 17326), (217, 17329), (222, 17356), (223, 17368), (233, 17422), (238, 17443), (249, 17509), (255, 17548), (268, 17641), (277, 17689), (283, 17734), (292, 17782), (298, 17824), (299, 17833), (305, 17863), (306, 17866), (309, 17878), (321, 17935), (322, 17941), (328, 17962), (329, 17965), (364, 18103), (370, 18115), (382, 18175), (392, 18232),

(412, 18370), (414, 18391), (416, 18415), (420, 18460), (424, 18478), (432, 18526), (434, 18538), (448, 18580), (459, 18643), (472, 18700), (477, 18769), (483, 18805), (496, 18886), (509, 19021),

Gene: HaveUMetTed\_28 Start: 16050, Stop: 19076, Start Num: 15

Candidate Starts for HaveUMetTed\_28:

(11, 15996), (Start: 15 @16050 has 81 MA's), (26, 16164), (34, 16230), (35, 16233), (37, 16242), (45, 16278), (54, 16329), (66, 16401), (78, 16473), (99, 16593), (101, 16596), (111, 16665), (112, 16710), (126, 16803), (130, 16812), (142, 16857), (148, 16896), (152, 16920), (155, 16932), (159, 16965), (164, 16983), (167, 17004), (175, 17052), (176, 17058), (179, 17073), (181, 17082), (183, 17094), (185, 17103), (202, 17196), (215, 17283), (216, 17313), (217, 17316), (222, 17343), (223, 17355), (233, 17409), (238, 17430), (242, 17460), (249, 17496), (266, 17622), (277, 17676), (283, 17721), (292, 17769), (298, 17811), (299, 17820), (305, 17850), (321, 17922), (322, 17928), (328, 17949), (329, 17952), (336, 17964), (363, 18081), (364, 18090), (382, 18162), (383, 18165), (391, 18201), (398, 18252), (399, 18255), (401, 18264), (420, 18447), (432, 18513), (434, 18525), (448, 18567), (459, 18630), (472, 18687), (477, 18756), (483, 18792), (496, 18873), (509, 19008), (510, 19020),

Gene: Heathen\_25 Start: 15296, Stop: 18334, Start Num: 14

Candidate Starts for Heathen\_25:

(Start: 14 @15296 has 32 MA's), (33, 15470), (35, 15482), (41, 15515), (78, 15725), (101, 15848), (105, 15869), (126, 16055), (135, 16076), (142, 16109), (152, 16172), (155, 16184), (159, 16217), (164, 16235), (175, 16304), (176, 16310), (179, 16325), (181, 16334), (183, 16346), (185, 16355), (202, 16448), (216, 16565), (217, 16568), (222, 16595), (223, 16607), (233, 16661), (238, 16682), (241, 16703), (249, 16748), (255, 16787), (268, 16880), (277, 16928), (283, 16973), (287, 16988), (298, 17063), (299, 17072), (301, 17084), (305, 17102), (309, 17117), (321, 17174), (328, 17201), (329, 17204), (339, 17225), (370, 17354), (375, 17375), (382, 17414), (391, 17453), (393, 17474), (398, 17504), (399, 17507), (401, 17516), (405, 17540), (412, 17609), (414, 17630), (420, 17699), (424, 17717), (432, 17765), (434, 17777), (448, 17819), (450, 17831), (458, 17879), (483, 18050), (485, 18080), (491, 18110), (496, 18131), (509, 18266), (510, 18278), (513, 18314),

Gene: Heffalump\_28 Start: 18467, Stop: 21010, Start Num: 60

Candidate Starts for Heffalump\_28:

(Start: 60 @18467 has 89 MA's), (91, 18644), (92, 18647), (93, 18650), (120, 18818), (121, 18824), (124, 18845), (126, 18854), (135, 18875), (142, 18908), (146, 18941), (164, 19034), (171, 19082), (174, 19100), (181, 19133), (183, 19145), (184, 19148), (185, 19154), (188, 19175), (189, 19178), (216, 19364), (223, 19406), (224, 19415), (227, 19424), (236, 19472), (238, 19481), (249, 19547), (255, 19586), (268, 19679), (270, 19697), (283, 19772), (299, 19871), (302, 19886), (303, 19892), (305, 19901), (309, 19916), (313, 19937), (318, 19958), (323, 19982), (329, 20003), (334, 20009), (342, 20042), (345, 20054), (347, 20063), (370, 20153), (382, 20213), (388, 20240), (398, 20303), (406, 20348), (419, 20486), (451, 20576), (458, 20585), (478, 20696), (482, 20726), (495, 20810),

Gene: HelDan\_25 Start: 15548, Stop: 18586, Start Num: 14

Candidate Starts for HelDan\_25:

(Start: 14 @15548 has 32 MA's), (33, 15722), (35, 15734), (41, 15767), (78, 15977), (101, 16100), (105, 16121), (126, 16307), (135, 16328), (142, 16361), (152, 16424), (155, 16436), (159, 16469), (164, 16487), (175, 16556), (176, 16562), (179, 16577), (181, 16586), (183, 16598), (185, 16607), (202, 16700), (216, 16817), (217, 16820), (222, 16847), (223, 16859), (233, 16913), (238, 16934), (241, 16955), (249, 17000), (255, 17039), (268, 17132), (277, 17180), (283, 17225), (287, 17240), (298, 17315), (299, 17324), (301, 17336), (305, 17354), (309, 17369), (321, 17426), (328, 17453), (329, 17456), (339, 17477), (370, 17606), (375, 17627), (382, 17666), (391, 17705), (393, 17726), (398, 17756), (399, 17759), (401, 17768), (405, 17792), (412, 17861), (414, 17882), (420, 17951), (424, 17969), (432, 18017), (434, 18029), (448, 18071), (450, 18083), (458, 18131), (483, 18302), (485, 18332), (491, 18362), (496, 18383), (509, 18518), (510, 18530), (513, 18566),

Gene: Heliosoles\_27 Start: 16057, Stop: 19083, Start Num: 15

Candidate Starts for Heliosoles\_27:

(11, 16003), (Start: 15 @16057 has 81 MA's), (26, 16171), (34, 16237), (35, 16240), (37, 16249), (45, 16285), (54, 16336), (66, 16408), (78, 16480), (99, 16600), (101, 16603), (111, 16672), (112, 16717), (126, 16810), (130, 16819), (142, 16864), (148, 16903), (152, 16927), (155, 16939), (159, 16972), (164, 16990), (167, 17011), (175, 17059), (176, 17065), (179, 17080), (181, 17089), (183, 17101), (185, 17110), (202, 17203), (215, 17290), (216, 17320), (217, 17323), (222, 17350), (223, 17362), (233, 17416), (238, 17437), (242, 17467), (249, 17503), (266, 17629), (277, 17683), (283, 17728), (292, 17776), (298, 17818), (299, 17827), (305, 17857), (321, 17929), (322, 17935), (328, 17956), (329, 17959), (336, 17971), (363, 18088), (364, 18097), (382, 18169), (383, 18172), (391, 18208), (398, 18259), (399, 18262), (401, 18271), (420, 18454), (432, 18520), (434, 18532), (448, 18574), (459, 18637), (472, 18694), (477, 18763), (483, 18799), (496, 18880), (509, 19015), (510, 19027),

Gene: Hercules11\_27 Start: 15986, Stop: 19012, Start Num: 15

Candidate Starts for Hercules11\_27:

(11, 15932), (Start: 15 @15986 has 81 MA's), (26, 16100), (34, 16166), (35, 16169), (37, 16178), (45, 16214), (54, 16265), (66, 16337), (78, 16409), (99, 16529), (101, 16532), (111, 16601), (112, 16646), (126, 16739), (130, 16748), (137, 16766), (142, 16793), (152, 16856), (155, 16868), (159, 16901), (164, 16919), (174, 16985), (175, 16988), (176, 16994), (179, 17009), (181, 17018), (183, 17030), (185, 17039), (199, 17117), (202, 17132), (216, 17249), (217, 17252), (222, 17279), (223, 17291), (233, 17345), (238, 17366), (249, 17432), (255, 17471), (268, 17564), (277, 17612), (283, 17657), (292, 17705), (298, 17747), (299, 17756), (305, 17786), (306, 17789), (309, 17801), (321, 17858), (322, 17864), (328, 17885), (329, 17888), (364, 18026), (370, 18038), (382, 18098), (392, 18155), (412, 18293), (414, 18314), (416, 18338), (420, 18383), (424, 18401), (432, 18449), (434, 18461), (448, 18503), (459, 18566), (472, 18623), (477, 18692), (483, 18728), (496, 18809), (509, 18944),

Gene: Horex\_26 Start: 17594, Stop: 20503, Start Num: 22

Candidate Starts for Horex\_26:

(Start: 22 @17594 has 33 MA's), (24, 17606), (32, 17666), (62, 17825), (74, 17888), (83, 17951), (89, 17993), (101, 18050), (107, 18089), (127, 18260), (130, 18266), (136, 18281), (151, 18371), (152, 18374), (155, 18386), (161, 18428), (169, 18482), (185, 18557), (188, 18578), (189, 18581), (194, 18599), (204, 18662), (213, 18728), (216, 18767), (221, 18794), (223, 18809), (229, 18839), (233, 18863), (236, 18875), (238, 18884), (249, 18950), (255, 18989), (264, 19055), (268, 19082), (272, 19109), (283, 19175), (291, 19220), (303, 19295), (313, 19340), (318, 19361), (322, 19382), (323, 19385), (328, 19403), (329, 19406), (340, 19433), (346, 19460), (359, 19514), (398, 19706), (402, 19721), (406, 19751), (411, 19802), (419, 19889), (421, 19898), (429, 19949), (448, 20012), (452, 20033), (458, 20069), (467, 20105), (468, 20111), (477, 20189), (481, 20216), (489, 20276), (499, 20345), (500, 20375), (505, 20402), (510, 20441), (514, 20483),

Gene: Hookmount\_26 Start: 16044, Stop: 19082, Start Num: 14

Candidate Starts for Hookmount\_26:

(Start: 14 @16044 has 32 MA's), (33, 16218), (35, 16230), (41, 16263), (78, 16470), (82, 16491), (99, 16590), (101, 16593), (126, 16803), (135, 16824), (142, 16857), (152, 16920), (155, 16932), (159, 16965), (164, 16983), (167, 17004), (175, 17052), (176, 17058), (179, 17073), (181, 17082), (183, 17094), (185, 17103), (202, 17196), (216, 17313), (217, 17316), (222, 17343), (223, 17355), (233, 17409), (238, 17430), (249, 17496), (255, 17535), (277, 17676), (283, 17721), (298, 17811), (299, 17820), (305, 17850), (318, 17907), (321, 17922), (328, 17949), (329, 17952), (338, 17970), (363, 18081), (382, 18162), (392, 18219), (400, 18261), (412, 18357), (414, 18378), (416, 18402), (420, 18447), (424, 18465), (432, 18513), (434, 18525), (448, 18567), (450, 18579), (458, 18627), (483, 18798), (491, 18858), (494, 18870), (498, 18897), (499, 18918), (509, 19014), (513, 19062),

Gene: HortumSL17\_27 Start: 17590, Stop: 20499, Start Num: 22

Candidate Starts for HortumSL17\_27:

(Start: 22 @17590 has 33 MA's), (24, 17602), (32, 17662), (62, 17821), (74, 17884), (83, 17947), (89, 17989), (101, 18046), (127, 18256), (130, 18262), (136, 18277), (151, 18367), (152, 18370), (155, 18382), (161, 18424), (169, 18478), (185, 18553), (188, 18574), (189, 18577), (194, 18595), (204, 18658), (213, 18724), (216, 18763), (221, 18790), (223, 18805), (229, 18835), (233, 18859), (236, 18871), (238, 18880), (249, 18946), (255, 18985), (264, 19051), (268, 19078), (272, 19105), (283, 19171), (291, 19216), (303, 19291), (313, 19336), (318, 19357), (322, 19378), (323, 19381), (328, 19399), (329, 19402), (340, 19429), (359, 19510), (370, 19552), (398, 19702), (402, 19717), (406, 19747), (411, 19798), (419, 19885), (421, 19894), (429, 19945), (448, 20008), (452, 20029), (458, 20065), (467, 20101), (468, 20107), (477, 20185), (481, 20212), (489, 20272), (499, 20341), (500, 20371), (505, 20398), (510, 20437), (514, 20479),

Gene: Idleandcovert\_25 Start: 15495, Stop: 18530, Start Num: 14

Candidate Starts for Idleandcovert\_25:

(Start: 14 @15495 has 32 MA's), (33, 15669), (35, 15681), (41, 15714), (78, 15924), (99, 16044), (101, 16047), (126, 16251), (135, 16272), (141, 16302), (142, 16305), (152, 16368), (155, 16380), (159, 16413), (164, 16431), (175, 16500), (176, 16506), (179, 16521), (181, 16530), (183, 16542), (185, 16551), (202, 16644), (216, 16761), (217, 16764), (221, 16788), (222, 16791), (223, 16803), (233, 16857), (238, 16878), (241, 16899), (249, 16944), (252, 16971), (255, 16983), (277, 17124), (283, 17169), (287, 17184), (298, 17259), (299, 17268), (305, 17298), (309, 17313), (310, 17316), (313, 17334), (318, 17355), (319, 17358), (328, 17397), (329, 17400), (353, 17484), (370, 17550), (375, 17571), (382, 17610), (391, 17649), (393, 17670), (398, 17700), (399, 17703), (401, 17712), (405, 17736), (412, 17805), (414, 17826), (420, 17895), (424, 17913), (432, 17961), (434, 17973), (448, 18015), (450, 18027), (458, 18075), (483, 18246), (485, 18276), (491, 18306), (496, 18327), (509, 18462), (513, 18510),

Gene: Isca\_25 Start: 15423, Stop: 18467, Start Num: 14

Candidate Starts for Isca\_25:

(Start: 14 @15423 has 32 MA's), (33, 15597), (35, 15609), (78, 15852), (99, 15972), (101, 15975), (129, 16197), (142, 16242), (155, 16317), (159, 16350), (164, 16368), (166, 16380), (177, 16446), (183, 16479), (185, 16488), (194, 16530), (202, 16581), (216, 16698), (223, 16740), (233, 16794), (238, 16815), (247, 16872), (249, 16881), (266, 17007), (268, 17013), (272, 17040), (283, 17106), (287, 17121), (291, 17151), (292, 17154), (299, 17205), (301, 17217), (306, 17238), (309, 17250), (313, 17271), (321, 17307), (328, 17334), (341, 17367), (343, 17379), (353, 17421), (370, 17487), (382, 17547), (391, 17586), (398, 17637), (399, 17640), (401, 17649), (405, 17673), (412, 17742), (414, 17763), (420, 17832), (424, 17850), (432, 17898), (434, 17910), (448, 17952), (450, 17964), (458, 18012), (483, 18183), (491, 18243), (496, 18264), (509, 18399), (510, 18411), (513, 18447),

Gene: JF2\_25 Start: 15174, Stop: 18218, Start Num: 14

Candidate Starts for JF2\_25:

(Start: 14 @15174 has 32 MA's), (33, 15348), (35, 15360), (78, 15603), (99, 15723), (101, 15726), (129, 15948), (142, 15993), (155, 16068), (159, 16101), (164, 16119), (166, 16131), (177, 16197), (183, 16230), (185, 16239), (194, 16281), (202, 16332), (216, 16449), (223, 16491), (233, 16545), (238, 16566), (247, 16623), (249, 16632), (266, 16758), (268, 16764), (272, 16791), (283, 16857), (287, 16872), (291, 16902), (292, 16905), (299, 16956), (301, 16968), (306, 16989), (309, 17001), (313, 17022), (321, 17058), (328, 17085), (341, 17118), (343, 17130), (353, 17172), (370, 17238), (382, 17298), (391, 17337), (398, 17388), (399, 17391), (401, 17400), (405, 17424), (412, 17493), (414, 17514), (420, 17583), (424, 17601), (432, 17649), (434, 17661), (448, 17703), (450, 17715), (458, 17763), (483, 17934), (491, 17994), (496, 18015), (509, 18150), (510, 18162), (513, 18198),

Gene: JF4\_25 Start: 15174, Stop: 18218, Start Num: 14

Candidate Starts for JF4\_25:

(Start: 14 @15174 has 32 MA's), (33, 15348), (35, 15360), (78, 15603), (99, 15723), (101, 15726), (129, 15948), (142, 15993), (155, 16068), (159, 16101), (164, 16119), (166, 16131), (177, 16197),



(183, 16230), (185, 16239), (194, 16281), (202, 16332), (216, 16449), (223, 16491), (233, 16545), (238, 16566), (247, 16623), (249, 16632), (266, 16758), (268, 16764), (272, 16791), (283, 16857), (287, 16872), (291, 16902), (292, 16905), (299, 16956), (301, 16968), (306, 16989), (309, 17001), (313, 17022), (321, 17058), (328, 17085), (341, 17118), (343, 17130), (353, 17172), (370, 17238), (382, 17298), (391, 17337), (398, 17388), (399, 17391), (401, 17400), (405, 17424), (412, 17493), (414, 17514), (420, 17583), (424, 17601), (432, 17649), (434, 17661), (448, 17703), (450, 17715), (458, 17763), (483, 17934), (491, 17994), (496, 18015), (509, 18150), (510, 18162), (513, 18198),

Gene: JHC117\_27 Start: 15977, Stop: 19003, Start Num: 15

Candidate Starts for JHC117\_27:

(11, 15923), (Start: 15 @15977 has 81 MA's), (26, 16091), (34, 16157), (35, 16160), (37, 16169), (45, 16205), (54, 16256), (66, 16328), (78, 16400), (99, 16520), (101, 16523), (111, 16592), (112, 16637), (126, 16730), (130, 16739), (137, 16757), (142, 16784), (152, 16847), (155, 16859), (159, 16892), (164, 16910), (174, 16976), (175, 16979), (176, 16985), (179, 17000), (181, 17009), (183, 17021), (185, 17030), (199, 17108), (202, 17123), (216, 17240), (217, 17243), (222, 17270), (223, 17282), (233, 17336), (238, 17357), (249, 17423), (255, 17462), (268, 17555), (277, 17603), (283, 17648), (292, 17696), (298, 17738), (299, 17747), (305, 17777), (306, 17780), (309, 17792), (321, 17849), (322, 17855), (328, 17876), (329, 17879), (364, 18017), (370, 18029), (382, 18089), (392, 18146), (412, 18284), (414, 18305), (416, 18329), (420, 18374), (424, 18392), (432, 18440), (434, 18452), (448, 18494), (459, 18557), (472, 18614), (477, 18683), (483, 18719), (496, 18800), (509, 18935),

Gene: JenCasNa\_27 Start: 15978, Stop: 19004, Start Num: 15

Candidate Starts for JenCasNa\_27:

(11, 15924), (Start: 15 @15978 has 81 MA's), (26, 16092), (34, 16158), (35, 16161), (37, 16170), (45, 16206), (54, 16257), (66, 16329), (78, 16401), (99, 16521), (101, 16524), (111, 16593), (112, 16638), (126, 16731), (130, 16740), (137, 16758), (142, 16785), (152, 16848), (155, 16860), (159, 16893), (164, 16911), (174, 16977), (175, 16980), (176, 16986), (179, 17001), (181, 17010), (183, 17022), (185, 17031), (199, 17109), (202, 17124), (216, 17241), (217, 17244), (222, 17271), (223, 17283), (233, 17337), (238, 17358), (249, 17424), (255, 17463), (268, 17556), (277, 17604), (283, 17649), (292, 17697), (298, 17739), (299, 17748), (305, 17778), (306, 17781), (309, 17793), (321, 17850), (322, 17856), (328, 17877), (329, 17880), (364, 18018), (370, 18030), (382, 18090), (392, 18147), (412, 18285), (414, 18306), (416, 18330), (420, 18375), (424, 18393), (432, 18441), (434, 18453), (448, 18495), (459, 18558), (472, 18615), (477, 18684), (483, 18720), (496, 18801), (509, 18936),

Gene: JeppNRM\_28 Start: 16055, Stop: 19081, Start Num: 15

Candidate Starts for JeppNRM\_28:

(11, 16001), (Start: 15 @16055 has 81 MA's), (26, 16169), (34, 16235), (35, 16238), (37, 16247), (45, 16283), (54, 16334), (66, 16406), (78, 16478), (99, 16598), (101, 16601), (112, 16715), (126, 16808), (130, 16817), (142, 16862), (148, 16901), (152, 16925), (155, 16937), (159, 16970), (164, 16988), (167, 17009), (175, 17057), (176, 17063), (179, 17078), (181, 17087), (183, 17099), (185, 17108), (202, 17201), (215, 17288), (216, 17318), (217, 17321), (222, 17348), (223, 17360), (233, 17414), (238, 17435), (242, 17465), (249, 17501), (266, 17627), (277, 17681), (283, 17726), (292, 17774), (298, 17816), (299, 17825), (305, 17855), (321, 17927), (322, 17933), (328, 17954), (329, 17957), (336, 17969), (363, 18086), (364, 18095), (382, 18167), (383, 18170), (391, 18206), (393, 18227), (398, 18257), (399, 18260), (401, 18269), (420, 18452), (432, 18518), (434, 18530), (448, 18572), (459, 18635), (472, 18692), (477, 18761), (483, 18797), (496, 18878), (509, 19013), (510, 19025),

Gene: Jerm\_28 Start: 17056, Stop: 19599, Start Num: 60

Candidate Starts for Jerm\_28:

(Start: 60 @17056 has 89 MA's), (92, 17236), (93, 17239), (98, 17269), (120, 17407), (121, 17413), (124, 17434), (126, 17443), (130, 17452), (135, 17464), (144, 17509), (146, 17530), (151, 17557), (155, 17572), (164, 17623), (169, 17668), (171, 17671), (174, 17689), (181, 17722), (183, 17734), (185, 17743), (188, 17764), (189, 17767), (216, 17953), (223, 17995), (224, 18004), (227, 18013),

(238, 18070), (249, 18136), (255, 18175), (268, 18268), (274, 18304), (283, 18361), (295, 18427), (299, 18460), (302, 18475), (303, 18481), (305, 18490), (309, 18505), (313, 18526), (318, 18547), (322, 18568), (323, 18571), (328, 18589), (329, 18592), (345, 18643), (347, 18652), (359, 18700), (362, 18718), (370, 18742), (382, 18802), (388, 18829), (398, 18892), (406, 18937), (419, 19075), (451, 19165), (458, 19174), (467, 19198), (478, 19285), (482, 19315), (495, 19399),

Gene: Jiawan\_26 Start: 17626, Stop: 20535, Start Num: 22

Candidate Starts for Jiawan\_26:

(Start: 22 @17626 has 33 MA's), (24, 17638), (32, 17698), (62, 17857), (74, 17920), (83, 17983), (89, 18025), (101, 18082), (107, 18121), (127, 18292), (130, 18298), (136, 18313), (151, 18403), (152, 18406), (155, 18418), (161, 18460), (169, 18514), (185, 18589), (188, 18610), (189, 18613), (194, 18631), (204, 18694), (213, 18760), (216, 18799), (221, 18826), (223, 18841), (229, 18871), (233, 18895), (236, 18907), (238, 18916), (249, 18982), (255, 19021), (264, 19087), (268, 19114), (272, 19141), (283, 19207), (291, 19252), (303, 19327), (313, 19372), (318, 19393), (322, 19414), (323, 19417), (328, 19435), (329, 19438), (340, 19465), (359, 19546), (398, 19738), (402, 19753), (406, 19783), (411, 19834), (419, 19921), (421, 19930), (429, 19981), (448, 20044), (452, 20065), (458, 20101), (467, 20137), (468, 20143), (477, 20221), (481, 20248), (489, 20308), (499, 20377), (500, 20407), (505, 20434), (510, 20473), (514, 20515),

Gene: Jobu08\_27 Start: 16051, Stop: 19077, Start Num: 15

Candidate Starts for Jobu08\_27:

(11, 15997), (Start: 15 @16051 has 81 MA's), (26, 16165), (34, 16231), (35, 16234), (37, 16243), (45, 16279), (54, 16330), (66, 16402), (78, 16474), (99, 16594), (101, 16597), (111, 16666), (112, 16711), (126, 16804), (130, 16813), (142, 16858), (152, 16921), (155, 16933), (159, 16966), (164, 16984), (174, 17050), (175, 17053), (176, 17059), (179, 17074), (181, 17083), (183, 17095), (185, 17104), (202, 17197), (215, 17284), (216, 17314), (217, 17317), (222, 17344), (223, 17356), (233, 17410), (238, 17431), (242, 17461), (249, 17497), (277, 17677), (283, 17722), (292, 17770), (298, 17812), (299, 17821), (305, 17851), (321, 17923), (328, 17950), (329, 17953), (336, 17965), (363, 18082), (364, 18091), (370, 18103), (382, 18163), (393, 18223), (398, 18253), (399, 18256), (401, 18265), (412, 18358), (420, 18448), (432, 18514), (434, 18526), (448, 18568), (459, 18631), (472, 18688), (477, 18757), (483, 18793), (496, 18874), (509, 19009),

Gene: JoshKayV\_28 Start: 17026, Stop: 19569, Start Num: 60

Candidate Starts for JoshKayV\_28:

(Start: 60 @17026 has 89 MA's), (91, 17203), (92, 17206), (93, 17209), (98, 17239), (121, 17383), (124, 17404), (126, 17413), (135, 17434), (142, 17467), (146, 17500), (164, 17593), (169, 17638), (171, 17641), (174, 17659), (181, 17692), (183, 17704), (185, 17713), (188, 17734), (189, 17737), (216, 17923), (223, 17965), (224, 17974), (227, 17983), (238, 18040), (249, 18106), (255, 18145), (279, 18298), (303, 18451), (305, 18460), (307, 18466), (309, 18475), (313, 18496), (319, 18520), (323, 18541), (329, 18562), (342, 18601), (345, 18613), (370, 18712), (382, 18772), (388, 18799), (398, 18862), (406, 18907), (410, 18955), (419, 19045), (425, 19057), (449, 19126), (451, 19135), (458, 19144), (478, 19255), (482, 19285), (495, 19369),

Gene: Journey13\_24 Start: 15775, Stop: 18291, Start Num: 60

Candidate Starts for Journey13\_24:

(Start: 60 @15775 has 89 MA's), (79, 15886), (91, 15952), (92, 15955), (117, 16072), (130, 16156), (133, 16165), (142, 16201), (155, 16276), (164, 16327), (173, 16384), (175, 16396), (176, 16402), (177, 16405), (179, 16417), (183, 16438), (185, 16447), (204, 16552), (206, 16561), (210, 16585), (212, 16615), (216, 16657), (233, 16753), (238, 16774), (244, 16819), (249, 16840), (270, 16990), (281, 17047), (283, 17065), (287, 17080), (290, 17107), (292, 17113), (299, 17164), (303, 17185), (307, 17200), (309, 17209), (313, 17230), (322, 17272), (329, 17296), (342, 17335), (347, 17356), (349, 17362), (364, 17434), (382, 17506), (383, 17509), (388, 17533), (392, 17563), (398, 17596), (408, 17653), (410, 17689), (416, 17737), (425, 17791), (441, 17830), (444, 17842), (449, 17857),

(451, 17866), (458, 17875), (475, 17956), (478, 17986), (482, 18016), (495, 18094),

Gene: Jsquared\_25 Start: 15543, Stop: 18056, Start Num: 60

Candidate Starts for Jsquared\_25:

(Start: 60 @15543 has 89 MA's), (79, 15654), (91, 15720), (92, 15723), (93, 15726), (124, 15912), (126, 15921), (130, 15930), (155, 16050), (164, 16101), (173, 16158), (175, 16170), (176, 16176), (179, 16191), (183, 16212), (185, 16221), (195, 16269), (216, 16431), (222, 16461), (223, 16473), (230, 16512), (233, 16527), (238, 16548), (247, 16605), (249, 16614), (252, 16641), (266, 16740), (283, 16839), (287, 16854), (292, 16887), (296, 16917), (299, 16938), (303, 16959), (313, 17004), (328, 17067), (329, 17070), (342, 17109), (345, 17121), (349, 17136), (370, 17220), (382, 17280), (388, 17307), (398, 17370), (402, 17385), (406, 17415), (416, 17511), (427, 17577), (451, 17640), (489, 17835), (490, 17838), (495, 17859),

Gene: KADY\_28 Start: 16063, Stop: 19089, Start Num: 15

Candidate Starts for KADY\_28:

(11, 16009), (Start: 15 @16063 has 81 MA's), (26, 16177), (34, 16243), (35, 16246), (37, 16255), (45, 16291), (54, 16342), (66, 16414), (78, 16486), (99, 16606), (101, 16609), (111, 16678), (112, 16723), (126, 16816), (130, 16825), (137, 16843), (142, 16870), (152, 16933), (155, 16945), (159, 16978), (164, 16996), (174, 17062), (175, 17065), (176, 17071), (179, 17086), (181, 17095), (183, 17107), (185, 17116), (199, 17194), (202, 17209), (216, 17326), (217, 17329), (222, 17356), (223, 17368), (233, 17422), (238, 17443), (249, 17509), (255, 17548), (268, 17641), (277, 17689), (283, 17734), (292, 17782), (298, 17824), (299, 17833), (305, 17863), (306, 17866), (309, 17878), (321, 17935), (322, 17941), (328, 17962), (329, 17965), (364, 18103), (370, 18115), (382, 18175), (392, 18232), (412, 18370), (414, 18391), (416, 18415), (420, 18460), (424, 18478), (432, 18526), (434, 18538), (448, 18580), (459, 18643), (472, 18700), (477, 18769), (483, 18805), (496, 18886), (509, 19021),

Gene: Kachowdy\_25 Start: 15548, Stop: 18586, Start Num: 14

Candidate Starts for Kachowdy\_25:

(Start: 14 @15548 has 32 MA's), (33, 15722), (35, 15734), (41, 15767), (78, 15977), (101, 16100), (105, 16121), (126, 16307), (135, 16328), (142, 16361), (152, 16424), (155, 16436), (159, 16469), (164, 16487), (175, 16556), (176, 16562), (179, 16577), (181, 16586), (183, 16598), (185, 16607), (202, 16700), (216, 16817), (217, 16820), (222, 16847), (223, 16859), (233, 16913), (238, 16934), (241, 16955), (249, 17000), (255, 17039), (268, 17132), (277, 17180), (283, 17225), (287, 17240), (298, 17315), (299, 17324), (301, 17336), (305, 17354), (309, 17369), (321, 17426), (328, 17453), (329, 17456), (339, 17477), (370, 17606), (375, 17627), (382, 17666), (391, 17705), (393, 17726), (398, 17756), (399, 17759), (401, 17768), (405, 17792), (412, 17861), (414, 17882), (420, 17951), (424, 17969), (432, 18017), (434, 18029), (448, 18071), (450, 18083), (458, 18131), (483, 18302), (485, 18332), (491, 18362), (496, 18383), (509, 18518), (510, 18530), (513, 18566),

Gene: Kalb97\_28 Start: 16056, Stop: 19082, Start Num: 15

Candidate Starts for Kalb97\_28:

(11, 16002), (Start: 15 @16056 has 81 MA's), (26, 16170), (34, 16236), (35, 16239), (37, 16248), (45, 16284), (54, 16335), (66, 16407), (78, 16479), (99, 16599), (101, 16602), (111, 16671), (112, 16716), (126, 16809), (130, 16818), (142, 16863), (148, 16902), (152, 16926), (155, 16938), (159, 16971), (164, 16989), (167, 17010), (175, 17058), (176, 17064), (179, 17079), (181, 17088), (183, 17100), (185, 17109), (202, 17202), (215, 17289), (216, 17319), (217, 17322), (222, 17349), (223, 17361), (233, 17415), (238, 17436), (242, 17466), (249, 17502), (266, 17628), (277, 17682), (283, 17727), (292, 17775), (298, 17817), (299, 17826), (305, 17856), (321, 17928), (322, 17934), (328, 17955), (329, 17958), (336, 17970), (363, 18087), (364, 18096), (382, 18168), (383, 18171), (391, 18207), (398, 18258), (399, 18261), (401, 18270), (420, 18453), (432, 18519), (434, 18531), (448, 18573), (459, 18636), (472, 18693), (477, 18762), (483, 18798), (496, 18879), (509, 19014), (510, 19026),

Gene: Kalnoky\_28 Start: 16057, Stop: 19083, Start Num: 15

Candidate Starts for Kalnoky\_28:

(11, 16003), (Start: 15 @16057 has 81 MA's), (26, 16171), (34, 16237), (35, 16240), (37, 16249), (45, 16285), (54, 16336), (66, 16408), (78, 16480), (99, 16600), (101, 16603), (111, 16672), (112, 16717), (126, 16810), (130, 16819), (142, 16864), (148, 16903), (152, 16927), (155, 16939), (159, 16972), (164, 16990), (167, 17011), (175, 17059), (176, 17065), (179, 17080), (181, 17089), (183, 17101), (185, 17110), (202, 17203), (215, 17290), (216, 17320), (217, 17323), (222, 17350), (223, 17362), (233, 17416), (238, 17437), (242, 17467), (249, 17503), (266, 17629), (277, 17683), (283, 17728), (292, 17776), (298, 17818), (299, 17827), (305, 17857), (321, 17929), (322, 17935), (328, 17956), (329, 17959), (336, 17971), (363, 18088), (364, 18097), (382, 18169), (383, 18172), (391, 18208), (398, 18259), (399, 18262), (401, 18271), (420, 18454), (432, 18520), (434, 18532), (448, 18574), (459, 18637), (472, 18694), (477, 18763), (483, 18799), (496, 18880), (509, 19015), (510, 19027),

Gene: Kalpine\_29 Start: 18405, Stop: 20942, Start Num: 60

Candidate Starts for Kalpine\_29:

(Start: 60 @18405 has 89 MA's), (79, 18516), (92, 18585), (120, 18750), (121, 18756), (124, 18777), (126, 18786), (140, 18831), (142, 18840), (146, 18873), (151, 18900), (155, 18915), (161, 18957), (164, 18966), (171, 19014), (174, 19032), (179, 19056), (181, 19065), (185, 19086), (188, 19107), (189, 19110), (216, 19296), (223, 19338), (227, 19356), (236, 19404), (238, 19413), (249, 19479), (255, 19518), (275, 19650), (283, 19704), (292, 19752), (303, 19824), (307, 19839), (313, 19869), (323, 19914), (329, 19935), (342, 19974), (349, 20001), (359, 20043), (370, 20085), (382, 20145), (388, 20172), (398, 20235), (406, 20280), (408, 20292), (449, 20499), (451, 20508), (458, 20517), (478, 20628), (482, 20658), (494, 20739), (495, 20742),

Gene: Kerberos\_29 Start: 16508, Stop: 19021, Start Num: 60

Candidate Starts for Kerberos\_29:

(Start: 60 @16508 has 89 MA's), (92, 16688), (93, 16691), (142, 16937), (151, 16997), (155, 17012), (158, 17042), (159, 17045), (174, 17129), (179, 17153), (184, 17177), (188, 17204), (189, 17207), (208, 17312), (216, 17393), (221, 17420), (223, 17435), (233, 17489), (238, 17510), (249, 17576), (251, 17594), (252, 17603), (266, 17702), (272, 17735), (274, 17744), (283, 17801), (287, 17816), (303, 17921), (309, 17945), (329, 18032), (336, 18044), (338, 18050), (345, 18083), (375, 18203), (398, 18332), (402, 18347), (406, 18377), (408, 18389), (410, 18425), (427, 18539), (435, 18551), (449, 18593), (490, 18800), (494, 18818), (495, 18821), (516, 19007),

Gene: Keziacharles14\_25 Start: 15713, Stop: 18619, Start Num: 22

Candidate Starts for Keziacharles14\_25:

(Start: 22 @15713 has 33 MA's), (24, 15725), (46, 15860), (74, 16007), (79, 16049), (83, 16070), (89, 16112), (99, 16166), (101, 16169), (127, 16379), (130, 16385), (145, 16451), (152, 16493), (155, 16505), (160, 16544), (169, 16601), (185, 16676), (188, 16697), (189, 16700), (194, 16718), (213, 16847), (216, 16886), (219, 16898), (221, 16913), (223, 16928), (229, 16958), (233, 16982), (238, 17003), (249, 17069), (255, 17108), (263, 17171), (268, 17201), (272, 17228), (277, 17249), (284, 17297), (292, 17342), (301, 17405), (304, 17417), (307, 17429), (313, 17459), (321, 17495), (322, 17501), (328, 17522), (329, 17525), (336, 17537), (350, 17594), (355, 17612), (357, 17627), (358, 17630), (370, 17675), (398, 17825), (406, 17870), (417, 17987), (420, 18011), (427, 18050), (448, 18131), (452, 18152), (468, 18227), (477, 18305), (481, 18332), (483, 18341), (500, 18491), (510, 18557),

Gene: Kimona\_22 Start: 13439, Stop: 16474, Start Num: 16

Candidate Starts for Kimona\_22:

(Start: 16 @13439 has 1 MA's), (33, 13607), (35, 13619), (45, 13670), (78, 13862), (101, 13985), (111, 14054), (114, 14105), (135, 14216), (142, 14249), (151, 14309), (155, 14324), (159, 14357), (177, 14453), (181, 14474), (182, 14480), (185, 14495), (194, 14537), (202, 14588), (204, 14600), (209, 14630), (216, 14705), (221, 14732), (223, 14747), (233, 14801), (238, 14822), (247, 14879), (249, 14888), (252, 14915), (253, 14918), (257, 14939), (261, 14972), (268, 15020), (282, 15104), (287,

15128), (289, 15146), (292, 15161), (299, 15212), (301, 15224), (302, 15227), (305, 15242), (306, 15245), (309, 15257), (313, 15278), (314, 15281), (321, 15314), (322, 15320), (328, 15341), (329, 15344), (339, 15365), (353, 15428), (370, 15494), (392, 15611), (405, 15680), (412, 15749), (416, 15794), (417, 15815), (420, 15839), (424, 15857), (432, 15905), (434, 15917), (448, 15959), (450, 15971), (458, 16019), (483, 16190), (494, 16262), (496, 16271), (501, 16343), (511, 16424), (513, 16454),

Gene: KingCyrus\_28 Start: 17023, Stop: 19566, Start Num: 60

Candidate Starts for KingCyrus\_28:

(Start: 60 @17023 has 89 MA's), (91, 17200), (92, 17203), (93, 17206), (119, 17371), (121, 17380), (124, 17401), (126, 17410), (135, 17431), (142, 17464), (146, 17497), (155, 17539), (164, 17590), (169, 17635), (171, 17638), (174, 17656), (181, 17689), (183, 17701), (185, 17710), (188, 17731), (189, 17734), (216, 17920), (223, 17962), (224, 17971), (227, 17980), (238, 18037), (249, 18103), (255, 18142), (268, 18235), (274, 18271), (283, 18328), (295, 18394), (299, 18427), (302, 18442), (303, 18448), (305, 18457), (309, 18472), (313, 18493), (318, 18514), (322, 18535), (323, 18538), (328, 18556), (329, 18559), (342, 18598), (345, 18610), (359, 18667), (362, 18685), (370, 18709), (382, 18769), (388, 18796), (398, 18859), (419, 19042), (449, 19123), (451, 19132), (458, 19141), (478, 19252), (482, 19282), (495, 19366),

Gene: Koduck\_26 Start: 15783, Stop: 18296, Start Num: 60

Candidate Starts for Koduck\_26:

(Start: 60 @15783 has 89 MA's), (91, 15960), (92, 15963), (93, 15966), (124, 16152), (126, 16161), (130, 16170), (155, 16290), (164, 16341), (175, 16410), (176, 16416), (179, 16431), (183, 16452), (185, 16461), (216, 16671), (223, 16713), (233, 16767), (238, 16788), (247, 16845), (249, 16854), (251, 16872), (252, 16881), (266, 16980), (277, 17034), (283, 17079), (287, 17094), (292, 17127), (301, 17190), (309, 17223), (313, 17244), (329, 17310), (334, 17316), (345, 17361), (347, 17370), (364, 17448), (382, 17520), (388, 17547), (398, 17610), (406, 17655), (408, 17667), (410, 17703), (416, 17751), (427, 17817), (451, 17880), (484, 18057), (489, 18075), (490, 18078), (495, 18099),

Gene: Koko\_29 Start: 16749, Stop: 19274, Start Num: 60

Candidate Starts for Koko\_29:

(Start: 60 @16749 has 89 MA's), (62, 16767), (79, 16860), (90, 16917), (109, 17025), (151, 17241), (161, 17298), (164, 17307), (181, 17406), (185, 17427), (189, 17451), (203, 17529), (204, 17532), (221, 17664), (223, 17679), (248, 17817), (249, 17820), (251, 17838), (252, 17847), (260, 17895), (287, 18060), (290, 18087), (303, 18165), (313, 18210), (328, 18273), (334, 18282), (341, 18306), (345, 18327), (387, 18510), (388, 18513), (398, 18576), (408, 18633), (410, 18669), (449, 18840), (478, 18969), (482, 18999),

Gene: L5\_26 Start: 15794, Stop: 18307, Start Num: 60

Candidate Starts for L5\_26:

(Start: 60 @15794 has 89 MA's), (91, 15971), (92, 15974), (93, 15977), (142, 16226), (155, 16301), (169, 16397), (174, 16418), (181, 16451), (184, 16466), (185, 16472), (188, 16493), (203, 16574), (216, 16682), (221, 16709), (223, 16724), (233, 16778), (238, 16799), (249, 16865), (266, 16991), (277, 17045), (283, 17090), (287, 17105), (292, 17138), (301, 17201), (309, 17234), (313, 17255), (329, 17321), (334, 17327), (345, 17372), (347, 17381), (364, 17459), (382, 17531), (388, 17558), (398, 17621), (406, 17666), (408, 17678), (410, 17714), (416, 17762), (427, 17828), (451, 17891), (484, 18068), (489, 18086), (490, 18089), (495, 18110),

Gene: LBerry\_27 Start: 15979, Stop: 19005, Start Num: 15

Candidate Starts for LBerry\_27:

(11, 15925), (Start: 15 @15979 has 81 MA's), (26, 16093), (34, 16159), (35, 16162), (37, 16171), (45, 16207), (54, 16258), (66, 16330), (78, 16402), (99, 16522), (101, 16525), (111, 16594), (112, 16639), (126, 16732), (130, 16741), (137, 16759), (142, 16786), (152, 16849), (155, 16861), (159, 16894),

(164, 16912), (174, 16978), (175, 16981), (176, 16987), (179, 17002), (181, 17011), (183, 17023), (185, 17032), (199, 17110), (202, 17125), (216, 17242), (217, 17245), (222, 17272), (223, 17284), (233, 17338), (238, 17359), (249, 17425), (255, 17464), (268, 17557), (277, 17605), (283, 17650), (292, 17698), (298, 17740), (299, 17749), (305, 17779), (306, 17782), (309, 17794), (321, 17851), (322, 17857), (328, 17878), (329, 17881), (364, 18019), (370, 18031), (382, 18091), (392, 18148), (412, 18286), (414, 18307), (416, 18331), (420, 18376), (424, 18394), (432, 18442), (434, 18454), (448, 18496), (472, 18616), (477, 18685), (483, 18721), (496, 18802), (509, 18937),

Gene: LadyBird\_26 Start: 16593, Stop: 19130, Start Num: 60

Candidate Starts for LadyBird\_26:

(Start: 60 @16593 has 89 MA's), (92, 16773), (93, 16776), (103, 16824), (119, 16935), (121, 16944), (124, 16965), (126, 16974), (130, 16983), (142, 17028), (146, 17061), (164, 17154), (171, 17202), (174, 17220), (177, 17232), (181, 17253), (185, 17274), (188, 17295), (189, 17298), (216, 17484), (223, 17526), (224, 17535), (227, 17544), (238, 17601), (249, 17667), (255, 17706), (266, 17793), (283, 17892), (303, 18012), (305, 18021), (307, 18027), (309, 18036), (313, 18057), (319, 18081), (323, 18102), (329, 18123), (334, 18129), (342, 18162), (345, 18174), (359, 18231), (382, 18333), (388, 18360), (392, 18390), (398, 18423), (408, 18480), (413, 18522), (416, 18564), (449, 18687), (451, 18696), (458, 18705), (478, 18816), (482, 18846), (487, 18900), (495, 18930),

Gene: Lambert1\_26 Start: 16043, Stop: 19081, Start Num: 14

Candidate Starts for Lambert1\_26:

(Start: 14 @16043 has 32 MA's), (33, 16217), (35, 16229), (41, 16262), (78, 16469), (82, 16490), (99, 16589), (101, 16592), (126, 16802), (135, 16823), (142, 16856), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (249, 17495), (255, 17534), (277, 17675), (283, 17720), (298, 17810), (299, 17819), (305, 17849), (318, 17906), (321, 17921), (328, 17948), (329, 17951), (338, 17969), (363, 18080), (382, 18161), (392, 18218), (400, 18260), (412, 18356), (414, 18377), (416, 18401), (420, 18446), (424, 18464), (432, 18512), (434, 18524), (448, 18566), (450, 18578), (458, 18626), (483, 18797), (491, 18857), (494, 18869), (498, 18896), (499, 18917), (509, 19013), (513, 19061),

Gene: Larenn\_27 Start: 16894, Stop: 19434, Start Num: 60

Candidate Starts for Larenn\_27:

(Start: 60 @16894 has 89 MA's), (92, 17074), (120, 17239), (121, 17245), (124, 17266), (126, 17275), (142, 17329), (144, 17341), (146, 17362), (155, 17404), (167, 17476), (179, 17548), (181, 17557), (185, 17578), (188, 17599), (189, 17602), (194, 17620), (203, 17680), (208, 17707), (216, 17788), (223, 17830), (224, 17839), (227, 17848), (228, 17851), (233, 17884), (236, 17896), (238, 17905), (248, 17968), (249, 17971), (252, 17998), (255, 18010), (291, 18241), (299, 18295), (301, 18307), (303, 18316), (307, 18331), (313, 18361), (319, 18385), (320, 18394), (321, 18397), (328, 18424), (336, 18439), (342, 18466), (347, 18487), (349, 18493), (370, 18577), (382, 18637), (388, 18664), (398, 18727), (419, 18910), (425, 18922), (449, 18991), (451, 19000), (458, 19009), (478, 19120), (482, 19150), (487, 19204), (495, 19234), (516, 19420),

Gene: LarryKay\_27 Start: 16065, Stop: 19091, Start Num: 15

Candidate Starts for LarryKay\_27:

(11, 16011), (Start: 15 @16065 has 81 MA's), (26, 16179), (34, 16245), (35, 16248), (37, 16257), (45, 16293), (54, 16344), (66, 16416), (78, 16488), (99, 16608), (101, 16611), (111, 16680), (112, 16725), (126, 16818), (130, 16827), (137, 16845), (142, 16872), (152, 16935), (155, 16947), (159, 16980), (164, 16998), (174, 17064), (175, 17067), (176, 17073), (179, 17088), (181, 17097), (183, 17109), (185, 17118), (199, 17196), (202, 17211), (216, 17328), (217, 17331), (222, 17358), (223, 17370), (233, 17424), (238, 17445), (249, 17511), (255, 17550), (268, 17643), (277, 17691), (283, 17736), (292, 17784), (298, 17826), (299, 17835), (305, 17865), (306, 17868), (309, 17880), (321, 17937), (322, 17943), (328, 17964), (329, 17967), (364, 18105), (370, 18117), (382, 18177), (392, 18234),

(412, 18372), (414, 18393), (416, 18417), (420, 18462), (424, 18480), (432, 18528), (434, 18540), (448, 18582), (459, 18645), (472, 18702), (477, 18771), (483, 18807), (496, 18888), (509, 19023),

Gene: Leogania\_28 Start: 18765, Stop: 21302, Start Num: 60

Candidate Starts for Leogania\_28:

(Start: 60 @18765 has 89 MA's), (92, 18945), (93, 18948), (103, 18996), (121, 19116), (124, 19137), (126, 19146), (135, 19167), (142, 19200), (146, 19233), (155, 19275), (161, 19317), (164, 19326), (171, 19374), (174, 19392), (181, 19425), (183, 19437), (185, 19446), (186, 19458), (188, 19467), (216, 19656), (221, 19683), (223, 19698), (233, 19752), (238, 19773), (249, 19839), (255, 19878), (266, 19965), (303, 20184), (307, 20199), (313, 20229), (318, 20250), (319, 20253), (321, 20265), (328, 20292), (342, 20334), (349, 20361), (359, 20403), (364, 20433), (382, 20505), (388, 20532), (398, 20595), (406, 20640), (408, 20652), (425, 20790), (449, 20859), (451, 20868), (458, 20877), (478, 20988), (482, 21018), (487, 21072), (495, 21102),

Gene: Leviathan\_28 Start: 17112, Stop: 19655, Start Num: 60

Candidate Starts for Leviathan\_28:

(Start: 60 @17112 has 89 MA's), (92, 17292), (93, 17295), (98, 17325), (120, 17463), (121, 17469), (124, 17490), (126, 17499), (130, 17508), (135, 17520), (144, 17565), (146, 17586), (155, 17628), (164, 17679), (169, 17724), (171, 17727), (174, 17745), (181, 17778), (183, 17790), (185, 17799), (188, 17820), (189, 17823), (216, 18009), (223, 18051), (224, 18060), (227, 18069), (238, 18126), (249, 18192), (255, 18231), (274, 18360), (283, 18417), (295, 18483), (299, 18516), (302, 18531), (303, 18537), (305, 18546), (309, 18561), (313, 18582), (318, 18603), (322, 18624), (323, 18627), (328, 18645), (329, 18648), (345, 18699), (359, 18756), (362, 18774), (370, 18798), (382, 18858), (388, 18885), (398, 18948), (406, 18993), (419, 19131), (451, 19221), (458, 19230), (467, 19254), (478, 19341), (482, 19371), (495, 19455),

Gene: LilBib\_25 Start: 17203, Stop: 20028, Start Num: 77

Candidate Starts for LilBib\_25:

(Start: 77 @17203 has 8 MA's), (88, 17275), (124, 17518), (130, 17533), (142, 17578), (162, 17698), (163, 17716), (167, 17764), (174, 17809), (183, 17854), (184, 17857), (194, 17905), (220, 18079), (223, 18106), (239, 18190), (249, 18247), (251, 18265), (258, 18310), (262, 18346), (272, 18406), (281, 18454), (291, 18517), (292, 18520), (308, 18613), (313, 18637), (321, 18673), (326, 18700), (329, 18712), (332, 18730), (333, 18745), (344, 18808), (366, 18937), (373, 18982), (377, 19015), (378, 19027), (398, 19156), (411, 19252), (419, 19339), (420, 19342), (424, 19360), (463, 19564), (485, 19741), (499, 19852), (507, 19939), (511, 19978), (512, 19993),

Gene: LilTurb\_28 Start: 17115, Stop: 19658, Start Num: 60

Candidate Starts for LilTurb\_28:

(Start: 60 @17115 has 89 MA's), (92, 17295), (93, 17298), (120, 17466), (121, 17472), (124, 17493), (126, 17502), (130, 17511), (135, 17523), (144, 17568), (146, 17589), (155, 17631), (164, 17682), (169, 17727), (171, 17730), (174, 17748), (181, 17781), (183, 17793), (185, 17802), (188, 17823), (189, 17826), (216, 18012), (223, 18054), (224, 18063), (227, 18072), (238, 18129), (249, 18195), (255, 18234), (268, 18327), (274, 18363), (283, 18420), (295, 18486), (299, 18519), (302, 18534), (303, 18540), (305, 18549), (309, 18564), (313, 18585), (318, 18606), (322, 18627), (323, 18630), (328, 18648), (329, 18651), (342, 18690), (345, 18702), (359, 18759), (362, 18777), (370, 18801), (382, 18861), (388, 18888), (398, 18951), (406, 18996), (419, 19134), (451, 19224), (458, 19233), (467, 19257), (478, 19344), (482, 19374), (495, 19458),

Gene: Lilith\_27 Start: 15972, Stop: 18998, Start Num: 15

Candidate Starts for Lilith\_27:

(11, 15918), (Start: 15 @15972 has 81 MA's), (26, 16086), (34, 16152), (35, 16155), (37, 16164), (45, 16200), (54, 16251), (66, 16323), (78, 16395), (99, 16515), (101, 16518), (111, 16587), (112, 16632), (126, 16725), (130, 16734), (137, 16752), (142, 16779), (152, 16842), (155, 16854), (159, 16887),



(164, 16905), (174, 16971), (175, 16974), (176, 16980), (179, 16995), (181, 17004), (183, 17016), (185, 17025), (202, 17118), (216, 17235), (217, 17238), (222, 17265), (223, 17277), (233, 17331), (238, 17352), (249, 17418), (252, 17445), (268, 17550), (277, 17598), (283, 17643), (292, 17691), (298, 17733), (299, 17742), (305, 17772), (306, 17775), (309, 17787), (321, 17844), (322, 17850), (328, 17871), (329, 17874), (364, 18012), (370, 18024), (382, 18084), (393, 18144), (398, 18174), (399, 18177), (401, 18186), (412, 18279), (420, 18369), (432, 18435), (434, 18447), (448, 18489), (459, 18552), (472, 18609), (477, 18678), (483, 18714), (496, 18795), (509, 18930),

Gene: Lilleskat\_25 Start: 17590, Stop: 20499, Start Num: 22

Candidate Starts for Lilleskat\_25:

(Start: 22 @17590 has 33 MA's), (24, 17602), (32, 17662), (74, 17884), (83, 17947), (89, 17989), (101, 18046), (107, 18085), (127, 18256), (130, 18262), (136, 18277), (151, 18367), (152, 18370), (155, 18382), (161, 18424), (169, 18478), (185, 18553), (188, 18574), (189, 18577), (194, 18595), (204, 18658), (213, 18724), (216, 18763), (221, 18790), (223, 18805), (229, 18835), (233, 18859), (238, 18880), (249, 18946), (255, 18985), (264, 19051), (268, 19078), (272, 19105), (291, 19216), (303, 19291), (313, 19336), (318, 19357), (322, 19378), (323, 19381), (328, 19399), (329, 19402), (340, 19429), (346, 19456), (359, 19510), (398, 19702), (402, 19717), (406, 19747), (411, 19798), (419, 19885), (421, 19894), (429, 19945), (448, 20008), (452, 20029), (458, 20065), (467, 20101), (468, 20107), (477, 20185), (481, 20212), (489, 20272), (499, 20341), (500, 20371), (505, 20398), (510, 20437), (514, 20479),

Gene: LionsBait\_27 Start: 18379, Stop: 20919, Start Num: 60

Candidate Starts for LionsBait\_27:

(Start: 60 @18379 has 89 MA's), (92, 18559), (93, 18562), (119, 18721), (121, 18730), (124, 18751), (126, 18760), (135, 18781), (142, 18814), (146, 18847), (171, 18988), (174, 19006), (181, 19039), (183, 19051), (184, 19054), (185, 19060), (188, 19081), (189, 19084), (216, 19270), (223, 19312), (224, 19321), (227, 19330), (238, 19387), (249, 19453), (255, 19492), (302, 19792), (305, 19807), (307, 19813), (309, 19822), (313, 19843), (319, 19867), (323, 19888), (329, 19909), (334, 19915), (342, 19948), (345, 19960), (347, 19969), (359, 20017), (381, 20110), (382, 20119), (388, 20146), (395, 20188), (398, 20209), (425, 20404), (451, 20482), (458, 20491), (473, 20554), (478, 20602), (482, 20632), (487, 20689), (494, 20716), (495, 20719), (504, 20809),

Gene: Lökk\_29 Start: 18268, Stop: 20796, Start Num: 60

Candidate Starts for Lökk\_29:

(Start: 60 @18268 has 89 MA's), (79, 18379), (80, 18391), (92, 18448), (93, 18451), (124, 18640), (126, 18649), (142, 18703), (161, 18820), (164, 18829), (167, 18850), (169, 18874), (183, 18940), (185, 18949), (188, 18970), (189, 18973), (216, 19159), (223, 19201), (238, 19276), (249, 19342), (255, 19381), (268, 19474), (283, 19567), (299, 19666), (303, 19687), (313, 19732), (328, 19795), (342, 19837), (349, 19864), (364, 19936), (370, 19948), (387, 20032), (388, 20035), (398, 20098), (406, 20143), (408, 20155), (416, 20239), (425, 20293), (458, 20377), (467, 20401), (482, 20518), (495, 20596),

Gene: LoneWolf\_27 Start: 17261, Stop: 20305, Start Num: 12

Candidate Starts for LoneWolf\_27:

(2, 16988), (Start: 12 @17261 has 1 MA's), (Start: 22 @17390 has 33 MA's), (24, 17402), (31, 17438), (40, 17510), (51, 17558), (89, 17789), (99, 17843), (101, 17846), (116, 17972), (124, 18047), (126, 18056), (132, 18071), (142, 18110), (155, 18185), (156, 18206), (160, 18224), (164, 18236), (166, 18248), (169, 18281), (171, 18284), (174, 18302), (175, 18305), (179, 18326), (183, 18347), (185, 18356), (186, 18368), (197, 18416), (200, 18437), (204, 18461), (216, 18566), (217, 18569), (233, 18662), (238, 18683), (239, 18692), (241, 18704), (249, 18749), (255, 18788), (269, 18890), (283, 18974), (286, 18986), (289, 19007), (291, 19019), (303, 19094), (305, 19103), (313, 19139), (318, 19160), (322, 19181), (323, 19184), (328, 19202), (329, 19205), (340, 19232), (346, 19259), (398, 19505), (404, 19538), (410, 19598), (411, 19601), (417, 19667), (420, 19691), (424, 19709), (427,

19730), (448, 19811), (452, 19832), (461, 19886), (468, 19913), (477, 19991), (483, 20027), (488, 20075), (489, 20078), (492, 20090), (495, 20102), (500, 20177), (508, 20213), (510, 20243), (514, 20285),

Gene: Loser\_29 Start: 18399, Stop: 20897, Start Num: 60

Candidate Starts for Loser\_29:

(44, 18336), (Start: 60 @18399 has 89 MA's), (82, 18528), (90, 18567), (98, 18612), (121, 18714), (124, 18735), (130, 18753), (140, 18789), (155, 18873), (164, 18924), (175, 18993), (176, 18999), (179, 19014), (181, 19023), (183, 19035), (185, 19044), (216, 19254), (221, 19281), (223, 19296), (233, 19350), (238, 19371), (249, 19437), (255, 19476), (263, 19539), (283, 19662), (287, 19677), (299, 19761), (302, 19776), (305, 19791), (307, 19797), (309, 19806), (313, 19827), (318, 19848), (323, 19872), (329, 19893), (334, 19899), (342, 19932), (346, 19947), (349, 19959), (356, 19989), (359, 20001), (364, 20031), (370, 20043), (388, 20130), (393, 20163), (398, 20193), (404, 20226), (406, 20238), (449, 20457), (451, 20466), (458, 20475), (478, 20586), (482, 20616), (495, 20697), (510, 20838),

Gene: Louie6\_27 Start: 16066, Stop: 19092, Start Num: 15

Candidate Starts for Louie6\_27:

(11, 16012), (Start: 15 @16066 has 81 MA's), (26, 16180), (34, 16246), (35, 16249), (37, 16258), (45, 16294), (54, 16345), (66, 16417), (78, 16489), (99, 16609), (101, 16612), (111, 16681), (112, 16726), (126, 16819), (130, 16828), (137, 16846), (142, 16873), (152, 16936), (155, 16948), (159, 16981), (164, 16999), (174, 17065), (175, 17068), (176, 17074), (179, 17089), (181, 17098), (183, 17110), (185, 17119), (199, 17197), (202, 17212), (216, 17329), (217, 17332), (222, 17359), (223, 17371), (233, 17425), (238, 17446), (249, 17512), (255, 17551), (268, 17644), (277, 17692), (283, 17737), (292, 17785), (298, 17827), (299, 17836), (305, 17866), (306, 17869), (309, 17881), (321, 17938), (322, 17944), (328, 17965), (329, 17968), (364, 18106), (370, 18118), (382, 18178), (392, 18235), (412, 18373), (414, 18394), (416, 18418), (420, 18463), (424, 18481), (432, 18529), (434, 18541), (448, 18583), (459, 18646), (472, 18703), (477, 18772), (483, 18808), (496, 18889), (509, 19024),

Gene: Lowa\_27 Start: 15971, Stop: 18997, Start Num: 15

Candidate Starts for Lowa\_27:

(11, 15917), (Start: 15 @15971 has 81 MA's), (26, 16085), (34, 16151), (35, 16154), (37, 16163), (45, 16199), (54, 16250), (66, 16322), (78, 16394), (99, 16514), (101, 16517), (111, 16586), (112, 16631), (126, 16724), (130, 16733), (137, 16751), (142, 16778), (152, 16841), (155, 16853), (159, 16886), (164, 16904), (174, 16970), (175, 16973), (176, 16979), (179, 16994), (181, 17003), (183, 17015), (185, 17024), (202, 17117), (216, 17234), (217, 17237), (222, 17264), (223, 17276), (233, 17330), (238, 17351), (249, 17417), (252, 17444), (268, 17549), (277, 17597), (283, 17642), (292, 17690), (298, 17732), (299, 17741), (305, 17771), (306, 17774), (309, 17786), (321, 17843), (322, 17849), (328, 17870), (329, 17873), (364, 18011), (370, 18023), (382, 18083), (393, 18143), (398, 18173), (399, 18176), (401, 18185), (412, 18278), (420, 18368), (432, 18434), (434, 18446), (448, 18488), (459, 18551), (472, 18608), (477, 18677), (483, 18713), (496, 18794), (509, 18929),

Gene: LugYA\_29 Start: 15979, Stop: 19005, Start Num: 15

Candidate Starts for LugYA\_29:

(11, 15925), (Start: 15 @15979 has 81 MA's), (26, 16093), (34, 16159), (35, 16162), (37, 16171), (45, 16207), (54, 16258), (66, 16330), (78, 16402), (99, 16522), (101, 16525), (111, 16594), (112, 16639), (126, 16732), (130, 16741), (137, 16759), (142, 16786), (152, 16849), (155, 16861), (159, 16894), (164, 16912), (174, 16978), (175, 16981), (176, 16987), (179, 17002), (181, 17011), (183, 17023), (185, 17032), (199, 17110), (202, 17125), (216, 17242), (217, 17245), (222, 17272), (223, 17284), (233, 17338), (238, 17359), (249, 17425), (255, 17464), (268, 17557), (277, 17605), (283, 17650), (292, 17698), (298, 17740), (299, 17749), (305, 17779), (306, 17782), (309, 17794), (321, 17851), (322, 17857), (328, 17878), (329, 17881), (364, 18019), (370, 18031), (382, 18091), (392, 18148), (412, 18286), (414, 18307), (416, 18331), (420, 18376), (424, 18394), (432, 18442), (434, 18454),

(448, 18496), (459, 18559), (472, 18616), (477, 18685), (483, 18721), (496, 18802), (509, 18937),

Gene: MA5\_25 Start: 15111, Stop: 18149, Start Num: 14

Candidate Starts for MA5\_25:

(Start: 14 @15111 has 32 MA's), (33, 15285), (41, 15330), (78, 15540), (101, 15663), (126, 15870), (142, 15924), (155, 15999), (159, 16032), (164, 16050), (166, 16062), (177, 16128), (183, 16161), (185, 16170), (194, 16212), (202, 16263), (216, 16380), (223, 16422), (233, 16476), (238, 16497), (249, 16563), (252, 16590), (277, 16743), (287, 16803), (291, 16833), (298, 16878), (299, 16887), (305, 16917), (309, 16932), (313, 16953), (318, 16974), (319, 16977), (321, 16989), (328, 17016), (329, 17019), (339, 17040), (353, 17103), (370, 17169), (382, 17229), (391, 17268), (398, 17319), (399, 17322), (401, 17331), (405, 17355), (412, 17424), (414, 17445), (420, 17514), (424, 17532), (432, 17580), (434, 17592), (448, 17634), (450, 17646), (458, 17694), (483, 17865), (496, 17946), (509, 18081), (510, 18093), (513, 18129),

Gene: MK4\_25 Start: 15408, Stop: 18452, Start Num: 14

Candidate Starts for MK4\_25:

(Start: 14 @15408 has 32 MA's), (33, 15582), (35, 15594), (78, 15837), (99, 15957), (101, 15960), (129, 16182), (142, 16227), (155, 16302), (159, 16335), (164, 16353), (166, 16365), (177, 16431), (183, 16464), (185, 16473), (194, 16515), (202, 16566), (216, 16683), (223, 16725), (233, 16779), (238, 16800), (247, 16857), (249, 16866), (266, 16992), (268, 16998), (272, 17025), (283, 17091), (287, 17106), (291, 17136), (292, 17139), (299, 17190), (301, 17202), (306, 17223), (309, 17235), (313, 17256), (321, 17292), (328, 17319), (341, 17352), (343, 17364), (353, 17406), (370, 17472), (382, 17532), (391, 17571), (398, 17622), (399, 17625), (401, 17634), (405, 17658), (412, 17727), (414, 17748), (420, 17817), (424, 17835), (432, 17883), (434, 17895), (448, 17937), (450, 17949), (458, 17997), (483, 18168), (491, 18228), (496, 18249), (509, 18384), (510, 18396), (513, 18432),

Gene: MadMarie\_27 Start: 15981, Stop: 19007, Start Num: 15

Candidate Starts for MadMarie\_27:

(11, 15927), (Start: 15 @15981 has 81 MA's), (26, 16095), (34, 16161), (35, 16164), (37, 16173), (45, 16209), (54, 16260), (66, 16332), (78, 16404), (99, 16524), (101, 16527), (111, 16596), (112, 16641), (126, 16734), (130, 16743), (137, 16761), (142, 16788), (152, 16851), (155, 16863), (159, 16896), (164, 16914), (174, 16980), (175, 16983), (176, 16989), (179, 17004), (181, 17013), (183, 17025), (185, 17034), (202, 17127), (216, 17244), (217, 17247), (222, 17274), (223, 17286), (233, 17340), (238, 17361), (249, 17427), (252, 17454), (268, 17559), (277, 17607), (283, 17652), (292, 17700), (298, 17742), (299, 17751), (305, 17781), (306, 17784), (309, 17796), (321, 17853), (322, 17859), (328, 17880), (329, 17883), (364, 18021), (370, 18033), (382, 18093), (393, 18153), (398, 18183), (399, 18186), (401, 18195), (412, 18288), (420, 18378), (432, 18444), (434, 18456), (448, 18498), (459, 18561), (472, 18618), (477, 18687), (483, 18723), (496, 18804), (509, 18939),

Gene: Mainiac\_27 Start: 15972, Stop: 18998, Start Num: 15

Candidate Starts for Mainiac\_27:

(11, 15918), (Start: 15 @15972 has 81 MA's), (26, 16086), (34, 16152), (35, 16155), (37, 16164), (45, 16200), (54, 16251), (66, 16323), (78, 16395), (99, 16515), (101, 16518), (111, 16587), (112, 16632), (126, 16725), (130, 16734), (137, 16752), (142, 16779), (152, 16842), (155, 16854), (159, 16887), (164, 16905), (174, 16971), (175, 16974), (176, 16980), (179, 16995), (181, 17004), (183, 17016), (185, 17025), (202, 17118), (216, 17235), (217, 17238), (222, 17265), (223, 17277), (233, 17331), (238, 17352), (249, 17418), (252, 17445), (268, 17550), (277, 17598), (283, 17643), (292, 17691), (298, 17733), (299, 17742), (305, 17772), (306, 17775), (309, 17787), (321, 17844), (322, 17850), (328, 17871), (329, 17874), (364, 18012), (370, 18024), (382, 18084), (393, 18144), (398, 18174), (399, 18177), (401, 18186), (412, 18279), (420, 18369), (432, 18435), (434, 18447), (448, 18489), (459, 18552), (472, 18609), (477, 18678), (483, 18714), (496, 18795), (509, 18930),

Gene: MajorMajor\_25 Start: 15528, Stop: 18041, Start Num: 60

Candidate Starts for MajorMajor\_25:

(Start: 60 @15528 has 89 MA's), (79, 15639), (91, 15705), (92, 15708), (93, 15711), (124, 15897), (126, 15906), (130, 15915), (155, 16035), (164, 16086), (173, 16143), (175, 16155), (176, 16161), (179, 16176), (183, 16197), (185, 16206), (195, 16254), (216, 16416), (222, 16446), (223, 16458), (230, 16497), (233, 16512), (238, 16533), (247, 16590), (249, 16599), (252, 16626), (266, 16725), (283, 16824), (287, 16839), (299, 16923), (303, 16944), (313, 16989), (328, 17052), (329, 17055), (345, 17106), (349, 17121), (382, 17265), (388, 17292), (398, 17355), (402, 17370), (406, 17400), (416, 17496), (427, 17562), (451, 17625), (489, 17820), (490, 17823), (495, 17844),

Gene: Malec\_27 Start: 16899, Stop: 19439, Start Num: 60

Candidate Starts for Malec\_27:

(Start: 60 @16899 has 89 MA's), (92, 17079), (120, 17244), (121, 17250), (124, 17271), (126, 17280), (142, 17334), (144, 17346), (146, 17367), (155, 17409), (167, 17481), (179, 17553), (181, 17562), (185, 17583), (188, 17604), (189, 17607), (194, 17625), (203, 17685), (208, 17712), (216, 17793), (223, 17835), (224, 17844), (227, 17853), (228, 17856), (233, 17889), (236, 17901), (238, 17910), (248, 17973), (249, 17976), (252, 18003), (255, 18015), (283, 18201), (291, 18246), (299, 18300), (301, 18312), (303, 18321), (307, 18336), (313, 18366), (319, 18390), (320, 18399), (321, 18402), (328, 18429), (336, 18444), (342, 18471), (347, 18492), (349, 18498), (370, 18582), (382, 18642), (388, 18669), (398, 18732), (419, 18915), (425, 18927), (449, 18996), (451, 19005), (458, 19014), (478, 19125), (482, 19155), (487, 19209), (495, 19239), (516, 19425),

Gene: Malinsilva\_29 Start: 15971, Stop: 18997, Start Num: 15

Candidate Starts for Malinsilva\_29:

(11, 15917), (Start: 15 @15971 has 81 MA's), (26, 16085), (34, 16151), (35, 16154), (37, 16163), (45, 16199), (54, 16250), (66, 16322), (78, 16394), (99, 16514), (101, 16517), (111, 16586), (112, 16631), (126, 16724), (130, 16733), (137, 16751), (142, 16778), (152, 16841), (155, 16853), (159, 16886), (164, 16904), (174, 16970), (175, 16973), (176, 16979), (179, 16994), (181, 17003), (183, 17015), (185, 17024), (202, 17117), (216, 17234), (217, 17237), (222, 17264), (223, 17276), (233, 17330), (238, 17351), (249, 17417), (252, 17444), (268, 17549), (277, 17597), (283, 17642), (292, 17690), (298, 17732), (299, 17741), (305, 17771), (306, 17774), (309, 17786), (321, 17843), (322, 17849), (328, 17870), (329, 17873), (364, 18011), (370, 18023), (382, 18083), (393, 18143), (398, 18173), (399, 18176), (401, 18185), (412, 18278), (420, 18368), (432, 18434), (434, 18446), (448, 18488), (459, 18551), (472, 18608), (477, 18677), (483, 18713), (496, 18794), (509, 18929),

Gene: Maminiaina\_27 Start: 17320, Stop: 20244, Start Num: 22

Candidate Starts for Maminiaina\_27:

(Start: 22 @17320 has 33 MA's), (24, 17332), (28, 17356), (31, 17368), (62, 17557), (74, 17620), (83, 17683), (89, 17725), (101, 17782), (102, 17788), (127, 17998), (130, 18004), (136, 18019), (145, 18070), (151, 18109), (155, 18124), (161, 18166), (164, 18175), (169, 18220), (175, 18244), (185, 18295), (188, 18316), (189, 18319), (194, 18337), (213, 18466), (216, 18505), (221, 18532), (223, 18547), (229, 18577), (233, 18601), (238, 18622), (249, 18688), (255, 18727), (268, 18820), (272, 18847), (283, 18913), (291, 18958), (303, 19033), (313, 19078), (318, 19099), (322, 19120), (323, 19123), (326, 19132), (328, 19141), (329, 19144), (334, 19150), (360, 19258), (362, 19270), (380, 19336), (398, 19444), (406, 19489), (408, 19501), (410, 19537), (411, 19540), (416, 19585), (418, 19621), (421, 19636), (429, 19687), (448, 19750), (458, 19810), (468, 19852), (477, 19930), (481, 19957), (483, 19966), (489, 20017), (500, 20116), (505, 20143), (510, 20182), (514, 20224),

Gene: Manu\_28 Start: 16057, Stop: 19083, Start Num: 15

Candidate Starts for Manu\_28:

(11, 16003), (Start: 15 @16057 has 81 MA's), (26, 16171), (34, 16237), (35, 16240), (37, 16249), (45, 16285), (54, 16336), (66, 16408), (78, 16480), (99, 16600), (101, 16603), (111, 16672), (112, 16717), (126, 16810), (130, 16819), (142, 16864), (148, 16903), (152, 16927), (155, 16939), (159, 16972), (164, 16990), (167, 17011), (175, 17059), (176, 17065), (179, 17080), (181, 17089), (183, 17101),

(185, 17110), (202, 17203), (215, 17290), (216, 17320), (217, 17323), (222, 17350), (223, 17362), (233, 17416), (238, 17437), (242, 17467), (249, 17503), (266, 17629), (277, 17683), (283, 17728), (292, 17776), (298, 17818), (299, 17827), (305, 17857), (321, 17929), (322, 17935), (328, 17956), (329, 17959), (336, 17971), (363, 18088), (364, 18097), (382, 18169), (383, 18172), (391, 18208), (398, 18259), (399, 18262), (401, 18271), (420, 18454), (432, 18520), (434, 18532), (448, 18574), (459, 18637), (472, 18694), (477, 18763), (483, 18799), (496, 18880), (509, 19015), (510, 19027),

Gene: MarQuardt\_27 Start: 15980, Stop: 19006, Start Num: 15

Candidate Starts for MarQuardt\_27:

(11, 15926), (Start: 15 @15980 has 81 MA's), (26, 16094), (34, 16160), (35, 16163), (37, 16172), (45, 16208), (54, 16259), (66, 16331), (78, 16403), (99, 16523), (101, 16526), (111, 16595), (112, 16640), (126, 16733), (130, 16742), (137, 16760), (142, 16787), (152, 16850), (155, 16862), (159, 16895), (164, 16913), (174, 16979), (175, 16982), (176, 16988), (179, 17003), (181, 17012), (183, 17024), (185, 17033), (199, 17111), (202, 17126), (216, 17243), (217, 17246), (222, 17273), (223, 17285), (233, 17339), (238, 17360), (249, 17426), (255, 17465), (268, 17558), (277, 17606), (283, 17651), (292, 17699), (298, 17741), (299, 17750), (305, 17780), (306, 17783), (309, 17795), (321, 17852), (322, 17858), (328, 17879), (329, 17882), (364, 18020), (370, 18032), (382, 18092), (392, 18149), (412, 18287), (414, 18308), (416, 18332), (420, 18377), (424, 18395), (432, 18443), (434, 18455), (448, 18497), (459, 18560), (472, 18617), (477, 18686), (483, 18722), (496, 18803), (509, 18938),

Gene: Marchesa\_25 Start: 15546, Stop: 18584, Start Num: 14

Candidate Starts for Marchesa\_25:

(Start: 14 @15546 has 32 MA's), (33, 15720), (35, 15732), (41, 15765), (78, 15975), (101, 16098), (105, 16119), (126, 16305), (142, 16359), (152, 16422), (155, 16434), (159, 16467), (164, 16485), (175, 16554), (176, 16560), (179, 16575), (181, 16584), (183, 16596), (185, 16605), (202, 16698), (216, 16815), (217, 16818), (222, 16845), (223, 16857), (233, 16911), (238, 16932), (241, 16953), (249, 16998), (255, 17037), (277, 17178), (283, 17223), (287, 17238), (298, 17313), (299, 17322), (305, 17352), (309, 17367), (310, 17370), (313, 17388), (318, 17409), (319, 17412), (322, 17430), (328, 17451), (329, 17454), (353, 17538), (370, 17604), (375, 17625), (382, 17664), (391, 17703), (398, 17754), (399, 17757), (401, 17766), (405, 17790), (412, 17859), (414, 17880), (420, 17949), (424, 17967), (432, 18015), (434, 18027), (448, 18069), (450, 18081), (458, 18129), (483, 18300), (485, 18330), (491, 18360), (496, 18381), (509, 18516), (510, 18528), (513, 18564),

Gene: Margo\_26 Start: 16069, Stop: 19107, Start Num: 14

Candidate Starts for Margo\_26:

(Start: 14 @16069 has 32 MA's), (33, 16243), (35, 16255), (41, 16288), (78, 16495), (82, 16516), (99, 16615), (101, 16618), (126, 16828), (130, 16837), (135, 16849), (142, 16882), (152, 16945), (155, 16957), (159, 16990), (164, 17008), (167, 17029), (175, 17077), (176, 17083), (179, 17098), (181, 17107), (183, 17119), (185, 17128), (202, 17221), (216, 17338), (217, 17341), (222, 17368), (223, 17380), (233, 17434), (238, 17455), (249, 17521), (255, 17560), (277, 17701), (283, 17746), (298, 17836), (299, 17845), (305, 17875), (318, 17932), (321, 17947), (328, 17974), (329, 17977), (338, 17995), (363, 18106), (382, 18187), (392, 18244), (400, 18286), (412, 18382), (414, 18403), (416, 18427), (420, 18472), (424, 18490), (432, 18538), (434, 18550), (448, 18592), (450, 18604), (458, 18652), (483, 18823), (491, 18883), (494, 18895), (498, 18922), (499, 18943), (509, 19039), (513, 19087),

Gene: Marie\_27 Start: 15978, Stop: 19004, Start Num: 15

Candidate Starts for Marie\_27:

(11, 15924), (Start: 15 @15978 has 81 MA's), (26, 16092), (34, 16158), (35, 16161), (37, 16170), (45, 16206), (54, 16257), (66, 16329), (78, 16401), (99, 16521), (101, 16524), (111, 16593), (112, 16638), (126, 16731), (130, 16740), (137, 16758), (142, 16785), (152, 16848), (155, 16860), (159, 16893), (164, 16911), (174, 16977), (175, 16980), (176, 16986), (179, 17001), (181, 17010), (183, 17022), (185, 17031), (199, 17109), (202, 17124), (216, 17241), (217, 17244), (222, 17271), (223, 17283),

(233, 17337), (238, 17358), (249, 17424), (255, 17463), (268, 17556), (277, 17604), (283, 17649), (292, 17697), (298, 17739), (299, 17748), (305, 17778), (306, 17781), (309, 17793), (321, 17850), (322, 17856), (328, 17877), (329, 17880), (364, 18018), (370, 18030), (382, 18090), (392, 18147), (412, 18285), (414, 18306), (416, 18330), (420, 18375), (424, 18393), (432, 18441), (434, 18453), (448, 18495), (459, 18558), (472, 18615), (477, 18684), (483, 18720), (496, 18801), (509, 18936),

Gene: Marius\_28 Start: 16057, Stop: 19083, Start Num: 15

Candidate Starts for Marius\_28:

(11, 16003), (Start: 15 @16057 has 81 MA's), (26, 16171), (34, 16237), (35, 16240), (37, 16249), (45, 16285), (54, 16336), (66, 16408), (78, 16480), (99, 16600), (101, 16603), (111, 16672), (112, 16717), (126, 16810), (130, 16819), (142, 16864), (148, 16903), (152, 16927), (155, 16939), (159, 16972), (164, 16990), (167, 17011), (175, 17059), (176, 17065), (179, 17080), (181, 17089), (183, 17101), (185, 17110), (202, 17203), (215, 17290), (216, 17320), (217, 17323), (222, 17350), (223, 17362), (233, 17416), (238, 17437), (242, 17467), (249, 17503), (266, 17629), (277, 17683), (283, 17728), (292, 17776), (298, 17818), (299, 17827), (305, 17857), (321, 17929), (322, 17935), (328, 17956), (329, 17959), (336, 17971), (363, 18088), (364, 18097), (382, 18169), (383, 18172), (391, 18208), (398, 18259), (399, 18262), (401, 18271), (420, 18454), (432, 18520), (434, 18532), (448, 18574), (459, 18637), (472, 18694), (477, 18763), (483, 18799), (496, 18880), (509, 19015), (510, 19027),

Gene: Marsha\_24 Start: 16857, Stop: 19691, Start Num: 77

Candidate Starts for Marsha\_24:

(Start: 77 @16857 has 8 MA's), (88, 16929), (124, 17172), (130, 17187), (142, 17232), (162, 17352), (163, 17370), (167, 17418), (174, 17463), (183, 17508), (184, 17511), (194, 17559), (220, 17742), (223, 17769), (239, 17853), (249, 17910), (251, 17928), (258, 17973), (262, 18009), (272, 18069), (281, 18117), (291, 18180), (292, 18183), (313, 18300), (321, 18336), (326, 18363), (329, 18375), (332, 18393), (333, 18408), (344, 18471), (366, 18600), (373, 18645), (377, 18678), (378, 18690), (398, 18819), (411, 18915), (419, 19002), (420, 19005), (424, 19023), (463, 19227), (485, 19404), (499, 19515), (507, 19602), (511, 19641), (513, 19671),

Gene: Methuselah\_26 Start: 16062, Stop: 19088, Start Num: 15

Candidate Starts for Methuselah\_26:

(11, 16008), (Start: 15 @16062 has 81 MA's), (26, 16176), (34, 16242), (35, 16245), (37, 16254), (45, 16290), (54, 16341), (66, 16413), (78, 16485), (99, 16605), (101, 16608), (111, 16677), (112, 16722), (126, 16815), (130, 16824), (137, 16842), (142, 16869), (152, 16932), (155, 16944), (159, 16977), (164, 16995), (174, 17061), (175, 17064), (176, 17070), (179, 17085), (181, 17094), (183, 17106), (185, 17115), (199, 17193), (202, 17208), (216, 17325), (217, 17328), (222, 17355), (223, 17367), (233, 17421), (238, 17442), (249, 17508), (255, 17547), (268, 17640), (277, 17688), (283, 17733), (292, 17781), (298, 17823), (299, 17832), (305, 17862), (306, 17865), (309, 17877), (321, 17934), (322, 17940), (328, 17961), (329, 17964), (364, 18102), (370, 18114), (382, 18174), (392, 18231), (412, 18369), (414, 18390), (416, 18414), (420, 18459), (424, 18477), (432, 18525), (434, 18537), (448, 18579), (459, 18642), (472, 18699), (477, 18768), (483, 18804), (496, 18885), (509, 19020),

Gene: Microwolf\_27 Start: 15980, Stop: 19006, Start Num: 15

Candidate Starts for Microwolf\_27:

(11, 15926), (Start: 15 @15980 has 81 MA's), (26, 16094), (34, 16160), (35, 16163), (37, 16172), (45, 16208), (54, 16259), (66, 16331), (78, 16403), (99, 16523), (101, 16526), (111, 16595), (112, 16640), (126, 16733), (130, 16742), (137, 16760), (142, 16787), (152, 16850), (155, 16862), (159, 16895), (164, 16913), (174, 16979), (175, 16982), (176, 16988), (179, 17003), (181, 17012), (183, 17024), (185, 17033), (202, 17126), (216, 17243), (217, 17246), (222, 17273), (223, 17285), (233, 17339), (238, 17360), (249, 17426), (252, 17453), (268, 17558), (277, 17606), (283, 17651), (292, 17699), (298, 17741), (299, 17750), (305, 17780), (306, 17783), (309, 17795), (321, 17852), (322, 17858), (328, 17879), (329, 17882), (364, 18020), (370, 18032), (382, 18092), (393, 18152), (398, 18182), (399, 18185), (401, 18194), (412, 18287), (420, 18377), (432, 18443), (434, 18455), (448, 18497),

(459, 18560), (472, 18617), (477, 18686), (483, 18722), (496, 18803), (509, 18938),

Gene: MiculUcigas\_26 Start: 16672, Stop: 19179, Start Num: 60

Candidate Starts for MiculUcigas\_26:

(Start: 60 @16672 has 89 MA's), (79, 16783), (90, 16840), (124, 17026), (142, 17089), (146, 17122), (148, 17128), (179, 17308), (181, 17317), (185, 17338), (188, 17359), (189, 17362), (194, 17380), (203, 17440), (216, 17548), (223, 17590), (233, 17644), (238, 17665), (248, 17728), (249, 17731), (251, 17749), (255, 17770), (283, 17956), (287, 17971), (290, 17998), (299, 18055), (302, 18070), (303, 18076), (305, 18085), (307, 18091), (313, 18121), (318, 18142), (329, 18187), (334, 18193), (342, 18226), (349, 18253), (364, 18325), (370, 18337), (382, 18397), (388, 18424), (398, 18487), (406, 18532), (408, 18544), (410, 18580), (415, 18616), (417, 18649), (439, 18712), (447, 18736), (479, 18880), (495, 18979), (503, 19066), (516, 19165),

Gene: Miko\_29 Start: 18238, Stop: 20766, Start Num: 60

Candidate Starts for Miko\_29:

(Start: 60 @18238 has 89 MA's), (79, 18349), (80, 18361), (92, 18418), (93, 18421), (124, 18610), (142, 18673), (155, 18748), (161, 18790), (164, 18799), (167, 18820), (169, 18844), (183, 18910), (185, 18919), (188, 18940), (189, 18943), (216, 19129), (223, 19171), (238, 19246), (249, 19312), (255, 19351), (283, 19537), (299, 19636), (303, 19657), (313, 19702), (320, 19735), (321, 19738), (328, 19765), (342, 19807), (349, 19834), (364, 19906), (370, 19918), (387, 20002), (388, 20005), (398, 20068), (406, 20113), (408, 20125), (416, 20209), (425, 20263), (458, 20347), (467, 20371), (482, 20488), (495, 20566),

Gene: Misomonster\_29 Start: 16062, Stop: 19088, Start Num: 15

Candidate Starts for Misomonster\_29:

(11, 16008), (Start: 15 @16062 has 81 MA's), (26, 16176), (34, 16242), (35, 16245), (37, 16254), (45, 16290), (54, 16341), (66, 16413), (78, 16485), (99, 16605), (101, 16608), (111, 16677), (112, 16722), (126, 16815), (130, 16824), (137, 16842), (142, 16869), (152, 16932), (155, 16944), (159, 16977), (164, 16995), (174, 17061), (175, 17064), (176, 17070), (179, 17085), (181, 17094), (183, 17106), (185, 17115), (199, 17193), (202, 17208), (216, 17325), (217, 17328), (222, 17355), (223, 17367), (233, 17421), (238, 17442), (249, 17508), (255, 17547), (268, 17640), (277, 17688), (283, 17733), (292, 17781), (298, 17823), (299, 17832), (305, 17862), (306, 17865), (309, 17877), (321, 17934), (322, 17940), (328, 17961), (329, 17964), (364, 18102), (370, 18114), (382, 18174), (392, 18231), (412, 18369), (414, 18390), (416, 18414), (420, 18459), (424, 18477), (432, 18525), (434, 18537), (448, 18579), (459, 18642), (472, 18699), (477, 18768), (483, 18804), (496, 18885), (509, 19020),

Gene: MissWhite\_26 Start: 15738, Stop: 18245, Start Num: 60

Candidate Starts for MissWhite\_26:

(Start: 60 @15738 has 89 MA's), (79, 15849), (91, 15915), (92, 15918), (124, 16095), (130, 16110), (133, 16119), (145, 16176), (155, 16230), (164, 16281), (175, 16350), (176, 16356), (179, 16371), (181, 16380), (183, 16392), (185, 16401), (204, 16506), (210, 16539), (216, 16611), (233, 16707), (238, 16728), (244, 16773), (249, 16794), (252, 16821), (266, 16920), (281, 17001), (283, 17019), (287, 17034), (290, 17061), (292, 17067), (299, 17118), (301, 17130), (303, 17139), (307, 17154), (313, 17184), (328, 17247), (329, 17250), (349, 17316), (359, 17358), (364, 17388), (370, 17400), (382, 17460), (383, 17463), (388, 17487), (392, 17517), (398, 17550), (408, 17607), (416, 17691), (442, 17787), (444, 17796), (473, 17892), (478, 17940), (482, 17970), (495, 18048),

Gene: MoneyMay\_27 Start: 15978, Stop: 19004, Start Num: 15

Candidate Starts for MoneyMay\_27:

(11, 15924), (Start: 15 @15978 has 81 MA's), (26, 16092), (34, 16158), (35, 16161), (37, 16170), (45, 16206), (54, 16257), (66, 16329), (78, 16401), (99, 16521), (101, 16524), (111, 16593), (112, 16638), (126, 16731), (130, 16740), (137, 16758), (142, 16785), (152, 16848), (155, 16860), (159, 16893), (164, 16911), (174, 16977), (175, 16980), (176, 16986), (179, 17001), (181, 17010), (183, 17022),

(185, 17031), (199, 17109), (202, 17124), (216, 17241), (217, 17244), (222, 17271), (223, 17283), (233, 17337), (238, 17358), (249, 17424), (255, 17463), (268, 17556), (277, 17604), (283, 17649), (292, 17697), (298, 17739), (299, 17748), (305, 17778), (306, 17781), (309, 17793), (321, 17850), (322, 17856), (328, 17877), (329, 17880), (364, 18018), (370, 18030), (382, 18090), (392, 18147), (412, 18285), (414, 18306), (416, 18330), (420, 18375), (424, 18393), (432, 18441), (434, 18453), (448, 18495), (459, 18558), (472, 18615), (477, 18684), (483, 18720), (496, 18801), (509, 18936),

Gene: MuchMore\_29 Start: 15971, Stop: 18997, Start Num: 15

Candidate Starts for MuchMore\_29:

(11, 15917), (Start: 15 @15971 has 81 MA's), (26, 16085), (34, 16151), (35, 16154), (37, 16163), (45, 16199), (54, 16250), (66, 16322), (78, 16394), (99, 16514), (101, 16517), (111, 16586), (112, 16631), (126, 16724), (130, 16733), (137, 16751), (142, 16778), (152, 16841), (155, 16853), (159, 16886), (164, 16904), (174, 16970), (175, 16973), (176, 16979), (179, 16994), (181, 17003), (183, 17015), (185, 17024), (202, 17117), (216, 17234), (217, 17237), (222, 17264), (223, 17276), (233, 17330), (238, 17351), (249, 17417), (252, 17444), (268, 17549), (277, 17597), (283, 17642), (292, 17690), (298, 17732), (299, 17741), (305, 17771), (306, 17774), (309, 17786), (321, 17843), (322, 17849), (328, 17870), (329, 17873), (364, 18011), (370, 18023), (382, 18083), (393, 18143), (398, 18173), (399, 18176), (401, 18185), (412, 18278), (420, 18368), (432, 18434), (434, 18446), (448, 18488), (459, 18551), (472, 18608), (477, 18677), (483, 18713), (496, 18794), (509, 18929),

Gene: Myxus\_27 Start: 17590, Stop: 20499, Start Num: 22

Candidate Starts for Myxus\_27:

(Start: 22 @17590 has 33 MA's), (24, 17602), (32, 17662), (62, 17821), (74, 17884), (83, 17947), (89, 17989), (101, 18046), (127, 18256), (130, 18262), (136, 18277), (151, 18367), (152, 18370), (155, 18382), (161, 18424), (169, 18478), (185, 18553), (188, 18574), (189, 18577), (194, 18595), (204, 18658), (213, 18724), (216, 18763), (221, 18790), (223, 18805), (229, 18835), (233, 18859), (236, 18871), (238, 18880), (249, 18946), (255, 18985), (264, 19051), (268, 19078), (272, 19105), (283, 19171), (291, 19216), (303, 19291), (313, 19336), (318, 19357), (322, 19378), (323, 19381), (328, 19399), (329, 19402), (340, 19429), (359, 19510), (370, 19552), (398, 19702), (402, 19717), (406, 19747), (411, 19798), (419, 19885), (421, 19894), (429, 19945), (448, 20008), (452, 20029), (458, 20065), (467, 20101), (468, 20107), (477, 20185), (481, 20212), (489, 20272), (499, 20341), (500, 20371), (505, 20398), (510, 20437), (514, 20479),

Gene: NaSiaTalie\_26 Start: 16670, Stop: 19177, Start Num: 60

Candidate Starts for NaSiaTalie\_26:

(Start: 60 @16670 has 89 MA's), (79, 16781), (90, 16838), (124, 17024), (142, 17087), (146, 17120), (148, 17126), (179, 17306), (181, 17315), (184, 17330), (185, 17336), (188, 17357), (189, 17360), (194, 17378), (203, 17438), (216, 17546), (223, 17588), (233, 17642), (238, 17663), (248, 17726), (249, 17729), (251, 17747), (255, 17768), (283, 17954), (287, 17969), (290, 17996), (299, 18053), (302, 18068), (303, 18074), (305, 18083), (307, 18089), (313, 18119), (318, 18140), (329, 18185), (334, 18191), (342, 18224), (349, 18251), (364, 18323), (370, 18335), (382, 18395), (388, 18422), (398, 18485), (406, 18530), (410, 18578), (415, 18614), (417, 18647), (439, 18710), (447, 18734), (479, 18878), (495, 18977), (503, 19064), (516, 19163),

Gene: Naji\_29 Start: 16508, Stop: 19021, Start Num: 60

Candidate Starts for Naji\_29:

(Start: 60 @16508 has 89 MA's), (92, 16688), (93, 16691), (141, 16934), (142, 16937), (151, 16997), (155, 17012), (158, 17042), (159, 17045), (174, 17129), (179, 17153), (184, 17177), (188, 17204), (189, 17207), (209, 17318), (216, 17393), (221, 17420), (223, 17435), (233, 17489), (238, 17510), (249, 17576), (251, 17594), (252, 17603), (266, 17702), (272, 17735), (274, 17744), (283, 17801), (287, 17816), (303, 17921), (329, 18032), (336, 18044), (338, 18050), (345, 18083), (346, 18086), (375, 18203), (398, 18332), (402, 18347), (406, 18377), (408, 18389), (410, 18425), (427, 18539), (435, 18551), (449, 18593), (490, 18800), (494, 18818), (495, 18821), (516, 19007),



Gene: NicoleTera\_30 Start: 18435, Stop: 20942, Start Num: 60

Candidate Starts for NicoleTera\_30:

(Start: 60 @18435 has 89 MA's), (79, 18546), (82, 18564), (90, 18603), (95, 18624), (98, 18648), (124, 18777), (132, 18801), (140, 18831), (155, 18915), (164, 18966), (173, 19023), (175, 19035), (176, 19041), (179, 19056), (181, 19065), (183, 19077), (185, 19086), (216, 19296), (221, 19323), (223, 19338), (233, 19392), (238, 19413), (249, 19479), (255, 19518), (263, 19581), (277, 19659), (283, 19704), (299, 19803), (302, 19818), (303, 19824), (305, 19833), (309, 19848), (313, 19869), (318, 19890), (319, 19893), (328, 19932), (336, 19947), (342, 19974), (349, 20001), (356, 20031), (359, 20043), (370, 20085), (382, 20145), (388, 20172), (398, 20235), (408, 20292), (410, 20328), (417, 20397), (425, 20430), (449, 20499), (451, 20508), (458, 20517), (478, 20628), (482, 20658), (495, 20742),

Gene: Noella\_26 Start: 16044, Stop: 19082, Start Num: 14

Candidate Starts for Noella\_26:

(Start: 14 @16044 has 32 MA's), (33, 16218), (35, 16230), (41, 16263), (78, 16470), (82, 16491), (99, 16590), (101, 16593), (126, 16803), (135, 16824), (142, 16857), (152, 16920), (155, 16932), (159, 16965), (164, 16983), (167, 17004), (175, 17052), (176, 17058), (179, 17073), (181, 17082), (183, 17094), (185, 17103), (202, 17196), (216, 17313), (217, 17316), (222, 17343), (223, 17355), (233, 17409), (238, 17430), (249, 17496), (255, 17535), (277, 17676), (283, 17721), (298, 17811), (299, 17820), (305, 17850), (318, 17907), (321, 17922), (328, 17949), (329, 17952), (338, 17970), (363, 18081), (382, 18162), (392, 18219), (400, 18261), (412, 18357), (414, 18378), (416, 18402), (420, 18447), (424, 18465), (432, 18513), (434, 18525), (448, 18567), (450, 18579), (458, 18627), (483, 18798), (491, 18858), (494, 18870), (498, 18897), (499, 18918), (509, 19014), (513, 19062),

Gene: Norbert\_25 Start: 16043, Stop: 19081, Start Num: 14

Candidate Starts for Norbert\_25:

(Start: 14 @16043 has 32 MA's), (33, 16217), (35, 16229), (41, 16262), (78, 16469), (82, 16490), (99, 16589), (101, 16592), (126, 16802), (135, 16823), (142, 16856), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (249, 17495), (255, 17534), (277, 17675), (283, 17720), (298, 17810), (299, 17819), (305, 17849), (318, 17906), (321, 17921), (328, 17948), (329, 17951), (338, 17969), (363, 18080), (382, 18161), (392, 18218), (400, 18260), (412, 18356), (414, 18377), (416, 18401), (420, 18446), (424, 18464), (432, 18512), (434, 18524), (448, 18566), (450, 18578), (458, 18626), (483, 18797), (491, 18857), (494, 18869), (498, 18896), (499, 18917), (509, 19013), (513, 19061),

Gene: NothingSpecial\_28 Start: 18636, Stop: 21167, Start Num: 60

Candidate Starts for NothingSpecial\_28:

(Start: 60 @18636 has 89 MA's), (92, 18816), (93, 18819), (119, 18987), (124, 19014), (130, 19029), (139, 19062), (142, 19074), (151, 19134), (155, 19149), (169, 19245), (171, 19248), (185, 19320), (188, 19341), (189, 19344), (211, 19485), (216, 19530), (221, 19557), (223, 19572), (233, 19626), (238, 19647), (249, 19713), (255, 19752), (285, 19947), (288, 19965), (291, 19983), (313, 20103), (317, 20118), (322, 20145), (323, 20148), (329, 20169), (393, 20439), (394, 20442), (398, 20469), (402, 20484), (406, 20514), (410, 20562), (416, 20610), (425, 20664), (458, 20748), (467, 20772), (482, 20889), (495, 20967),

Gene: Odin\_25 Start: 15403, Stop: 17928, Start Num: 57

Candidate Starts for Odin\_25:

(Start: 57 @15403 has 1 MA's), (61, 15421), (79, 15526), (91, 15592), (92, 15595), (93, 15598), (130, 15802), (142, 15847), (155, 15922), (161, 15964), (164, 15973), (169, 16018), (174, 16039), (181, 16072), (185, 16093), (188, 16114), (189, 16117), (216, 16303), (221, 16330), (223, 16345), (233, 16399), (238, 16420), (249, 16486), (287, 16726), (290, 16753), (299, 16810), (303, 16831), (310,

16858), (313, 16876), (328, 16939), (329, 16942), (342, 16981), (364, 17080), (382, 17152), (388, 17179), (392, 17209), (398, 17242), (416, 17383), (427, 17449), (451, 17512), (490, 17710), (495, 17731), (500, 17806), (508, 17842),

Gene: OlanP\_27 Start: 16237, Stop: 19263, Start Num: 15

Candidate Starts for OlanP\_27:

(11, 16183), (Start: 15 @16237 has 81 MA's), (26, 16351), (34, 16417), (35, 16420), (37, 16429), (45, 16465), (54, 16516), (66, 16588), (78, 16660), (99, 16780), (101, 16783), (111, 16852), (112, 16897), (126, 16990), (130, 16999), (142, 17044), (148, 17083), (152, 17107), (155, 17119), (159, 17152), (164, 17170), (167, 17191), (175, 17239), (176, 17245), (179, 17260), (181, 17269), (183, 17281), (185, 17290), (202, 17383), (215, 17470), (216, 17500), (217, 17503), (222, 17530), (223, 17542), (233, 17596), (238, 17617), (242, 17647), (249, 17683), (257, 17734), (266, 17809), (277, 17863), (283, 17908), (292, 17956), (298, 17998), (299, 18007), (305, 18037), (321, 18109), (322, 18115), (328, 18136), (329, 18139), (336, 18151), (362, 18265), (363, 18268), (382, 18349), (393, 18409), (398, 18439), (399, 18442), (401, 18451), (420, 18634), (432, 18700), (434, 18712), (448, 18754), (459, 18817), (472, 18874), (477, 18943), (483, 18979), (496, 19060), (509, 19195), (510, 19207),

Gene: Ollie\_27 Start: 15849, Stop: 18875, Start Num: 15

Candidate Starts for Ollie\_27:

(11, 15795), (Start: 15 @15849 has 81 MA's), (26, 15963), (34, 16029), (35, 16032), (37, 16041), (45, 16077), (54, 16128), (66, 16200), (78, 16272), (99, 16392), (101, 16395), (111, 16464), (112, 16509), (126, 16602), (130, 16611), (137, 16629), (142, 16656), (152, 16719), (155, 16731), (159, 16764), (164, 16782), (174, 16848), (175, 16851), (176, 16857), (179, 16872), (181, 16881), (183, 16893), (185, 16902), (199, 16980), (202, 16995), (216, 17112), (217, 17115), (222, 17142), (223, 17154), (233, 17208), (238, 17229), (249, 17295), (255, 17334), (268, 17427), (277, 17475), (283, 17520), (292, 17568), (298, 17610), (299, 17619), (305, 17649), (306, 17652), (309, 17664), (317, 17700), (321, 17721), (322, 17727), (328, 17748), (329, 17751), (364, 17889), (370, 17901), (382, 17961), (391, 18000), (412, 18156), (414, 18177), (416, 18201), (420, 18246), (424, 18264), (432, 18312), (434, 18324), (448, 18366), (459, 18429), (472, 18486), (477, 18555), (483, 18591), (496, 18672), (509, 18807),

Gene: Onglai\_26 Start: 15924, Stop: 18833, Start Num: 22

Candidate Starts for Onglai\_26:

(Start: 22 @15924 has 33 MA's), (24, 15936), (32, 15996), (62, 16155), (74, 16218), (83, 16281), (89, 16323), (101, 16380), (107, 16419), (127, 16590), (130, 16596), (136, 16611), (151, 16701), (152, 16704), (155, 16716), (161, 16758), (169, 16812), (185, 16887), (188, 16908), (189, 16911), (194, 16929), (204, 16992), (213, 17058), (216, 17097), (221, 17124), (223, 17139), (229, 17169), (233, 17193), (238, 17214), (249, 17280), (255, 17319), (264, 17385), (268, 17412), (272, 17439), (283, 17505), (291, 17550), (303, 17625), (313, 17670), (318, 17691), (322, 17712), (323, 17715), (328, 17733), (329, 17736), (340, 17763), (359, 17844), (398, 18036), (402, 18051), (406, 18081), (411, 18132), (419, 18219), (421, 18228), (429, 18279), (448, 18342), (452, 18363), (458, 18399), (467, 18435), (468, 18441), (477, 18519), (481, 18546), (489, 18606), (499, 18675), (500, 18705), (505, 18732), (510, 18771), (514, 18813),

Gene: P28Green\_27 Start: 15980, Stop: 19006, Start Num: 15

Candidate Starts for P28Green\_27:

(11, 15926), (Start: 15 @15980 has 81 MA's), (26, 16094), (34, 16160), (35, 16163), (37, 16172), (45, 16208), (54, 16259), (66, 16331), (78, 16403), (99, 16523), (101, 16526), (111, 16595), (112, 16640), (126, 16733), (130, 16742), (137, 16760), (142, 16787), (152, 16850), (155, 16862), (159, 16895), (164, 16913), (174, 16979), (175, 16982), (176, 16988), (179, 17003), (181, 17012), (183, 17024), (185, 17033), (202, 17126), (216, 17243), (217, 17246), (222, 17273), (223, 17285), (233, 17339), (238, 17360), (249, 17426), (252, 17453), (255, 17465), (268, 17558), (277, 17606), (283, 17651), (292, 17699), (298, 17741), (299, 17750), (305, 17780), (306, 17783), (309, 17795), (321, 17852),

(322, 17858), (328, 17879), (329, 17882), (364, 18020), (382, 18092), (393, 18152), (398, 18182), (399, 18185), (401, 18194), (420, 18377), (432, 18443), (434, 18455), (448, 18497), (459, 18560), (472, 18617), (477, 18686), (483, 18722), (496, 18803), (509, 18938), (510, 18950),

Gene: PGHhamlin\_29 Start: 15971, Stop: 18997, Start Num: 15

Candidate Starts for PGHhamlin\_29:

(11, 15917), (Start: 15 @15971 has 81 MA's), (26, 16085), (34, 16151), (35, 16154), (37, 16163), (45, 16199), (54, 16250), (66, 16322), (78, 16394), (99, 16514), (101, 16517), (111, 16586), (112, 16631), (126, 16724), (130, 16733), (137, 16751), (142, 16778), (152, 16841), (155, 16853), (159, 16886), (164, 16904), (174, 16970), (175, 16973), (176, 16979), (179, 16994), (181, 17003), (183, 17015), (185, 17024), (202, 17117), (216, 17234), (217, 17237), (222, 17264), (223, 17276), (233, 17330), (238, 17351), (249, 17417), (252, 17444), (268, 17549), (277, 17597), (283, 17642), (292, 17690), (298, 17732), (299, 17741), (305, 17771), (306, 17774), (309, 17786), (321, 17843), (322, 17849), (328, 17870), (329, 17873), (364, 18011), (370, 18023), (382, 18083), (393, 18143), (398, 18173), (399, 18176), (401, 18185), (412, 18278), (420, 18368), (432, 18434), (434, 18446), (448, 18488), (459, 18551), (472, 18608), (477, 18677), (483, 18713), (496, 18794), (509, 18929),

Gene: PP\_35 Start: 21773, Stop: 24784, Start Num: 27

Candidate Starts for PP\_35:

(Start: 27 @21773 has 1 MA's), (47, 21896), (48, 21902), (69, 22010), (70, 22013), (71, 22022), (75, 22034), (86, 22115), (110, 22229), (115, 22253), (122, 22325), (128, 22346), (131, 22355), (134, 22361), (161, 22526), (165, 22547), (172, 22604), (178, 22643), (184, 22673), (186, 22691), (190, 22706), (191, 22709), (193, 22724), (197, 22745), (206, 22799), (214, 22862), (216, 22898), (218, 22907), (222, 22928), (225, 22949), (259, 23138), (271, 23216), (278, 23249), (286, 23297), (293, 23348), (294, 23351), (299, 23396), (337, 23567), (347, 23615), (355, 23660), (365, 23714), (369, 23735), (376, 23768), (385, 23834), (387, 23846), (395, 23891), (401, 23924), (404, 23945), (405, 23948), (415, 24056), (419, 24110), (420, 24113), (424, 24131), (431, 24188), (436, 24218), (453, 24293), (456, 24314), (463, 24353), (474, 24407), (478, 24467), (483, 24500), (493, 24563), (495, 24572), (503, 24662), (505, 24677), (510, 24728),

Gene: PackMan\_27 Start: 17590, Stop: 20499, Start Num: 22

Candidate Starts for PackMan\_27:

(Start: 22 @17590 has 33 MA's), (24, 17602), (32, 17662), (62, 17821), (74, 17884), (83, 17947), (89, 17989), (101, 18046), (127, 18256), (130, 18262), (136, 18277), (151, 18367), (152, 18370), (155, 18382), (161, 18424), (169, 18478), (185, 18553), (188, 18574), (189, 18577), (194, 18595), (204, 18658), (213, 18724), (216, 18763), (221, 18790), (223, 18805), (229, 18835), (233, 18859), (236, 18871), (238, 18880), (249, 18946), (255, 18985), (264, 19051), (268, 19078), (272, 19105), (283, 19171), (291, 19216), (303, 19291), (313, 19336), (318, 19357), (322, 19378), (323, 19381), (328, 19399), (329, 19402), (340, 19429), (359, 19510), (370, 19552), (398, 19702), (402, 19717), (406, 19747), (411, 19798), (419, 19885), (421, 19894), (429, 19945), (448, 20008), (452, 20029), (458, 20065), (467, 20101), (468, 20107), (477, 20185), (481, 20212), (489, 20272), (499, 20341), (500, 20371), (505, 20398), (510, 20437), (514, 20479),

Gene: Panamaxus\_25 Start: 16043, Stop: 19081, Start Num: 14

Candidate Starts for Panamaxus\_25:

(Start: 14 @16043 has 32 MA's), (33, 16217), (35, 16229), (41, 16262), (78, 16469), (82, 16490), (99, 16589), (101, 16592), (126, 16802), (135, 16823), (142, 16856), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (249, 17495), (255, 17534), (277, 17675), (283, 17720), (298, 17810), (299, 17819), (305, 17849), (318, 17906), (321, 17921), (328, 17948), (329, 17951), (338, 17969), (363, 18080), (382, 18161), (392, 18218), (400, 18260), (412, 18356), (414, 18377), (416, 18401), (420, 18446), (424, 18464), (432, 18512), (434, 18524), (448, 18566), (450, 18578), (458, 18626), (483,

18797), (491, 18857), (494, 18869), (498, 18896), (499, 18917), (509, 19013), (513, 19061),

Gene: Paphu\_23 Start: 15792, Stop: 18626, Start Num: 77

Candidate Starts for Paphu\_23:

(Start: 77 @15792 has 8 MA's), (88, 15864), (124, 16107), (130, 16122), (142, 16167), (162, 16287), (163, 16305), (167, 16353), (174, 16398), (183, 16443), (184, 16446), (194, 16494), (220, 16677), (223, 16704), (239, 16788), (249, 16845), (251, 16863), (258, 16908), (262, 16944), (272, 17004), (281, 17052), (291, 17115), (292, 17118), (313, 17235), (321, 17271), (326, 17298), (329, 17310), (332, 17328), (333, 17343), (344, 17406), (366, 17535), (373, 17580), (377, 17613), (378, 17625), (398, 17754), (411, 17850), (419, 17937), (420, 17940), (424, 17958), (463, 18162), (485, 18339), (499, 18450), (507, 18537), (511, 18576), (512, 18591),

Gene: Paraselene\_23 Start: 16163, Stop: 18997, Start Num: 77

Candidate Starts for Paraselene\_23:

(Start: 77 @16163 has 8 MA's), (88, 16235), (124, 16478), (130, 16493), (142, 16538), (162, 16658), (163, 16676), (167, 16724), (174, 16769), (183, 16814), (184, 16817), (194, 16865), (220, 17048), (223, 17075), (239, 17159), (249, 17216), (251, 17234), (258, 17279), (262, 17315), (269, 17357), (272, 17375), (281, 17423), (291, 17486), (292, 17489), (313, 17606), (321, 17642), (326, 17669), (329, 17681), (332, 17699), (333, 17714), (344, 17777), (366, 17906), (373, 17951), (377, 17984), (378, 17996), (398, 18125), (411, 18221), (419, 18308), (420, 18311), (424, 18329), (463, 18533), (485, 18710), (499, 18821), (504, 18875), (507, 18908), (511, 18947), (512, 18962),

Gene: Pawn\_27 Start: 16057, Stop: 19083, Start Num: 15

Candidate Starts for Pawn\_27:

(11, 16003), (Start: 15 @16057 has 81 MA's), (26, 16171), (34, 16237), (35, 16240), (37, 16249), (45, 16285), (54, 16336), (66, 16408), (78, 16480), (99, 16600), (101, 16603), (111, 16672), (112, 16717), (126, 16810), (130, 16819), (142, 16864), (148, 16903), (152, 16927), (155, 16939), (159, 16972), (164, 16990), (167, 17011), (175, 17059), (176, 17065), (179, 17080), (181, 17089), (183, 17101), (185, 17110), (202, 17203), (215, 17290), (216, 17320), (217, 17323), (222, 17350), (223, 17362), (233, 17416), (238, 17437), (242, 17467), (249, 17503), (266, 17629), (277, 17683), (283, 17728), (292, 17776), (298, 17818), (299, 17827), (305, 17857), (321, 17929), (322, 17935), (328, 17956), (329, 17959), (336, 17971), (363, 18088), (364, 18097), (382, 18169), (383, 18172), (391, 18208), (398, 18259), (399, 18262), (401, 18271), (420, 18454), (432, 18520), (434, 18532), (448, 18574), (459, 18637), (472, 18694), (477, 18763), (483, 18799), (496, 18880), (509, 19015), (510, 19027),

Gene: Pembroke\_27 Start: 15980, Stop: 19006, Start Num: 15

Candidate Starts for Pembroke\_27:

(11, 15926), (Start: 15 @15980 has 81 MA's), (26, 16094), (34, 16160), (35, 16163), (37, 16172), (45, 16208), (54, 16259), (66, 16331), (78, 16403), (99, 16523), (101, 16526), (111, 16595), (112, 16640), (126, 16733), (130, 16742), (137, 16760), (142, 16787), (152, 16850), (155, 16862), (159, 16895), (164, 16913), (174, 16979), (175, 16982), (176, 16988), (179, 17003), (181, 17012), (183, 17024), (185, 17033), (202, 17126), (216, 17243), (217, 17246), (222, 17273), (223, 17285), (233, 17339), (238, 17360), (249, 17426), (252, 17453), (268, 17558), (277, 17606), (283, 17651), (292, 17699), (298, 17741), (299, 17750), (305, 17780), (306, 17783), (309, 17795), (321, 17852), (322, 17858), (328, 17879), (329, 17882), (364, 18020), (370, 18032), (382, 18092), (393, 18152), (398, 18182), (399, 18185), (401, 18194), (412, 18287), (420, 18377), (432, 18443), (434, 18455), (448, 18497), (459, 18560), (472, 18617), (477, 18686), (483, 18722), (496, 18803), (509, 18938),

Gene: Penny1\_27 Start: 15979, Stop: 19005, Start Num: 15

Candidate Starts for Penny1\_27:

(11, 15925), (Start: 15 @15979 has 81 MA's), (26, 16093), (34, 16159), (35, 16162), (37, 16171), (45, 16207), (54, 16258), (66, 16330), (78, 16402), (99, 16522), (101, 16525), (111, 16594), (112, 16639), (126, 16732), (130, 16741), (137, 16759), (142, 16786), (152, 16849), (155, 16861), (159, 16894),

(164, 16912), (174, 16978), (175, 16981), (176, 16987), (179, 17002), (181, 17011), (183, 17023), (185, 17032), (199, 17110), (202, 17125), (216, 17242), (217, 17245), (222, 17272), (223, 17284), (233, 17338), (238, 17359), (249, 17425), (255, 17464), (268, 17557), (277, 17605), (283, 17650), (292, 17698), (298, 17740), (299, 17749), (305, 17779), (306, 17782), (309, 17794), (321, 17851), (322, 17857), (328, 17878), (329, 17881), (364, 18019), (370, 18031), (382, 18091), (392, 18148), (412, 18286), (414, 18307), (416, 18331), (420, 18376), (424, 18394), (432, 18442), (434, 18454), (448, 18496), (459, 18559), (472, 18616), (477, 18685), (483, 18721), (496, 18802), (509, 18937),

Gene: Ph8s\_27 Start: 15361, Stop: 17886, Start Num: 58

Candidate Starts for Ph8s\_27:

(Start: 58 @15361 has 4 MA's), (61, 15379), (79, 15484), (91, 15550), (92, 15553), (93, 15556), (98, 15586), (142, 15805), (147, 15841), (155, 15880), (164, 15931), (169, 15976), (174, 15997), (181, 16030), (184, 16045), (185, 16051), (188, 16072), (216, 16261), (221, 16288), (223, 16303), (233, 16357), (238, 16378), (249, 16444), (283, 16669), (287, 16684), (290, 16711), (293, 16726), (301, 16780), (303, 16789), (310, 16816), (313, 16834), (321, 16870), (328, 16897), (329, 16900), (342, 16939), (345, 16951), (364, 17038), (382, 17110), (388, 17137), (398, 17200), (406, 17245), (427, 17407), (451, 17470), (479, 17596), (490, 17668), (494, 17686), (495, 17689), (500, 17764), (508, 17800),

Gene: Phaeder\_27 Start: 17590, Stop: 20499, Start Num: 22

Candidate Starts for Phaeder\_27:

(Start: 22 @17590 has 33 MA's), (24, 17602), (32, 17662), (62, 17821), (74, 17884), (83, 17947), (89, 17989), (101, 18046), (127, 18256), (130, 18262), (136, 18277), (151, 18367), (152, 18370), (155, 18382), (161, 18424), (169, 18478), (185, 18553), (188, 18574), (189, 18577), (194, 18595), (204, 18658), (213, 18724), (216, 18763), (221, 18790), (223, 18805), (229, 18835), (233, 18859), (236, 18871), (238, 18880), (249, 18946), (255, 18985), (264, 19051), (268, 19078), (272, 19105), (283, 19171), (291, 19216), (303, 19291), (313, 19336), (318, 19357), (322, 19378), (323, 19381), (328, 19399), (329, 19402), (340, 19429), (359, 19510), (370, 19552), (398, 19702), (402, 19717), (406, 19747), (411, 19798), (419, 19885), (421, 19894), (429, 19945), (448, 20008), (452, 20029), (458, 20065), (467, 20101), (468, 20107), (477, 20185), (481, 20212), (489, 20272), (499, 20341), (500, 20371), (505, 20398), (510, 20437), (514, 20479),

Gene: Phantastic\_25 Start: 15463, Stop: 18498, Start Num: 14

Candidate Starts for Phantastic\_25:

(Start: 14 @15463 has 32 MA's), (33, 15637), (35, 15649), (41, 15682), (78, 15892), (94, 15979), (99, 16012), (101, 16015), (126, 16219), (130, 16228), (135, 16240), (142, 16273), (149, 16327), (152, 16336), (155, 16348), (159, 16381), (164, 16399), (166, 16411), (177, 16477), (183, 16510), (185, 16519), (202, 16612), (216, 16729), (223, 16771), (233, 16825), (238, 16846), (249, 16912), (277, 17092), (287, 17152), (291, 17182), (298, 17227), (299, 17236), (305, 17266), (309, 17281), (313, 17302), (321, 17338), (328, 17365), (329, 17368), (339, 17389), (353, 17452), (370, 17518), (382, 17578), (391, 17617), (393, 17638), (398, 17668), (399, 17671), (401, 17680), (405, 17704), (412, 17773), (414, 17794), (420, 17863), (424, 17881), (432, 17929), (434, 17941), (448, 17983), (450, 17995), (458, 18043), (459, 18046), (483, 18214), (491, 18274), (494, 18286), (496, 18295), (509, 18430), (513, 18478),

Gene: Pharaoh\_26 Start: 17176, Stop: 20193, Start Num: 9

Candidate Starts for Pharaoh\_26:

(5, 17146), (Start: 9 @17176 has 5 MA's), (Start: 22 @17353 has 33 MA's), (23, 17356), (24, 17365), (46, 17500), (63, 17596), (74, 17647), (83, 17710), (89, 17752), (99, 17806), (101, 17809), (116, 17938), (127, 18025), (136, 18046), (140, 18067), (149, 18130), (151, 18136), (155, 18151), (158, 18181), (161, 18193), (164, 18202), (168, 18238), (175, 18271), (185, 18322), (188, 18343), (189, 18346), (216, 18532), (223, 18574), (227, 18592), (233, 18628), (238, 18649), (249, 18715), (251, 18733), (252, 18742), (255, 18754), (259, 18787), (263, 18817), (270, 18865), (283, 18940), (303,

19060), (310, 19087), (313, 19105), (317, 19120), (321, 19141), (328, 19168), (339, 19192), (354, 19255), (389, 19408), (391, 19420), (398, 19471), (406, 19516), (416, 19612), (445, 19741), (448, 19750), (469, 19831), (479, 19903), (495, 19990), (500, 20065), (505, 20092), (510, 20131),

Gene: PhishRPhriends\_26 Start: 15241, Stop: 18267, Start Num: 15

Candidate Starts for PhishRPhriends\_26:

(11, 15187), (Start: 15 @15241 has 81 MA's), (26, 15355), (34, 15421), (35, 15424), (37, 15433), (45, 15469), (54, 15520), (66, 15592), (78, 15664), (99, 15784), (101, 15787), (111, 15856), (112, 15901), (126, 15994), (130, 16003), (142, 16048), (148, 16087), (152, 16111), (155, 16123), (159, 16156), (164, 16174), (167, 16195), (175, 16243), (176, 16249), (179, 16264), (181, 16273), (183, 16285), (185, 16294), (202, 16387), (215, 16474), (216, 16504), (217, 16507), (222, 16534), (223, 16546), (233, 16600), (238, 16621), (242, 16651), (249, 16687), (266, 16813), (277, 16867), (283, 16912), (291, 16957), (292, 16960), (298, 17002), (299, 17011), (305, 17041), (321, 17113), (322, 17119), (328, 17140), (329, 17143), (336, 17155), (363, 17272), (364, 17281), (382, 17353), (383, 17356), (391, 17392), (398, 17443), (399, 17446), (401, 17455), (420, 17638), (432, 17704), (434, 17716), (448, 17758), (459, 17821), (472, 17878), (477, 17947), (483, 17983), (496, 18064), (509, 18199), (510, 18211),

Gene: Phoebe\_27 Start: 15977, Stop: 19003, Start Num: 15

Candidate Starts for Phoebe\_27:

(11, 15923), (Start: 15 @15977 has 81 MA's), (26, 16091), (34, 16157), (35, 16160), (37, 16169), (45, 16205), (54, 16256), (66, 16328), (78, 16400), (99, 16520), (101, 16523), (111, 16592), (112, 16637), (126, 16730), (130, 16739), (137, 16757), (142, 16784), (152, 16847), (155, 16859), (159, 16892), (164, 16910), (174, 16976), (175, 16979), (176, 16985), (179, 17000), (181, 17009), (183, 17021), (185, 17030), (202, 17123), (216, 17240), (217, 17243), (222, 17270), (223, 17282), (233, 17336), (238, 17357), (249, 17423), (252, 17450), (268, 17555), (277, 17603), (283, 17648), (292, 17696), (298, 17738), (299, 17747), (305, 17777), (306, 17780), (309, 17792), (321, 17849), (322, 17855), (328, 17876), (329, 17879), (364, 18017), (370, 18029), (382, 18089), (393, 18149), (398, 18179), (399, 18182), (401, 18191), (412, 18284), (420, 18374), (432, 18440), (434, 18452), (448, 18494), (459, 18557), (472, 18614), (477, 18683), (483, 18719), (496, 18800), (509, 18935),

Gene: Phonnegut\_27 Start: 17623, Stop: 20532, Start Num: 22

Candidate Starts for Phonnegut\_27:

(Start: 22 @17623 has 33 MA's), (24, 17635), (32, 17695), (62, 17854), (74, 17917), (83, 17980), (89, 18022), (101, 18079), (107, 18118), (127, 18289), (130, 18295), (136, 18310), (151, 18400), (152, 18403), (155, 18415), (161, 18457), (169, 18511), (185, 18586), (188, 18607), (189, 18610), (194, 18628), (204, 18691), (213, 18757), (216, 18796), (221, 18823), (223, 18838), (229, 18868), (233, 18892), (236, 18904), (238, 18913), (249, 18979), (255, 19018), (264, 19084), (268, 19111), (272, 19138), (291, 19249), (303, 19324), (313, 19369), (318, 19390), (322, 19411), (323, 19414), (328, 19432), (329, 19435), (340, 19462), (346, 19489), (359, 19543), (398, 19735), (402, 19750), (406, 19780), (411, 19831), (419, 19918), (421, 19927), (429, 19978), (448, 20041), (452, 20062), (458, 20098), (467, 20134), (468, 20140), (477, 20218), (481, 20245), (489, 20305), (499, 20374), (500, 20404), (505, 20431), (510, 20470), (514, 20512),

Gene: Phoxy\_27 Start: 16063, Stop: 19089, Start Num: 15

Candidate Starts for Phoxy\_27:

(11, 16009), (Start: 15 @16063 has 81 MA's), (26, 16177), (34, 16243), (35, 16246), (37, 16255), (45, 16291), (54, 16342), (66, 16414), (78, 16486), (99, 16606), (101, 16609), (111, 16678), (112, 16723), (126, 16816), (130, 16825), (137, 16843), (142, 16870), (152, 16933), (155, 16945), (159, 16978), (164, 16996), (174, 17062), (175, 17065), (176, 17071), (179, 17086), (181, 17095), (183, 17107), (185, 17116), (199, 17194), (202, 17209), (216, 17326), (217, 17329), (222, 17356), (223, 17368), (233, 17422), (238, 17443), (249, 17509), (255, 17548), (268, 17641), (277, 17689), (283, 17734), (298, 17824), (299, 17833), (305, 17863), (318, 17920), (321, 17935), (328, 17962), (329, 17965),

(364, 18103), (370, 18115), (382, 18175), (392, 18232), (412, 18370), (414, 18391), (416, 18415), (420, 18460), (424, 18478), (432, 18526), (434, 18538), (448, 18580), (459, 18643), (472, 18700), (477, 18769), (483, 18805), (496, 18886), (509, 19021),

Gene: Phranny\_28 Start: 16049, Stop: 19075, Start Num: 15

Candidate Starts for Phranny\_28:

(11, 15995), (Start: 15 @16049 has 81 MA's), (26, 16163), (34, 16229), (35, 16232), (37, 16241), (45, 16277), (54, 16328), (66, 16400), (78, 16472), (99, 16592), (101, 16595), (111, 16664), (112, 16709), (126, 16802), (130, 16811), (142, 16856), (148, 16895), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (215, 17282), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (242, 17459), (249, 17495), (266, 17621), (277, 17675), (283, 17720), (292, 17768), (298, 17810), (299, 17819), (305, 17849), (321, 17921), (322, 17927), (328, 17948), (329, 17951), (336, 17963), (363, 18080), (364, 18089), (382, 18161), (383, 18164), (391, 18200), (398, 18251), (399, 18254), (401, 18263), (420, 18446), (432, 18512), (434, 18524), (448, 18566), (459, 18629), (472, 18686), (477, 18755), (483, 18791), (496, 18872), (509, 19007), (510, 19019),

Gene: Pioneer\_27 Start: 17623, Stop: 20532, Start Num: 22

Candidate Starts for Pioneer\_27:

(Start: 22 @17623 has 33 MA's), (24, 17635), (32, 17695), (62, 17854), (74, 17917), (83, 17980), (89, 18022), (101, 18079), (107, 18118), (127, 18289), (130, 18295), (136, 18310), (151, 18400), (152, 18403), (155, 18415), (161, 18457), (169, 18511), (185, 18586), (188, 18607), (189, 18610), (194, 18628), (204, 18691), (213, 18757), (216, 18796), (221, 18823), (223, 18838), (229, 18868), (233, 18892), (236, 18904), (238, 18913), (249, 18979), (255, 19018), (264, 19084), (268, 19111), (272, 19138), (291, 19249), (303, 19324), (313, 19369), (318, 19390), (322, 19411), (323, 19414), (328, 19432), (329, 19435), (340, 19462), (346, 19489), (359, 19543), (398, 19735), (402, 19750), (406, 19780), (411, 19831), (419, 19918), (421, 19927), (429, 19978), (448, 20041), (452, 20062), (458, 20098), (467, 20134), (468, 20140), (477, 20218), (481, 20245), (489, 20305), (499, 20374), (500, 20404), (505, 20431), (510, 20470), (514, 20512),

Gene: Piro94\_27 Start: 17131, Stop: 19638, Start Num: 60

Candidate Starts for Piro94\_27:

(Start: 60 @17131 has 89 MA's), (79, 17242), (90, 17299), (124, 17485), (142, 17548), (146, 17581), (148, 17587), (179, 17767), (181, 17776), (184, 17791), (185, 17797), (188, 17818), (189, 17821), (194, 17839), (203, 17899), (216, 18007), (223, 18049), (224, 18058), (227, 18067), (233, 18103), (238, 18124), (248, 18187), (249, 18190), (251, 18208), (255, 18229), (283, 18415), (287, 18430), (290, 18457), (299, 18514), (302, 18529), (303, 18535), (305, 18544), (307, 18550), (313, 18580), (318, 18601), (329, 18646), (334, 18652), (342, 18685), (349, 18712), (364, 18784), (370, 18796), (382, 18856), (388, 18883), (398, 18946), (406, 18991), (410, 19039), (415, 19075), (417, 19108), (439, 19171), (447, 19195), (479, 19339), (495, 19438), (503, 19525), (516, 19624),

Gene: Pistachio\_26 Start: 15042, Stop: 18077, Start Num: 14

Candidate Starts for Pistachio\_26:

(Start: 14 @15042 has 32 MA's), (33, 15216), (35, 15228), (41, 15261), (78, 15471), (99, 15591), (101, 15594), (126, 15798), (135, 15819), (141, 15849), (142, 15852), (152, 15915), (155, 15927), (159, 15960), (164, 15978), (175, 16047), (176, 16053), (179, 16068), (181, 16077), (183, 16089), (185, 16098), (202, 16191), (216, 16308), (217, 16311), (221, 16335), (222, 16338), (223, 16350), (233, 16404), (238, 16425), (241, 16446), (249, 16491), (252, 16518), (255, 16530), (277, 16671), (283, 16716), (287, 16731), (298, 16806), (299, 16815), (305, 16845), (309, 16860), (310, 16863), (313, 16881), (318, 16902), (319, 16905), (328, 16944), (329, 16947), (353, 17031), (370, 17097), (375, 17118), (382, 17157), (391, 17196), (393, 17217), (398, 17247), (399, 17250), (401, 17259), (405, 17283), (412, 17352), (414, 17373), (420, 17442), (424, 17460), (432, 17508), (434, 17520), (448, 17562), (450, 17574), (458, 17622), (483, 17793), (485, 17823), (491, 17853), (496, 17874), (509,

18009), (513, 18057),

Gene: Pocahontas\_26 Start: 16040, Stop: 19078, Start Num: 14

Candidate Starts for Pocahontas\_26:

(Start: 14 @16040 has 32 MA's), (33, 16214), (35, 16226), (41, 16259), (78, 16466), (82, 16487), (99, 16586), (101, 16589), (126, 16799), (135, 16820), (142, 16853), (152, 16916), (155, 16928), (159, 16961), (164, 16979), (167, 17000), (175, 17048), (176, 17054), (179, 17069), (181, 17078), (183, 17090), (185, 17099), (202, 17192), (216, 17309), (217, 17312), (222, 17339), (223, 17351), (233, 17405), (238, 17426), (249, 17492), (255, 17531), (277, 17672), (283, 17717), (298, 17807), (299, 17816), (305, 17846), (318, 17903), (321, 17918), (328, 17945), (329, 17948), (338, 17966), (363, 18077), (382, 18158), (392, 18215), (400, 18257), (412, 18353), (414, 18374), (416, 18398), (420, 18443), (424, 18461), (432, 18509), (434, 18521), (448, 18563), (450, 18575), (458, 18623), (483, 18794), (491, 18854), (494, 18866), (498, 18893), (499, 18914), (509, 19010), (513, 19058),

Gene: Pomar16\_29 Start: 16549, Stop: 19062, Start Num: 60

Candidate Starts for Pomar16\_29:

(Start: 60 @16549 has 89 MA's), (92, 16729), (93, 16732), (142, 16978), (151, 17038), (155, 17053), (158, 17083), (159, 17086), (174, 17170), (179, 17194), (184, 17218), (188, 17245), (189, 17248), (208, 17353), (216, 17434), (221, 17461), (223, 17476), (233, 17530), (238, 17551), (249, 17617), (251, 17635), (252, 17644), (266, 17743), (272, 17776), (274, 17785), (283, 17842), (287, 17857), (303, 17962), (309, 17986), (329, 18073), (336, 18085), (338, 18091), (345, 18124), (359, 18181), (375, 18244), (398, 18373), (402, 18388), (406, 18418), (408, 18430), (410, 18466), (427, 18580), (435, 18592), (449, 18634), (490, 18841), (494, 18859), (495, 18862), (516, 19048),

Gene: Popcicle\_26 Start: 16040, Stop: 19078, Start Num: 14

Candidate Starts for Popcicle\_26:

(Start: 14 @16040 has 32 MA's), (33, 16214), (35, 16226), (41, 16259), (78, 16466), (82, 16487), (99, 16586), (101, 16589), (126, 16799), (135, 16820), (142, 16853), (152, 16916), (155, 16928), (159, 16961), (164, 16979), (167, 17000), (175, 17048), (176, 17054), (179, 17069), (181, 17078), (183, 17090), (185, 17099), (202, 17192), (216, 17309), (217, 17312), (222, 17339), (223, 17351), (233, 17405), (238, 17426), (249, 17492), (255, 17531), (277, 17672), (283, 17717), (298, 17807), (299, 17816), (305, 17846), (318, 17903), (321, 17918), (328, 17945), (329, 17948), (338, 17966), (363, 18077), (382, 18158), (392, 18215), (400, 18257), (412, 18353), (414, 18374), (416, 18398), (420, 18443), (424, 18461), (432, 18509), (434, 18521), (448, 18563), (450, 18575), (458, 18623), (483, 18794), (491, 18854), (494, 18866), (498, 18893), (499, 18914), (509, 19010), (513, 19058),

Gene: PotatoSplit\_28 Start: 15979, Stop: 19005, Start Num: 15

Candidate Starts for PotatoSplit\_28:

(11, 15925), (Start: 15 @15979 has 81 MA's), (26, 16093), (34, 16159), (35, 16162), (37, 16171), (45, 16207), (54, 16258), (66, 16330), (78, 16402), (99, 16522), (101, 16525), (111, 16594), (112, 16639), (126, 16732), (130, 16741), (137, 16759), (142, 16786), (152, 16849), (155, 16861), (159, 16894), (164, 16912), (174, 16978), (175, 16981), (176, 16987), (179, 17002), (181, 17011), (183, 17023), (185, 17032), (199, 17110), (202, 17125), (216, 17242), (217, 17245), (222, 17272), (223, 17284), (233, 17338), (238, 17359), (249, 17425), (255, 17464), (268, 17557), (277, 17605), (283, 17650), (292, 17698), (298, 17740), (299, 17749), (305, 17779), (306, 17782), (309, 17794), (321, 17851), (322, 17857), (328, 17878), (329, 17881), (364, 18019), (370, 18031), (382, 18091), (392, 18148), (412, 18286), (414, 18307), (416, 18331), (420, 18376), (424, 18394), (432, 18442), (434, 18454), (448, 18496), (459, 18559), (472, 18616), (477, 18685), (483, 18721), (496, 18802), (509, 18937),

Gene: Power\_26 Start: 16547, Stop: 19084, Start Num: 60

Candidate Starts for Power\_26:

(Start: 60 @16547 has 89 MA's), (91, 16724), (92, 16727), (93, 16730), (98, 16760), (121, 16898), (124, 16919), (126, 16928), (135, 16949), (142, 16982), (151, 17042), (155, 17057), (164, 17108),



(171, 17156), (174, 17174), (181, 17207), (183, 17219), (184, 17222), (185, 17228), (188, 17249), (189, 17252), (205, 17339), (216, 17438), (223, 17480), (224, 17489), (227, 17498), (236, 17546), (238, 17555), (249, 17621), (255, 17660), (283, 17846), (287, 17861), (292, 17894), (299, 17945), (303, 17966), (307, 17981), (309, 17990), (312, 18005), (328, 18074), (370, 18227), (398, 18377), (406, 18422), (408, 18434), (410, 18470), (451, 18650), (458, 18659), (478, 18770), (482, 18800), (495, 18884),

Gene: Priya\_27 Start: 17621, Stop: 20530, Start Num: 22

Candidate Starts for Priya\_27:

(Start: 22 @17621 has 33 MA's), (24, 17633), (32, 17693), (74, 17915), (83, 17978), (89, 18020), (99, 18074), (101, 18077), (107, 18116), (127, 18287), (130, 18293), (136, 18308), (151, 18398), (152, 18401), (155, 18413), (161, 18455), (169, 18509), (174, 18530), (185, 18584), (188, 18605), (189, 18608), (194, 18626), (204, 18689), (213, 18755), (216, 18794), (221, 18821), (223, 18836), (229, 18866), (233, 18890), (236, 18902), (238, 18911), (249, 18977), (255, 19016), (264, 19082), (268, 19109), (272, 19136), (291, 19247), (303, 19322), (309, 19346), (313, 19367), (318, 19388), (322, 19409), (323, 19412), (328, 19430), (329, 19433), (340, 19460), (355, 19520), (361, 19550), (370, 19583), (379, 19613), (380, 19625), (398, 19733), (402, 19748), (406, 19778), (411, 19829), (419, 19916), (421, 19925), (429, 19976), (448, 20039), (452, 20060), (458, 20096), (467, 20132), (468, 20138), (477, 20216), (481, 20243), (499, 20372), (500, 20402), (505, 20429), (510, 20468), (514, 20510),

Gene: Puppy\_26 Start: 15114, Stop: 18149, Start Num: 14

Candidate Starts for Puppy\_26:

(Start: 14 @15114 has 32 MA's), (33, 15288), (35, 15300), (41, 15333), (78, 15543), (99, 15663), (101, 15666), (126, 15870), (135, 15891), (141, 15921), (142, 15924), (152, 15987), (155, 15999), (159, 16032), (164, 16050), (175, 16119), (176, 16125), (179, 16140), (181, 16149), (183, 16161), (185, 16170), (202, 16263), (216, 16380), (217, 16383), (221, 16407), (222, 16410), (223, 16422), (233, 16476), (238, 16497), (241, 16518), (249, 16563), (252, 16590), (255, 16602), (277, 16743), (283, 16788), (287, 16803), (298, 16878), (299, 16887), (305, 16917), (309, 16932), (310, 16935), (313, 16953), (318, 16974), (319, 16977), (328, 17016), (329, 17019), (353, 17103), (370, 17169), (375, 17190), (382, 17229), (391, 17268), (393, 17289), (398, 17319), (399, 17322), (401, 17331), (405, 17355), (412, 17424), (414, 17445), (420, 17514), (424, 17532), (432, 17580), (434, 17592), (448, 17634), (450, 17646), (458, 17694), (483, 17865), (485, 17895), (491, 17925), (496, 17946), (509, 18081), (513, 18129),

Gene: PurpleHaze\_27 Start: 16056, Stop: 19082, Start Num: 15

Candidate Starts for PurpleHaze\_27:

(11, 16002), (Start: 15 @16056 has 81 MA's), (26, 16170), (34, 16236), (35, 16239), (37, 16248), (45, 16284), (54, 16335), (66, 16407), (78, 16479), (99, 16599), (101, 16602), (111, 16671), (112, 16716), (126, 16809), (130, 16818), (142, 16863), (148, 16902), (152, 16926), (155, 16938), (159, 16971), (164, 16989), (167, 17010), (175, 17058), (176, 17064), (179, 17079), (181, 17088), (183, 17100), (185, 17109), (202, 17202), (215, 17289), (216, 17319), (217, 17322), (222, 17349), (223, 17361), (233, 17415), (238, 17436), (242, 17466), (249, 17502), (266, 17628), (277, 17682), (283, 17727), (292, 17775), (298, 17817), (299, 17826), (305, 17856), (321, 17928), (322, 17934), (328, 17955), (329, 17958), (336, 17970), (363, 18087), (364, 18096), (382, 18168), (383, 18171), (391, 18207), (398, 18258), (399, 18261), (401, 18270), (420, 18453), (432, 18519), (434, 18531), (448, 18573), (459, 18636), (472, 18693), (477, 18762), (483, 18798), (496, 18879), (509, 19014), (510, 19026),

Gene: Qobbit\_27 Start: 17620, Stop: 20529, Start Num: 22

Candidate Starts for Qobbit\_27:

(Start: 22 @17620 has 33 MA's), (24, 17632), (32, 17692), (62, 17851), (74, 17914), (83, 17977), (89, 18019), (101, 18076), (107, 18115), (127, 18286), (130, 18292), (136, 18307), (151, 18397), (152, 18400), (155, 18412), (161, 18454), (169, 18508), (185, 18583), (188, 18604), (189, 18607), (194,

18625), (204, 18688), (213, 18754), (216, 18793), (221, 18820), (223, 18835), (229, 18865), (233, 18889), (236, 18901), (238, 18910), (249, 18976), (255, 19015), (264, 19081), (268, 19108), (272, 19135), (291, 19246), (303, 19321), (313, 19366), (318, 19387), (322, 19408), (323, 19411), (328, 19429), (329, 19432), (340, 19459), (346, 19486), (359, 19540), (398, 19732), (402, 19747), (406, 19777), (411, 19828), (419, 19915), (421, 19924), (429, 19975), (448, 20038), (452, 20059), (458, 20095), (467, 20131), (468, 20137), (477, 20215), (481, 20242), (489, 20302), (499, 20371), (500, 20401), (505, 20428), (510, 20467), (514, 20509),

Gene: QueenB2\_26 Start: 16665, Stop: 19202, Start Num: 60

Candidate Starts for QueenB2\_26:

(Start: 60 @16665 has 89 MA's), (91, 16842), (92, 16845), (93, 16848), (120, 17010), (121, 17016), (124, 17037), (126, 17046), (135, 17067), (142, 17100), (146, 17133), (164, 17226), (171, 17274), (174, 17292), (181, 17325), (183, 17337), (184, 17340), (185, 17346), (188, 17367), (189, 17370), (216, 17556), (223, 17598), (224, 17607), (236, 17664), (238, 17673), (249, 17739), (255, 17778), (268, 17871), (270, 17889), (283, 17964), (299, 18063), (302, 18078), (303, 18084), (305, 18093), (309, 18108), (313, 18129), (318, 18150), (323, 18174), (329, 18195), (334, 18201), (342, 18234), (345, 18246), (347, 18255), (370, 18345), (382, 18405), (388, 18432), (398, 18495), (406, 18540), (419, 18678), (451, 18768), (458, 18777), (478, 18888), (482, 18918), (495, 19002),

Gene: QueenBeesly\_26 Start: 16547, Stop: 19084, Start Num: 60

Candidate Starts for QueenBeesly\_26:

(Start: 60 @16547 has 89 MA's), (91, 16724), (92, 16727), (93, 16730), (98, 16760), (121, 16898), (124, 16919), (126, 16928), (135, 16949), (142, 16982), (151, 17042), (155, 17057), (164, 17108), (171, 17156), (174, 17174), (181, 17207), (183, 17219), (184, 17222), (185, 17228), (188, 17249), (189, 17252), (205, 17339), (216, 17438), (223, 17480), (224, 17489), (227, 17498), (236, 17546), (238, 17555), (249, 17621), (255, 17660), (283, 17846), (287, 17861), (292, 17894), (299, 17945), (303, 17966), (307, 17981), (309, 17990), (312, 18005), (328, 18074), (370, 18227), (375, 18248), (398, 18377), (406, 18422), (408, 18434), (410, 18470), (451, 18650), (458, 18659), (478, 18770), (482, 18800), (495, 18884),

Gene: QuinnKiro\_25 Start: 16043, Stop: 19081, Start Num: 14

Candidate Starts for QuinnKiro\_25:

(Start: 14 @16043 has 32 MA's), (33, 16217), (35, 16229), (41, 16262), (78, 16469), (82, 16490), (99, 16589), (101, 16592), (126, 16802), (130, 16811), (135, 16823), (142, 16856), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (249, 17495), (255, 17534), (277, 17675), (283, 17720), (298, 17810), (299, 17819), (305, 17849), (318, 17906), (321, 17921), (328, 17948), (329, 17951), (338, 17969), (363, 18080), (382, 18161), (392, 18218), (400, 18260), (412, 18356), (414, 18377), (416, 18401), (420, 18446), (424, 18464), (432, 18512), (434, 18524), (448, 18566), (450, 18578), (458, 18626), (483, 18797), (491, 18857), (494, 18869), (498, 18896), (499, 18917), (509, 19013), (513, 19061),

Gene: Quokka\_24 Start: 15528, Stop: 18041, Start Num: 60

Candidate Starts for Quokka\_24:

(Start: 60 @15528 has 89 MA's), (79, 15639), (91, 15705), (92, 15708), (93, 15711), (124, 15897), (126, 15906), (130, 15915), (155, 16035), (164, 16086), (173, 16143), (175, 16155), (176, 16161), (179, 16176), (183, 16197), (185, 16206), (195, 16254), (216, 16416), (222, 16446), (223, 16458), (230, 16497), (233, 16512), (238, 16533), (247, 16590), (249, 16599), (252, 16626), (266, 16725), (283, 16824), (287, 16839), (299, 16923), (303, 16944), (313, 16989), (328, 17052), (329, 17055), (345, 17106), (349, 17121), (382, 17265), (388, 17292), (398, 17355), (402, 17370), (406, 17400), (416, 17496), (427, 17562), (451, 17625), (489, 17820), (490, 17823), (495, 17844),

Gene: Rachaly\_29 Start: 18265, Stop: 20793, Start Num: 60

Candidate Starts for Rachaly\_29:

(Start: 60 @18265 has 89 MA's), (79, 18376), (80, 18388), (92, 18445), (93, 18448), (124, 18637), (126, 18646), (142, 18700), (161, 18817), (164, 18826), (167, 18847), (169, 18871), (183, 18937), (185, 18946), (188, 18967), (189, 18970), (216, 19156), (223, 19198), (238, 19273), (242, 19303), (249, 19339), (255, 19378), (283, 19564), (299, 19663), (303, 19684), (304, 19687), (309, 19708), (313, 19729), (320, 19762), (321, 19765), (328, 19792), (342, 19834), (349, 19861), (364, 19933), (370, 19945), (387, 20029), (388, 20032), (398, 20095), (406, 20140), (408, 20152), (416, 20236), (425, 20290), (458, 20374), (467, 20398), (482, 20515), (495, 20593),

Gene: Rahalelujah\_25 Start: 15668, Stop: 18586, Start Num: 22

Candidate Starts for Rahalelujah\_25:

(Start: 22 @15668 has 33 MA's), (24, 15680), (51, 15839), (59, 15881), (62, 15902), (83, 16028), (89, 16070), (99, 16124), (101, 16127), (116, 16253), (124, 16328), (126, 16337), (127, 16340), (132, 16352), (160, 16505), (164, 16517), (166, 16529), (167, 16538), (169, 16562), (174, 16583), (175, 16586), (179, 16607), (183, 16628), (185, 16637), (186, 16649), (197, 16697), (204, 16742), (216, 16847), (228, 16910), (232, 16940), (233, 16943), (238, 16964), (239, 16973), (241, 16985), (244, 17009), (249, 17030), (255, 17069), (283, 17255), (286, 17267), (291, 17300), (303, 17375), (305, 17384), (313, 17420), (318, 17441), (322, 17462), (323, 17465), (326, 17474), (328, 17483), (329, 17486), (340, 17513), (346, 17540), (360, 17600), (380, 17678), (398, 17786), (406, 17831), (411, 17882), (418, 17963), (419, 17969), (421, 17978), (429, 18029), (448, 18092), (452, 18113), (458, 18152), (468, 18194), (477, 18272), (481, 18299), (489, 18359), (495, 18383), (500, 18458), (510, 18524), (514, 18566),

Gene: Reba\_28 Start: 15722, Stop: 18748, Start Num: 15

Candidate Starts for Reba\_28:

(Start: 15 @15722 has 81 MA's), (26, 15836), (34, 15902), (35, 15905), (37, 15914), (45, 15950), (54, 16001), (66, 16073), (78, 16145), (99, 16265), (101, 16268), (111, 16337), (112, 16382), (126, 16475), (130, 16484), (142, 16529), (148, 16568), (152, 16592), (155, 16604), (159, 16637), (164, 16655), (167, 16676), (175, 16724), (176, 16730), (179, 16745), (181, 16754), (183, 16766), (185, 16775), (202, 16868), (215, 16955), (216, 16985), (217, 16988), (222, 17015), (223, 17027), (233, 17081), (238, 17102), (242, 17132), (249, 17168), (266, 17294), (277, 17348), (283, 17393), (292, 17441), (298, 17483), (299, 17492), (305, 17522), (321, 17594), (322, 17600), (328, 17621), (329, 17624), (336, 17636), (363, 17753), (364, 17762), (382, 17834), (383, 17837), (391, 17873), (398, 17924), (399, 17927), (401, 17936), (420, 18119), (432, 18185), (434, 18197), (448, 18239), (459, 18302), (472, 18359), (477, 18428), (483, 18464), (496, 18545), (509, 18680), (510, 18692),

Gene: RedRock\_29 Start: 18558, Stop: 21056, Start Num: 60

Candidate Starts for RedRock\_29:

(Start: 60 @18558 has 89 MA's), (82, 18687), (90, 18726), (98, 18771), (121, 18873), (124, 18894), (130, 18912), (155, 19032), (164, 19083), (175, 19152), (176, 19158), (179, 19173), (181, 19182), (183, 19194), (185, 19203), (216, 19413), (221, 19440), (223, 19455), (233, 19509), (238, 19530), (249, 19596), (255, 19635), (263, 19698), (283, 19821), (287, 19836), (302, 19935), (305, 19950), (307, 19956), (309, 19965), (313, 19986), (318, 20007), (321, 20022), (323, 20031), (329, 20052), (334, 20058), (342, 20091), (349, 20118), (356, 20148), (359, 20160), (364, 20190), (370, 20202), (388, 20289), (393, 20322), (398, 20352), (404, 20385), (406, 20397), (449, 20616), (451, 20625), (458, 20634), (478, 20745), (482, 20775), (495, 20856), (510, 20997),

Gene: Refuge\_29 Start: 18955, Stop: 22065, Start Num: 9

Candidate Starts for Refuge\_29:

(1, 18709), (5, 18925), (Start: 9 @18955 has 5 MA's), (Start: 22 @19132 has 33 MA's), (24, 19144), (31, 19180), (74, 19411), (83, 19474), (89, 19516), (99, 19570), (101, 19573), (116, 19699), (124, 19774), (126, 19783), (127, 19786), (132, 19798), (142, 19837), (164, 19963), (169, 20008), (171,

20011), (174, 20029), (175, 20032), (179, 20053), (181, 20062), (185, 20083), (186, 20095), (197, 20143), (200, 20164), (201, 20173), (204, 20188), (226, 20350), (234, 20392), (238, 20410), (239, 20419), (241, 20431), (249, 20476), (254, 20509), (255, 20515), (263, 20578), (283, 20701), (301, 20812), (303, 20821), (304, 20824), (313, 20866), (317, 20881), (323, 20911), (328, 20929), (334, 20938), (336, 20944), (347, 20992), (349, 20998), (364, 21070), (382, 21142), (383, 21145), (393, 21202), (398, 21232), (401, 21244), (405, 21268), (406, 21277), (417, 21409), (420, 21433), (426, 21469), (428, 21478), (439, 21520), (448, 21553), (461, 21634), (463, 21643), (483, 21790), (488, 21838), (489, 21841), (495, 21865), (509, 21994), (510, 22006),

Gene: ResDef\_26 Start: 16043, Stop: 19081, Start Num: 14

Candidate Starts for ResDef\_26:

(Start: 14 @16043 has 32 MA's), (33, 16217), (35, 16229), (41, 16262), (78, 16469), (82, 16490), (99, 16589), (101, 16592), (126, 16802), (135, 16823), (142, 16856), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (249, 17495), (255, 17534), (277, 17675), (283, 17720), (298, 17810), (299, 17819), (305, 17849), (318, 17906), (321, 17921), (328, 17948), (329, 17951), (338, 17969), (363, 18080), (382, 18161), (392, 18218), (400, 18260), (412, 18356), (414, 18377), (416, 18401), (420, 18446), (424, 18464), (432, 18512), (434, 18524), (448, 18566), (450, 18578), (458, 18626), (483, 18797), (491, 18857), (494, 18869), (498, 18896), (499, 18917), (509, 19013), (513, 19061),

Gene: Retro23\_26 Start: 16689, Stop: 19232, Start Num: 60

Candidate Starts for Retro23\_26:

(Start: 60 @16689 has 89 MA's), (91, 16866), (92, 16869), (93, 16872), (120, 17040), (121, 17046), (124, 17067), (126, 17076), (135, 17097), (142, 17130), (146, 17163), (164, 17256), (171, 17304), (174, 17322), (179, 17346), (181, 17355), (183, 17367), (184, 17370), (185, 17376), (188, 17397), (189, 17400), (205, 17487), (216, 17586), (223, 17628), (227, 17646), (230, 17667), (236, 17694), (238, 17703), (249, 17769), (255, 17808), (283, 17994), (287, 18009), (292, 18042), (299, 18093), (303, 18114), (307, 18129), (309, 18138), (312, 18153), (328, 18222), (370, 18375), (375, 18396), (398, 18525), (402, 18540), (406, 18570), (408, 18582), (410, 18618), (451, 18798), (458, 18807), (478, 18918), (482, 18948), (495, 19032),

Gene: Rockstar\_25 Start: 15416, Stop: 18460, Start Num: 14

Candidate Starts for Rockstar\_25:

(Start: 14 @15416 has 32 MA's), (33, 15590), (35, 15602), (78, 15845), (99, 15965), (101, 15968), (129, 16190), (142, 16235), (155, 16310), (159, 16343), (164, 16361), (166, 16373), (177, 16439), (183, 16472), (185, 16481), (194, 16523), (202, 16574), (216, 16691), (223, 16733), (233, 16787), (238, 16808), (247, 16865), (249, 16874), (266, 17000), (268, 17006), (272, 17033), (283, 17099), (287, 17114), (291, 17144), (292, 17147), (299, 17198), (301, 17210), (306, 17231), (309, 17243), (313, 17264), (321, 17300), (328, 17327), (341, 17360), (343, 17372), (353, 17414), (370, 17480), (382, 17540), (391, 17579), (398, 17630), (399, 17633), (401, 17642), (405, 17666), (412, 17735), (414, 17756), (420, 17825), (424, 17843), (432, 17891), (434, 17903), (448, 17945), (450, 17957), (458, 18005), (483, 18176), (491, 18236), (496, 18257), (509, 18392), (510, 18404), (513, 18440),

Gene: Rummer\_27 Start: 16063, Stop: 19089, Start Num: 15

Candidate Starts for Rummer\_27:

(11, 16009), (Start: 15 @16063 has 81 MA's), (26, 16177), (34, 16243), (35, 16246), (37, 16255), (45, 16291), (54, 16342), (66, 16414), (78, 16486), (99, 16606), (101, 16609), (111, 16678), (112, 16723), (126, 16816), (130, 16825), (137, 16843), (142, 16870), (152, 16933), (155, 16945), (159, 16978), (164, 16996), (174, 17062), (175, 17065), (176, 17071), (179, 17086), (181, 17095), (183, 17107), (185, 17116), (199, 17194), (202, 17209), (216, 17326), (217, 17329), (222, 17356), (223, 17368), (233, 17422), (238, 17443), (249, 17509), (255, 17548), (268, 17641), (277, 17689), (283, 17734), (292, 17782), (298, 17824), (299, 17833), (305, 17863), (306, 17866), (309, 17878), (321, 17935),

(322, 17941), (328, 17962), (329, 17965), (364, 18103), (370, 18115), (382, 18175), (392, 18232), (412, 18370), (414, 18391), (416, 18415), (420, 18460), (424, 18478), (432, 18526), (434, 18538), (448, 18580), (459, 18643), (472, 18700), (477, 18769), (483, 18805), (488, 18853), (496, 18886), (509, 19021),

Gene: Ruotula\_23 Start: 16616, Stop: 19450, Start Num: 77

Candidate Starts for Ruotula\_23:

(Start: 77 @16616 has 8 MA's), (88, 16688), (124, 16931), (130, 16946), (142, 16991), (162, 17111), (163, 17129), (167, 17177), (174, 17222), (183, 17267), (184, 17270), (194, 17318), (220, 17501), (223, 17528), (239, 17612), (249, 17669), (251, 17687), (258, 17732), (262, 17768), (269, 17810), (272, 17828), (281, 17876), (291, 17939), (292, 17942), (313, 18059), (321, 18095), (326, 18122), (329, 18134), (332, 18152), (333, 18167), (344, 18230), (366, 18359), (373, 18404), (377, 18437), (378, 18449), (406, 18623), (411, 18674), (419, 18761), (420, 18764), (424, 18782), (463, 18986), (485, 19163), (499, 19274), (507, 19361), (511, 19400), (512, 19415),

Gene: RyeScarlet\_28 Start: 17594, Stop: 20503, Start Num: 22

Candidate Starts for RyeScarlet\_28:

(Start: 22 @17594 has 33 MA's), (24, 17606), (32, 17666), (62, 17825), (74, 17888), (83, 17951), (89, 17993), (101, 18050), (107, 18089), (127, 18260), (130, 18266), (136, 18281), (151, 18371), (152, 18374), (155, 18386), (161, 18428), (169, 18482), (185, 18557), (188, 18578), (189, 18581), (194, 18599), (204, 18662), (213, 18728), (216, 18767), (221, 18794), (223, 18809), (229, 18839), (233, 18863), (238, 18884), (249, 18950), (255, 18989), (264, 19055), (268, 19082), (272, 19109), (283, 19175), (291, 19220), (303, 19295), (313, 19340), (318, 19361), (322, 19382), (323, 19385), (328, 19403), (329, 19406), (340, 19433), (346, 19460), (359, 19514), (398, 19706), (402, 19721), (406, 19751), (411, 19802), (419, 19889), (421, 19898), (429, 19949), (448, 20012), (452, 20033), (458, 20069), (467, 20105), (468, 20111), (477, 20189), (481, 20216), (489, 20276), (499, 20345), (500, 20375), (505, 20402), (510, 20441), (514, 20483),

Gene: STLscum\_25 Start: 16819, Stop: 19653, Start Num: 77

Candidate Starts for STLscum\_25:

(Start: 77 @16819 has 8 MA's), (88, 16891), (124, 17134), (130, 17149), (142, 17194), (162, 17314), (163, 17332), (174, 17425), (183, 17470), (184, 17473), (194, 17521), (220, 17704), (223, 17731), (239, 17815), (249, 17872), (251, 17890), (252, 17899), (262, 17971), (265, 17989), (272, 18031), (273, 18034), (281, 18079), (291, 18142), (292, 18145), (313, 18262), (321, 18298), (326, 18325), (329, 18337), (332, 18355), (333, 18370), (344, 18433), (366, 18562), (373, 18607), (377, 18640), (378, 18652), (393, 18751), (406, 18826), (411, 18877), (419, 18964), (420, 18967), (424, 18985), (463, 19189), (485, 19366), (499, 19477), (502, 19519), (507, 19564), (511, 19603), (512, 19618),

Gene: Sabia\_27 Start: 15972, Stop: 18998, Start Num: 15

Candidate Starts for Sabia\_27:

(11, 15918), (Start: 15 @15972 has 81 MA's), (26, 16086), (34, 16152), (35, 16155), (37, 16164), (45, 16200), (54, 16251), (66, 16323), (78, 16395), (99, 16515), (101, 16518), (111, 16587), (112, 16632), (126, 16725), (130, 16734), (137, 16752), (142, 16779), (152, 16842), (155, 16854), (159, 16887), (164, 16905), (174, 16971), (175, 16974), (176, 16980), (179, 16995), (181, 17004), (183, 17016), (185, 17025), (202, 17118), (216, 17235), (217, 17238), (222, 17265), (223, 17277), (233, 17331), (238, 17352), (249, 17418), (252, 17445), (268, 17550), (277, 17598), (283, 17643), (292, 17691), (298, 17733), (299, 17742), (305, 17772), (306, 17775), (309, 17787), (321, 17844), (322, 17850), (328, 17871), (329, 17874), (364, 18012), (370, 18024), (382, 18084), (393, 18144), (398, 18174), (399, 18177), (401, 18186), (412, 18279), (420, 18369), (432, 18435), (434, 18447), (448, 18489), (459, 18552), (472, 18609), (477, 18678), (483, 18714), (496, 18795), (509, 18930),

Gene: Sabinator\_27 Start: 15977, Stop: 19003, Start Num: 15

Candidate Starts for Sabinator\_27:

(11, 15923), (Start: 15 @15977 has 81 MA's), (26, 16091), (34, 16157), (35, 16160), (37, 16169), (45, 16205), (54, 16256), (66, 16328), (78, 16400), (99, 16520), (101, 16523), (111, 16592), (112, 16637), (126, 16730), (130, 16739), (137, 16757), (142, 16784), (152, 16847), (155, 16859), (159, 16892), (164, 16910), (174, 16976), (175, 16979), (176, 16985), (179, 17000), (181, 17009), (183, 17021), (185, 17030), (199, 17108), (202, 17123), (216, 17240), (217, 17243), (222, 17270), (223, 17282), (233, 17336), (238, 17357), (249, 17423), (255, 17462), (268, 17555), (277, 17603), (283, 17648), (292, 17696), (298, 17738), (299, 17747), (305, 17777), (306, 17780), (309, 17792), (321, 17849), (322, 17855), (328, 17876), (329, 17879), (364, 18017), (370, 18029), (382, 18089), (392, 18146), (412, 18284), (414, 18305), (416, 18329), (420, 18374), (424, 18392), (432, 18440), (434, 18452), (448, 18494), (459, 18557), (472, 18614), (477, 18683), (483, 18719), (496, 18800), (509, 18935),

Gene: Sachima\_25 Start: 17590, Stop: 20499, Start Num: 22

Candidate Starts for Sachima\_25:

(Start: 22 @17590 has 33 MA's), (24, 17602), (32, 17662), (74, 17884), (83, 17947), (89, 17989), (101, 18046), (107, 18085), (127, 18256), (130, 18262), (136, 18277), (151, 18367), (152, 18370), (155, 18382), (161, 18424), (169, 18478), (185, 18553), (188, 18574), (189, 18577), (194, 18595), (204, 18658), (213, 18724), (216, 18763), (221, 18790), (223, 18805), (229, 18835), (233, 18859), (238, 18880), (249, 18946), (255, 18985), (264, 19051), (268, 19078), (272, 19105), (283, 19171), (291, 19216), (303, 19291), (313, 19336), (318, 19357), (322, 19378), (323, 19381), (328, 19399), (329, 19402), (340, 19429), (346, 19456), (359, 19510), (398, 19702), (402, 19717), (406, 19747), (411, 19798), (419, 19885), (421, 19894), (429, 19945), (448, 20008), (452, 20029), (458, 20065), (467, 20101), (468, 20107), (477, 20185), (481, 20212), (489, 20272), (499, 20341), (500, 20371), (505, 20398), (510, 20437), (514, 20479),

Gene: SaturnRing\_25 Start: 15495, Stop: 18530, Start Num: 14

Candidate Starts for SaturnRing\_25:

(Start: 14 @15495 has 32 MA's), (33, 15669), (35, 15681), (41, 15714), (78, 15924), (99, 16044), (101, 16047), (126, 16251), (135, 16272), (141, 16302), (142, 16305), (152, 16368), (155, 16380), (159, 16413), (164, 16431), (175, 16500), (176, 16506), (179, 16521), (181, 16530), (183, 16542), (185, 16551), (202, 16644), (216, 16761), (217, 16764), (221, 16788), (222, 16791), (223, 16803), (233, 16857), (238, 16878), (241, 16899), (249, 16944), (252, 16971), (255, 16983), (277, 17124), (283, 17169), (287, 17184), (298, 17259), (299, 17268), (305, 17298), (309, 17313), (310, 17316), (313, 17334), (318, 17355), (319, 17358), (328, 17397), (329, 17400), (353, 17484), (370, 17550), (375, 17571), (382, 17610), (391, 17649), (393, 17670), (398, 17700), (399, 17703), (401, 17712), (405, 17736), (412, 17805), (414, 17826), (420, 17895), (424, 17913), (432, 17961), (434, 17973), (448, 18015), (450, 18027), (458, 18075), (483, 18246), (485, 18276), (491, 18306), (496, 18327), (509, 18462), (513, 18510),

Gene: Scherzo\_27 Start: 17623, Stop: 20532, Start Num: 22

Candidate Starts for Scherzo\_27:

(Start: 22 @17623 has 33 MA's), (24, 17635), (32, 17695), (74, 17917), (83, 17980), (89, 18022), (101, 18079), (107, 18118), (127, 18289), (130, 18295), (136, 18310), (151, 18400), (152, 18403), (155, 18415), (161, 18457), (169, 18511), (185, 18586), (188, 18607), (189, 18610), (194, 18628), (204, 18691), (213, 18757), (216, 18796), (221, 18823), (223, 18838), (229, 18868), (233, 18892), (238, 18913), (249, 18979), (255, 19018), (264, 19084), (268, 19111), (272, 19138), (283, 19204), (291, 19249), (303, 19324), (313, 19369), (318, 19390), (322, 19411), (323, 19414), (328, 19432), (329, 19435), (340, 19462), (346, 19489), (359, 19543), (398, 19735), (402, 19750), (406, 19780), (411, 19831), (419, 19918), (421, 19927), (429, 19978), (448, 20041), (452, 20062), (458, 20098), (467, 20134), (468, 20140), (477, 20218), (481, 20245), (489, 20305), (499, 20374), (500, 20404), (505, 20431), (510, 20470), (514, 20512),

Gene: Scout\_25 Start: 14795, Stop: 17833, Start Num: 14

Candidate Starts for Scout\_25:

(Start: 14 @14795 has 32 MA's), (33, 14969), (35, 14981), (41, 15014), (78, 15224), (101, 15347), (105, 15368), (126, 15554), (135, 15575), (142, 15608), (152, 15671), (155, 15683), (159, 15716), (164, 15734), (175, 15803), (176, 15809), (179, 15824), (181, 15833), (183, 15845), (185, 15854), (202, 15947), (216, 16064), (217, 16067), (222, 16094), (223, 16106), (233, 16160), (238, 16181), (241, 16202), (249, 16247), (255, 16286), (268, 16379), (277, 16427), (283, 16472), (287, 16487), (298, 16562), (299, 16571), (305, 16601), (309, 16616), (321, 16673), (328, 16700), (329, 16703), (339, 16724), (370, 16853), (375, 16874), (382, 16913), (391, 16952), (393, 16973), (398, 17003), (399, 17006), (401, 17015), (405, 17039), (412, 17108), (414, 17129), (420, 17198), (424, 17216), (432, 17264), (434, 17276), (448, 17318), (450, 17330), (458, 17378), (483, 17549), (485, 17579), (491, 17609), (496, 17630), (509, 17765), (510, 17777), (513, 17813),

Gene: SemperFi\_28 Start: 16964, Stop: 19501, Start Num: 60

Candidate Starts for SemperFi\_28:

(Start: 60 @16964 has 89 MA's), (91, 17141), (92, 17144), (93, 17147), (98, 17177), (121, 17315), (124, 17336), (126, 17345), (135, 17366), (142, 17399), (151, 17459), (155, 17474), (164, 17525), (171, 17573), (174, 17591), (181, 17624), (183, 17636), (184, 17639), (185, 17645), (188, 17666), (189, 17669), (205, 17756), (216, 17855), (223, 17897), (224, 17906), (227, 17915), (236, 17963), (238, 17972), (249, 18038), (255, 18077), (283, 18263), (287, 18278), (292, 18311), (299, 18362), (303, 18383), (307, 18398), (309, 18407), (312, 18422), (328, 18491), (370, 18644), (375, 18665), (398, 18794), (406, 18839), (408, 18851), (410, 18887), (451, 19067), (458, 19076), (478, 19187), (482, 19217), (495, 19301),

Gene: Serenity\_25 Start: 15579, Stop: 18095, Start Num: 60

Candidate Starts for Serenity\_25:

(Start: 60 @15579 has 89 MA's), (79, 15690), (91, 15756), (92, 15759), (93, 15762), (103, 15810), (124, 15948), (126, 15957), (130, 15966), (155, 16086), (164, 16137), (173, 16194), (175, 16206), (176, 16212), (179, 16227), (183, 16248), (185, 16257), (195, 16305), (216, 16467), (222, 16497), (223, 16509), (230, 16548), (233, 16563), (238, 16584), (247, 16641), (248, 16647), (249, 16650), (252, 16677), (266, 16776), (283, 16875), (287, 16890), (296, 16953), (299, 16974), (303, 16995), (313, 17040), (328, 17103), (329, 17106), (342, 17145), (349, 17172), (356, 17202), (359, 17214), (370, 17256), (382, 17316), (388, 17343), (398, 17406), (408, 17463), (416, 17547), (427, 17613), (451, 17676), (489, 17871), (490, 17874), (495, 17895), (513, 18072), (516, 18081),

Gene: SheaKeira\_26 Start: 15769, Stop: 18678, Start Num: 22

Candidate Starts for SheaKeira\_26:

(7, 15580), (Start: 16 @15682 has 1 MA's), (Start: 22 @15769 has 33 MA's), (24, 15781), (42, 15892), (43, 15901), (49, 15925), (51, 15934), (53, 15955), (56, 15964), (62, 15997), (72, 16051), (89, 16165), (99, 16219), (101, 16222), (116, 16348), (124, 16423), (126, 16432), (141, 16483), (144, 16498), (152, 16549), (155, 16561), (158, 16591), (164, 16612), (169, 16657), (171, 16660), (174, 16678), (175, 16681), (179, 16702), (185, 16732), (186, 16744), (196, 16783), (197, 16792), (202, 16825), (204, 16837), (216, 16942), (232, 17035), (233, 17038), (238, 17059), (239, 17068), (241, 17080), (244, 17104), (246, 17113), (247, 17116), (249, 17125), (251, 17143), (252, 17152), (257, 17176), (268, 17257), (275, 17296), (286, 17362), (303, 17470), (310, 17497), (313, 17515), (318, 17536), (322, 17557), (323, 17560), (328, 17578), (329, 17581), (340, 17608), (346, 17635), (355, 17668), (360, 17695), (398, 17881), (406, 17926), (408, 17938), (411, 17977), (416, 18022), (417, 18043), (420, 18067), (424, 18085), (427, 18106), (429, 18124), (448, 18187), (452, 18208), (466, 18280), (468, 18289), (477, 18367), (483, 18403), (492, 18466), (495, 18478), (500, 18553), (510, 18619), (514, 18661),

Gene: Sheen\_27 Start: 17618, Stop: 20998, Start Num: 3

Candidate Starts for Sheen\_27:

(Start: 3 @17618 has 4 MA's), (38, 18005), (50, 18062), (54, 18089), (68, 18170), (73, 18194), (76, 18206), (82, 18257), (98, 18353), (108, 18404), (132, 18587), (135, 18593), (142, 18626), (144,

18638), (158, 18731), (164, 18752), (166, 18764), (195, 18920), (198, 18944), (209, 19007), (216, 19082), (223, 19124), (233, 19178), (238, 19199), (247, 19256), (248, 19262), (249, 19265), (261, 19349), (262, 19364), (266, 19391), (268, 19397), (283, 19490), (286, 19502), (287, 19505), (313, 19655), (317, 19670), (320, 19688), (325, 19712), (329, 19730), (330, 19733), (331, 19739), (352, 19844), (362, 19907), (363, 19910), (372, 19967), (374, 19973), (384, 20021), (390, 20051), (401, 20129), (403, 20141), (404, 20150), (414, 20249), (420, 20318), (424, 20336), (437, 20420), (438, 20432), (440, 20444), (452, 20495), (455, 20516), (463, 20567), (470, 20600), (478, 20681), (483, 20714), (485, 20744), (494, 20786), (497, 20810), (503, 20876), (505, 20891), (506, 20897), (511, 20948),

Gene: Sknot\_27 Start: 16673, Stop: 19180, Start Num: 60

Candidate Starts for Sknot\_27:

(Start: 60 @16673 has 89 MA's), (79, 16784), (90, 16841), (119, 16997), (124, 17027), (142, 17090), (146, 17123), (148, 17129), (179, 17309), (181, 17318), (185, 17339), (188, 17360), (189, 17363), (194, 17381), (203, 17441), (216, 17549), (223, 17591), (233, 17645), (238, 17666), (248, 17729), (249, 17732), (251, 17750), (255, 17771), (283, 17957), (287, 17972), (290, 17999), (299, 18056), (302, 18071), (303, 18077), (305, 18086), (307, 18092), (313, 18122), (318, 18143), (329, 18188), (334, 18194), (342, 18227), (349, 18254), (364, 18326), (370, 18338), (382, 18398), (388, 18425), (398, 18488), (406, 18533), (408, 18545), (410, 18581), (415, 18617), (417, 18650), (439, 18713), (447, 18737), (479, 18881), (495, 18980), (503, 19067), (516, 19166),

Gene: Smeagan\_28 Start: 17115, Stop: 19658, Start Num: 60

Candidate Starts for Smeagan\_28:

(Start: 60 @17115 has 89 MA's), (92, 17295), (93, 17298), (98, 17328), (120, 17466), (121, 17472), (124, 17493), (126, 17502), (130, 17511), (135, 17523), (144, 17568), (146, 17589), (155, 17631), (164, 17682), (169, 17727), (171, 17730), (174, 17748), (181, 17781), (183, 17793), (185, 17802), (188, 17823), (189, 17826), (205, 17913), (216, 18012), (223, 18054), (224, 18063), (227, 18072), (238, 18129), (249, 18195), (255, 18234), (274, 18363), (283, 18420), (295, 18486), (299, 18519), (302, 18534), (303, 18540), (305, 18549), (309, 18564), (313, 18585), (318, 18606), (322, 18627), (323, 18630), (328, 18648), (329, 18651), (345, 18702), (359, 18759), (362, 18777), (370, 18801), (382, 18861), (388, 18888), (398, 18951), (406, 18996), (419, 19134), (451, 19224), (458, 19233), (467, 19257), (478, 19344), (482, 19374), (495, 19458),

Gene: SnapTap\_26 Start: 16547, Stop: 19084, Start Num: 60

Candidate Starts for SnapTap\_26:

(Start: 60 @16547 has 89 MA's), (91, 16724), (92, 16727), (93, 16730), (98, 16760), (121, 16898), (124, 16919), (126, 16928), (135, 16949), (142, 16982), (151, 17042), (155, 17057), (164, 17108), (171, 17156), (174, 17174), (181, 17207), (183, 17219), (184, 17222), (185, 17228), (188, 17249), (189, 17252), (205, 17339), (216, 17438), (223, 17480), (224, 17489), (227, 17498), (236, 17546), (238, 17555), (249, 17621), (255, 17660), (273, 17783), (283, 17846), (287, 17861), (292, 17894), (299, 17945), (303, 17966), (307, 17981), (309, 17990), (312, 18005), (328, 18074), (370, 18227), (398, 18377), (406, 18422), (408, 18434), (410, 18470), (451, 18650), (458, 18659), (478, 18770), (482, 18800), (495, 18884),

Gene: Snickers\_27 Start: 15953, Stop: 18979, Start Num: 15

Candidate Starts for Snickers\_27:

(11, 15899), (Start: 15 @15953 has 81 MA's), (26, 16067), (34, 16133), (35, 16136), (37, 16145), (45, 16181), (54, 16232), (66, 16304), (78, 16376), (99, 16496), (101, 16499), (111, 16568), (112, 16613), (126, 16706), (130, 16715), (137, 16733), (142, 16760), (152, 16823), (155, 16835), (159, 16868), (164, 16886), (174, 16952), (175, 16955), (176, 16961), (179, 16976), (181, 16985), (183, 16997), (185, 17006), (199, 17084), (202, 17099), (216, 17216), (217, 17219), (222, 17246), (223, 17258), (233, 17312), (238, 17333), (249, 17399), (255, 17438), (268, 17531), (277, 17579), (283, 17624), (292, 17672), (298, 17714), (299, 17723), (305, 17753), (306, 17756), (309, 17768), (321, 17825),



(322, 17831), (328, 17852), (329, 17855), (364, 17993), (370, 18005), (382, 18065), (393, 18125), (398, 18155), (399, 18158), (401, 18167), (412, 18260), (420, 18350), (432, 18416), (434, 18428), (448, 18470), (459, 18533), (472, 18590), (477, 18659), (483, 18695), (496, 18776), (509, 18911),

Gene: SoYo\_27 Start: 15890, Stop: 18916, Start Num: 15

Candidate Starts for SoYo\_27:

(11, 15836), (Start: 15 @15890 has 81 MA's), (26, 16004), (34, 16070), (35, 16073), (37, 16082), (45, 16118), (54, 16169), (66, 16241), (78, 16313), (99, 16433), (101, 16436), (111, 16505), (112, 16550), (126, 16643), (130, 16652), (137, 16670), (142, 16697), (152, 16760), (155, 16772), (159, 16805), (164, 16823), (174, 16889), (175, 16892), (176, 16898), (179, 16913), (181, 16922), (183, 16934), (185, 16943), (199, 17021), (202, 17036), (216, 17153), (217, 17156), (222, 17183), (223, 17195), (233, 17249), (238, 17270), (249, 17336), (255, 17375), (268, 17468), (277, 17516), (283, 17561), (292, 17609), (298, 17651), (299, 17660), (305, 17690), (306, 17693), (309, 17705), (321, 17762), (322, 17768), (328, 17789), (329, 17792), (364, 17930), (370, 17942), (382, 18002), (392, 18059), (412, 18197), (414, 18218), (416, 18242), (420, 18287), (424, 18305), (432, 18353), (434, 18365), (448, 18407), (459, 18470), (472, 18527), (477, 18596), (483, 18632), (496, 18713), (509, 18848),

Gene: SoilDragon\_27 Start: 15667, Stop: 18693, Start Num: 15

Candidate Starts for SoilDragon\_27:

(11, 15613), (Start: 15 @15667 has 81 MA's), (26, 15781), (34, 15847), (35, 15850), (37, 15859), (45, 15895), (54, 15946), (66, 16018), (78, 16090), (99, 16210), (101, 16213), (111, 16282), (112, 16327), (126, 16420), (130, 16429), (142, 16474), (152, 16537), (155, 16549), (159, 16582), (164, 16600), (174, 16666), (175, 16669), (176, 16675), (179, 16690), (181, 16699), (183, 16711), (185, 16720), (202, 16813), (215, 16900), (216, 16930), (217, 16933), (222, 16960), (223, 16972), (233, 17026), (238, 17047), (242, 17077), (249, 17113), (277, 17293), (283, 17338), (292, 17386), (298, 17428), (299, 17437), (305, 17467), (321, 17539), (328, 17566), (329, 17569), (336, 17581), (363, 17698), (364, 17707), (370, 17719), (382, 17779), (393, 17839), (398, 17869), (399, 17872), (401, 17881), (412, 17974), (420, 18064), (432, 18130), (434, 18142), (448, 18184), (459, 18247), (472, 18304), (477, 18373), (483, 18409), (496, 18490), (509, 18625),

Gene: Soshari\_29 Start: 16062, Stop: 19088, Start Num: 15

Candidate Starts for Soshari\_29:

(11, 16008), (Start: 15 @16062 has 81 MA's), (26, 16176), (34, 16242), (35, 16245), (37, 16254), (45, 16290), (54, 16341), (66, 16413), (78, 16485), (99, 16605), (101, 16608), (111, 16677), (112, 16722), (126, 16815), (130, 16824), (137, 16842), (142, 16869), (152, 16932), (155, 16944), (159, 16977), (164, 16995), (174, 17061), (175, 17064), (176, 17070), (179, 17085), (181, 17094), (183, 17106), (185, 17115), (199, 17193), (202, 17208), (216, 17325), (217, 17328), (222, 17355), (223, 17367), (233, 17421), (238, 17442), (249, 17508), (255, 17547), (268, 17640), (277, 17688), (283, 17733), (292, 17781), (298, 17823), (299, 17832), (305, 17862), (306, 17865), (309, 17877), (321, 17934), (322, 17940), (328, 17961), (329, 17964), (364, 18102), (370, 18114), (382, 18174), (392, 18231), (412, 18369), (414, 18390), (416, 18414), (420, 18459), (424, 18477), (432, 18525), (434, 18537), (448, 18579), (459, 18642), (472, 18699), (477, 18768), (483, 18804), (496, 18885), (509, 19020),

Gene: Spike509\_27 Start: 16063, Stop: 19089, Start Num: 15

Candidate Starts for Spike509\_27:

(11, 16009), (Start: 15 @16063 has 81 MA's), (26, 16177), (34, 16243), (35, 16246), (37, 16255), (45, 16291), (54, 16342), (66, 16414), (78, 16486), (99, 16606), (101, 16609), (111, 16678), (112, 16723), (126, 16816), (130, 16825), (137, 16843), (142, 16870), (152, 16933), (155, 16945), (159, 16978), (164, 16996), (174, 17062), (175, 17065), (176, 17071), (179, 17086), (181, 17095), (183, 17107), (185, 17116), (199, 17194), (202, 17209), (216, 17326), (217, 17329), (222, 17356), (223, 17368), (233, 17422), (238, 17443), (249, 17509), (255, 17548), (268, 17641), (277, 17689), (283, 17734), (298, 17824), (299, 17833), (305, 17863), (318, 17920), (321, 17935), (328, 17962), (329, 17965), (364, 18103), (370, 18115), (382, 18175), (392, 18232), (412, 18370), (414, 18391), (416, 18415),

(420, 18460), (424, 18478), (432, 18526), (434, 18538), (448, 18580), (459, 18643), (472, 18700), (477, 18769), (483, 18805), (496, 18886), (509, 19021),

Gene: Spouty\_27 Start: 17620, Stop: 20529, Start Num: 22

Candidate Starts for Spouty\_27:

(Start: 22 @17620 has 33 MA's), (24, 17632), (32, 17692), (74, 17914), (83, 17977), (89, 18019), (99, 18073), (101, 18076), (107, 18115), (127, 18286), (130, 18292), (136, 18307), (151, 18397), (152, 18400), (155, 18412), (161, 18454), (169, 18508), (174, 18529), (185, 18583), (188, 18604), (189, 18607), (194, 18625), (204, 18688), (213, 18754), (216, 18793), (221, 18820), (223, 18835), (229, 18865), (233, 18889), (236, 18901), (238, 18910), (249, 18976), (255, 19015), (264, 19081), (268, 19108), (272, 19135), (291, 19246), (303, 19321), (309, 19345), (313, 19366), (318, 19387), (322, 19408), (323, 19411), (328, 19429), (329, 19432), (340, 19459), (355, 19519), (361, 19549), (370, 19582), (379, 19612), (380, 19624), (398, 19732), (402, 19747), (406, 19777), (411, 19828), (419, 19915), (421, 19924), (429, 19975), (448, 20038), (452, 20059), (458, 20095), (467, 20131), (468, 20137), (477, 20215), (481, 20242), (499, 20371), (500, 20401), (505, 20428), (510, 20467), (514, 20509),

Gene: Stagni\_27 Start: 15981, Stop: 19007, Start Num: 15

Candidate Starts for Stagni\_27:

(11, 15927), (Start: 15 @15981 has 81 MA's), (26, 16095), (34, 16161), (35, 16164), (37, 16173), (45, 16209), (54, 16260), (66, 16332), (78, 16404), (99, 16524), (101, 16527), (111, 16596), (112, 16641), (126, 16734), (130, 16743), (137, 16761), (142, 16788), (152, 16851), (155, 16863), (159, 16896), (164, 16914), (174, 16980), (175, 16983), (176, 16989), (179, 17004), (181, 17013), (183, 17025), (185, 17034), (202, 17127), (216, 17244), (217, 17247), (222, 17274), (223, 17286), (233, 17340), (238, 17361), (249, 17427), (252, 17454), (268, 17559), (277, 17607), (283, 17652), (292, 17700), (298, 17742), (299, 17751), (305, 17781), (306, 17784), (309, 17796), (321, 17853), (322, 17859), (328, 17880), (329, 17883), (364, 18021), (370, 18033), (382, 18093), (393, 18153), (398, 18183), (399, 18186), (401, 18195), (412, 18288), (420, 18378), (432, 18444), (434, 18456), (448, 18498), (459, 18561), (472, 18618), (477, 18687), (483, 18723), (496, 18804), (509, 18939),

Gene: StarStuff\_29 Start: 16508, Stop: 19021, Start Num: 60

Candidate Starts for StarStuff\_29:

(Start: 60 @16508 has 89 MA's), (92, 16688), (93, 16691), (142, 16937), (151, 16997), (155, 17012), (158, 17042), (159, 17045), (174, 17129), (179, 17153), (184, 17177), (188, 17204), (189, 17207), (216, 17393), (221, 17420), (223, 17435), (233, 17489), (238, 17510), (249, 17576), (251, 17594), (252, 17603), (266, 17702), (272, 17735), (274, 17744), (283, 17801), (287, 17816), (303, 17921), (329, 18032), (336, 18044), (338, 18050), (345, 18083), (375, 18203), (398, 18332), (402, 18347), (406, 18377), (408, 18389), (410, 18425), (427, 18539), (435, 18551), (449, 18593), (490, 18800), (494, 18818), (495, 18821), (516, 19007),

Gene: Steamy\_27 Start: 17182, Stop: 20196, Start Num: 9

Candidate Starts for Steamy\_27:

(4, 17137), (Start: 9 @17182 has 5 MA's), (19, 17305), (Start: 22 @17359 has 33 MA's), (23, 17362), (24, 17371), (46, 17506), (51, 17527), (63, 17602), (Start: 77 @17674 has 8 MA's), (83, 17716), (99, 17812), (101, 17815), (116, 17941), (127, 18028), (135, 18046), (136, 18049), (151, 18139), (152, 18142), (155, 18154), (158, 18184), (164, 18205), (175, 18274), (185, 18325), (188, 18346), (203, 18427), (213, 18496), (216, 18535), (223, 18577), (227, 18595), (233, 18631), (238, 18652), (249, 18718), (250, 18727), (251, 18736), (252, 18745), (259, 18790), (263, 18820), (270, 18868), (283, 18943), (292, 18991), (303, 19063), (313, 19108), (317, 19123), (321, 19144), (328, 19171), (339, 19195), (341, 19204), (370, 19324), (382, 19384), (389, 19411), (398, 19474), (406, 19519), (416, 19615), (423, 19669), (439, 19720), (445, 19744), (448, 19753), (464, 19816), (479, 19906), (480, 19909), (495, 19993), (510, 20134),

Gene: StepMih\_27 Start: 15972, Stop: 18998, Start Num: 15

Candidate Starts for StepMih\_27:

(11, 15918), (Start: 15 @15972 has 81 MA's), (26, 16086), (34, 16152), (35, 16155), (37, 16164), (45, 16200), (54, 16251), (66, 16323), (78, 16395), (99, 16515), (101, 16518), (111, 16587), (112, 16632), (126, 16725), (130, 16734), (137, 16752), (142, 16779), (152, 16842), (155, 16854), (159, 16887), (164, 16905), (174, 16971), (175, 16974), (176, 16980), (179, 16995), (181, 17004), (183, 17016), (185, 17025), (202, 17118), (216, 17235), (217, 17238), (222, 17265), (223, 17277), (233, 17331), (238, 17352), (249, 17418), (252, 17445), (268, 17550), (277, 17598), (283, 17643), (292, 17691), (298, 17733), (299, 17742), (305, 17772), (306, 17775), (309, 17787), (321, 17844), (322, 17850), (328, 17871), (329, 17874), (364, 18012), (370, 18024), (382, 18084), (393, 18144), (398, 18174), (399, 18177), (401, 18186), (412, 18279), (420, 18369), (432, 18435), (434, 18447), (448, 18489), (459, 18552), (472, 18609), (477, 18678), (483, 18714), (496, 18795), (509, 18930),

Gene: Superchunk\_25 Start: 15270, Stop: 17795, Start Num: 58

Candidate Starts for Superchunk\_25:

(Start: 58 @15270 has 4 MA's), (61, 15288), (79, 15393), (91, 15459), (92, 15462), (93, 15465), (116, 15585), (130, 15666), (142, 15711), (155, 15786), (161, 15828), (169, 15882), (174, 15903), (181, 15936), (185, 15957), (188, 15978), (189, 15981), (216, 16167), (221, 16194), (223, 16209), (233, 16263), (238, 16284), (249, 16350), (283, 16575), (287, 16590), (290, 16617), (291, 16620), (303, 16695), (309, 16719), (310, 16722), (313, 16740), (328, 16803), (329, 16806), (342, 16845), (345, 16857), (364, 16944), (370, 16956), (382, 17016), (383, 17019), (388, 17043), (392, 17073), (398, 17106), (416, 17247), (427, 17313), (451, 17376), (490, 17574), (495, 17595), (500, 17670), (508, 17706), (515, 17781),

Gene: SweetiePie\_26 Start: 16547, Stop: 19084, Start Num: 60

Candidate Starts for SweetiePie\_26:

(Start: 60 @16547 has 89 MA's), (91, 16724), (92, 16727), (93, 16730), (98, 16760), (121, 16898), (124, 16919), (126, 16928), (135, 16949), (142, 16982), (151, 17042), (155, 17057), (164, 17108), (171, 17156), (174, 17174), (181, 17207), (183, 17219), (184, 17222), (185, 17228), (188, 17249), (189, 17252), (205, 17339), (216, 17438), (223, 17480), (224, 17489), (227, 17498), (236, 17546), (238, 17555), (249, 17621), (255, 17660), (283, 17846), (287, 17861), (292, 17894), (299, 17945), (303, 17966), (307, 17981), (309, 17990), (312, 18005), (328, 18074), (370, 18227), (375, 18248), (398, 18377), (406, 18422), (408, 18434), (410, 18470), (451, 18650), (458, 18659), (478, 18770), (482, 18800), (495, 18884),

Gene: SwirlSquare\_28 Start: 15461, Stop: 17965, Start Num: 61

Candidate Starts for SwirlSquare\_28:

(Start: 58 @15443 has 4 MA's), (61, 15461), (79, 15566), (92, 15635), (93, 15638), (124, 15821), (142, 15884), (146, 15917), (155, 15959), (174, 16076), (181, 16109), (184, 16124), (185, 16130), (188, 16151), (189, 16154), (216, 16340), (221, 16367), (223, 16382), (233, 16436), (238, 16457), (249, 16523), (283, 16748), (287, 16763), (292, 16796), (301, 16859), (303, 16868), (309, 16892), (310, 16895), (313, 16913), (321, 16949), (328, 16976), (329, 16979), (342, 17018), (345, 17030), (346, 17033), (364, 17117), (382, 17189), (388, 17216), (392, 17246), (398, 17279), (410, 17372), (427, 17486), (451, 17549), (490, 17747), (495, 17768), (500, 17843),

Gene: TNguyen7\_25 Start: 15465, Stop: 18500, Start Num: 14

Candidate Starts for TNguyen7\_25:

(Start: 14 @15465 has 32 MA's), (33, 15639), (35, 15651), (41, 15684), (78, 15894), (99, 16014), (101, 16017), (126, 16221), (135, 16242), (141, 16272), (142, 16275), (152, 16338), (155, 16350), (159, 16383), (164, 16401), (175, 16470), (176, 16476), (179, 16491), (181, 16500), (183, 16512), (185, 16521), (202, 16614), (216, 16731), (217, 16734), (221, 16758), (222, 16761), (223, 16773), (233, 16827), (238, 16848), (241, 16869), (249, 16914), (252, 16941), (255, 16953), (277, 17094), (283, 17139), (287, 17154), (298, 17229), (299, 17238), (305, 17268), (309, 17283), (310, 17286), (313,

17304), (318, 17325), (319, 17328), (328, 17367), (329, 17370), (353, 17454), (370, 17520), (375, 17541), (382, 17580), (391, 17619), (393, 17640), (398, 17670), (399, 17673), (401, 17682), (405, 17706), (412, 17775), (414, 17796), (420, 17865), (424, 17883), (432, 17931), (434, 17943), (448, 17985), (450, 17997), (458, 18045), (483, 18216), (485, 18246), (491, 18276), (496, 18297), (509, 18432), (513, 18480),

Gene: TarsusIV\_26 Start: 16638, Stop: 19166, Start Num: 60

Candidate Starts for TarsusIV\_26:

(Start: 60 @16638 has 89 MA's), (65, 16677), (67, 16683), (81, 16764), (84, 16779), (92, 16818), (103, 16863), (121, 16989), (124, 17010), (126, 17019), (135, 17040), (142, 17073), (155, 17148), (160, 17187), (161, 17190), (164, 17199), (167, 17220), (168, 17235), (171, 17247), (174, 17265), (181, 17298), (185, 17319), (188, 17340), (189, 17343), (216, 17529), (223, 17571), (224, 17580), (233, 17625), (238, 17646), (249, 17712), (255, 17751), (268, 17844), (283, 17937), (286, 17949), (309, 18081), (317, 18117), (322, 18144), (328, 18165), (329, 18168), (370, 18318), (375, 18339), (398, 18468), (402, 18483), (404, 18501), (410, 18561), (416, 18609), (444, 18714), (458, 18747), (467, 18771), (482, 18888), (495, 18966), (511, 19113),

Gene: Taurus\_27 Start: 15978, Stop: 19004, Start Num: 15

Candidate Starts for Taurus\_27:

(11, 15924), (Start: 15 @15978 has 81 MA's), (26, 16092), (34, 16158), (35, 16161), (37, 16170), (45, 16206), (54, 16257), (66, 16329), (78, 16401), (99, 16521), (101, 16524), (111, 16593), (112, 16638), (126, 16731), (130, 16740), (137, 16758), (142, 16785), (152, 16848), (155, 16860), (159, 16893), (164, 16911), (174, 16977), (175, 16980), (176, 16986), (179, 17001), (181, 17010), (183, 17022), (185, 17031), (199, 17109), (202, 17124), (216, 17241), (217, 17244), (222, 17271), (223, 17283), (233, 17337), (238, 17358), (249, 17424), (255, 17463), (268, 17556), (277, 17604), (283, 17649), (292, 17697), (298, 17739), (299, 17748), (305, 17778), (306, 17781), (309, 17793), (321, 17850), (322, 17856), (328, 17877), (329, 17880), (364, 18018), (370, 18030), (382, 18090), (392, 18147), (412, 18285), (414, 18306), (416, 18330), (420, 18375), (424, 18393), (432, 18441), (434, 18453), (448, 18495), (459, 18558), (472, 18615), (477, 18684), (483, 18720), (496, 18801), (509, 18936),

Gene: Terrific\_30 Start: 17127, Stop: 19634, Start Num: 60

Candidate Starts for Terrific\_30:

(Start: 60 @17127 has 89 MA's), (79, 17238), (90, 17295), (124, 17481), (142, 17544), (146, 17577), (148, 17583), (179, 17763), (181, 17772), (185, 17793), (188, 17814), (189, 17817), (194, 17835), (203, 17895), (216, 18003), (223, 18045), (233, 18099), (238, 18120), (248, 18183), (249, 18186), (251, 18204), (255, 18225), (283, 18411), (287, 18426), (290, 18453), (299, 18510), (302, 18525), (303, 18531), (305, 18540), (307, 18546), (313, 18576), (318, 18597), (329, 18642), (334, 18648), (342, 18681), (349, 18708), (364, 18780), (370, 18792), (382, 18852), (388, 18879), (398, 18942), (406, 18987), (408, 18999), (410, 19035), (415, 19071), (417, 19104), (439, 19167), (447, 19191), (479, 19335), (495, 19434), (503, 19521), (516, 19620),

Gene: Texage\_25 Start: 16044, Stop: 19082, Start Num: 14

Candidate Starts for Texage\_25:

(Start: 14 @16044 has 32 MA's), (33, 16218), (35, 16230), (41, 16263), (78, 16470), (82, 16491), (99, 16590), (101, 16593), (126, 16803), (135, 16824), (142, 16857), (152, 16920), (155, 16932), (159, 16965), (164, 16983), (167, 17004), (175, 17052), (176, 17058), (179, 17073), (181, 17082), (183, 17094), (185, 17103), (202, 17196), (216, 17313), (217, 17316), (222, 17343), (223, 17355), (233, 17409), (238, 17430), (249, 17496), (255, 17535), (277, 17676), (283, 17721), (298, 17811), (299, 17820), (305, 17850), (318, 17907), (321, 17922), (328, 17949), (329, 17952), (338, 17970), (363, 18081), (382, 18162), (392, 18219), (400, 18261), (412, 18357), (414, 18378), (416, 18402), (420, 18447), (424, 18465), (432, 18513), (434, 18525), (448, 18567), (450, 18579), (458, 18627), (483, 18798), (491, 18858), (494, 18870), (498, 18897), (499, 18918), (509, 19014), (513, 19062),

Gene: Tiffany\_27 Start: 15873, Stop: 18899, Start Num: 15

Candidate Starts for Tiffany\_27:

(11, 15819), (Start: 15 @15873 has 81 MA's), (26, 15987), (34, 16053), (35, 16056), (37, 16065), (45, 16101), (54, 16152), (66, 16224), (78, 16296), (99, 16416), (101, 16419), (111, 16488), (112, 16533), (126, 16626), (130, 16635), (137, 16653), (142, 16680), (152, 16743), (155, 16755), (159, 16788), (164, 16806), (174, 16872), (175, 16875), (176, 16881), (179, 16896), (181, 16905), (183, 16917), (185, 16926), (199, 17004), (202, 17019), (216, 17136), (217, 17139), (222, 17166), (223, 17178), (233, 17232), (238, 17253), (249, 17319), (255, 17358), (268, 17451), (277, 17499), (283, 17544), (292, 17592), (298, 17634), (299, 17643), (305, 17673), (306, 17676), (309, 17688), (321, 17745), (322, 17751), (328, 17772), (329, 17775), (364, 17913), (370, 17925), (382, 17985), (392, 18042), (412, 18180), (414, 18201), (416, 18225), (420, 18270), (424, 18288), (432, 18336), (434, 18348), (448, 18390), (459, 18453), (472, 18510), (477, 18579), (483, 18615), (496, 18696), (509, 18831),

Gene: Timshel\_26 Start: 17496, Stop: 20864, Start Num: 3

Candidate Starts for Timshel\_26:

(Start: 3 @17496 has 4 MA's), (11, 17625), (Start: 15 @17679 has 81 MA's), (20, 17721), (38, 17883), (64, 18033), (82, 18135), (106, 18270), (135, 18468), (146, 18534), (151, 18561), (152, 18564), (155, 18576), (166, 18639), (167, 18648), (169, 18672), (176, 18702), (185, 18747), (189, 18771), (212, 18915), (216, 18957), (221, 18984), (223, 18999), (230, 19038), (233, 19053), (238, 19074), (247, 19131), (249, 19140), (250, 19149), (261, 19224), (270, 19290), (284, 19368), (293, 19422), (303, 19485), (307, 19500), (313, 19530), (316, 19542), (317, 19545), (320, 19563), (322, 19572), (325, 19587), (329, 19605), (333, 19638), (338, 19656), (352, 19719), (363, 19785), (364, 19794), (365, 19797), (366, 19806), (367, 19809), (368, 19818), (370, 19827), (379, 19860), (380, 19872), (384, 19896), (390, 19926), (401, 20004), (403, 20016), (404, 20025), (405, 20028), (406, 20037), (407, 20046), (414, 20124), (416, 20148), (420, 20193), (424, 20211), (433, 20268), (437, 20286), (440, 20310), (443, 20319), (448, 20340), (452, 20361), (454, 20373), (456, 20394), (463, 20433), (470, 20466), (478, 20547), (483, 20580), (489, 20631), (494, 20652), (497, 20676), (503, 20742), (505, 20757), (506, 20763),

Gene: TinyPebbles\_27 Start: 16062, Stop: 19088, Start Num: 15

Candidate Starts for TinyPebbles\_27:

(11, 16008), (Start: 15 @16062 has 81 MA's), (26, 16176), (34, 16242), (35, 16245), (37, 16254), (45, 16290), (54, 16341), (66, 16413), (78, 16485), (99, 16605), (101, 16608), (111, 16677), (112, 16722), (126, 16815), (130, 16824), (137, 16842), (142, 16869), (152, 16932), (155, 16944), (159, 16977), (164, 16995), (174, 17061), (175, 17064), (176, 17070), (179, 17085), (181, 17094), (183, 17106), (185, 17115), (199, 17193), (202, 17208), (216, 17325), (217, 17328), (222, 17355), (223, 17367), (233, 17421), (238, 17442), (249, 17508), (255, 17547), (268, 17640), (277, 17688), (283, 17733), (292, 17781), (298, 17823), (299, 17832), (305, 17862), (306, 17865), (309, 17877), (321, 17934), (322, 17940), (328, 17961), (329, 17964), (364, 18102), (370, 18114), (382, 18174), (392, 18231), (412, 18369), (414, 18390), (416, 18414), (420, 18459), (424, 18477), (432, 18525), (434, 18537), (448, 18579), (459, 18642), (472, 18699), (477, 18768), (483, 18804), (496, 18885), (509, 19020),

Gene: TipsytheTRex\_25 Start: 15744, Stop: 18260, Start Num: 60

Candidate Starts for TipsytheTRex\_25:

(Start: 60 @15744 has 89 MA's), (79, 15855), (91, 15921), (92, 15924), (93, 15927), (124, 16113), (126, 16122), (130, 16131), (155, 16251), (164, 16302), (173, 16359), (175, 16371), (176, 16377), (179, 16392), (183, 16413), (185, 16422), (195, 16470), (216, 16632), (222, 16662), (223, 16674), (230, 16713), (233, 16728), (238, 16749), (247, 16806), (249, 16815), (252, 16842), (266, 16941), (283, 17040), (287, 17055), (299, 17139), (303, 17160), (313, 17205), (328, 17268), (329, 17271), (342, 17310), (345, 17322), (349, 17337), (370, 17421), (382, 17481), (388, 17508), (398, 17571), (402, 17586), (406, 17616), (416, 17712), (427, 17778), (451, 17841), (489, 18036), (490, 18039), (495, 18060), (513, 18237), (516, 18246),

Gene: Toaka\_25 Start: 15938, Stop: 18865, Start Num: 22

Candidate Starts for Toaka\_25:

(Start: 22 @15938 has 33 MA's), (24, 15950), (30, 15980), (51, 16109), (89, 16340), (99, 16394), (116, 16523), (127, 16610), (130, 16616), (132, 16622), (155, 16736), (156, 16757), (159, 16769), (164, 16787), (169, 16832), (174, 16853), (175, 16856), (179, 16877), (183, 16898), (185, 16907), (186, 16919), (187, 16922), (197, 16967), (202, 17000), (204, 17012), (216, 17117), (233, 17213), (238, 17234), (239, 17243), (241, 17255), (244, 17279), (247, 17291), (249, 17300), (250, 17309), (255, 17339), (263, 17402), (268, 17432), (272, 17459), (303, 17645), (313, 17690), (318, 17711), (321, 17726), (322, 17732), (328, 17753), (329, 17756), (346, 17810), (359, 17864), (362, 17882), (370, 17906), (382, 17966), (398, 18056), (401, 18068), (405, 18092), (406, 18101), (412, 18167), (417, 18233), (420, 18257), (448, 18377), (468, 18470), (477, 18548), (481, 18575), (483, 18584), (486, 18623), (488, 18632), (489, 18635), (500, 18734), (509, 18788), (510, 18800), (514, 18842),

Gene: Todacoro\_26 Start: 16043, Stop: 19081, Start Num: 14

Candidate Starts for Todacoro\_26:

(Start: 14 @16043 has 32 MA's), (33, 16217), (35, 16229), (41, 16262), (78, 16469), (82, 16490), (99, 16589), (101, 16592), (126, 16802), (130, 16811), (135, 16823), (142, 16856), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (249, 17495), (255, 17534), (277, 17675), (283, 17720), (298, 17810), (299, 17819), (305, 17849), (318, 17906), (321, 17921), (328, 17948), (329, 17951), (338, 17969), (363, 18080), (382, 18161), (392, 18218), (400, 18260), (412, 18356), (414, 18377), (416, 18401), (420, 18446), (424, 18464), (432, 18512), (434, 18524), (448, 18566), (450, 18578), (458, 18626), (483, 18797), (491, 18857), (494, 18869), (498, 18896), (499, 18917), (509, 19013), (513, 19061),

Gene: Tomathan\_29 Start: 16508, Stop: 19021, Start Num: 60

Candidate Starts for Tomathan\_29:

(Start: 60 @16508 has 89 MA's), (92, 16688), (93, 16691), (142, 16937), (151, 16997), (155, 17012), (158, 17042), (159, 17045), (174, 17129), (179, 17153), (184, 17177), (188, 17204), (189, 17207), (208, 17312), (216, 17393), (221, 17420), (223, 17435), (233, 17489), (238, 17510), (249, 17576), (251, 17594), (252, 17603), (266, 17702), (272, 17735), (274, 17744), (283, 17801), (287, 17816), (303, 17921), (309, 17945), (329, 18032), (336, 18044), (338, 18050), (345, 18083), (375, 18203), (398, 18332), (402, 18347), (406, 18377), (408, 18389), (410, 18425), (427, 18539), (435, 18551), (449, 18593), (490, 18800), (494, 18818), (495, 18821), (516, 19007),

Gene: Toro\_28 Start: 17560, Stop: 20943, Start Num: 3

Candidate Starts for Toro\_28:

(Start: 3 @17560 has 4 MA's), (38, 17947), (50, 18004), (73, 18136), (76, 18148), (82, 18199), (108, 18346), (132, 18529), (135, 18535), (142, 18568), (144, 18580), (158, 18673), (164, 18694), (166, 18706), (195, 18862), (198, 18886), (209, 18949), (216, 19024), (223, 19066), (233, 19120), (238, 19141), (247, 19198), (248, 19204), (249, 19207), (261, 19291), (262, 19306), (266, 19333), (268, 19339), (283, 19432), (286, 19444), (287, 19447), (313, 19597), (317, 19612), (320, 19630), (325, 19654), (329, 19672), (330, 19675), (352, 19786), (362, 19849), (363, 19852), (372, 19909), (374, 19915), (384, 19963), (390, 19993), (401, 20071), (403, 20083), (404, 20092), (407, 20113), (414, 20191), (420, 20260), (424, 20278), (430, 20329), (437, 20365), (438, 20377), (446, 20410), (452, 20440), (455, 20461), (463, 20512), (470, 20545), (478, 20626), (483, 20659), (485, 20689), (494, 20731), (497, 20755), (503, 20821), (505, 20836), (506, 20842), (511, 20893),

Gene: Travvers\_29 Start: 16508, Stop: 19021, Start Num: 60

Candidate Starts for Travvers\_29:

(Start: 60 @16508 has 89 MA's), (92, 16688), (93, 16691), (141, 16934), (142, 16937), (151, 16997), (155, 17012), (158, 17042), (159, 17045), (174, 17129), (179, 17153), (184, 17177), (188, 17204),

(189, 17207), (209, 17318), (216, 17393), (221, 17420), (223, 17435), (233, 17489), (238, 17510), (249, 17576), (251, 17594), (252, 17603), (266, 17702), (272, 17735), (274, 17744), (283, 17801), (287, 17816), (303, 17921), (329, 18032), (336, 18044), (338, 18050), (345, 18083), (346, 18086), (375, 18203), (398, 18332), (402, 18347), (406, 18377), (408, 18389), (410, 18425), (427, 18539), (435, 18551), (449, 18593), (490, 18800), (494, 18818), (495, 18821), (516, 19007),

Gene: Trixie\_29 Start: 18274, Stop: 20811, Start Num: 60

Candidate Starts for Trixie\_29:

(Start: 60 @18274 has 89 MA's), (79, 18385), (92, 18454), (120, 18619), (121, 18625), (124, 18646), (126, 18655), (140, 18700), (142, 18709), (146, 18742), (155, 18784), (161, 18826), (164, 18835), (167, 18856), (171, 18883), (174, 18901), (185, 18955), (188, 18976), (189, 18979), (216, 19165), (223, 19207), (227, 19225), (236, 19273), (238, 19282), (249, 19348), (252, 19375), (255, 19387), (263, 19450), (265, 19465), (275, 19519), (283, 19573), (292, 19621), (301, 19684), (303, 19693), (313, 19738), (317, 19753), (322, 19780), (323, 19783), (329, 19804), (334, 19810), (339, 19825), (359, 19912), (375, 19975), (380, 19996), (398, 20104), (402, 20119), (406, 20149), (408, 20161), (410, 20197), (419, 20287), (449, 20368), (451, 20377), (458, 20386), (478, 20497), (482, 20527), (494, 20608), (495, 20611),

Gene: Trooper\_26 Start: 16433, Stop: 18964, Start Num: 60

Candidate Starts for Trooper\_26:

(Start: 60 @16433 has 89 MA's), (65, 16472), (67, 16478), (91, 16610), (92, 16613), (95, 16622), (98, 16646), (121, 16790), (124, 16811), (126, 16820), (132, 16835), (135, 16841), (142, 16874), (146, 16907), (155, 16949), (161, 16991), (164, 17000), (171, 17048), (174, 17066), (181, 17099), (185, 17120), (188, 17141), (189, 17144), (216, 17330), (223, 17372), (224, 17381), (238, 17447), (249, 17513), (255, 17552), (283, 17738), (287, 17753), (292, 17786), (309, 17882), (313, 17903), (322, 17945), (328, 17966), (329, 17969), (364, 18107), (370, 18119), (375, 18140), (393, 18239), (394, 18242), (398, 18269), (402, 18284), (406, 18314), (410, 18362), (416, 18410), (425, 18464), (444, 18515), (458, 18548), (467, 18572), (482, 18689), (492, 18755), (495, 18767),

Gene: Tubs\_27 Start: 17590, Stop: 20499, Start Num: 22

Candidate Starts for Tubs\_27:

(Start: 22 @17590 has 33 MA's), (24, 17602), (32, 17662), (62, 17821), (74, 17884), (83, 17947), (89, 17989), (101, 18046), (127, 18256), (130, 18262), (136, 18277), (151, 18367), (152, 18370), (155, 18382), (161, 18424), (169, 18478), (185, 18553), (188, 18574), (189, 18577), (194, 18595), (204, 18658), (213, 18724), (216, 18763), (221, 18790), (223, 18805), (229, 18835), (233, 18859), (236, 18871), (238, 18880), (249, 18946), (255, 18985), (264, 19051), (268, 19078), (272, 19105), (283, 19171), (291, 19216), (303, 19291), (313, 19336), (318, 19357), (322, 19378), (323, 19381), (328, 19399), (329, 19402), (340, 19429), (359, 19510), (370, 19552), (398, 19702), (402, 19717), (406, 19747), (411, 19798), (419, 19885), (421, 19894), (429, 19945), (448, 20008), (452, 20029), (458, 20065), (467, 20101), (468, 20107), (477, 20185), (481, 20212), (489, 20272), (499, 20341), (500, 20371), (505, 20398), (510, 20437), (514, 20479),

Gene: Turbido\_28 Start: 17118, Stop: 19661, Start Num: 60

Candidate Starts for Turbido\_28:

(Start: 60 @17118 has 89 MA's), (92, 17298), (93, 17301), (98, 17331), (120, 17469), (121, 17475), (124, 17496), (126, 17505), (130, 17514), (135, 17526), (144, 17571), (146, 17592), (155, 17634), (164, 17685), (169, 17730), (171, 17733), (174, 17751), (181, 17784), (183, 17796), (185, 17805), (188, 17826), (189, 17829), (216, 18015), (223, 18057), (224, 18066), (227, 18075), (238, 18132), (249, 18198), (255, 18237), (268, 18330), (274, 18366), (283, 18423), (295, 18489), (299, 18522), (302, 18537), (303, 18543), (305, 18552), (309, 18567), (313, 18588), (318, 18609), (322, 18630), (323, 18633), (328, 18651), (329, 18654), (345, 18705), (359, 18762), (362, 18780), (370, 18804), (382, 18864), (388, 18891), (398, 18954), (406, 18999), (419, 19137), (451, 19227), (458, 19236), (467, 19260), (478, 19347), (482, 19377), (495, 19461),

Gene: Ugenie5\_24 Start: 17623, Stop: 20532, Start Num: 22

Candidate Starts for Ugenie5\_24:

(Start: 22 @17623 has 33 MA's), (24, 17635), (32, 17695), (74, 17917), (83, 17980), (89, 18022), (101, 18079), (107, 18118), (127, 18289), (130, 18295), (136, 18310), (151, 18400), (152, 18403), (155, 18415), (161, 18457), (169, 18511), (185, 18586), (188, 18607), (189, 18610), (194, 18628), (204, 18691), (213, 18757), (216, 18796), (221, 18823), (223, 18838), (229, 18868), (233, 18892), (238, 18913), (249, 18979), (255, 19018), (264, 19084), (268, 19111), (272, 19138), (283, 19204), (291, 19249), (303, 19324), (313, 19369), (318, 19390), (322, 19411), (323, 19414), (328, 19432), (329, 19435), (340, 19462), (346, 19489), (359, 19543), (398, 19735), (402, 19750), (406, 19780), (411, 19831), (419, 19918), (421, 19927), (429, 19978), (448, 20041), (452, 20062), (458, 20098), (467, 20134), (468, 20140), (477, 20218), (481, 20245), (489, 20305), (499, 20374), (500, 20404), (505, 20431), (510, 20470), (514, 20512),

Gene: Updawg\_28 Start: 17115, Stop: 19622, Start Num: 60

Candidate Starts for Updawg\_28:

(Start: 60 @17115 has 89 MA's), (79, 17226), (90, 17283), (124, 17469), (142, 17532), (146, 17565), (148, 17571), (179, 17751), (181, 17760), (185, 17781), (188, 17802), (189, 17805), (194, 17823), (203, 17883), (216, 17991), (223, 18033), (233, 18087), (238, 18108), (248, 18171), (249, 18174), (251, 18192), (255, 18213), (283, 18399), (287, 18414), (290, 18441), (299, 18498), (302, 18513), (303, 18519), (305, 18528), (307, 18534), (313, 18564), (318, 18585), (329, 18630), (334, 18636), (342, 18669), (349, 18696), (364, 18768), (370, 18780), (382, 18840), (388, 18867), (398, 18930), (406, 18975), (408, 18987), (410, 19023), (415, 19059), (417, 19092), (439, 19155), (447, 19179), (479, 19323), (495, 19422), (503, 19509), (516, 19608),

Gene: VA6\_26 Start: 16626, Stop: 19163, Start Num: 60

Candidate Starts for VA6\_26:

(Start: 60 @16626 has 89 MA's), (92, 16806), (93, 16809), (103, 16857), (119, 16968), (121, 16977), (124, 16998), (126, 17007), (135, 17028), (142, 17061), (146, 17094), (164, 17187), (171, 17235), (174, 17253), (177, 17265), (181, 17286), (185, 17307), (188, 17328), (189, 17331), (216, 17517), (223, 17559), (224, 17568), (238, 17634), (249, 17700), (252, 17727), (255, 17739), (266, 17826), (283, 17925), (303, 18045), (305, 18054), (307, 18060), (309, 18069), (313, 18090), (319, 18114), (323, 18135), (329, 18156), (334, 18162), (342, 18195), (345, 18207), (359, 18264), (382, 18366), (388, 18393), (398, 18456), (451, 18729), (458, 18738), (478, 18849), (482, 18879), (495, 18963),

Gene: VC3\_29 Start: 16651, Stop: 19164, Start Num: 60

Candidate Starts for VC3\_29:

(Start: 60 @16651 has 89 MA's), (92, 16831), (93, 16834), (115, 16945), (142, 17080), (151, 17140), (155, 17155), (158, 17185), (159, 17188), (174, 17272), (179, 17296), (184, 17320), (188, 17347), (189, 17350), (209, 17461), (216, 17536), (221, 17563), (223, 17578), (233, 17632), (238, 17653), (249, 17719), (251, 17737), (252, 17746), (266, 17845), (272, 17878), (274, 17887), (283, 17944), (287, 17959), (303, 18064), (329, 18175), (336, 18187), (338, 18193), (345, 18226), (375, 18346), (398, 18475), (402, 18490), (406, 18520), (408, 18532), (410, 18568), (427, 18682), (435, 18694), (449, 18736), (490, 18943), (494, 18961), (495, 18964), (516, 19150),

Gene: Vanisoa\_25 Start: 15668, Stop: 18586, Start Num: 22

Candidate Starts for Vanisoa\_25:

(Start: 22 @15668 has 33 MA's), (24, 15680), (51, 15839), (62, 15902), (89, 16070), (99, 16124), (101, 16127), (116, 16253), (124, 16328), (126, 16337), (127, 16340), (130, 16346), (132, 16352), (155, 16466), (156, 16487), (164, 16517), (166, 16529), (169, 16562), (174, 16583), (175, 16586), (179, 16607), (183, 16628), (185, 16637), (186, 16649), (197, 16697), (202, 16730), (204, 16742), (216, 16847), (219, 16859), (228, 16910), (233, 16943), (237, 16958), (238, 16964), (239, 16973), (241, 16985), (244, 17009), (247, 17021), (249, 17030), (272, 17189), (275, 17201), (283, 17255), (303,



17375), (313, 17420), (318, 17441), (322, 17462), (323, 17465), (328, 17483), (329, 17486), (340, 17513), (346, 17540), (360, 17600), (370, 17636), (380, 17678), (398, 17786), (411, 17882), (419, 17969), (421, 17978), (429, 18029), (439, 18059), (448, 18092), (452, 18113), (458, 18152), (468, 18194), (477, 18272), (481, 18299), (489, 18359), (500, 18458), (509, 18512), (510, 18524), (514, 18566),

Gene: Veracruz\_25 Start: 16043, Stop: 19081, Start Num: 14

Candidate Starts for Veracruz\_25:

(Start: 14 @16043 has 32 MA's), (33, 16217), (35, 16229), (41, 16262), (78, 16469), (82, 16490), (99, 16589), (101, 16592), (126, 16802), (130, 16811), (135, 16823), (142, 16856), (152, 16919), (155, 16931), (159, 16964), (164, 16982), (167, 17003), (175, 17051), (176, 17057), (179, 17072), (181, 17081), (183, 17093), (185, 17102), (202, 17195), (216, 17312), (217, 17315), (222, 17342), (223, 17354), (233, 17408), (238, 17429), (249, 17495), (255, 17534), (277, 17675), (283, 17720), (298, 17810), (299, 17819), (305, 17849), (318, 17906), (321, 17921), (328, 17948), (329, 17951), (338, 17969), (363, 18080), (382, 18161), (392, 18218), (400, 18260), (412, 18356), (414, 18377), (416, 18401), (420, 18446), (424, 18464), (432, 18512), (434, 18524), (448, 18566), (450, 18578), (458, 18626), (483, 18797), (491, 18857), (494, 18869), (498, 18896), (499, 18917), (509, 19013), (513, 19061),

Gene: Vix\_27 Start: 16061, Stop: 19087, Start Num: 15

Candidate Starts for Vix\_27:

(11, 16007), (Start: 15 @16061 has 81 MA's), (26, 16175), (34, 16241), (35, 16244), (37, 16253), (45, 16289), (54, 16340), (66, 16412), (78, 16484), (99, 16604), (101, 16607), (111, 16676), (112, 16721), (126, 16814), (130, 16823), (137, 16841), (142, 16868), (152, 16931), (155, 16943), (159, 16976), (164, 16994), (174, 17060), (175, 17063), (176, 17069), (179, 17084), (181, 17093), (183, 17105), (185, 17114), (199, 17192), (202, 17207), (216, 17324), (217, 17327), (222, 17354), (223, 17366), (233, 17420), (238, 17441), (249, 17507), (255, 17546), (268, 17639), (277, 17687), (283, 17732), (292, 17780), (298, 17822), (299, 17831), (305, 17861), (306, 17864), (309, 17876), (321, 17933), (322, 17939), (328, 17960), (329, 17963), (364, 18101), (370, 18113), (382, 18173), (392, 18230), (412, 18368), (414, 18389), (416, 18413), (420, 18458), (424, 18476), (432, 18524), (434, 18536), (448, 18578), (459, 18641), (472, 18698), (477, 18767), (483, 18803), (496, 18884), (509, 19019),

Gene: Watson\_27 Start: 15971, Stop: 18997, Start Num: 15

Candidate Starts for Watson\_27:

(11, 15917), (Start: 15 @15971 has 81 MA's), (26, 16085), (34, 16151), (35, 16154), (37, 16163), (45, 16199), (54, 16250), (66, 16322), (78, 16394), (99, 16514), (101, 16517), (111, 16586), (112, 16631), (126, 16724), (130, 16733), (137, 16751), (142, 16778), (152, 16841), (155, 16853), (159, 16886), (164, 16904), (174, 16970), (175, 16973), (176, 16979), (179, 16994), (181, 17003), (183, 17015), (185, 17024), (202, 17117), (216, 17234), (217, 17237), (222, 17264), (223, 17276), (233, 17330), (238, 17351), (249, 17417), (252, 17444), (268, 17549), (277, 17597), (283, 17642), (292, 17690), (298, 17732), (299, 17741), (305, 17771), (306, 17774), (309, 17786), (321, 17843), (322, 17849), (328, 17870), (329, 17873), (364, 18011), (370, 18023), (382, 18083), (393, 18143), (398, 18173), (399, 18176), (401, 18185), (412, 18278), (420, 18368), (432, 18434), (434, 18446), (448, 18488), (459, 18551), (472, 18608), (477, 18677), (483, 18713), (496, 18794), (509, 18929),

Gene: WeiHuaDA\_32 Start: 18881, Stop: 21418, Start Num: 60

Candidate Starts for WeiHuaDA\_32:

(Start: 60 @18881 has 89 MA's), (79, 18992), (92, 19061), (120, 19226), (121, 19232), (124, 19253), (126, 19262), (135, 19283), (142, 19316), (143, 19325), (146, 19349), (151, 19376), (155, 19391), (161, 19433), (164, 19442), (171, 19490), (174, 19508), (179, 19532), (188, 19583), (189, 19586), (216, 19772), (223, 19814), (236, 19880), (238, 19889), (249, 19955), (255, 19994), (268, 20087), (283, 20180), (287, 20195), (303, 20300), (313, 20345), (322, 20387), (323, 20390), (329, 20411), (334, 20417), (339, 20432), (364, 20549), (375, 20582), (380, 20603), (398, 20711), (402, 20726),

(406, 20756), (408, 20768), (410, 20804), (449, 20975), (451, 20984), (458, 20993), (478, 21104),  
(482, 21134), (494, 21215), (495, 21218),

Gene: Whabigail7\_28 Start: 17106, Stop: 19649, Start Num: 60

Candidate Starts for Whabigail7\_28:

(Start: 60 @17106 has 89 MA's), (92, 17286), (93, 17289), (120, 17457), (121, 17463), (124, 17484),  
(126, 17493), (130, 17502), (135, 17514), (144, 17559), (146, 17580), (155, 17622), (164, 17673),  
(169, 17718), (171, 17721), (174, 17739), (181, 17772), (183, 17784), (185, 17793), (188, 17814),  
(189, 17817), (216, 18003), (223, 18045), (224, 18054), (227, 18063), (238, 18120), (249, 18186),  
(255, 18225), (268, 18318), (274, 18354), (283, 18411), (295, 18477), (299, 18510), (302, 18525),  
(303, 18531), (305, 18540), (309, 18555), (313, 18576), (318, 18597), (322, 18618), (323, 18621),  
(328, 18639), (329, 18642), (345, 18693), (359, 18750), (362, 18768), (370, 18792), (382, 18852),  
(388, 18879), (398, 18942), (406, 18987), (419, 19125), (451, 19215), (458, 19224), (467, 19248),  
(478, 19335), (482, 19365), (495, 19449),

Gene: WideWale\_28 Start: 17115, Stop: 19622, Start Num: 60

Candidate Starts for WideWale\_28:

(Start: 60 @17115 has 89 MA's), (79, 17226), (90, 17283), (124, 17469), (142, 17532), (146, 17565),  
(148, 17571), (179, 17751), (181, 17760), (185, 17781), (188, 17802), (189, 17805), (194, 17823),  
(203, 17883), (216, 17991), (223, 18033), (233, 18087), (238, 18108), (248, 18171), (249, 18174),  
(251, 18192), (255, 18213), (283, 18399), (287, 18414), (290, 18441), (299, 18498), (302, 18513),  
(303, 18519), (305, 18528), (307, 18534), (313, 18564), (318, 18585), (329, 18630), (334, 18636),  
(342, 18669), (349, 18696), (364, 18768), (370, 18780), (382, 18840), (388, 18867), (398, 18930),  
(406, 18975), (408, 18987), (410, 19023), (415, 19059), (417, 19092), (439, 19155), (447, 19179),  
(479, 19323), (495, 19422), (503, 19509), (516, 19608),

Gene: Wooldri\_29 Start: 15890, Stop: 18916, Start Num: 15

Candidate Starts for Wooldri\_29:

(11, 15836), (Start: 15 @15890 has 81 MA's), (26, 16004), (34, 16070), (35, 16073), (37, 16082), (45,  
16118), (54, 16169), (66, 16241), (78, 16313), (99, 16433), (101, 16436), (111, 16505), (112, 16550),  
(126, 16643), (130, 16652), (137, 16670), (142, 16697), (152, 16760), (155, 16772), (159, 16805),  
(164, 16823), (174, 16889), (175, 16892), (176, 16898), (179, 16913), (181, 16922), (183, 16934),  
(185, 16943), (199, 17021), (202, 17036), (216, 17153), (217, 17156), (222, 17183), (223, 17195),  
(233, 17249), (238, 17270), (249, 17336), (255, 17375), (268, 17468), (277, 17516), (283, 17561),  
(292, 17609), (298, 17651), (299, 17660), (305, 17690), (306, 17693), (309, 17705), (321, 17762),  
(322, 17768), (328, 17789), (329, 17792), (364, 17930), (370, 17942), (382, 18002), (392, 18059),  
(412, 18197), (414, 18218), (416, 18242), (420, 18287), (424, 18305), (432, 18353), (434, 18365),  
(448, 18407), (459, 18470), (472, 18527), (477, 18596), (483, 18632), (496, 18713), (509, 18848),

Gene: XianYue\_26 Start: 16577, Stop: 19105, Start Num: 60

Candidate Starts for XianYue\_26:

(Start: 60 @16577 has 89 MA's), (91, 16754), (92, 16757), (93, 16760), (103, 16808), (121, 16928),  
(124, 16949), (126, 16958), (130, 16967), (142, 17012), (146, 17045), (151, 17072), (155, 17087),  
(161, 17129), (164, 17138), (167, 17159), (171, 17186), (174, 17204), (181, 17237), (185, 17258),  
(188, 17279), (189, 17282), (216, 17468), (223, 17510), (224, 17519), (233, 17564), (238, 17585),  
(249, 17651), (255, 17690), (272, 17810), (276, 17828), (283, 17876), (286, 17888), (287, 17891),  
(303, 17996), (307, 18011), (309, 18020), (317, 18056), (322, 18083), (323, 18086), (328, 18104),  
(329, 18107), (394, 18380), (398, 18407), (402, 18422), (406, 18452), (408, 18464), (410, 18500),  
(416, 18548), (425, 18602), (444, 18653), (458, 18686), (467, 18710), (482, 18827), (495, 18905),  
(516, 19091),

Gene: Yecey3\_26 Start: 15697, Stop: 18618, Start Num: 22

Candidate Starts for Yecey3\_26:

(Start: 12 @15568 has 1 MA's), (Start: 22 @15697 has 33 MA's), (24, 15709), (51, 15868), (59, 15910), (62, 15931), (89, 16099), (99, 16153), (101, 16156), (116, 16285), (124, 16360), (126, 16369), (127, 16372), (130, 16378), (132, 16384), (144, 16435), (155, 16498), (156, 16519), (158, 16528), (160, 16537), (164, 16549), (169, 16594), (171, 16597), (174, 16615), (175, 16618), (179, 16639), (185, 16669), (186, 16681), (197, 16729), (202, 16762), (204, 16774), (216, 16879), (226, 16936), (227, 16939), (233, 16975), (238, 16996), (239, 17005), (241, 17017), (249, 17062), (255, 17101), (263, 17164), (275, 17233), (291, 17332), (302, 17401), (303, 17407), (313, 17452), (317, 17467), (318, 17473), (328, 17515), (329, 17518), (340, 17545), (346, 17572), (379, 17698), (380, 17710), (398, 17818), (404, 17851), (406, 17863), (408, 17875), (410, 17911), (411, 17914), (417, 17980), (419, 18001), (420, 18004), (422, 18013), (427, 18043), (448, 18124), (452, 18145), (461, 18199), (468, 18226), (476, 18298), (477, 18304), (489, 18391), (492, 18403), (495, 18415), (500, 18490), (508, 18526), (510, 18556),

Gene: Zetzy\_26 Start: 15513, Stop: 18539, Start Num: 15

Candidate Starts for Zetzy\_26:

(11, 15459), (Start: 15 @15513 has 81 MA's), (26, 15627), (34, 15693), (35, 15696), (37, 15705), (45, 15741), (54, 15792), (66, 15864), (78, 15936), (99, 16056), (101, 16059), (111, 16128), (112, 16173), (126, 16266), (130, 16275), (137, 16293), (142, 16320), (152, 16383), (155, 16395), (159, 16428), (164, 16446), (174, 16512), (175, 16515), (176, 16521), (179, 16536), (183, 16557), (185, 16566), (202, 16659), (216, 16776), (217, 16779), (222, 16806), (223, 16818), (233, 16872), (238, 16893), (249, 16959), (255, 16998), (268, 17091), (277, 17139), (283, 17184), (287, 17199), (298, 17274), (299, 17283), (309, 17328), (318, 17370), (328, 17412), (341, 17445), (364, 17553), (382, 17625), (393, 17685), (398, 17715), (399, 17718), (401, 17727), (420, 17910), (432, 17976), (434, 17988), (448, 18030), (459, 18093), (472, 18150), (477, 18219), (483, 18255), (496, 18336), (509, 18471), (510, 18483),

Gene: Zimmer\_28 Start: 18207, Stop: 21335, Start Num: 9

Candidate Starts for Zimmer\_28:

(1, 17961), (5, 18177), (Start: 9 @18207 has 5 MA's), (Start: 22 @18384 has 33 MA's), (24, 18396), (46, 18534), (74, 18681), (83, 18744), (89, 18786), (99, 18840), (101, 18843), (124, 19044), (126, 19053), (127, 19056), (142, 19107), (146, 19140), (154, 19176), (164, 19233), (169, 19278), (171, 19281), (174, 19299), (175, 19302), (179, 19323), (185, 19353), (196, 19404), (197, 19413), (226, 19620), (230, 19644), (233, 19659), (234, 19662), (238, 19680), (239, 19689), (241, 19701), (248, 19743), (249, 19746), (254, 19779), (255, 19785), (263, 19848), (283, 19971), (303, 20091), (312, 20130), (313, 20136), (317, 20151), (322, 20178), (323, 20181), (328, 20199), (334, 20208), (336, 20214), (347, 20262), (364, 20340), (382, 20412), (383, 20415), (386, 20427), (398, 20502), (401, 20514), (405, 20538), (406, 20547), (420, 20703), (426, 20739), (428, 20748), (448, 20823), (461, 20904), (462, 20907), (463, 20913), (483, 21060), (488, 21108), (489, 21111), (495, 21135), (510, 21276),