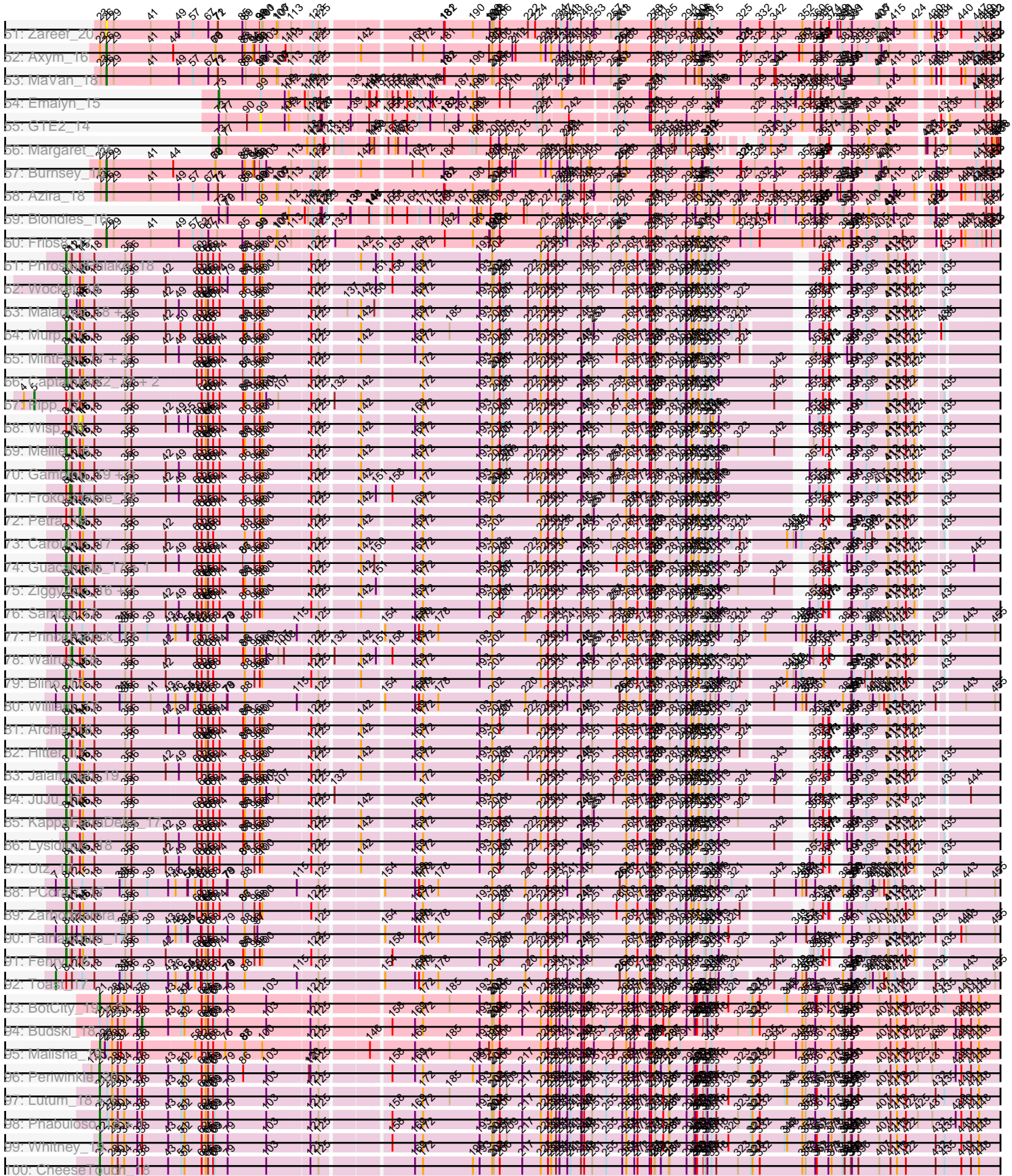


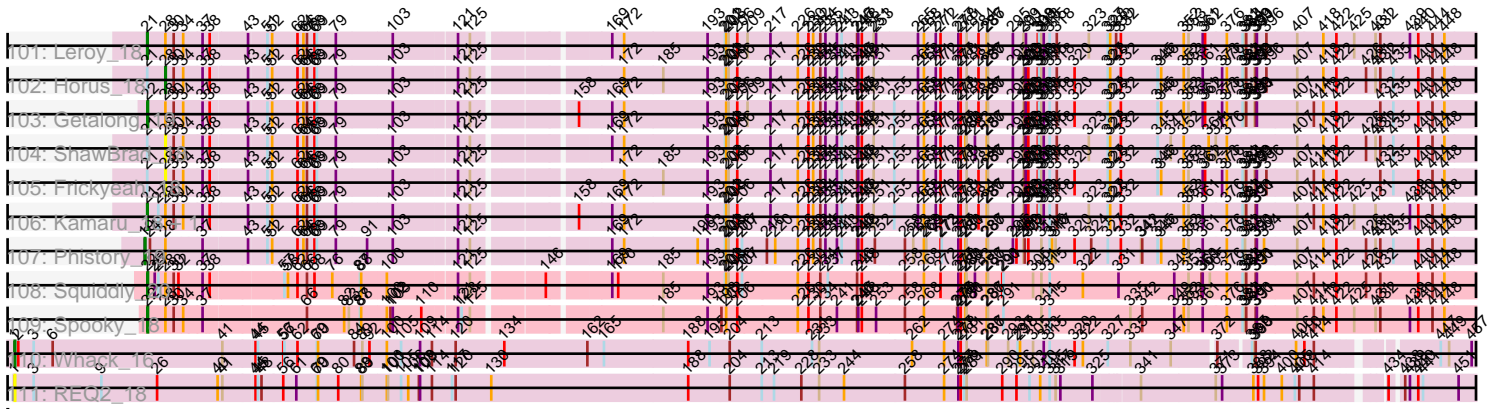


Zoomed Pham 197894





# Zoomed Pham 197894



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 197894 Report

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

Pham number 197894 has 136 members, 21 are drafts.

Phages represented in each track:

- Track 1 : AikoCarson\_15
- Track 2 : Agatha\_16
- Track 3 : Bavidard\_16
- Track 4 : Nodigi\_18
- Track 5 : Cozz\_16
- Track 6 : Quasar\_16
- Track 7 : ChocoMunchkin\_16, Yarn\_15, CanesSauce\_16, AndPeggy\_15
- Track 8 : Elliott\_16, PsychoKiller\_16
- Track 9 : SteamedHams\_18
- Track 10 : Horseradish\_17, Yummy\_17
- Track 11 : Feastonyeet\_15, BigChungus\_15
- Track 12 : Amok\_15
- Track 13 : Mayweather\_17
- Track 14 : GiKK\_19
- Track 15 : Vine\_17
- Track 16 : Elinal\_17, KayGee\_16
- Track 17 : SweatNTears\_18
- Track 18 : Nina\_17
- Track 19 : Orla\_18
- Track 20 : CherryonLim\_17
- Track 21 : Lauer\_15
- Track 22 : Buttrmilkdreams\_16
- Track 23 : Tolls\_18
- Track 24 : Button\_17
- Track 25 : PotPie\_16
- Track 26 : ChickenTender\_18
- Track 27 : SheckWes\_15
- Track 28 : Jamzy\_19
- Track 29 : Starburst\_17
- Track 30 : Biskit\_17, SketchMex\_15
- Track 31 : Survivors\_18
- Track 32 : RanchParmCat\_19
- Track 33 : GoldHunter\_17
- Track 34 : SummitAcademy\_15
- Track 35 : Hexbug\_18
- Track 36 : Dre3\_16, Gibbous\_16
- Track 37 : Carsonalex\_17

- Track 38 : MunkgeeRoachy\_16
- Track 39 : HippoPololi\_18
- Track 40 : MAnor\_16
- Track 41 : Cleo\_16
- Track 42 : Nibbles\_18
- Track 43 : BillDoor\_18
- Track 44 : Sopespian\_16
- Track 45 : Troje\_16
- Track 46 : RedBaron\_17
- Track 47 : MScarn\_18
- Track 48 : Pons\_16
- Track 49 : Yucky\_18
- Track 50 : Typhonomachy\_17
- Track 51 : Zareef\_20
- Track 52 : Axym\_16
- Track 53 : MaVan\_18
- Track 54 : Emalyn\_15
- Track 55 : GTE2\_14
- Track 56 : Margaret\_19
- Track 57 : Burnsey\_16
- Track 58 : Azira\_18
- Track 59 : Blondies\_16
- Track 60 : Fribs8\_17
- Track 61 : PhrostedPhlake\_18
- Track 62 : Wocket\_18
- Track 63 : Malachai\_18, Begonia\_18
- Track 64 : Murp\_17
- Track 65 : MintFen\_17, Melba\_17, BlingBling\_17, Barco\_17
- Track 66 : CaptainKirk2\_17, Delian\_17, UmaThurman\_17
- Track 67 : Pipp\_17
- Track 68 : Wisp\_16
- Track 69 : Mellie\_16
- Track 70 : Gambino\_19, Azula\_19, MissRona\_19, Blueberry\_19
- Track 71 : Frokostdame\_17
- Track 72 : Petra\_19
- Track 73 : CarolAnn\_17
- Track 74 : Guacamole\_17, JasperJr\_17
- Track 75 : ZiggyZoo\_16, Obliviate\_16
- Track 76 : Samba\_17
- Track 77 : PrincePatrick\_17
- Track 78 : Walrus\_18
- Track 79 : Blino\_17
- Track 80 : William\_17
- Track 81 : Archis\_18
- Track 82 : Hitter\_17
- Track 83 : Jalammah\_19
- Track 84 : JuJu\_17
- Track 85 : KappaFarmDelta\_17
- Track 86 : Lysidious\_18
- Track 87 : Utz\_17
- Track 88 : PCoral7\_17
- Track 89 : Zarbodnamra\_17
- Track 90 : Fairfaxidum\_17

- Track 91 : Fenry\_16
- Track 92 : Toast\_17
- Track 93 : BotCity\_19, BENtherdunthat\_18, Asapag\_18
- Track 94 : Budski\_18
- Track 95 : Malisha\_19
- Track 96 : Periwinkle\_20
- Track 97 : Lutum\_18, Kenna\_17
- Track 98 : Phabuloso\_18, LitninMcQueen\_18
- Track 99 : Whitney\_19
- Track 100 : CheeseTouch\_18
- Track 101 : Leroy\_18
- Track 102 : Horus\_18
- Track 103 : Getalong\_19
- Track 104 : ShawBrad\_18
- Track 105 : Frickyeah\_18
- Track 106 : Kamaru\_18, Holliday\_18
- Track 107 : Phistory\_19
- Track 108 : Squiddly\_20
- Track 109 : Spooky\_18
- Track 110 : Whack\_16
- Track 111 : REQ2\_18

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

The start number called the most often in the published annotations is 8, it was called in 37 of the 115 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Archis\_18, Azula\_19, Barco\_17, Begonia\_18, BlingBling\_17, Blino\_17, Blueberry\_19, CaptainKirk2\_17, CarolAnn\_17, Delian\_17, Fairfaxidum\_17, Fenry\_16, Gambino\_19, Guacamole\_17, Hitter\_17, Jalammah\_19, JasperJr\_17, JuJu\_17, KappaFarmDelta\_17, Lysidious\_18, Malachai\_18, Melba\_17, Mellie\_16, MintFen\_17, MissRona\_19, Murp\_17, Obliviate\_16, PCoral7\_17, PhrostedPhlake\_18, PrincePatrick\_17, Samba\_17, UmaThurman\_17, Utz\_17, William\_17, Wocket\_18, Zarbodnamra\_17, ZiggyZoo\_16,

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

- Frokostdame\_17, Petra\_19, Pipp\_17, Toast\_17, Walrus\_18, Wisp\_16,

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

- Agatha\_16, AikoCarson\_15, Amok\_15, AndPeggy\_15, Asapag\_18, Axym\_16, Azira\_18, BENtherdunthat\_18, Bavidard\_16, BigChungus\_15, BillDoor\_18, Biskit\_17, Blondies\_16, BotCity\_19, Budski\_18, Burnsey\_16, Button\_17, Buttrmlkdreams\_16, CanesSauce\_16, Carsonalex\_17, CheeseTouch\_18, CherryonLim\_17, ChickenTender\_18, ChocoMunchkin\_16, Cleo\_16, Cozz\_16, Dre3\_16, Elinal\_17, Elliott\_16, Emalyn\_15, Feastonyeet\_15, Fribs8\_17, Frickyeah\_18, GTE2\_14, Getalong\_19, GiKK\_19, Gibbous\_16, GoldHunter\_17, Hexbug\_18, HippoPololi\_18, Holliday\_18, Horseradish\_17, Horus\_18, Jamzy\_19, Kamaru\_18, KayGee\_16, Kenna\_17, Lauer\_15, Leroy\_18, LitninMcQueen\_18, Lutum\_18, MAnor\_16, MScarn\_18, MaVan\_18, Malisha\_19, Margaret\_19, Mayweather\_17,

MunkgeeRoachy\_16, Nibbles\_18, Nina\_17, Nodigi\_18, Orla\_18, Periwinkle\_20, Phabuloso\_18, Phistory\_19, Pons\_16, PotPie\_16, PsychoKiller\_16, Quasar\_16, REQ2\_18, RanchParmCat\_19, RedBaron\_17, ShawBrad\_18, SheckWes\_15, SketchMex\_15, Sopespian\_16, Spooky\_18, Squiddly\_20, Starburst\_17, SteamedHams\_18, SummitAcademy\_15, Survivors\_18, SweatNTears\_18, Tolls\_18, Troje\_16, Typhonomachy\_17, Vine\_17, Whack\_16, Whitney\_19, Yarn\_15, Yucky\_18, Yummy\_17, Zareef\_20,

### Summary by start number:

#### Start 1:

- Found in 2 of 136 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: REQ2\_18 (singleton), Whack\_16 (singleton),

#### Start 5:

- Found in 1 of 136 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pipp\_17 (CV),

#### Start 7:

- Found in 5 of 136 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Toast\_17 (CV),

#### Start 8:

- Found in 43 of 136 ( 31.6% ) of genes in pham
- Manual Annotations of this start: 37 of 115
- Called 86.0% of time when present
- Phage (with cluster) where this start called: Archis\_18 (CV), Azula\_19 (CV), Barco\_17 (CV), Begonia\_18 (CV), BlingBling\_17 (CV), Blino\_17 (CV), Blueberry\_19 (CV), CaptainKirk2\_17 (CV), CarolAnn\_17 (CV), Delian\_17 (CV), Fairfaxidum\_17 (CV), Fenry\_16 (CV), Gambino\_19 (CV), Guacamole\_17 (CV), Hitter\_17 (CV), Jalammah\_19 (CV), JasperJr\_17 (CV), JuJu\_17 (CV), KappaFarmDelta\_17 (CV), Lysidious\_18 (CV), Malachai\_18 (CV), Melba\_17 (CV), Mellie\_16 (CV), MintFen\_17 (CV), MissRona\_19 (CV), Murp\_17 (CV), Obliviate\_16 (CV), PCoral7\_17 (CV), PhrostedPhlake\_18 (CV), PrincePatrick\_17 (CV), Samba\_17 (CV), UmaThurman\_17 (CV), Utz\_17 (CV), William\_17 (CV), Wocket\_18 (CV), Zarbodnamra\_17 (CV), ZiggyZoo\_16 (CV),

#### Start 11:

- Found in 34 of 136 ( 25.0% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Frokostdame\_17 (CV),

#### Start 12:

- Found in 36 of 136 ( 26.5% ) of genes in pham
- Manual Annotations of this start: 1 of 115

- Called 2.8% of time when present
- Phage (with cluster) where this start called: Walrus\_18 (CV),

#### Start 14:

- Found in 38 of 136 ( 27.9% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 5.3% of time when present
- Phage (with cluster) where this start called: Petra\_19 (CV), Wisp\_16 (CV),

#### Start 19:

- Found in 1 of 136 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phistory\_19 (DN1),

#### Start 20:

- Found in 1 of 136 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Periwinkle\_20 (DN1),

#### Start 21:

- Found in 15 of 136 ( 11.0% ) of genes in pham
- Manual Annotations of this start: 10 of 115
- Called 73.3% of time when present
- Phage (with cluster) where this start called: Asapag\_18 (DN1), BENtherdunthat\_18 (DN1), BotCity\_19 (DN), CheeseTouch\_18 (DN1), Holliday\_18 (DN1), Kamaru\_18 (DN1), Kenna\_17 (DN1), Leroy\_18 (DN1), LitninMcQueen\_18 (DN1), Lutum\_18 (DN1), Phabuloso\_18 (DN1),

#### Start 22:

- Found in 20 of 136 ( 14.7% ) of genes in pham
- Manual Annotations of this start: 5 of 115
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Getalong\_19 (DN1), Malisha\_19 (DN), Spooky\_18 (DN2), Squiddly\_20 (DN2), Whitney\_19 (DN1),

#### Start 26:

- Found in 42 of 136 ( 30.9% ) of genes in pham
- Manual Annotations of this start: 29 of 115
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Agatha\_16 (CT), Axym\_16 (CT), Azira\_18 (CT), Bavidard\_16 (CT), BigChungus\_15 (CT), Burnsey\_16 (CT), Carsonalex\_17 (CT), CherryonLim\_17 (CT), ChickenTender\_18 (CT), Cleo\_16 (CT), Cozz\_16 (CT), Dre3\_16 (CT), Elinal\_17 (CT), Elliott\_16 (CT), Feastonyeet\_15 (CT), Fribs8\_17 (CT), Gibbous\_16 (CT), GoldHunter\_17 (CT), HippoPololi\_18 (CT), KayGee\_16 (CT), Lauer\_15 (CT), MAnor\_16 (CT), MaVan\_18 (CT), Mayweather\_17 (CT), MunkgeeRoachy\_16 (CT), Nibbles\_18 (CT), Nina\_17 (CT), Pons\_16 (CT), PotPie\_16 (CT), PsychoKiller\_16 (CT), Quasar\_16 (CT), RedBaron\_17 (CT), SheckWes\_15 (CT), Sopespian\_16 (CT), Starburst\_17 (CT), SummitAcademy\_15 (CT), Survivors\_18 (CT), Typhonomachy\_17 (CT), Vine\_17 (CT), Yucky\_18 (CT), Zareef\_20 (CT),



Start 28:

- Found in 22 of 136 ( 16.2% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 13.6% of time when present
- Phage (with cluster) where this start called: Frickyeah\_18 (DN1), Horus\_18 (DN1), ShawBrad\_18 (DN1),

Start 38:

- Found in 20 of 136 ( 14.7% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 5.0% of time when present
- Phage (with cluster) where this start called: Budski\_18 (DN),

Start 73:

- Found in 28 of 136 ( 20.6% ) of genes in pham
- Manual Annotations of this start: 23 of 115
- Called 89.3% of time when present
- Phage (with cluster) where this start called: AikoCarson\_15 (CT), Amok\_15 (CT), AndPeggy\_15 (CT), BillDoor\_18 (CT), Biskit\_17 (CT), Buttrmlkdreams\_16 (CT), CanesSauce\_16 (CT), ChocoMunchkin\_16 (CT), Emalyn\_15 (CT), GiKK\_19 (CT), Hexbug\_18 (CT), Horseradish\_17 (CT), Jamzy\_19 (CT), MScarn\_18 (CT), Margaret\_19 (CT), Nodigi\_18 (CT), Orla\_18 (CT), RanchParmCat\_19 (CT), SketchMex\_15 (CT), SteamedHams\_18 (CT), SweatNTears\_18 (CT), Tolls\_18 (CT), Troje\_16 (CT), Yarn\_15 (CT), Yummy\_17 (CT),

Start 77:

- Found in 27 of 136 ( 19.9% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 3.7% of time when present
- Phage (with cluster) where this start called: Button\_17 (CT),

Start 99:

- Found in 46 of 136 ( 33.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.3% of time when present
- Phage (with cluster) where this start called: Blondies\_16 (CT), GTE2\_14 (CT),

**Summary by clusters:**

There are 6 clusters represented in this pham: DN, singleton, DN1, DN2, CV, CT,

Info for manual annotations of cluster CT:

- Start number 26 was manually annotated 29 times for cluster CT.
- Start number 73 was manually annotated 23 times for cluster CT.
- Start number 77 was manually annotated 1 time for cluster CT.

Info for manual annotations of cluster CV:

- Start number 5 was manually annotated 1 time for cluster CV.
- Start number 7 was manually annotated 1 time for cluster CV.
- Start number 8 was manually annotated 37 times for cluster CV.
- Start number 11 was manually annotated 1 time for cluster CV.
- Start number 12 was manually annotated 1 time for cluster CV.
- Start number 14 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster DN:

- Start number 22 was manually annotated 1 time for cluster DN.
- Start number 38 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 19 was manually annotated 1 time for cluster DN1.
- Start number 20 was manually annotated 1 time for cluster DN1.
- Start number 21 was manually annotated 10 times for cluster DN1.
- Start number 22 was manually annotated 2 times for cluster DN1.
- Start number 28 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 22 was manually annotated 2 times for cluster DN2.

### **Gene Information:**

Gene: Agatha\_16 Start: 9629, Stop: 14767, Start Num: 26

Candidate Starts for Agatha\_16:

(Start: 22 @9605 has 5 MA's), (Start: 26 @9629 has 29 MA's), (29, 9656), (41, 9785), (44, 9860), (69, 10013), (70, 10016), (85, 10112), (88, 10121), (94, 10151), (96, 10157), (98, 10172), (99, 10175), (103, 10196), (110, 10268), (113, 10289), (123, 10355), (125, 10376), (142, 10493), (168, 10655), (172, 10694), (181, 10769), (198, 10928), (202, 10940), (206, 10967), (211, 11012), (212, 11024), (226, 11114), (229, 11132), (232, 11153), (235, 11183), (241, 11207), (243, 11219), (246, 11258), (250, 11291), (263, 11393), (264, 11396), (268, 11420), (278, 11513), (281, 11528), (285, 11567), (298, 11663), (307, 11705), (314, 11735), (315, 11738), (325, 11846), (326, 11849), (329, 11900), (343, 11975), (352, 12077), (360, 12122), (365, 12143), (366, 12146), (367, 12149), (381, 12224), (391, 12257), (395, 12278), (399, 12308), (407, 12356), (409, 12362), (413, 12389), (433, 12524), (447, 12641), (450, 12674), (452, 12695), (453, 12698), (465, 12764), (466, 12770), (467, 12785), (484, 12905), (487, 12914), (499, 12998), (553, 13319), (582, 13538), (588, 13574), (616, 13787), (648, 13979), (659, 14027), (663, 14048), (678, 14156), (689, 14222), (691, 14240), (702, 14345), (708, 14375), (709, 14384), (713, 14414), (724, 14480), (729, 14528), (738, 14588), (750, 14675), (759, 14738),

Gene: AikoCarson\_15 Start: 9357, Stop: 14072, Start Num: 73

Candidate Starts for AikoCarson\_15:

(Start: 73 @9357 has 23 MA's), (Start: 77 @9384 has 1 MA's), (99, 9513), (109, 9600), (112, 9615), (116, 9660), (119, 9672), (123, 9690), (126, 9717), (139, 9789), (143, 9831), (144, 9846), (146, 9849), (152, 9873), (155, 9891), (158, 9909), (164, 9954), (166, 9963), (171, 9990), (175, 10023), (184, 10083), (187, 10122), (190, 10161), (192, 10176), (206, 10245), (210, 10272), (225, 10368), (227, 10386), (238, 10449), (261, 10617), (263, 10623), (277, 10737), (278, 10743), (281, 10758), (311, 10947), (315, 10968), (318, 10986), (319, 10995), (329, 11130), (343, 11205), (345, 11241), (348, 11280), (349, 11283), (352, 11307), (356, 11337), (360, 11352), (366, 11376), (377, 11415), (381, 11454), (383, 11460), (413, 11619), (446, 11868), (447, 11871), (450, 11904), (452, 11925), (465, 11994), (466, 12000), (477, 12099), (487, 12144), (499, 12231), (527, 12366), (553, 12558), (561, 12627), (564, 12651), (585, 12792), (612, 13005), (616, 13026), (623, 13083), (669, 13386), (674, 13443), (678, 13461), (689, 13527), (696, 13599), (702, 13650), (707, 13674), (708, 13680), (709, 13689), (713, 13719), (724, 13785), (729, 13833), (738, 13893), (751, 13983), (759, 14043),

Gene: Amok\_15 Start: 9357, Stop: 14069, Start Num: 73

Candidate Starts for Amok\_15:

(Start: 73 @9357 has 23 MA's), (Start: 77 @9384 has 1 MA's), (99, 9513), (109, 9600), (112, 9615), (116, 9660), (119, 9672), (123, 9690), (126, 9717), (139, 9789), (143, 9831), (144, 9846), (146, 9849), (152, 9873), (155, 9891), (158, 9909), (162, 9930), (164, 9954), (166, 9963), (171, 9990), (175, 10023), (176, 10032), (187, 10122), (190, 10161), (192, 10176), (206, 10245), (210, 10272), (225, 10368), (227, 10386), (238, 10449), (261, 10617), (263, 10623), (277, 10737), (278, 10743), (281, 10758), (311, 10947), (315, 10968), (318, 10986), (319, 10995), (329, 11130), (338, 11184), (343, 11205), (345, 11241), (348, 11280), (349, 11283), (352, 11307), (356, 11337), (360, 11352), (366, 11376), (377, 11415), (381, 11454), (383, 11460), (407, 11586), (412, 11616), (413, 11619), (415, 11637), (416, 11640), (446, 11868), (447, 11871), (450, 11904), (452, 11925), (465, 11994), (466, 12000), (499, 12231), (527, 12366), (553, 12558), (561, 12627), (564, 12651), (585, 12792), (612, 13005), (616, 13026), (623, 13080), (669, 13383), (674, 13440), (678, 13458), (689, 13524), (696, 13596), (702, 13647), (708, 13677), (709, 13686), (713, 13716), (724, 13782), (729, 13830), (738, 13890), (751, 13980), (759, 14040),

Gene: AndPeggy\_15 Start: 9645, Stop: 14432, Start Num: 73

Candidate Starts for AndPeggy\_15:

(Start: 73 @9645 has 23 MA's), (Start: 77 @9672 has 1 MA's), (90, 9750), (99, 9801), (109, 9888), (112, 9903), (119, 9960), (123, 9978), (126, 10005), (127, 10008), (139, 10077), (144, 10134), (155, 10179), (158, 10197), (164, 10242), (171, 10278), (175, 10311), (182, 10359), (183, 10362), (187, 10410), (190, 10449), (192, 10464), (225, 10656), (227, 10674), (242, 10758), (261, 10905), (267, 10932), (277, 11025), (278, 11031), (281, 11046), (285, 11085), (286, 11097), (295, 11163), (311, 11235), (314, 11253), (315, 11256), (319, 11283), (345, 11529), (352, 11595), (360, 11640), (365, 11661), (366, 11664), (367, 11667), (377, 11703), (381, 11742), (383, 11748), (391, 11775), (412, 11904), (413, 11907), (415, 11925), (434, 12048), (436, 12063), (450, 12192), (452, 12213), (461, 12255), (465, 12282), (466, 12288), (482, 12420), (487, 12432), (499, 12519), (507, 12561), (514, 12597), (540, 12723), (545, 12762), (559, 12891), (566, 12948), (573, 12990), (585, 13083), (592, 13158), (600, 13221), (612, 13302), (616, 13323), (638, 13500), (639, 13506), (667, 13725), (674, 13803), (678, 13821), (681, 13827), (689, 13887), (691, 13905), (694, 13938), (702, 14010), (709, 14049), (713, 14079), (724, 14145), (729, 14193), (738, 14253), (751, 14343), (759, 14403),

Gene: Archis\_18 Start: 10485, Stop: 16007, Start Num: 8

Candidate Starts for Archis\_18:

(Start: 8 @10485 has 37 MA's), (Start: 11 @10500 has 1 MA's), (Start: 12 @10506 has 1 MA's), (Start: 14 @10536 has 1 MA's), (15, 10545), (16, 10548), (18, 10590), (35, 10701), (36, 10722), (42, 10842), (49, 10884), (60, 10950), (62, 10968), (65, 10989), (66, 10992), (68, 11010), (74, 11034), (86, 11118), (88, 11124), (96, 11160), (98, 11175), (100, 11184), (122, 11352), (125, 11379), (142, 11496), (169, 11667), (172, 11697), (193, 11901), (202, 11946), (206, 11973), (207, 11985), (222, 12075), (226, 12120), (230, 12147), (234, 12177), (246, 12264), (247, 12267), (251, 12306), (260, 12390), (268, 12426), (272, 12468), (277, 12513), (278, 12519), (280, 12531), (281, 12534), (287, 12588), (291, 12627), (294, 12648), (295, 12651), (298, 12669), (299, 12678), (304, 12696), (309, 12717), (311, 12723), (315, 12744), (319, 12771), (324, 12849), (359, 13038), (368, 13062), (373, 13074), (374, 13077), (385, 13092), (390, 13107), (391, 13110), (399, 13161), (412, 13242), (413, 13245), (419, 13278), (422, 13308), (424, 13332), (469, 13665), (475, 13713), (479, 13758), (480, 13761), (481, 13776), (490, 13821), (491, 13830), (492, 13839), (499, 13890), (511, 13962), (517, 13980), (523, 14001), (537, 14100), (538, 14103), (544, 14136), (548, 14202), (550, 14220), (553, 14235), (558, 14268), (563, 14319), (570, 14370), (577, 14418), (595, 14613), (596, 14616), (606, 14688), (607, 14691), (617, 14757), (618, 14760), (619, 14778), (625, 14838), (631, 14895), (634, 14913), (641, 14994), (642, 14997), (644, 15012), (665, 15171), (672, 15225), (680, 15291), (687, 15345), (688, 15357), (689, 15363), (693, 15393), (702, 15486), (707, 15510), (710, 15528), (713, 15552), (714, 15558), (717, 15579), (724, 15618), (740, 15759), (750, 15822), (754, 15840), (760, 15897), (763, 15990),

Gene: Asapag\_18 Start: 9881, Stop: 15508, Start Num: 21

Candidate Starts for Asapag\_18:

(Start: 21 @9881 has 10 MA's), (Start: 28 @9926 has 1 MA's), (30, 9947), (34, 9968), (37, 10013), (Start: 38 @10028 has 1 MA's), (43, 10112), (51, 10154), (52, 10166), (62, 10229), (64, 10244), (66, 10253), (68, 10271), (69, 10277), (79, 10325), (103, 10460), (121, 10610), (125, 10640), (172, 10964), (185, 11060), (193, 11168), (201, 11210), (202, 11213), (203, 11219), (206, 11240), (217, 11321), (226, 11387), (230, 11414), (232, 11426), (234, 11444), (235, 11456), (241, 11480), (243, 11492), (246, 11531), (247, 11534), (248, 11543), (251, 11573), (265, 11678), (268, 11693), (271, 11723), (272, 11735), (277, 11780), (278, 11786), (281, 11801), (284, 11831), (286, 11852), (287, 11855), (295, 11918), (299, 11945), (300, 11948), (301, 11951), (302, 11957), (308, 11981), (309, 11984), (311, 11990), (313, 11996), (315, 12011), (318, 12029), (320, 12074), (327, 12158), (328, 12164), (332, 12191), (345, 12284), (346, 12293), (352, 12350), (353, 12362), (361, 12398), (362, 12404), (373, 12446), (376, 12458), (381, 12497), (383, 12503), (384, 12506), (389, 12524), (390, 12527), (391, 12530), (396, 12554), (407, 12629), (414, 12668), (418, 12692), (422, 12725), (432, 12836), (435, 12869), (440, 12932), (444, 12968), (448, 12998), (459, 13076), (460, 13079), (461, 13088), (464, 13112), (474, 13193), (475, 13199), (479, 13244), (480, 13247), (481, 13262), (490, 13307), (491, 13316), (492, 13325), (493, 13328), (509, 13433), (521, 13481), (522, 13484), (523, 13487), (537, 13586), (538, 13589), (541, 13601), (553, 13718), (558, 13751), (563, 13802), (569, 13832), (575, 13892), (586, 13973), (589, 13994), (591, 14027), (598, 14099), (599, 14108), (618, 14222), (620, 14252), (622, 14261), (626, 14300), (627, 14303), (630, 14333), (631, 14354), (653, 14552), (662, 14615), (664, 14621), (670, 14672), (692, 14858), (700, 14945), (705, 14972), (706, 14975), (718, 15050), (722, 15074), (727, 15113), (730, 15149), (734, 15170), (743, 15257), (749, 15299), (755, 15332), (756, 15344), (761, 15422), (764, 15488),

Gene: Axym\_16 Start: 9629, Stop: 14767, Start Num: 26

Candidate Starts for Axym\_16:

(Start: 22 @9605 has 5 MA's), (Start: 26 @9629 has 29 MA's), (29, 9656), (41, 9785), (44, 9860), (69, 10013), (70, 10016), (85, 10112), (88, 10121), (94, 10151), (96, 10157), (98, 10172), (99, 10175), (103, 10196), (110, 10268), (113, 10289), (123, 10355), (125, 10376), (142, 10493), (168, 10655), (172, 10694), (181, 10769), (198, 10928), (202, 10940), (206, 10967), (211, 11012), (212, 11024), (226, 11114), (229, 11132), (232, 11153), (235, 11183), (241, 11207), (243, 11219), (246, 11258), (250, 11291), (263, 11393), (264, 11396), (268, 11420), (278, 11513), (281, 11528), (285, 11567), (291, 11621), (298, 11663), (300, 11675), (307, 11705), (314, 11735), (315, 11738), (325, 11846), (326, 11849), (329, 11900), (343, 11975), (350, 12065), (352, 12077), (360, 12122), (365, 12143), (366, 12146), (367, 12149), (381, 12224), (391, 12257), (395, 12278), (399, 12308), (407, 12356), (409, 12362), (413, 12389), (433, 12524), (447, 12641), (450, 12674), (452, 12695), (453, 12698), (465, 12764), (466, 12770), (467, 12785), (484, 12905), (487, 12914), (499, 12998), (553, 13319), (582, 13538), (588, 13574), (616, 13787), (648, 13979), (659, 14027), (663, 14048), (678, 14156), (689, 14222), (691, 14240), (697, 14300), (702, 14345), (708, 14375), (709, 14384), (713, 14414), (724, 14480), (729, 14528), (738, 14588), (750, 14675), (759, 14738),

Gene: Azira\_18 Start: 10619, Stop: 15748, Start Num: 26

Candidate Starts for Azira\_18:

(23, 10598), (Start: 26 @10619 has 29 MA's), (29, 10646), (41, 10775), (49, 10871), (57, 10922), (67, 10979), (71, 11012), (72, 11015), (85, 11102), (89, 11114), (98, 11162), (99, 11165), (100, 11171), (106, 11225), (107, 11231), (113, 11279), (123, 11345), (125, 11366), (181, 11759), (182, 11762), (190, 11864), (202, 11930), (203, 11936), (206, 11957), (234, 12161), (237, 12179), (239, 12185), (241, 12197), (243, 12209), (246, 12248), (248, 12260), (253, 12296), (257, 12353), (261, 12377), (263, 12383), (278, 12503), (281, 12518), (285, 12557), (294, 12632), (300, 12665), (304, 12680), (305, 12686), (306, 12692), (315, 12728), (325, 12836), (332, 12908), (342, 12962), (352, 13067), (360, 13112), (366, 13136), (379, 13196), (380, 13208), (381, 13214), (389, 13241), (390, 13244), (391, 13247), (405, 13340), (407, 13346), (415, 13397), (424, 13466), (430, 13499), (433, 13514), (434, 13520), (440, 13577), (442, 13589), (446, 13628), (447, 13631), (449, 13652), (450, 13664), (452, 13685), (453, 13688), (461, 13727), (462, 13739), (465, 13754), (484, 13895), (499, 13991),

(510, 14057), (516, 14078), (519, 14084), (553, 14321), (558, 14351), (561, 14390), (580, 14525), (585, 14555), (588, 14576), (609, 14735), (612, 14768), (648, 14981), (655, 14999), (659, 15005), (678, 15134), (689, 15200), (694, 15251), (702, 15323), (709, 15362), (713, 15392), (719, 15425), (724, 15458), (735, 15530), (742, 15602), (750, 15656), (752, 15662), (759, 15719),

Gene: Azula\_19 Start: 10619, Stop: 16108, Start Num: 8

Candidate Starts for Azula\_19:

(Start: 8 @10619 has 37 MA's), (Start: 11 @10634 has 1 MA's), (Start: 12 @10640 has 1 MA's), (Start: 14 @10670 has 1 MA's), (15, 10679), (16, 10682), (18, 10724), (35, 10835), (36, 10856), (42, 10976), (49, 11018), (60, 11084), (62, 11102), (65, 11123), (66, 11126), (68, 11144), (74, 11168), (86, 11252), (96, 11294), (98, 11309), (100, 11318), (122, 11486), (125, 11513), (142, 11630), (169, 11801), (172, 11831), (193, 12035), (202, 12080), (206, 12107), (207, 12119), (209, 12131), (222, 12209), (226, 12254), (230, 12281), (234, 12311), (246, 12398), (247, 12401), (251, 12440), (257, 12503), (258, 12512), (268, 12560), (272, 12602), (277, 12647), (278, 12653), (281, 12668), (287, 12722), (291, 12761), (294, 12782), (295, 12785), (298, 12803), (304, 12830), (309, 12851), (311, 12857), (315, 12878), (318, 12896), (319, 12905), (355, 13178), (374, 13232), (390, 13262), (391, 13265), (399, 13316), (412, 13397), (413, 13400), (419, 13433), (422, 13463), (424, 13487), (435, 13553), (469, 13820), (475, 13868), (477, 13901), (479, 13913), (480, 13916), (490, 13976), (491, 13985), (492, 13994), (499, 14045), (511, 14117), (517, 14135), (523, 14156), (537, 14255), (538, 14258), (544, 14291), (548, 14357), (550, 14375), (553, 14390), (558, 14423), (563, 14474), (570, 14525), (579, 14594), (595, 14768), (596, 14771), (606, 14843), (607, 14846), (617, 14912), (618, 14915), (619, 14933), (625, 14993), (631, 15050), (634, 15068), (641, 15149), (642, 15152), (644, 15167), (665, 15338), (672, 15392), (684, 15464), (686, 15473), (690, 15509), (698, 15569), (699, 15587), (703, 15605), (712, 15650), (716, 15683), (732, 15794), (740, 15863), (750, 15926), (754, 15944), (763, 16094),

Gene: BENtherdunthat\_18 Start: 9881, Stop: 15508, Start Num: 21

Candidate Starts for BENtherdunthat\_18:

(Start: 21 @9881 has 10 MA's), (Start: 28 @9926 has 1 MA's), (30, 9947), (34, 9968), (37, 10013), (Start: 38 @10028 has 1 MA's), (43, 10112), (51, 10154), (52, 10166), (62, 10229), (64, 10244), (66, 10253), (68, 10271), (69, 10277), (79, 10325), (103, 10460), (121, 10610), (125, 10640), (172, 10964), (185, 11060), (193, 11168), (201, 11210), (202, 11213), (203, 11219), (206, 11240), (217, 11321), (226, 11387), (230, 11414), (232, 11426), (234, 11444), (235, 11456), (241, 11480), (243, 11492), (246, 11531), (247, 11534), (248, 11543), (251, 11573), (265, 11678), (268, 11693), (271, 11723), (272, 11735), (277, 11780), (278, 11786), (281, 11801), (284, 11831), (286, 11852), (287, 11855), (295, 11918), (299, 11945), (300, 11948), (301, 11951), (302, 11957), (308, 11981), (309, 11984), (311, 11990), (313, 11996), (315, 12011), (318, 12029), (320, 12074), (327, 12158), (328, 12164), (332, 12191), (345, 12284), (346, 12293), (352, 12350), (353, 12362), (361, 12398), (362, 12404), (373, 12446), (376, 12458), (381, 12497), (383, 12503), (384, 12506), (389, 12524), (390, 12527), (391, 12530), (396, 12554), (407, 12629), (414, 12668), (418, 12692), (422, 12725), (432, 12836), (435, 12869), (440, 12932), (444, 12968), (448, 12998), (459, 13076), (460, 13079), (461, 13088), (464, 13112), (474, 13193), (475, 13199), (479, 13244), (480, 13247), (481, 13262), (490, 13307), (491, 13316), (492, 13325), (493, 13328), (509, 13433), (521, 13481), (522, 13484), (523, 13487), (537, 13586), (538, 13589), (541, 13601), (553, 13718), (558, 13751), (563, 13802), (569, 13832), (575, 13892), (586, 13973), (589, 13994), (591, 14027), (598, 14099), (599, 14108), (618, 14222), (620, 14252), (622, 14261), (626, 14300), (627, 14303), (630, 14333), (631, 14354), (653, 14552), (662, 14615), (664, 14621), (670, 14672), (692, 14858), (700, 14945), (705, 14972), (706, 14975), (718, 15050), (722, 15074), (727, 15113), (730, 15149), (734, 15170), (743, 15257), (749, 15299), (755, 15332), (756, 15344), (761, 15422), (764, 15488),

Gene: Barco\_17 Start: 10274, Stop: 15796, Start Num: 8

Candidate Starts for Barco\_17:

(Start: 8 @10274 has 37 MA's), (Start: 11 @10289 has 1 MA's), (Start: 12 @10295 has 1 MA's), (Start: 14 @10325 has 1 MA's), (15, 10334), (16, 10337), (18, 10379), (35, 10490), (36, 10511), (42, 10631), (49, 10673), (60, 10739), (62, 10757), (65, 10778), (66, 10781), (68, 10799), (74, 10823), (86, 10907), (87, 10910), (96, 10949), (98, 10964), (100, 10973), (122, 11141), (125, 11168), (142, 11285), (169, 11456), (172, 11486), (193, 11690), (202, 11735), (206, 11762), (207, 11774), (222, 11864), (226, 11909), (230, 11936), (234, 11966), (246, 12053), (247, 12056), (251, 12095), (260, 12179), (268, 12215), (272, 12257), (277, 12302), (278, 12308), (280, 12320), (281, 12323), (287, 12377), (291, 12416), (294, 12437), (295, 12440), (298, 12458), (299, 12467), (304, 12485), (309, 12506), (311, 12512), (315, 12533), (319, 12560), (324, 12638), (359, 12827), (368, 12851), (373, 12863), (374, 12866), (385, 12881), (390, 12896), (391, 12899), (399, 12950), (412, 13031), (413, 13034), (419, 13067), (422, 13097), (424, 13121), (469, 13454), (475, 13502), (479, 13547), (480, 13550), (481, 13565), (490, 13610), (491, 13619), (492, 13628), (499, 13679), (511, 13751), (517, 13769), (523, 13790), (537, 13889), (538, 13892), (544, 13925), (548, 13991), (550, 14009), (553, 14024), (558, 14057), (563, 14108), (570, 14159), (577, 14207), (595, 14402), (596, 14405), (606, 14477), (607, 14480), (617, 14546), (618, 14549), (619, 14567), (625, 14627), (631, 14684), (634, 14702), (641, 14783), (642, 14786), (644, 14801), (672, 15014), (680, 15080), (687, 15134), (688, 15146), (689, 15152), (702, 15275), (707, 15299), (710, 15317), (713, 15341), (714, 15347), (717, 15368), (724, 15407), (740, 15548), (742, 15560), (750, 15611), (754, 15629), (763, 15779),

Gene: Bavilard\_16 Start: 10158, Stop: 15257, Start Num: 26

Candidate Starts for Bavilard\_16:

(Start: 26 @10158 has 29 MA's), (41, 10314), (55, 10443), (59, 10473), (65, 10515), (69, 10542), (79, 10590), (85, 10641), (88, 10650), (96, 10686), (100, 10710), (107, 10770), (114, 10824), (118, 10863), (120, 10869), (123, 10884), (125, 10905), (149, 11064), (151, 11076), (162, 11139), (168, 11184), (177, 11265), (193, 11424), (198, 11457), (202, 11469), (206, 11496), (212, 11553), (218, 11583), (221, 11595), (233, 11697), (234, 11700), (246, 11787), (252, 11832), (253, 11835), (268, 11949), (278, 12042), (281, 12057), (283, 12078), (287, 12111), (289, 12141), (292, 12153), (298, 12192), (303, 12216), (304, 12219), (310, 12243), (315, 12267), (324, 12372), (331, 12420), (335, 12450), (339, 12465), (342, 12480), (345, 12519), (349, 12561), (352, 12585), (354, 12600), (356, 12615), (360, 12630), (366, 12654), (377, 12693), (378, 12708), (379, 12714), (382, 12735), (389, 12759), (391, 12765), (411, 12891), (417, 12921), (421, 12957), (422, 12960), (428, 13008), (432, 13029), (433, 13032), (441, 13104), (447, 13149), (450, 13182), (452, 13203), (462, 13257), (473, 13332), (487, 13416), (499, 13503), (537, 13689), (553, 13821), (558, 13851), (576, 13989), (583, 14040), (588, 14070), (599, 14175), (609, 14226), (612, 14256), (643, 14436), (649, 14487), (659, 14529), (663, 14550), (678, 14646), (689, 14712), (702, 14835), (707, 14859), (709, 14874), (713, 14904), (717, 14931), (719, 14937), (724, 14970), (733, 15039), (735, 15042), (738, 15078), (751, 15168),

Gene: Begonia\_18 Start: 10785, Stop: 16274, Start Num: 8

Candidate Starts for Begonia\_18:

(Start: 8 @10785 has 37 MA's), (13, 10824), (Start: 14 @10836 has 1 MA's), (15, 10845), (16, 10848), (18, 10890), (35, 11001), (36, 11022), (42, 11142), (49, 11184), (60, 11250), (62, 11268), (64, 11283), (65, 11289), (66, 11292), (68, 11310), (74, 11334), (86, 11418), (96, 11460), (98, 11475), (100, 11484), (122, 11652), (125, 11679), (137, 11754), (142, 11796), (150, 11844), (169, 11967), (172, 11997), (193, 12201), (202, 12246), (206, 12273), (207, 12285), (222, 12375), (226, 12420), (230, 12447), (234, 12477), (246, 12564), (251, 12606), (268, 12726), (272, 12768), (277, 12813), (278, 12819), (280, 12831), (281, 12834), (287, 12888), (291, 12927), (294, 12948), (295, 12951), (298, 12969), (304, 12996), (311, 13023), (315, 13044), (319, 13071), (323, 13143), (355, 13344), (359, 13359), (368, 13383), (374, 13398), (390, 13428), (391, 13431), (399, 13482), (412, 13563), (413, 13566), (419, 13599), (422, 13629), (424, 13653), (435, 13719), (469, 13986), (475, 14034), (479, 14079), (480, 14082), (481, 14097), (490, 14142), (491, 14151), (492, 14160), (499, 14211), (511, 14283), (517, 14301), (523, 14322), (537, 14421), (538, 14424), (544, 14457), (548, 14523), (550, 14541), (553, 14556), (558, 14589), (563, 14640), (570, 14691), (595, 14934), (596, 14937), (607, 15012), (617, 15078), (618, 15081), (619, 15099), (625, 15159), (641, 15315), (642, 15318), (644, 15333),



(672, 15552), (682, 15609), (684, 15624), (690, 15672), (695, 15717), (715, 15837), (716, 15846), (723, 15885), (732, 15957), (740, 16026), (742, 16038), (750, 16089), (754, 16107), (760, 16164), (763, 16257),

Gene: BigChungus\_15 Start: 9403, Stop: 14511, Start Num: 26

Candidate Starts for BigChungus\_15:

(Start: 26 @9403 has 29 MA's), (41, 9559), (55, 9688), (59, 9718), (69, 9787), (72, 9799), (79, 9835), (85, 9886), (88, 9895), (96, 9931), (100, 9955), (107, 10015), (114, 10069), (118, 10108), (120, 10114), (123, 10129), (125, 10150), (151, 10321), (162, 10384), (168, 10429), (177, 10510), (193, 10669), (198, 10702), (202, 10714), (206, 10741), (212, 10798), (218, 10828), (221, 10840), (233, 10942), (234, 10945), (246, 11032), (253, 11080), (268, 11194), (278, 11287), (281, 11302), (283, 11323), (287, 11356), (289, 11386), (292, 11398), (298, 11437), (303, 11461), (304, 11464), (310, 11488), (315, 11512), (324, 11617), (335, 11695), (342, 11725), (343, 11728), (345, 11764), (349, 11806), (352, 11830), (354, 11845), (356, 11860), (360, 11875), (366, 11899), (377, 11938), (378, 11953), (379, 11959), (389, 12004), (391, 12010), (411, 12136), (417, 12166), (421, 12202), (422, 12205), (428, 12253), (432, 12274), (433, 12277), (441, 12349), (447, 12394), (450, 12427), (452, 12448), (462, 12502), (473, 12577), (487, 12661), (499, 12748), (553, 13066), (558, 13096), (576, 13234), (583, 13285), (588, 13315), (609, 13480), (612, 13510), (643, 13690), (649, 13741), (659, 13783), (663, 13804), (678, 13900), (686, 13948), (689, 13966), (702, 14089), (707, 14113), (709, 14128), (713, 14158), (717, 14185), (719, 14191), (724, 14224), (733, 14293), (735, 14296), (738, 14332), (751, 14422),

Gene: BillDoor\_18 Start: 9610, Stop: 14400, Start Num: 73

Candidate Starts for BillDoor\_18:

(Start: 73 @9610 has 23 MA's), (Start: 77 @9637 has 1 MA's), (90, 9715), (99, 9766), (109, 9853), (112, 9868), (119, 9925), (123, 9943), (126, 9970), (127, 9973), (139, 10042), (144, 10099), (155, 10144), (158, 10162), (164, 10207), (171, 10243), (175, 10276), (182, 10324), (183, 10327), (187, 10375), (190, 10414), (192, 10429), (225, 10621), (227, 10639), (242, 10723), (261, 10870), (267, 10897), (277, 10990), (278, 10996), (281, 11011), (285, 11050), (286, 11062), (295, 11128), (311, 11200), (314, 11218), (315, 11221), (319, 11248), (329, 11383), (343, 11458), (345, 11494), (352, 11560), (360, 11605), (365, 11626), (366, 11629), (367, 11632), (377, 11668), (381, 11707), (383, 11713), (391, 11740), (412, 11869), (413, 11872), (415, 11890), (434, 12013), (436, 12028), (450, 12157), (452, 12178), (461, 12220), (465, 12247), (466, 12253), (482, 12385), (487, 12397), (499, 12484), (507, 12526), (514, 12562), (540, 12688), (545, 12727), (559, 12856), (566, 12913), (573, 12958), (585, 13051), (592, 13126), (600, 13189), (612, 13270), (616, 13291), (638, 13468), (639, 13474), (667, 13693), (674, 13771), (678, 13789), (681, 13795), (689, 13855), (691, 13873), (694, 13906), (702, 13978), (709, 14017), (713, 14047), (724, 14113), (729, 14161), (738, 14221), (751, 14311), (759, 14371),

Gene: Biskit\_17 Start: 9616, Stop: 14415, Start Num: 73

Candidate Starts for Biskit\_17:

(Start: 73 @9616 has 23 MA's), (Start: 77 @9643 has 1 MA's), (99, 9772), (112, 9874), (116, 9919), (119, 9931), (123, 9949), (126, 9976), (127, 9979), (129, 9994), (138, 10045), (139, 10048), (144, 10105), (146, 10108), (155, 10150), (158, 10168), (164, 10213), (171, 10249), (175, 10282), (179, 10315), (180, 10327), (187, 10381), (190, 10420), (192, 10435), (196, 10444), (200, 10471), (208, 10522), (215, 10564), (218, 10582), (221, 10591), (227, 10645), (238, 10708), (241, 10723), (248, 10786), (261, 10876), (267, 10903), (277, 10996), (278, 11002), (281, 11017), (285, 11056), (295, 11134), (301, 11167), (311, 11206), (314, 11224), (315, 11227), (319, 11254), (322, 11311), (324, 11332), (330, 11395), (335, 11431), (338, 11443), (343, 11464), (345, 11500), (349, 11542), (350, 11554), (352, 11566), (360, 11611), (361, 11614), (365, 11632), (366, 11635), (367, 11638), (381, 11713), (383, 11719), (391, 11746), (400, 11806), (403, 11821), (411, 11872), (412, 11875), (413, 11878), (415, 11896), (429, 11995), (432, 12010), (433, 12013), (450, 12163), (452, 12184), (461, 12226), (465, 12253), (466, 12259), (482, 12391), (487, 12403), (499, 12490), (507, 12532), (514,

12568), (531, 12643), (540, 12694), (545, 12733), (551, 12811), (559, 12862), (566, 12919), (585, 13057), (592, 13132), (612, 13276), (616, 13297), (638, 13474), (639, 13480), (678, 13804), (681, 13810), (689, 13870), (691, 13888), (694, 13921), (702, 13993), (709, 14032), (713, 14062), (724, 14128), (729, 14176), (738, 14236), (751, 14326), (759, 14386),

Gene: BlingBling\_17 Start: 10274, Stop: 15796, Start Num: 8

Candidate Starts for BlingBling\_17:

(Start: 8 @10274 has 37 MA's), (Start: 11 @10289 has 1 MA's), (Start: 12 @10295 has 1 MA's), (Start: 14 @10325 has 1 MA's), (15, 10334), (16, 10337), (18, 10379), (35, 10490), (36, 10511), (42, 10631), (49, 10673), (60, 10739), (62, 10757), (65, 10778), (66, 10781), (68, 10799), (74, 10823), (86, 10907), (87, 10910), (96, 10949), (98, 10964), (100, 10973), (122, 11141), (125, 11168), (142, 11285), (169, 11456), (172, 11486), (193, 11690), (202, 11735), (206, 11762), (207, 11774), (222, 11864), (226, 11909), (230, 11936), (234, 11966), (246, 12053), (247, 12056), (251, 12095), (260, 12179), (268, 12215), (272, 12257), (277, 12302), (278, 12308), (280, 12320), (281, 12323), (287, 12377), (291, 12416), (294, 12437), (295, 12440), (298, 12458), (299, 12467), (304, 12485), (309, 12506), (311, 12512), (315, 12533), (319, 12560), (324, 12638), (359, 12827), (368, 12851), (373, 12863), (374, 12866), (385, 12881), (390, 12896), (391, 12899), (399, 12950), (412, 13031), (413, 13034), (419, 13067), (422, 13097), (424, 13121), (469, 13454), (475, 13502), (479, 13547), (480, 13550), (481, 13565), (490, 13610), (491, 13619), (492, 13628), (499, 13679), (511, 13751), (517, 13769), (523, 13790), (537, 13889), (538, 13892), (544, 13925), (548, 13991), (550, 14009), (553, 14024), (558, 14057), (563, 14108), (570, 14159), (577, 14207), (595, 14402), (596, 14405), (606, 14477), (607, 14480), (617, 14546), (618, 14549), (619, 14567), (625, 14627), (631, 14684), (634, 14702), (641, 14783), (642, 14786), (644, 14801), (672, 15014), (680, 15080), (687, 15134), (688, 15146), (689, 15152), (702, 15275), (707, 15299), (710, 15317), (713, 15341), (714, 15347), (717, 15368), (724, 15407), (740, 15548), (742, 15560), (750, 15611), (754, 15629), (763, 15779),

Gene: Blino\_17 Start: 10173, Stop: 15764, Start Num: 8

Candidate Starts for Blino\_17:

(Start: 8 @10173 has 37 MA's), (Start: 11 @10188 has 1 MA's), (Start: 14 @10224 has 1 MA's), (15, 10233), (16, 10236), (18, 10278), (35, 10389), (36, 10410), (42, 10530), (60, 10638), (62, 10656), (65, 10677), (66, 10680), (68, 10698), (88, 10812), (96, 10848), (98, 10863), (100, 10872), (122, 11040), (125, 11067), (142, 11184), (169, 11355), (172, 11385), (193, 11589), (202, 11634), (226, 11808), (230, 11835), (234, 11865), (246, 11952), (247, 11955), (251, 11994), (257, 12057), (268, 12114), (272, 12156), (277, 12201), (278, 12207), (280, 12219), (281, 12222), (287, 12276), (291, 12315), (294, 12336), (295, 12339), (298, 12357), (304, 12384), (309, 12405), (311, 12411), (315, 12432), (319, 12459), (321, 12507), (324, 12537), (346, 12693), (347, 12717), (349, 12726), (351, 12747), (370, 12828), (390, 12924), (391, 12927), (393, 12933), (398, 12975), (399, 12978), (402, 12999), (412, 13059), (413, 13062), (419, 13095), (422, 13125), (435, 13215), (469, 13482), (475, 13530), (479, 13575), (480, 13578), (481, 13593), (490, 13638), (491, 13647), (492, 13656), (499, 13707), (511, 13779), (517, 13797), (523, 13818), (537, 13917), (538, 13920), (544, 13953), (548, 14019), (550, 14037), (553, 14052), (558, 14085), (563, 14136), (570, 14187), (577, 14235), (595, 14430), (596, 14433), (606, 14505), (607, 14508), (617, 14574), (618, 14577), (619, 14595), (625, 14655), (634, 14730), (642, 14814), (644, 14829), (672, 15042), (682, 15099), (684, 15114), (690, 15162), (695, 15207), (715, 15327), (716, 15336), (723, 15375), (732, 15447), (740, 15516), (750, 15579), (754, 15597), (760, 15654), (763, 15747),

Gene: Blondies\_16 Start: 9758, Stop: 14398, Start Num: 99

Candidate Starts for Blondies\_16:

(Start: 73 @9602 has 23 MA's), (Start: 77 @9629 has 1 MA's), (79, 9635), (99, 9758), (112, 9860), (116, 9905), (119, 9917), (123, 9935), (126, 9962), (127, 9965), (129, 9980), (138, 10031), (139, 10034), (144, 10091), (146, 10094), (147, 10097), (155, 10136), (158, 10154), (164, 10199), (171, 10235), (175, 10268), (179, 10301), (180, 10313), (187, 10367), (190, 10406), (192, 10421), (196, 10430), (200, 10457), (208, 10508), (218, 10568), (221, 10577), (227, 10631), (238, 10694), (241,

10709), (248, 10772), (261, 10862), (267, 10889), (277, 10982), (278, 10988), (281, 11003), (285, 11042), (295, 11120), (301, 11153), (311, 11192), (314, 11210), (315, 11213), (319, 11240), (322, 11297), (324, 11318), (330, 11381), (338, 11429), (343, 11450), (345, 11486), (349, 11528), (352, 11552), (360, 11597), (361, 11600), (365, 11618), (366, 11621), (367, 11624), (381, 11699), (383, 11705), (391, 11732), (400, 11792), (411, 11858), (412, 11861), (413, 11864), (415, 11882), (429, 11981), (432, 11996), (433, 11999), (450, 12149), (452, 12170), (461, 12212), (465, 12239), (466, 12245), (482, 12377), (487, 12389), (499, 12476), (507, 12518), (514, 12554), (531, 12629), (540, 12680), (545, 12719), (559, 12848), (566, 12905), (585, 13043), (592, 13118), (612, 13262), (616, 13283), (638, 13457), (639, 13463), (678, 13787), (681, 13793), (689, 13853), (691, 13871), (694, 13904), (702, 13976), (709, 14015), (713, 14045), (724, 14111), (729, 14159), (738, 14219), (751, 14309), (759, 14369),

Gene: Blueberry\_19 Start: 10619, Stop: 16108, Start Num: 8

Candidate Starts for Blueberry\_19:

(Start: 8 @10619 has 37 MA's), (Start: 11 @10634 has 1 MA's), (Start: 12 @10640 has 1 MA's), (Start: 14 @10670 has 1 MA's), (15, 10679), (16, 10682), (18, 10724), (35, 10835), (36, 10856), (42, 10976), (49, 11018), (60, 11084), (62, 11102), (65, 11123), (66, 11126), (68, 11144), (74, 11168), (86, 11252), (96, 11294), (98, 11309), (100, 11318), (122, 11486), (125, 11513), (142, 11630), (169, 11801), (172, 11831), (193, 12035), (202, 12080), (206, 12107), (207, 12119), (209, 12131), (222, 12209), (226, 12254), (230, 12281), (234, 12311), (246, 12398), (247, 12401), (251, 12440), (257, 12503), (258, 12512), (268, 12560), (272, 12602), (277, 12647), (278, 12653), (281, 12668), (287, 12722), (291, 12761), (294, 12782), (295, 12785), (298, 12803), (304, 12830), (309, 12851), (311, 12857), (315, 12878), (318, 12896), (319, 12905), (355, 13178), (374, 13232), (390, 13262), (391, 13265), (399, 13316), (412, 13397), (413, 13400), (419, 13433), (422, 13463), (424, 13487), (435, 13553), (469, 13820), (475, 13868), (477, 13901), (479, 13913), (480, 13916), (490, 13976), (491, 13985), (492, 13994), (499, 14045), (511, 14117), (517, 14135), (523, 14156), (537, 14255), (538, 14258), (544, 14291), (548, 14357), (550, 14375), (553, 14390), (558, 14423), (563, 14474), (570, 14525), (579, 14594), (595, 14768), (596, 14771), (606, 14843), (607, 14846), (617, 14912), (618, 14915), (619, 14933), (625, 14993), (631, 15050), (634, 15068), (641, 15149), (642, 15152), (644, 15167), (665, 15338), (672, 15392), (684, 15464), (686, 15473), (690, 15509), (698, 15569), (699, 15587), (703, 15605), (712, 15650), (716, 15683), (732, 15794), (740, 15863), (750, 15926), (754, 15944), (763, 16094),

Gene: BotCity\_19 Start: 9879, Stop: 15506, Start Num: 21

Candidate Starts for BotCity\_19:

(Start: 21 @9879 has 10 MA's), (Start: 28 @9924 has 1 MA's), (30, 9945), (34, 9966), (37, 10011), (Start: 38 @10026 has 1 MA's), (43, 10110), (51, 10152), (52, 10164), (62, 10227), (64, 10242), (66, 10251), (68, 10269), (69, 10275), (79, 10323), (103, 10458), (121, 10608), (125, 10638), (172, 10962), (185, 11058), (193, 11166), (201, 11208), (202, 11211), (203, 11217), (206, 11238), (217, 11319), (226, 11385), (230, 11412), (232, 11424), (234, 11442), (235, 11454), (241, 11478), (243, 11490), (246, 11529), (247, 11532), (248, 11541), (251, 11571), (265, 11676), (268, 11691), (271, 11721), (272, 11733), (277, 11778), (278, 11784), (281, 11799), (284, 11829), (286, 11850), (287, 11853), (295, 11916), (299, 11943), (300, 11946), (301, 11949), (302, 11955), (308, 11979), (309, 11982), (311, 11988), (313, 11994), (315, 12009), (318, 12027), (320, 12072), (327, 12156), (328, 12162), (332, 12189), (345, 12282), (346, 12291), (352, 12348), (353, 12360), (361, 12396), (362, 12402), (373, 12444), (376, 12456), (381, 12495), (383, 12501), (384, 12504), (389, 12522), (390, 12525), (391, 12528), (396, 12552), (407, 12627), (414, 12666), (418, 12690), (422, 12723), (432, 12834), (435, 12867), (440, 12930), (444, 12966), (448, 12996), (459, 13074), (460, 13077), (461, 13086), (464, 13110), (474, 13191), (475, 13197), (479, 13242), (480, 13245), (481, 13260), (490, 13305), (491, 13314), (492, 13323), (493, 13326), (509, 13431), (521, 13479), (522, 13482), (523, 13485), (537, 13584), (538, 13587), (541, 13599), (553, 13716), (558, 13749), (563, 13800), (569, 13830), (575, 13890), (586, 13971), (589, 13992), (591, 14025), (598, 14097), (599, 14106), (618, 14220), (620, 14250), (622, 14259), (626, 14298), (627, 14301), (630, 14331), (631, 14352), (653, 14550),

(662, 14613), (664, 14619), (670, 14670), (692, 14856), (700, 14943), (705, 14970), (706, 14973), (718, 15048), (722, 15072), (727, 15111), (730, 15147), (734, 15168), (743, 15255), (749, 15297), (755, 15330), (756, 15342), (761, 15420), (764, 15486),

Gene: Budski\_18 Start: 10015, Stop: 15501, Start Num: 38

Candidate Starts for Budski\_18:

(Start: 21 @9868 has 10 MA's), (27, 9895), (Start: 28 @9913 has 1 MA's), (30, 9934), (34, 9955), (37, 10000), (Start: 38 @10015 has 1 MA's), (43, 10099), (51, 10141), (52, 10153), (62, 10216), (64, 10231), (66, 10240), (68, 10258), (69, 10264), (79, 10312), (103, 10447), (121, 10597), (125, 10627), (158, 10846), (169, 10921), (172, 10951), (193, 11155), (201, 11197), (202, 11200), (203, 11206), (206, 11227), (217, 11308), (226, 11374), (230, 11401), (232, 11413), (234, 11431), (235, 11443), (241, 11467), (243, 11479), (246, 11518), (247, 11521), (248, 11530), (251, 11560), (255, 11605), (265, 11665), (268, 11680), (271, 11710), (272, 11722), (277, 11767), (278, 11773), (281, 11788), (284, 11818), (286, 11839), (287, 11842), (295, 11905), (299, 11932), (300, 11935), (301, 11938), (302, 11944), (308, 11968), (309, 11971), (311, 11977), (313, 11983), (315, 11998), (318, 12016), (323, 12097), (327, 12145), (328, 12151), (332, 12178), (352, 12337), (353, 12349), (361, 12385), (376, 12445), (381, 12484), (383, 12490), (384, 12493), (390, 12514), (391, 12517), (407, 12616), (414, 12655), (418, 12679), (422, 12712), (425, 12757), (431, 12811), (439, 12898), (440, 12919), (444, 12955), (448, 12985), (459, 13063), (460, 13066), (461, 13075), (464, 13099), (474, 13180), (475, 13186), (479, 13231), (480, 13234), (481, 13249), (490, 13294), (491, 13303), (492, 13312), (493, 13315), (509, 13420), (521, 13468), (523, 13474), (537, 13573), (538, 13576), (541, 13588), (553, 13705), (558, 13738), (563, 13789), (565, 13801), (569, 13819), (575, 13879), (586, 13960), (589, 13981), (591, 14014), (597, 14077), (599, 14095), (618, 14209), (620, 14239), (622, 14248), (626, 14287), (627, 14290), (630, 14320), (631, 14341), (646, 14494), (653, 14545), (662, 14608), (664, 14614), (670, 14665), (692, 14851), (700, 14938), (705, 14965), (706, 14968), (718, 15043), (722, 15067), (727, 15106), (730, 15142), (734, 15163), (743, 15250), (749, 15292), (755, 15325), (756, 15337), (761, 15415), (764, 15481),

Gene: Burnsey\_16 Start: 9630, Stop: 14768, Start Num: 26

Candidate Starts for Burnsey\_16:

(Start: 22 @9606 has 5 MA's), (Start: 26 @9630 has 29 MA's), (29, 9657), (41, 9786), (44, 9861), (69, 10014), (70, 10017), (85, 10113), (88, 10122), (94, 10152), (96, 10158), (98, 10173), (99, 10176), (103, 10197), (113, 10290), (123, 10356), (125, 10377), (142, 10494), (168, 10656), (172, 10695), (181, 10770), (198, 10929), (202, 10941), (206, 10968), (211, 11013), (212, 11025), (226, 11115), (229, 11133), (232, 11154), (235, 11184), (241, 11208), (243, 11220), (246, 11259), (250, 11292), (263, 11394), (264, 11397), (268, 11421), (278, 11514), (281, 11529), (285, 11568), (298, 11664), (306, 11703), (307, 11706), (315, 11739), (325, 11847), (326, 11850), (329, 11901), (343, 11976), (352, 12078), (360, 12123), (365, 12144), (366, 12147), (367, 12150), (381, 12225), (391, 12258), (395, 12279), (399, 12309), (407, 12357), (409, 12363), (413, 12390), (433, 12525), (447, 12642), (450, 12675), (452, 12696), (453, 12699), (465, 12765), (466, 12771), (467, 12786), (484, 12906), (487, 12915), (499, 12999), (553, 13320), (582, 13539), (588, 13575), (616, 13788), (648, 13980), (659, 14028), (663, 14049), (678, 14157), (689, 14223), (691, 14241), (697, 14301), (702, 14346), (708, 14376), (709, 14385), (713, 14415), (724, 14481), (729, 14529), (738, 14589), (750, 14676), (759, 14739),

Gene: Button\_17 Start: 9644, Stop: 13834, Start Num: 77

Candidate Starts for Button\_17:

(Start: 73 @9617 has 23 MA's), (Start: 77 @9644 has 1 MA's), (114, 9890), (123, 9953), (131, 10010), (136, 10037), (140, 10079), (150, 10142), (153, 10157), (156, 10175), (159, 10193), (161, 10205), (164, 10238), (171, 10280), (173, 10295), (186, 10400), (187, 10424), (189, 10463), (194, 10487), (200, 10514), (205, 10544), (208, 10565), (217, 10619), (221, 10634), (239, 10763), (254, 10895), (256, 10904), (261, 10940), (281, 11081), (283, 11102), (287, 11135), (288, 11153), (290, 11171), (298, 11216), (311, 11270), (315, 11291), (331, 11354), (340, 11402), (342, 11414), (345, 11453),

(365, 11507), (374, 11534), (383, 11540), (390, 11564), (391, 11567), (400, 11627), (405, 11660), (413, 11699), (415, 11717), (416, 11720), (422, 11762), (423, 11774), (427, 11807), (432, 11831), (436, 11855), (437, 11858), (449, 11972), (450, 11984), (454, 12014), (456, 12023), (458, 12029), (489, 12182), (495, 12242), (498, 12251), (499, 12257), (505, 12293), (536, 12425), (553, 12563), (557, 12587), (583, 12785), (584, 12788), (603, 12950), (608, 12974), (609, 12977), (640, 13079), (671, 13184), (682, 13256), (686, 13280), (688, 13292), (691, 13316), (693, 13328), (701, 13412), (702, 13418), (710, 13460), (713, 13481), (719, 13514), (724, 13547), (726, 13568), (729, 13595), (738, 13655), (741, 13682), (742, 13691), (744, 13703), (759, 13805),

Gene: Buttrmlkdreams\_16 Start: 9601, Stop: 14397, Start Num: 73

Candidate Starts for Buttrmlkdreams\_16:

(Start: 73 @9601 has 23 MA's), (Start: 77 @9628 has 1 MA's), (79, 9634), (99, 9757), (112, 9859), (116, 9904), (119, 9916), (123, 9934), (126, 9961), (127, 9964), (129, 9979), (138, 10030), (139, 10033), (144, 10090), (146, 10093), (155, 10135), (158, 10153), (164, 10198), (171, 10234), (175, 10267), (179, 10300), (180, 10312), (187, 10366), (190, 10405), (192, 10420), (196, 10429), (200, 10456), (208, 10507), (218, 10567), (221, 10576), (227, 10630), (238, 10693), (241, 10708), (261, 10861), (267, 10888), (275, 10969), (277, 10981), (278, 10987), (281, 11002), (284, 11032), (285, 11041), (295, 11119), (301, 11152), (311, 11191), (314, 11209), (315, 11212), (319, 11239), (322, 11296), (324, 11317), (330, 11380), (338, 11428), (343, 11449), (345, 11485), (349, 11527), (352, 11551), (360, 11596), (361, 11599), (365, 11617), (366, 11620), (367, 11623), (381, 11698), (383, 11704), (391, 11731), (400, 11791), (411, 11857), (412, 11860), (413, 11863), (415, 11881), (429, 11980), (432, 11995), (433, 11998), (450, 12148), (452, 12169), (461, 12211), (465, 12238), (466, 12244), (487, 12388), (499, 12475), (507, 12517), (514, 12553), (531, 12628), (540, 12679), (545, 12718), (559, 12847), (566, 12904), (585, 13042), (592, 13117), (612, 13261), (616, 13282), (638, 13456), (639, 13462), (678, 13786), (681, 13792), (689, 13852), (694, 13903), (702, 13975), (709, 14014), (713, 14044), (724, 14110), (729, 14158), (738, 14218), (751, 14308), (759, 14368),

Gene: CanesSauce\_16 Start: 9646, Stop: 14433, Start Num: 73

Candidate Starts for CanesSauce\_16:

(Start: 73 @9646 has 23 MA's), (Start: 77 @9673 has 1 MA's), (90, 9751), (99, 9802), (109, 9889), (112, 9904), (119, 9961), (123, 9979), (126, 10006), (127, 10009), (139, 10078), (144, 10135), (155, 10180), (158, 10198), (164, 10243), (171, 10279), (175, 10312), (182, 10360), (183, 10363), (187, 10411), (190, 10450), (192, 10465), (225, 10657), (227, 10675), (242, 10759), (261, 10906), (267, 10933), (277, 11026), (278, 11032), (281, 11047), (285, 11086), (286, 11098), (295, 11164), (311, 11236), (314, 11254), (315, 11257), (319, 11284), (345, 11530), (352, 11596), (360, 11641), (365, 11662), (366, 11665), (367, 11668), (377, 11704), (381, 11743), (383, 11749), (391, 11776), (412, 11905), (413, 11908), (415, 11926), (434, 12049), (436, 12064), (450, 12193), (452, 12214), (461, 12256), (465, 12283), (466, 12289), (482, 12421), (487, 12433), (499, 12520), (507, 12562), (514, 12598), (540, 12724), (545, 12763), (559, 12892), (566, 12949), (573, 12991), (585, 13084), (592, 13159), (600, 13222), (612, 13303), (616, 13324), (638, 13501), (639, 13507), (667, 13726), (674, 13804), (678, 13822), (681, 13828), (689, 13888), (691, 13906), (694, 13939), (702, 14011), (709, 14050), (713, 14080), (724, 14146), (729, 14194), (738, 14254), (751, 14344), (759, 14404),

Gene: CaptainKirk2\_17 Start: 10277, Stop: 15820, Start Num: 8

Candidate Starts for CaptainKirk2\_17:

(Start: 8 @10277 has 37 MA's), (Start: 11 @10292 has 1 MA's), (Start: 12 @10298 has 1 MA's), (Start: 14 @10328 has 1 MA's), (15, 10337), (16, 10340), (18, 10382), (35, 10493), (36, 10514), (60, 10742), (62, 10760), (64, 10775), (65, 10781), (66, 10784), (68, 10802), (74, 10826), (86, 10910), (87, 10913), (96, 10952), (98, 10967), (100, 10976), (122, 11144), (125, 11171), (172, 11489), (193, 11693), (202, 11738), (203, 11744), (206, 11765), (207, 11777), (222, 11867), (226, 11912), (230, 11939), (234, 11969), (246, 12056), (247, 12059), (251, 12098), (268, 12218), (272, 12260), (277, 12305), (278, 12311), (281, 12326), (287, 12380), (291, 12419), (294, 12440), (295, 12443), (298, 12461), (299, 12470), (309, 12509), (311, 12515), (315, 12536), (319, 12563), (342, 12770), (355, 12836), (368,

12875), (374, 12890), (390, 12920), (391, 12923), (399, 12974), (412, 13055), (413, 13058), (419, 13091), (422, 13121), (424, 13145), (469, 13478), (475, 13526), (479, 13571), (480, 13574), (481, 13589), (490, 13634), (491, 13643), (492, 13652), (499, 13703), (511, 13775), (517, 13793), (523, 13814), (537, 13913), (538, 13916), (544, 13949), (548, 14015), (550, 14033), (553, 14048), (558, 14081), (563, 14132), (570, 14183), (577, 14231), (595, 14426), (596, 14429), (606, 14501), (607, 14504), (617, 14570), (618, 14573), (619, 14591), (625, 14651), (631, 14708), (634, 14726), (641, 14807), (642, 14810), (644, 14825), (665, 14984), (672, 15038), (680, 15104), (687, 15158), (688, 15170), (689, 15176), (702, 15299), (707, 15323), (710, 15341), (713, 15365), (714, 15371), (717, 15392), (724, 15431), (740, 15572), (742, 15584), (750, 15635), (754, 15653), (763, 15803),

Gene: CarolAnn\_17 Start: 10172, Stop: 15763, Start Num: 8

Candidate Starts for CarolAnn\_17:

(Start: 8 @10172 has 37 MA's), (Start: 11 @10187 has 1 MA's), (Start: 14 @10223 has 1 MA's), (15, 10232), (16, 10235), (18, 10277), (35, 10388), (36, 10409), (42, 10529), (60, 10637), (62, 10655), (65, 10676), (66, 10679), (68, 10697), (88, 10811), (96, 10847), (98, 10862), (100, 10871), (122, 11039), (125, 11066), (142, 11183), (169, 11354), (172, 11384), (193, 11588), (202, 11633), (226, 11807), (230, 11834), (234, 11864), (238, 11885), (246, 11951), (247, 11954), (251, 11993), (257, 12056), (268, 12113), (272, 12155), (277, 12200), (278, 12206), (280, 12218), (281, 12221), (287, 12275), (291, 12314), (294, 12335), (295, 12338), (298, 12356), (304, 12383), (309, 12404), (311, 12410), (315, 12431), (319, 12458), (321, 12506), (324, 12536), (346, 12692), (347, 12716), (349, 12725), (351, 12746), (370, 12827), (390, 12923), (391, 12926), (393, 12932), (398, 12974), (399, 12977), (402, 12998), (412, 13058), (413, 13061), (419, 13094), (422, 13124), (435, 13214), (469, 13481), (475, 13529), (479, 13574), (480, 13577), (481, 13592), (490, 13637), (491, 13646), (492, 13655), (499, 13706), (511, 13778), (517, 13796), (523, 13817), (537, 13916), (538, 13919), (544, 13952), (548, 14018), (550, 14036), (553, 14051), (558, 14084), (563, 14135), (570, 14186), (577, 14234), (595, 14429), (596, 14432), (606, 14504), (607, 14507), (617, 14573), (618, 14576), (619, 14594), (625, 14654), (634, 14729), (642, 14813), (644, 14828), (672, 15041), (682, 15098), (684, 15113), (690, 15161), (695, 15206), (715, 15326), (716, 15335), (723, 15374), (732, 15446), (740, 15515), (750, 15578), (754, 15596), (760, 15653), (763, 15746),

Gene: Carsonalex\_17 Start: 9687, Stop: 14825, Start Num: 26

Candidate Starts for Carsonalex\_17:

(Start: 22 @9663 has 5 MA's), (Start: 26 @9687 has 29 MA's), (29, 9714), (41, 9843), (44, 9918), (69, 10071), (70, 10074), (85, 10170), (88, 10179), (94, 10209), (96, 10215), (98, 10230), (99, 10233), (103, 10254), (110, 10326), (113, 10347), (123, 10413), (125, 10434), (142, 10551), (168, 10713), (172, 10752), (181, 10827), (206, 11025), (223, 11133), (232, 11211), (234, 11229), (237, 11247), (246, 11316), (248, 11328), (252, 11361), (267, 11472), (268, 11478), (278, 11571), (281, 11586), (298, 11721), (305, 11754), (315, 11796), (325, 11904), (329, 11958), (342, 12030), (343, 12033), (352, 12135), (360, 12180), (362, 12189), (365, 12201), (366, 12204), (367, 12207), (381, 12282), (382, 12285), (383, 12288), (386, 12300), (389, 12309), (391, 12315), (397, 12357), (399, 12366), (407, 12414), (413, 12447), (433, 12582), (447, 12699), (450, 12732), (452, 12753), (465, 12822), (466, 12828), (484, 12963), (487, 12972), (499, 13056), (553, 13377), (582, 13596), (588, 13632), (616, 13845), (648, 14037), (659, 14085), (663, 14106), (678, 14214), (689, 14280), (691, 14298), (697, 14358), (702, 14403), (708, 14433), (709, 14442), (713, 14472), (724, 14538), (729, 14586), (738, 14646), (750, 14733), (759, 14796),

Gene: CheeseTouch\_18 Start: 9868, Stop: 15501, Start Num: 21

Candidate Starts for CheeseTouch\_18:

(Start: 21 @9868 has 10 MA's), (Start: 28 @9913 has 1 MA's), (30, 9934), (34, 9955), (37, 10000), (Start: 38 @10015 has 1 MA's), (43, 10099), (51, 10141), (52, 10153), (62, 10216), (64, 10231), (66, 10240), (68, 10258), (69, 10264), (79, 10312), (103, 10447), (121, 10597), (125, 10627), (169, 10921), (172, 10951), (190, 11134), (193, 11155), (202, 11200), (203, 11206), (206, 11227), (217, 11308), (226, 11374), (230, 11401), (232, 11413), (234, 11431), (235, 11443), (241, 11467), (243, 11479),



(246, 11518), (248, 11530), (251, 11560), (255, 11605), (265, 11665), (268, 11680), (271, 11710), (272, 11722), (277, 11767), (278, 11773), (280, 11785), (281, 11788), (283, 11809), (286, 11839), (287, 11842), (295, 11905), (299, 11932), (300, 11935), (301, 11938), (302, 11944), (308, 11968), (309, 11971), (311, 11977), (313, 11983), (315, 11998), (318, 12016), (323, 12097), (327, 12145), (328, 12151), (332, 12178), (352, 12337), (353, 12349), (361, 12385), (362, 12391), (373, 12433), (376, 12445), (381, 12484), (383, 12490), (384, 12493), (389, 12511), (390, 12514), (391, 12517), (396, 12541), (407, 12616), (414, 12655), (418, 12679), (422, 12712), (432, 12823), (435, 12856), (440, 12919), (444, 12955), (448, 12985), (459, 13063), (460, 13066), (461, 13075), (464, 13099), (475, 13186), (479, 13231), (480, 13234), (481, 13249), (490, 13294), (491, 13303), (492, 13312), (493, 13315), (509, 13420), (521, 13468), (523, 13474), (537, 13573), (538, 13576), (541, 13588), (553, 13705), (558, 13738), (563, 13789), (569, 13819), (575, 13879), (586, 13960), (589, 13981), (590, 13984), (591, 14014), (597, 14077), (598, 14086), (599, 14095), (618, 14209), (620, 14239), (626, 14287), (627, 14290), (630, 14320), (631, 14341), (653, 14539), (662, 14602), (664, 14608), (670, 14659), (692, 14851), (700, 14938), (705, 14965), (706, 14968), (718, 15043), (722, 15067), (727, 15106), (730, 15142), (734, 15163), (743, 15250), (749, 15292), (755, 15325), (756, 15337), (761, 15415), (764, 15481),

Gene: CherryonLim\_17 Start: 10133, Stop: 15220, Start Num: 26

Candidate Starts for CherryonLim\_17:

(Start: 26 @10133 has 29 MA's), (41, 10289), (55, 10418), (65, 10490), (69, 10517), (79, 10565), (81, 10574), (85, 10616), (87, 10622), (88, 10625), (96, 10661), (100, 10685), (104, 10712), (114, 10799), (118, 10838), (120, 10844), (123, 10859), (125, 10880), (134, 10934), (151, 11051), (162, 11114), (168, 11159), (177, 11240), (193, 11402), (197, 11411), (198, 11435), (202, 11447), (206, 11474), (207, 11486), (212, 11531), (218, 11561), (221, 11573), (233, 11675), (234, 11678), (246, 11765), (249, 11792), (259, 11882), (264, 11903), (268, 11927), (274, 11978), (278, 12020), (281, 12035), (282, 12044), (283, 12056), (287, 12089), (292, 12131), (302, 12191), (303, 12194), (304, 12197), (305, 12203), (310, 12221), (315, 12245), (320, 12308), (322, 12329), (324, 12350), (331, 12398), (335, 12428), (341, 12455), (342, 12458), (349, 12539), (350, 12551), (352, 12563), (354, 12578), (360, 12608), (365, 12629), (366, 12632), (379, 12692), (382, 12713), (389, 12737), (391, 12743), (404, 12827), (411, 12869), (417, 12899), (422, 12938), (428, 12986), (432, 13007), (433, 13010), (434, 13016), (441, 13082), (447, 13127), (450, 13160), (452, 13181), (462, 13235), (484, 13385), (487, 13394), (499, 13481), (536, 13658), (553, 13799), (558, 13829), (576, 13967), (588, 14048), (609, 14201), (612, 14231), (647, 14441), (648, 14450), (649, 14456), (659, 14492), (678, 14609), (681, 14615), (686, 14657), (689, 14675), (702, 14798), (707, 14822), (709, 14837), (713, 14867), (717, 14894), (719, 14900), (724, 14933), (733, 15002), (735, 15005), (738, 15041), (747, 15113), (751, 15131),

Gene: ChickenTender\_18 Start: 9679, Stop: 14817, Start Num: 26

Candidate Starts for ChickenTender\_18:

(Start: 26 @9679 has 29 MA's), (29, 9706), (41, 9835), (44, 9910), (69, 10063), (70, 10066), (85, 10162), (88, 10171), (94, 10201), (96, 10207), (98, 10222), (99, 10225), (103, 10246), (110, 10318), (113, 10339), (123, 10405), (125, 10426), (142, 10543), (168, 10705), (172, 10744), (198, 10978), (202, 10990), (206, 11017), (226, 11164), (232, 11203), (241, 11257), (243, 11269), (246, 11308), (250, 11341), (263, 11443), (264, 11446), (268, 11470), (274, 11521), (278, 11563), (281, 11578), (285, 11617), (298, 11713), (307, 11755), (315, 11788), (325, 11896), (329, 11950), (343, 12025), (352, 12127), (360, 12172), (366, 12196), (367, 12199), (379, 12256), (381, 12274), (391, 12307), (395, 12328), (399, 12358), (407, 12406), (409, 12412), (413, 12439), (433, 12574), (447, 12691), (450, 12724), (452, 12745), (465, 12814), (466, 12820), (487, 12964), (499, 13048), (553, 13369), (582, 13588), (585, 13603), (588, 13624), (614, 13825), (616, 13837), (659, 14077), (663, 14098), (678, 14206), (689, 14272), (691, 14290), (702, 14395), (707, 14419), (708, 14425), (709, 14434), (713, 14464), (724, 14530), (729, 14578), (738, 14638), (750, 14725), (759, 14788),

Gene: ChocoMunchkin\_16 Start: 9646, Stop: 14433, Start Num: 73

Candidate Starts for ChocoMunchkin\_16:

(Start: 73 @9646 has 23 MA's), (Start: 77 @9673 has 1 MA's), (90, 9751), (99, 9802), (109, 9889), (112, 9904), (119, 9961), (123, 9979), (126, 10006), (127, 10009), (139, 10078), (144, 10135), (155, 10180), (158, 10198), (164, 10243), (171, 10279), (175, 10312), (182, 10360), (183, 10363), (187, 10411), (190, 10450), (192, 10465), (225, 10657), (227, 10675), (242, 10759), (261, 10906), (267, 10933), (277, 11026), (278, 11032), (281, 11047), (285, 11086), (286, 11098), (295, 11164), (311, 11236), (314, 11254), (315, 11257), (319, 11284), (345, 11530), (352, 11596), (360, 11641), (365, 11662), (366, 11665), (367, 11668), (377, 11704), (381, 11743), (383, 11749), (391, 11776), (412, 11905), (413, 11908), (415, 11926), (434, 12049), (436, 12064), (450, 12193), (452, 12214), (461, 12256), (465, 12283), (466, 12289), (482, 12421), (487, 12433), (499, 12520), (507, 12562), (514, 12598), (540, 12724), (545, 12763), (559, 12892), (566, 12949), (573, 12991), (585, 13084), (592, 13159), (600, 13222), (612, 13303), (616, 13324), (638, 13501), (639, 13507), (667, 13726), (674, 13804), (678, 13822), (681, 13828), (689, 13888), (691, 13906), (694, 13939), (702, 14011), (709, 14050), (713, 14080), (724, 14146), (729, 14194), (738, 14254), (751, 14344), (759, 14404),

Gene: Cleo\_16 Start: 9909, Stop: 15023, Start Num: 26

Candidate Starts for Cleo\_16:

(23, 9888), (Start: 26 @9909 has 29 MA's), (29, 9936), (41, 10065), (46, 10149), (49, 10161), (57, 10212), (63, 10245), (67, 10269), (71, 10302), (85, 10392), (98, 10452), (99, 10455), (107, 10521), (111, 10557), (113, 10569), (121, 10626), (123, 10635), (125, 10656), (174, 10995), (182, 11052), (190, 11154), (202, 11220), (203, 11226), (206, 11247), (226, 11394), (234, 11451), (237, 11469), (240, 11484), (243, 11499), (246, 11538), (257, 11643), (261, 11667), (263, 11673), (276, 11784), (278, 11793), (281, 11808), (285, 11847), (298, 11943), (304, 11970), (305, 11976), (306, 11982), (314, 12015), (315, 12018), (325, 12126), (327, 12165), (332, 12198), (336, 12228), (337, 12231), (342, 12252), (343, 12255), (352, 12357), (360, 12402), (366, 12426), (367, 12429), (389, 12531), (390, 12534), (391, 12537), (399, 12588), (407, 12636), (409, 12642), (415, 12687), (433, 12804), (434, 12810), (440, 12867), (447, 12921), (449, 12942), (450, 12954), (452, 12975), (453, 12978), (465, 13044), (466, 13050), (484, 13185), (494, 13251), (499, 13278), (514, 13356), (553, 13596), (558, 13626), (580, 13800), (585, 13830), (588, 13851), (599, 13959), (605, 13995), (612, 14043), (659, 14280), (674, 14391), (678, 14409), (689, 14475), (694, 14526), (702, 14598), (708, 14628), (709, 14637), (710, 14640), (713, 14667), (717, 14694), (724, 14733), (729, 14781), (738, 14841), (742, 14877), (750, 14931),

Gene: Cozz\_16 Start: 9630, Stop: 14768, Start Num: 26

Candidate Starts for Cozz\_16:

(Start: 22 @9606 has 5 MA's), (Start: 26 @9630 has 29 MA's), (29, 9657), (41, 9786), (44, 9861), (69, 10014), (70, 10017), (85, 10113), (88, 10122), (94, 10152), (96, 10158), (98, 10173), (99, 10176), (103, 10197), (110, 10269), (113, 10290), (123, 10356), (125, 10377), (142, 10494), (168, 10656), (172, 10695), (181, 10770), (198, 10929), (202, 10941), (206, 10968), (211, 11013), (212, 11025), (226, 11115), (229, 11133), (232, 11154), (235, 11184), (241, 11208), (243, 11220), (246, 11259), (250, 11292), (263, 11394), (264, 11397), (268, 11421), (278, 11514), (281, 11529), (285, 11568), (298, 11664), (306, 11703), (307, 11706), (315, 11739), (325, 11847), (326, 11850), (329, 11901), (343, 11976), (352, 12078), (360, 12123), (365, 12144), (366, 12147), (367, 12150), (381, 12225), (391, 12258), (395, 12279), (407, 12357), (409, 12363), (413, 12390), (433, 12525), (447, 12642), (450, 12675), (452, 12696), (465, 12765), (466, 12771), (467, 12786), (484, 12906), (487, 12915), (499, 12999), (553, 13320), (582, 13539), (588, 13575), (616, 13788), (648, 13980), (659, 14028), (663, 14049), (678, 14157), (689, 14223), (691, 14241), (697, 14301), (702, 14346), (708, 14376), (709, 14385), (713, 14415), (724, 14481), (729, 14529), (738, 14589), (750, 14676), (759, 14739),

Gene: Delian\_17 Start: 10277, Stop: 15820, Start Num: 8

Candidate Starts for Delian\_17:

(Start: 8 @10277 has 37 MA's), (Start: 11 @10292 has 1 MA's), (Start: 12 @10298 has 1 MA's), (Start: 14 @10328 has 1 MA's), (15, 10337), (16, 10340), (18, 10382), (35, 10493), (36, 10514), (60, 10742),

(62, 10760), (64, 10775), (65, 10781), (66, 10784), (68, 10802), (74, 10826), (86, 10910), (87, 10913), (96, 10952), (98, 10967), (100, 10976), (122, 11144), (125, 11171), (172, 11489), (193, 11693), (202, 11738), (203, 11744), (206, 11765), (207, 11777), (222, 11867), (226, 11912), (230, 11939), (234, 11969), (246, 12056), (247, 12059), (251, 12098), (268, 12218), (272, 12260), (277, 12305), (278, 12311), (281, 12326), (287, 12380), (291, 12419), (294, 12440), (295, 12443), (298, 12461), (299, 12470), (309, 12509), (311, 12515), (315, 12536), (319, 12563), (342, 12770), (355, 12836), (368, 12875), (374, 12890), (390, 12920), (391, 12923), (399, 12974), (412, 13055), (413, 13058), (419, 13091), (422, 13121), (424, 13145), (469, 13478), (475, 13526), (479, 13571), (480, 13574), (481, 13589), (490, 13634), (491, 13643), (492, 13652), (499, 13703), (511, 13775), (517, 13793), (523, 13814), (537, 13913), (538, 13916), (544, 13949), (548, 14015), (550, 14033), (553, 14048), (558, 14081), (563, 14132), (570, 14183), (577, 14231), (595, 14426), (596, 14429), (606, 14501), (607, 14504), (617, 14570), (618, 14573), (619, 14591), (625, 14651), (631, 14708), (634, 14726), (641, 14807), (642, 14810), (644, 14825), (665, 14984), (672, 15038), (680, 15104), (687, 15158), (688, 15170), (689, 15176), (702, 15299), (707, 15323), (710, 15341), (713, 15365), (714, 15371), (717, 15392), (724, 15431), (740, 15572), (742, 15584), (750, 15635), (754, 15653), (763, 15803),

Gene: Dre3\_16 Start: 9856, Stop: 14970, Start Num: 26

Candidate Starts for Dre3\_16:

(23, 9835), (Start: 26 @9856 has 29 MA's), (29, 9883), (41, 10012), (46, 10096), (49, 10108), (57, 10159), (63, 10192), (67, 10216), (71, 10249), (85, 10339), (98, 10399), (99, 10402), (107, 10468), (111, 10504), (113, 10516), (121, 10573), (123, 10582), (125, 10603), (174, 10942), (182, 10999), (190, 11101), (202, 11167), (203, 11173), (206, 11194), (226, 11341), (234, 11398), (237, 11416), (240, 11431), (243, 11446), (246, 11485), (257, 11590), (261, 11614), (263, 11620), (276, 11731), (278, 11740), (281, 11755), (285, 11794), (298, 11890), (304, 11917), (305, 11923), (306, 11929), (314, 11962), (315, 11965), (325, 12073), (327, 12112), (332, 12145), (336, 12175), (337, 12178), (342, 12199), (343, 12202), (352, 12304), (360, 12349), (366, 12373), (367, 12376), (382, 12454), (389, 12478), (390, 12481), (391, 12484), (399, 12535), (407, 12583), (409, 12589), (415, 12634), (433, 12751), (434, 12757), (440, 12814), (447, 12868), (449, 12889), (450, 12901), (452, 12922), (453, 12925), (465, 12991), (466, 12997), (484, 13132), (494, 13198), (499, 13225), (514, 13303), (553, 13543), (558, 13573), (580, 13747), (585, 13777), (588, 13798), (599, 13906), (612, 13990), (659, 14227), (674, 14338), (678, 14356), (689, 14422), (694, 14473), (702, 14545), (709, 14584), (710, 14587), (713, 14614), (717, 14641), (724, 14680), (729, 14728), (738, 14788), (742, 14824), (750, 14878),

Gene: Elinal\_17 Start: 9384, Stop: 14468, Start Num: 26

Candidate Starts for Elinal\_17:

(Start: 26 @9384 has 29 MA's), (41, 9540), (55, 9669), (59, 9699), (69, 9768), (72, 9780), (81, 9825), (85, 9867), (88, 9876), (96, 9912), (100, 9936), (114, 10050), (118, 10089), (120, 10095), (121, 10101), (123, 10110), (125, 10131), (151, 10302), (162, 10365), (168, 10410), (177, 10491), (193, 10650), (198, 10683), (202, 10695), (206, 10722), (212, 10779), (218, 10809), (221, 10821), (233, 10923), (234, 10926), (246, 11013), (253, 11061), (268, 11175), (278, 11268), (281, 11283), (283, 11304), (287, 11337), (289, 11367), (292, 11379), (298, 11418), (303, 11442), (304, 11445), (310, 11469), (315, 11493), (324, 11598), (331, 11646), (335, 11676), (339, 11691), (342, 11706), (345, 11745), (349, 11787), (350, 11799), (352, 11811), (354, 11826), (356, 11841), (360, 11856), (366, 11880), (377, 11919), (378, 11934), (379, 11940), (382, 11961), (389, 11985), (391, 11991), (411, 12117), (417, 12147), (423, 12198), (428, 12234), (432, 12255), (433, 12258), (441, 12330), (447, 12375), (450, 12408), (452, 12429), (462, 12483), (473, 12558), (487, 12642), (499, 12729), (537, 12915), (553, 13047), (558, 13077), (576, 13215), (583, 13266), (588, 13296), (609, 13452), (612, 13482), (643, 13662), (649, 13713), (659, 13740), (663, 13761), (678, 13857), (686, 13905), (689, 13923), (702, 14046), (707, 14070), (709, 14085), (713, 14115), (717, 14142), (719, 14148), (724, 14181), (733, 14250), (735, 14253), (738, 14289), (751, 14379),

Gene: Elliott\_16 Start: 9629, Stop: 14767, Start Num: 26

Candidate Starts for Eliott\_16:

(Start: 22 @9605 has 5 MA's), (Start: 26 @9629 has 29 MA's), (29, 9656), (41, 9785), (44, 9860), (69, 10013), (70, 10016), (85, 10112), (88, 10121), (94, 10151), (96, 10157), (98, 10172), (99, 10175), (103, 10196), (110, 10268), (113, 10289), (123, 10355), (125, 10376), (142, 10493), (168, 10655), (172, 10694), (181, 10769), (198, 10928), (202, 10940), (206, 10967), (211, 11012), (212, 11024), (226, 11114), (229, 11132), (232, 11153), (235, 11183), (241, 11207), (243, 11219), (246, 11258), (250, 11291), (263, 11393), (264, 11396), (268, 11420), (278, 11513), (281, 11528), (285, 11567), (306, 11702), (307, 11705), (315, 11738), (325, 11846), (326, 11849), (329, 11900), (343, 11975), (352, 12077), (360, 12122), (365, 12143), (366, 12146), (367, 12149), (381, 12224), (391, 12257), (395, 12278), (399, 12308), (407, 12356), (409, 12362), (413, 12389), (433, 12524), (447, 12641), (450, 12674), (452, 12695), (465, 12764), (466, 12770), (467, 12785), (484, 12905), (487, 12914), (499, 12998), (553, 13319), (582, 13538), (588, 13574), (616, 13787), (648, 13979), (659, 14027), (663, 14048), (678, 14156), (689, 14222), (691, 14240), (702, 14345), (708, 14375), (709, 14384), (713, 14414), (724, 14480), (729, 14528), (738, 14588), (750, 14675), (759, 14738),

Gene: Emalyn\_15 Start: 9356, Stop: 14068, Start Num: 73

Candidate Starts for Emalyn\_15:

(Start: 73 @9356 has 23 MA's), (99, 9512), (109, 9599), (112, 9614), (116, 9659), (119, 9671), (123, 9689), (126, 9716), (139, 9788), (143, 9830), (144, 9845), (146, 9848), (152, 9872), (155, 9890), (158, 9908), (162, 9929), (164, 9953), (166, 9962), (171, 9989), (175, 10022), (176, 10031), (187, 10121), (190, 10160), (192, 10175), (206, 10244), (210, 10271), (225, 10367), (227, 10385), (238, 10448), (261, 10616), (263, 10622), (277, 10736), (278, 10742), (281, 10757), (311, 10946), (315, 10967), (318, 10985), (319, 10994), (329, 11129), (343, 11204), (345, 11240), (348, 11279), (349, 11282), (352, 11306), (356, 11336), (360, 11351), (366, 11375), (377, 11414), (381, 11453), (383, 11459), (413, 11618), (446, 11867), (447, 11870), (450, 11903), (452, 11924), (465, 11993), (466, 11999), (499, 12230), (527, 12365), (553, 12557), (561, 12626), (564, 12650), (585, 12791), (612, 13004), (616, 13025), (623, 13079), (669, 13382), (674, 13439), (678, 13457), (689, 13523), (696, 13595), (702, 13646), (707, 13670), (708, 13676), (709, 13685), (713, 13715), (724, 13781), (729, 13829), (738, 13889), (751, 13979), (759, 14039),

Gene: Fairfaxidum\_17 Start: 10343, Stop: 15964, Start Num: 8

Candidate Starts for Fairfaxidum\_17:

(Start: 7 @10307 has 1 MA's), (Start: 8 @10343 has 37 MA's), (Start: 12 @10364 has 1 MA's), (13, 10382), (16, 10406), (18, 10448), (33, 10547), (35, 10559), (36, 10580), (39, 10637), (43, 10709), (46, 10730), (51, 10751), (54, 10772), (55, 10775), (61, 10823), (62, 10826), (66, 10850), (68, 10868), (79, 10922), (88, 10982), (96, 11018), (97, 11024), (125, 11237), (154, 11423), (169, 11525), (170, 11540), (172, 11555), (178, 11612), (202, 11804), (220, 11924), (230, 12005), (234, 12035), (241, 12071), (246, 12122), (251, 12164), (268, 12284), (274, 12335), (277, 12371), (278, 12377), (281, 12392), (287, 12446), (291, 12485), (295, 12509), (298, 12527), (305, 12560), (309, 12575), (311, 12581), (314, 12599), (315, 12602), (319, 12629), (320, 12665), (349, 12896), (353, 12932), (354, 12935), (361, 12968), (382, 13070), (391, 13103), (401, 13166), (407, 13202), (413, 13238), (417, 13262), (420, 13289), (432, 13370), (440, 13436), (443, 13454), (455, 13559), (461, 13592), (469, 13658), (470, 13667), (475, 13706), (477, 13739), (479, 13751), (480, 13754), (481, 13769), (483, 13778), (490, 13814), (491, 13823), (492, 13832), (506, 13928), (521, 13988), (522, 13991), (523, 13994), (526, 14015), (538, 14096), (546, 14138), (553, 14225), (558, 14258), (560, 14267), (563, 14309), (579, 14423), (595, 14597), (606, 14672), (607, 14675), (610, 14705), (611, 14708), (615, 14732), (617, 14741), (618, 14744), (625, 14822), (631, 14879), (644, 14996), (651, 15047), (672, 15185), (680, 15251), (688, 15317), (689, 15323), (691, 15341), (700, 15434), (702, 15446), (711, 15494), (713, 15512), (714, 15518), (717, 15539), (724, 15578), (740, 15719), (750, 15782), (760, 15857), (763, 15950),

Gene: Feastonyeet\_15 Start: 9403, Stop: 14511, Start Num: 26

Candidate Starts for Feastonyeet\_15:

(Start: 26 @9403 has 29 MA's), (41, 9559), (55, 9688), (59, 9718), (69, 9787), (72, 9799), (79, 9835), (85, 9886), (88, 9895), (96, 9931), (100, 9955), (107, 10015), (114, 10069), (118, 10108), (120, 10114), (123, 10129), (125, 10150), (151, 10321), (162, 10384), (168, 10429), (177, 10510), (193, 10669), (198, 10702), (202, 10714), (206, 10741), (212, 10798), (218, 10828), (221, 10840), (233, 10942), (234, 10945), (246, 11032), (253, 11080), (268, 11194), (278, 11287), (281, 11302), (283, 11323), (287, 11356), (289, 11386), (292, 11398), (298, 11437), (303, 11461), (304, 11464), (310, 11488), (315, 11512), (324, 11617), (335, 11695), (342, 11725), (343, 11728), (345, 11764), (349, 11806), (352, 11830), (354, 11845), (356, 11860), (360, 11875), (366, 11899), (377, 11938), (378, 11953), (379, 11959), (389, 12004), (391, 12010), (411, 12136), (417, 12166), (421, 12202), (422, 12205), (428, 12253), (432, 12274), (433, 12277), (441, 12349), (447, 12394), (450, 12427), (452, 12448), (462, 12502), (473, 12577), (487, 12661), (499, 12748), (553, 13066), (558, 13096), (576, 13234), (583, 13285), (588, 13315), (609, 13480), (612, 13510), (643, 13690), (649, 13741), (659, 13783), (663, 13804), (678, 13900), (686, 13948), (689, 13966), (702, 14089), (707, 14113), (709, 14128), (713, 14158), (717, 14185), (719, 14191), (724, 14224), (733, 14293), (735, 14296), (738, 14332), (751, 14422),

Gene: Fenry\_16 Start: 10023, Stop: 15515, Start Num: 8

Candidate Starts for Fenry\_16:

(Start: 8 @10023 has 37 MA's), (Start: 11 @10038 has 1 MA's), (Start: 12 @10044 has 1 MA's), (Start: 14 @10074 has 1 MA's), (15, 10083), (16, 10086), (18, 10128), (35, 10239), (36, 10260), (42, 10380), (60, 10488), (62, 10506), (64, 10521), (65, 10527), (66, 10530), (68, 10548), (74, 10572), (86, 10656), (88, 10662), (96, 10698), (98, 10713), (100, 10722), (122, 10890), (125, 10917), (158, 11130), (172, 11235), (193, 11439), (202, 11484), (206, 11511), (207, 11523), (222, 11613), (226, 11658), (230, 11685), (234, 11715), (246, 11802), (247, 11805), (251, 11844), (268, 11964), (272, 12006), (277, 12051), (278, 12057), (280, 12069), (281, 12072), (287, 12126), (291, 12165), (294, 12186), (295, 12189), (298, 12207), (309, 12255), (311, 12261), (315, 12282), (319, 12309), (323, 12381), (342, 12516), (357, 12588), (359, 12597), (363, 12609), (368, 12621), (374, 12636), (390, 12666), (391, 12669), (399, 12720), (412, 12801), (413, 12804), (419, 12837), (422, 12867), (424, 12891), (435, 12957), (463, 13173), (469, 13224), (475, 13272), (479, 13317), (480, 13320), (481, 13335), (490, 13380), (491, 13389), (492, 13398), (499, 13449), (511, 13521), (517, 13539), (523, 13560), (537, 13659), (538, 13662), (544, 13695), (548, 13761), (550, 13779), (553, 13794), (558, 13827), (563, 13878), (570, 13929), (595, 14172), (596, 14175), (606, 14247), (607, 14250), (617, 14316), (618, 14319), (619, 14337), (625, 14397), (641, 14553), (642, 14556), (644, 14571), (665, 14742), (672, 14796), (682, 14853), (684, 14868), (690, 14916), (695, 14961), (715, 15081), (716, 15090), (723, 15129), (732, 15201), (740, 15270), (742, 15282), (750, 15333), (754, 15351), (763, 15501),

Gene: Fribs8\_17 Start: 10424, Stop: 15559, Start Num: 26

Candidate Starts for Fribs8\_17:

(Start: 26 @10424 has 29 MA's), (29, 10451), (41, 10580), (49, 10676), (57, 10727), (63, 10760), (67, 10784), (71, 10817), (85, 10907), (98, 10967), (99, 10970), (106, 11030), (107, 11036), (113, 11084), (123, 11150), (125, 11171), (133, 11207), (182, 11567), (190, 11669), (198, 11723), (199, 11726), (202, 11735), (203, 11741), (206, 11762), (226, 11909), (234, 11966), (237, 11984), (241, 12002), (243, 12014), (246, 12053), (253, 12101), (257, 12158), (261, 12182), (263, 12188), (276, 12299), (278, 12308), (281, 12323), (285, 12362), (294, 12437), (304, 12485), (305, 12491), (315, 12533), (325, 12641), (327, 12680), (332, 12713), (352, 12872), (360, 12917), (366, 12941), (382, 13022), (389, 13046), (390, 13049), (391, 13052), (394, 13070), (399, 13103), (405, 13145), (413, 13184), (420, 13235), (433, 13319), (434, 13325), (440, 13382), (442, 13394), (447, 13436), (449, 13457), (450, 13469), (452, 13490), (453, 13493), (465, 13559), (467, 13580), (484, 13700), (494, 13766), (499, 13793), (508, 13838), (510, 13859), (516, 13880), (553, 14123), (558, 14153), (561, 14192), (580, 14327), (585, 14357), (588, 14378), (612, 14570), (648, 14783), (652, 14801), (659, 14816), (674, 14927), (678, 14945), (689, 15011), (694, 15062), (700, 15122), (702, 15134), (709, 15173), (710, 15176), (713, 15203), (719, 15236), (724, 15269), (750, 15467), (752, 15473), (759, 15530),

Gene: Frickyeah\_18 Start: 9926, Stop: 15508, Start Num: 28

Candidate Starts for Frickyeah\_18:

(Start: 21 @9881 has 10 MA's), (Start: 28 @9926 has 1 MA's), (30, 9947), (34, 9968), (37, 10013), (Start: 38 @10028 has 1 MA's), (43, 10112), (51, 10154), (52, 10166), (62, 10229), (64, 10244), (66, 10253), (68, 10271), (69, 10277), (79, 10325), (103, 10460), (121, 10610), (125, 10640), (172, 10964), (185, 11060), (193, 11168), (202, 11213), (203, 11219), (206, 11240), (217, 11321), (226, 11387), (230, 11414), (232, 11426), (234, 11444), (235, 11456), (241, 11480), (243, 11492), (246, 11531), (247, 11534), (248, 11543), (251, 11573), (255, 11618), (265, 11678), (268, 11693), (271, 11723), (272, 11735), (277, 11780), (278, 11786), (281, 11801), (284, 11831), (286, 11852), (287, 11855), (295, 11918), (299, 11945), (300, 11948), (301, 11951), (302, 11957), (308, 11981), (309, 11984), (311, 11990), (313, 11996), (315, 12011), (318, 12029), (320, 12074), (327, 12158), (328, 12164), (332, 12191), (345, 12284), (346, 12293), (352, 12350), (353, 12362), (361, 12398), (362, 12404), (373, 12446), (376, 12458), (381, 12497), (383, 12503), (384, 12506), (389, 12524), (390, 12527), (391, 12530), (396, 12554), (407, 12629), (414, 12668), (418, 12692), (422, 12725), (432, 12836), (435, 12869), (440, 12932), (444, 12968), (448, 12998), (459, 13076), (460, 13079), (461, 13088), (464, 13112), (474, 13193), (475, 13199), (479, 13244), (480, 13247), (481, 13262), (490, 13307), (491, 13316), (492, 13325), (493, 13328), (509, 13433), (521, 13481), (522, 13484), (523, 13487), (537, 13586), (538, 13589), (541, 13601), (553, 13718), (558, 13751), (563, 13802), (569, 13832), (575, 13892), (586, 13973), (589, 13994), (591, 14027), (598, 14099), (599, 14108), (618, 14222), (620, 14252), (622, 14261), (626, 14300), (627, 14303), (630, 14333), (631, 14354), (653, 14552), (662, 14615), (664, 14621), (670, 14672), (692, 14858), (700, 14945), (705, 14972), (706, 14975), (718, 15050), (722, 15074), (727, 15113), (730, 15149), (734, 15170), (743, 15257), (749, 15299), (755, 15332), (756, 15344), (761, 15422), (764, 15488),

Gene: Frokostdame\_17 Start: 10288, Stop: 15762, Start Num: 11

Candidate Starts for Frokostdame\_17:

(Start: 8 @10273 has 37 MA's), (10, 10285), (Start: 11 @10288 has 1 MA's), (Start: 12 @10294 has 1 MA's), (Start: 14 @10324 has 1 MA's), (15, 10333), (18, 10378), (35, 10489), (36, 10510), (42, 10630), (49, 10672), (60, 10738), (62, 10756), (65, 10777), (66, 10780), (68, 10798), (74, 10822), (86, 10906), (96, 10948), (98, 10963), (100, 10972), (122, 11140), (125, 11167), (142, 11284), (151, 11338), (158, 11380), (172, 11485), (193, 11689), (202, 11734), (203, 11740), (206, 11761), (207, 11773), (222, 11863), (226, 11908), (230, 11935), (234, 11965), (246, 12052), (247, 12055), (251, 12094), (257, 12157), (258, 12166), (268, 12214), (272, 12256), (278, 12307), (281, 12322), (287, 12376), (291, 12415), (294, 12436), (295, 12439), (298, 12457), (304, 12484), (309, 12505), (311, 12511), (315, 12532), (318, 12550), (319, 12559), (355, 12832), (363, 12859), (368, 12871), (374, 12886), (390, 12916), (391, 12919), (399, 12970), (405, 13012), (412, 13051), (413, 13054), (419, 13087), (422, 13117), (424, 13141), (435, 13207), (469, 13474), (475, 13522), (477, 13555), (479, 13567), (480, 13570), (481, 13585), (490, 13630), (491, 13639), (492, 13648), (499, 13699), (511, 13771), (517, 13789), (523, 13810), (537, 13909), (538, 13912), (544, 13945), (548, 14011), (550, 14029), (553, 14044), (558, 14077), (563, 14128), (570, 14179), (595, 14422), (596, 14425), (606, 14497), (607, 14500), (617, 14566), (618, 14569), (619, 14587), (625, 14647), (631, 14704), (634, 14722), (641, 14803), (642, 14806), (644, 14821), (665, 14992), (672, 15046), (684, 15118), (686, 15127), (690, 15163), (698, 15223), (699, 15241), (703, 15259), (712, 15304), (716, 15337), (732, 15448), (740, 15517), (750, 15580), (754, 15598), (763, 15748),

Gene: GTE2\_14 Start: 9463, Stop: 14106, Start Num: 99

Candidate Starts for GTE2\_14:

(Start: 73 @9307 has 23 MA's), (Start: 77 @9334 has 1 MA's), (90, 9412), (99, 9463), (109, 9550), (112, 9565), (119, 9622), (123, 9640), (126, 9667), (127, 9670), (139, 9739), (144, 9796), (155, 9841), (158, 9859), (164, 9904), (171, 9940), (175, 9973), (182, 10021), (183, 10024), (187, 10072), (190, 10111), (192, 10126), (225, 10318), (227, 10336), (242, 10420), (261, 10567), (267, 10594), (277, 10687), (278, 10693), (281, 10708), (285, 10747), (295, 10825), (311, 10897), (314, 10915), (315, 10918), (329, 11080), (343, 11155), (345, 11191), (352, 11257), (360, 11302), (365, 11323), (366,



11326), (367, 11329), (377, 11365), (381, 11404), (383, 11410), (389, 11431), (391, 11437), (400, 11497), (412, 11566), (413, 11569), (415, 11587), (434, 11710), (436, 11725), (450, 11854), (452, 11875), (460, 11908), (465, 11944), (466, 11950), (482, 12082), (487, 12094), (499, 12181), (531, 12334), (540, 12385), (545, 12424), (559, 12553), (566, 12610), (573, 12655), (585, 12748), (592, 12823), (600, 12886), (612, 12967), (616, 12988), (638, 13174), (639, 13180), (667, 13399), (674, 13477), (678, 13495), (681, 13501), (689, 13561), (691, 13579), (694, 13612), (702, 13684), (709, 13723), (713, 13753), (724, 13819), (729, 13867), (738, 13927), (751, 14017), (759, 14077),

Gene: Gambino\_19 Start: 10619, Stop: 16108, Start Num: 8

Candidate Starts for Gambino\_19:

(Start: 8 @10619 has 37 MA's), (Start: 11 @10634 has 1 MA's), (Start: 12 @10640 has 1 MA's), (Start: 14 @10670 has 1 MA's), (15, 10679), (16, 10682), (18, 10724), (35, 10835), (36, 10856), (42, 10976), (49, 11018), (60, 11084), (62, 11102), (65, 11123), (66, 11126), (68, 11144), (74, 11168), (86, 11252), (96, 11294), (98, 11309), (100, 11318), (122, 11486), (125, 11513), (142, 11630), (169, 11801), (172, 11831), (193, 12035), (202, 12080), (206, 12107), (207, 12119), (209, 12131), (222, 12209), (226, 12254), (230, 12281), (234, 12311), (246, 12398), (247, 12401), (251, 12440), (257, 12503), (258, 12512), (268, 12560), (272, 12602), (277, 12647), (278, 12653), (281, 12668), (287, 12722), (291, 12761), (294, 12782), (295, 12785), (298, 12803), (304, 12830), (309, 12851), (311, 12857), (315, 12878), (318, 12896), (319, 12905), (355, 13178), (374, 13232), (390, 13262), (391, 13265), (399, 13316), (412, 13397), (413, 13400), (419, 13433), (422, 13463), (424, 13487), (435, 13553), (469, 13820), (475, 13868), (477, 13901), (479, 13913), (480, 13916), (490, 13976), (491, 13985), (492, 13994), (499, 14045), (511, 14117), (517, 14135), (523, 14156), (537, 14255), (538, 14258), (544, 14291), (548, 14357), (550, 14375), (553, 14390), (558, 14423), (563, 14474), (570, 14525), (579, 14594), (595, 14768), (596, 14771), (606, 14843), (607, 14846), (617, 14912), (618, 14915), (619, 14933), (625, 14993), (631, 15050), (634, 15068), (641, 15149), (642, 15152), (644, 15167), (665, 15338), (672, 15392), (684, 15464), (686, 15473), (690, 15509), (698, 15569), (699, 15587), (703, 15605), (712, 15650), (716, 15683), (732, 15794), (740, 15863), (750, 15926), (754, 15944), (763, 16094),

Gene: Getalong\_19 Start: 10672, Stop: 16305, Start Num: 22

Candidate Starts for Getalong\_19:

(Start: 22 @10672 has 5 MA's), (Start: 28 @10717 has 1 MA's), (30, 10738), (34, 10759), (37, 10804), (Start: 38 @10819 has 1 MA's), (43, 10903), (51, 10945), (52, 10957), (62, 11020), (64, 11035), (66, 11044), (68, 11062), (69, 11068), (79, 11116), (103, 11251), (121, 11401), (125, 11431), (158, 11650), (169, 11725), (172, 11755), (193, 11959), (202, 12004), (203, 12010), (206, 12031), (209, 12055), (217, 12112), (226, 12178), (230, 12205), (232, 12217), (234, 12235), (235, 12247), (241, 12271), (243, 12283), (246, 12322), (247, 12325), (248, 12334), (251, 12364), (255, 12409), (265, 12469), (268, 12484), (271, 12514), (272, 12526), (277, 12571), (278, 12577), (281, 12592), (284, 12622), (286, 12643), (287, 12646), (295, 12709), (299, 12736), (300, 12739), (301, 12742), (302, 12748), (308, 12772), (309, 12775), (311, 12781), (313, 12787), (315, 12802), (318, 12820), (320, 12865), (327, 12949), (328, 12955), (332, 12982), (345, 13075), (346, 13084), (352, 13141), (353, 13153), (361, 13189), (362, 13195), (373, 13237), (376, 13249), (381, 13288), (383, 13294), (384, 13297), (389, 13315), (390, 13318), (391, 13321), (407, 13420), (414, 13459), (418, 13483), (422, 13516), (432, 13627), (435, 13660), (440, 13723), (444, 13759), (448, 13789), (459, 13867), (460, 13870), (461, 13879), (464, 13903), (475, 13990), (479, 14035), (480, 14038), (481, 14053), (490, 14098), (491, 14107), (492, 14116), (493, 14119), (509, 14224), (521, 14272), (523, 14278), (537, 14377), (538, 14380), (541, 14392), (553, 14509), (558, 14542), (563, 14593), (569, 14623), (575, 14683), (586, 14764), (589, 14785), (590, 14788), (591, 14818), (597, 14881), (598, 14890), (599, 14899), (618, 15013), (620, 15043), (626, 15091), (627, 15094), (630, 15124), (631, 15145), (653, 15343), (662, 15406), (664, 15412), (670, 15463), (692, 15655), (700, 15742), (705, 15769), (706, 15772), (718, 15847), (722, 15871), (727, 15910), (730, 15946), (734, 15967), (743, 16054), (749, 16096), (755, 16129), (756, 16141), (764, 16285),

Gene: GiKK\_19 Start: 9920, Stop: 14137, Start Num: 73

Candidate Starts for GiKK\_19:

(Start: 73 @9920 has 23 MA's), (Start: 77 @9947 has 1 MA's), (114, 10193), (123, 10256), (131, 10313), (136, 10340), (140, 10382), (150, 10445), (153, 10460), (156, 10478), (159, 10496), (161, 10508), (164, 10541), (171, 10583), (173, 10598), (185, 10694), (186, 10703), (189, 10766), (191, 10781), (200, 10817), (208, 10868), (214, 10901), (215, 10910), (227, 10991), (236, 11057), (239, 11066), (240, 11075), (244, 11096), (259, 11231), (261, 11243), (281, 11384), (283, 11405), (287, 11438), (288, 11456), (290, 11474), (298, 11519), (311, 11573), (313, 11579), (315, 11594), (331, 11657), (340, 11705), (343, 11720), (345, 11756), (365, 11810), (374, 11837), (375, 11840), (383, 11843), (390, 11867), (391, 11870), (400, 11930), (412, 11999), (413, 12002), (415, 12020), (420, 12053), (426, 12104), (432, 12134), (436, 12158), (437, 12161), (450, 12287), (452, 12308), (454, 12317), (456, 12326), (458, 12332), (489, 12485), (498, 12554), (499, 12560), (505, 12596), (535, 12725), (553, 12866), (557, 12890), (561, 12935), (583, 13088), (584, 13091), (609, 13283), (612, 13313), (671, 13487), (682, 13559), (688, 13595), (691, 13619), (693, 13631), (696, 13673), (701, 13715), (702, 13721), (707, 13745), (710, 13763), (713, 13784), (717, 13811), (719, 13817), (724, 13850), (726, 13871), (729, 13898), (735, 13922), (738, 13958), (744, 14006), (759, 14108),

Gene: Gibbous\_16 Start: 9856, Stop: 14970, Start Num: 26

Candidate Starts for Gibbous\_16:

(23, 9835), (Start: 26 @9856 has 29 MA's), (29, 9883), (41, 10012), (46, 10096), (49, 10108), (57, 10159), (63, 10192), (67, 10216), (71, 10249), (85, 10339), (98, 10399), (99, 10402), (107, 10468), (111, 10504), (113, 10516), (121, 10573), (123, 10582), (125, 10603), (174, 10942), (182, 10999), (190, 11101), (202, 11167), (203, 11173), (206, 11194), (226, 11341), (234, 11398), (237, 11416), (240, 11431), (243, 11446), (246, 11485), (257, 11590), (261, 11614), (263, 11620), (276, 11731), (278, 11740), (281, 11755), (285, 11794), (298, 11890), (304, 11917), (305, 11923), (306, 11929), (314, 11962), (315, 11965), (325, 12073), (327, 12112), (332, 12145), (336, 12175), (337, 12178), (342, 12199), (343, 12202), (352, 12304), (360, 12349), (366, 12373), (367, 12376), (382, 12454), (389, 12478), (390, 12481), (391, 12484), (399, 12535), (407, 12583), (409, 12589), (415, 12634), (433, 12751), (434, 12757), (440, 12814), (447, 12868), (449, 12889), (450, 12901), (452, 12922), (453, 12925), (465, 12991), (466, 12997), (484, 13132), (494, 13198), (499, 13225), (514, 13303), (553, 13543), (558, 13573), (580, 13747), (585, 13777), (588, 13798), (599, 13906), (612, 13990), (659, 14227), (674, 14338), (678, 14356), (689, 14422), (694, 14473), (702, 14545), (709, 14584), (710, 14587), (713, 14614), (717, 14641), (724, 14680), (729, 14728), (738, 14788), (742, 14824), (750, 14878),

Gene: GoldHunter\_17 Start: 9630, Stop: 14768, Start Num: 26

Candidate Starts for GoldHunter\_17:

(Start: 22 @9606 has 5 MA's), (Start: 26 @9630 has 29 MA's), (29, 9657), (41, 9786), (44, 9861), (69, 10014), (70, 10017), (85, 10113), (88, 10122), (94, 10152), (96, 10158), (98, 10173), (99, 10176), (103, 10197), (110, 10269), (113, 10290), (123, 10356), (125, 10377), (142, 10494), (168, 10656), (172, 10695), (181, 10770), (198, 10929), (202, 10941), (206, 10968), (211, 11013), (212, 11025), (226, 11115), (229, 11133), (232, 11154), (235, 11184), (241, 11208), (243, 11220), (246, 11259), (250, 11292), (263, 11394), (264, 11397), (268, 11421), (278, 11514), (281, 11529), (285, 11568), (291, 11622), (298, 11664), (307, 11706), (314, 11736), (315, 11739), (325, 11847), (326, 11850), (329, 11901), (343, 11976), (350, 12066), (352, 12078), (360, 12123), (365, 12144), (366, 12147), (367, 12150), (381, 12225), (391, 12258), (395, 12279), (399, 12309), (407, 12357), (409, 12363), (413, 12390), (433, 12525), (447, 12642), (450, 12675), (452, 12696), (453, 12699), (465, 12765), (466, 12771), (467, 12786), (484, 12906), (487, 12915), (499, 12999), (553, 13320), (582, 13539), (588, 13575), (616, 13788), (648, 13980), (659, 14028), (663, 14049), (678, 14157), (689, 14223), (691, 14241), (697, 14301), (702, 14346), (708, 14376), (709, 14385), (713, 14415), (724, 14481), (729, 14529), (738, 14589), (750, 14676), (759, 14739),

Gene: Guacamole\_17 Start: 10278, Stop: 15800, Start Num: 8

Candidate Starts for Guacamole\_17:

(Start: 8 @10278 has 37 MA's), (Start: 11 @10293 has 1 MA's), (Start: 12 @10299 has 1 MA's), (Start: 14 @10329 has 1 MA's), (15, 10338), (16, 10341), (18, 10383), (35, 10494), (36, 10515), (42, 10635), (49, 10677), (60, 10743), (62, 10761), (65, 10782), (66, 10785), (68, 10803), (74, 10827), (86, 10911), (87, 10914), (96, 10953), (98, 10968), (100, 10977), (122, 11145), (125, 11172), (142, 11289), (150, 11337), (169, 11460), (172, 11490), (193, 11694), (202, 11739), (206, 11766), (207, 11778), (222, 11868), (226, 11913), (230, 11940), (234, 11970), (246, 12057), (247, 12060), (251, 12099), (260, 12183), (268, 12219), (272, 12261), (277, 12306), (278, 12312), (280, 12324), (281, 12327), (287, 12381), (291, 12420), (294, 12441), (295, 12444), (298, 12462), (299, 12471), (304, 12489), (309, 12510), (311, 12516), (315, 12537), (319, 12564), (324, 12642), (359, 12831), (368, 12855), (373, 12867), (374, 12870), (385, 12885), (390, 12900), (391, 12903), (399, 12954), (412, 13035), (413, 13038), (419, 13071), (422, 13101), (424, 13125), (445, 13284), (469, 13458), (475, 13506), (479, 13551), (480, 13554), (481, 13569), (490, 13614), (491, 13623), (492, 13632), (499, 13683), (511, 13755), (517, 13773), (523, 13794), (537, 13893), (538, 13896), (544, 13929), (548, 13995), (550, 14013), (553, 14028), (558, 14061), (563, 14112), (570, 14163), (577, 14211), (595, 14406), (596, 14409), (606, 14481), (607, 14484), (617, 14550), (618, 14553), (619, 14571), (625, 14631), (631, 14688), (634, 14706), (641, 14787), (642, 14790), (644, 14805), (672, 15018), (680, 15084), (687, 15138), (688, 15150), (689, 15156), (702, 15279), (707, 15303), (710, 15321), (713, 15345), (714, 15351), (717, 15372), (724, 15411), (740, 15552), (742, 15564), (750, 15615), (754, 15633), (763, 15783),

Gene: Hexbug\_18 Start: 10603, Stop: 14823, Start Num: 73

Candidate Starts for Hexbug\_18:

(Start: 73 @10603 has 23 MA's), (Start: 77 @10630 has 1 MA's), (123, 10939), (131, 10996), (135, 11020), (140, 11065), (141, 11068), (145, 11110), (150, 11128), (153, 11143), (156, 11161), (157, 11170), (164, 11224), (173, 11281), (183, 11362), (187, 11410), (189, 11449), (191, 11464), (194, 11473), (200, 11500), (205, 11530), (206, 11533), (208, 11551), (227, 11674), (236, 11740), (245, 11803), (256, 11890), (268, 11959), (280, 12064), (281, 12067), (283, 12088), (287, 12121), (288, 12139), (290, 12157), (294, 12181), (298, 12202), (299, 12211), (311, 12256), (312, 12259), (315, 12277), (340, 12388), (342, 12400), (343, 12403), (345, 12439), (359, 12481), (365, 12493), (374, 12520), (391, 12553), (403, 12628), (412, 12682), (413, 12685), (415, 12703), (422, 12748), (426, 12787), (427, 12793), (432, 12817), (435, 12838), (436, 12841), (437, 12844), (450, 12970), (452, 12991), (454, 13000), (456, 13009), (458, 13015), (489, 13168), (494, 13213), (498, 13237), (499, 13243), (505, 13279), (513, 13312), (518, 13336), (528, 13387), (536, 13432), (553, 13570), (558, 13600), (609, 13981), (671, 14173), (682, 14245), (688, 14281), (691, 14305), (693, 14317), (696, 14359), (702, 14407), (713, 14470), (719, 14503), (724, 14536), (726, 14557), (729, 14584), (735, 14608), (738, 14644), (741, 14671), (742, 14680), (744, 14692), (759, 14794),

Gene: HippoPololi\_18 Start: 10513, Stop: 15630, Start Num: 26

Candidate Starts for HippoPololi\_18:

(23, 10492), (Start: 26 @10513 has 29 MA's), (29, 10540), (41, 10669), (46, 10753), (53, 10792), (57, 10816), (67, 10873), (70, 10900), (71, 10906), (85, 10996), (98, 11056), (99, 11059), (107, 11125), (113, 11173), (123, 11239), (125, 11260), (174, 11599), (181, 11653), (182, 11656), (190, 11758), (199, 11815), (201, 11821), (202, 11824), (203, 11830), (206, 11851), (222, 11953), (234, 12055), (237, 12073), (246, 12142), (253, 12190), (257, 12247), (261, 12271), (263, 12277), (278, 12397), (281, 12412), (285, 12451), (294, 12526), (298, 12547), (304, 12574), (305, 12580), (314, 12619), (315, 12622), (325, 12730), (332, 12802), (342, 12856), (352, 12961), (360, 13006), (366, 13030), (382, 13111), (390, 13138), (391, 13141), (399, 13192), (407, 13240), (409, 13246), (415, 13291), (433, 13408), (434, 13414), (440, 13471), (447, 13525), (449, 13546), (450, 13558), (452, 13579), (453, 13582), (465, 13648), (466, 13654), (484, 13789), (487, 13798), (494, 13855), (499, 13882), (519, 13975), (553, 14203), (555, 14224), (558, 14233), (580, 14407), (585, 14437), (588, 14458), (612, 14650), (635, 14740), (659, 14887), (663, 14908), (678, 15016), (683, 15049), (689, 15082), (694, 15133), (702, 15205), (709, 15244), (710, 15247), (713, 15274), (719, 15307), (724, 15340),

(726, 15361), (729, 15388), (742, 15484), (750, 15538),

Gene: Hitter\_17 Start: 10274, Stop: 15796, Start Num: 8

Candidate Starts for Hitter\_17:

(Start: 8 @10274 has 37 MA's), (Start: 11 @10289 has 1 MA's), (Start: 12 @10295 has 1 MA's), (Start: 14 @10325 has 1 MA's), (15, 10334), (16, 10337), (18, 10379), (35, 10490), (36, 10511), (60, 10739), (62, 10757), (64, 10772), (65, 10778), (66, 10781), (68, 10799), (74, 10823), (86, 10907), (88, 10913), (96, 10949), (98, 10964), (100, 10973), (122, 11141), (125, 11168), (142, 11285), (169, 11456), (172, 11486), (193, 11690), (202, 11735), (226, 11909), (230, 11936), (234, 11966), (246, 12053), (251, 12095), (260, 12179), (268, 12215), (272, 12257), (277, 12302), (278, 12308), (280, 12320), (281, 12323), (287, 12377), (291, 12416), (294, 12437), (295, 12440), (298, 12458), (299, 12467), (304, 12485), (309, 12506), (311, 12512), (315, 12533), (319, 12560), (324, 12638), (359, 12827), (368, 12851), (373, 12863), (374, 12866), (385, 12881), (390, 12896), (391, 12899), (399, 12950), (412, 13031), (413, 13034), (419, 13067), (422, 13097), (424, 13121), (469, 13454), (475, 13502), (479, 13547), (480, 13550), (481, 13565), (490, 13610), (491, 13619), (492, 13628), (499, 13679), (511, 13751), (517, 13769), (523, 13790), (537, 13889), (538, 13892), (544, 13925), (548, 13991), (550, 14009), (553, 14024), (558, 14057), (563, 14108), (570, 14159), (595, 14402), (596, 14405), (606, 14477), (607, 14480), (617, 14546), (618, 14549), (619, 14567), (625, 14627), (631, 14684), (634, 14702), (641, 14783), (642, 14786), (644, 14801), (672, 15014), (680, 15080), (681, 15086), (688, 15146), (689, 15152), (702, 15275), (707, 15299), (710, 15317), (713, 15341), (714, 15347), (717, 15368), (724, 15407), (740, 15548), (742, 15560), (750, 15611), (754, 15629), (763, 15779),

Gene: Holliday\_18 Start: 9868, Stop: 15501, Start Num: 21

Candidate Starts for Holliday\_18:

(Start: 21 @9868 has 10 MA's), (27, 9895), (Start: 28 @9913 has 1 MA's), (30, 9934), (34, 9955), (37, 10000), (Start: 38 @10015 has 1 MA's), (43, 10099), (51, 10141), (52, 10153), (62, 10216), (64, 10231), (66, 10240), (68, 10258), (69, 10264), (79, 10312), (103, 10447), (121, 10597), (125, 10627), (158, 10846), (169, 10921), (172, 10951), (193, 11155), (201, 11197), (202, 11200), (203, 11206), (206, 11227), (217, 11308), (226, 11374), (230, 11401), (232, 11413), (234, 11431), (235, 11443), (241, 11467), (243, 11479), (246, 11518), (247, 11521), (248, 11530), (251, 11560), (255, 11605), (265, 11665), (268, 11680), (271, 11710), (272, 11722), (277, 11767), (278, 11773), (281, 11788), (284, 11818), (286, 11839), (287, 11842), (295, 11905), (299, 11932), (300, 11935), (301, 11938), (302, 11944), (308, 11968), (309, 11971), (311, 11977), (313, 11983), (315, 11998), (318, 12016), (323, 12097), (327, 12145), (328, 12151), (332, 12178), (352, 12337), (353, 12349), (361, 12385), (376, 12445), (381, 12484), (383, 12490), (384, 12493), (390, 12514), (391, 12517), (407, 12616), (414, 12655), (418, 12679), (422, 12712), (425, 12757), (431, 12811), (439, 12898), (440, 12919), (444, 12955), (448, 12985), (459, 13063), (460, 13066), (461, 13075), (464, 13099), (474, 13180), (475, 13186), (479, 13231), (480, 13234), (481, 13249), (490, 13294), (491, 13303), (492, 13312), (493, 13315), (509, 13420), (521, 13468), (523, 13474), (537, 13573), (538, 13576), (541, 13588), (553, 13705), (558, 13738), (563, 13789), (565, 13801), (569, 13819), (575, 13879), (586, 13960), (589, 13981), (591, 14014), (597, 14077), (599, 14095), (618, 14209), (620, 14239), (622, 14248), (626, 14287), (627, 14290), (630, 14320), (631, 14341), (646, 14494), (653, 14545), (662, 14608), (664, 14614), (670, 14665), (692, 14851), (700, 14938), (705, 14965), (706, 14968), (718, 15043), (722, 15067), (727, 15106), (730, 15142), (734, 15163), (743, 15250), (749, 15292), (755, 15325), (756, 15337), (761, 15415), (764, 15481),

Gene: Horseradish\_17 Start: 9515, Stop: 14311, Start Num: 73

Candidate Starts for Horseradish\_17:

(Start: 73 @9515 has 23 MA's), (Start: 77 @9542 has 1 MA's), (79, 9548), (99, 9671), (112, 9773), (116, 9818), (119, 9830), (123, 9848), (126, 9875), (127, 9878), (129, 9893), (138, 9944), (139, 9947), (144, 10004), (146, 10007), (147, 10010), (155, 10049), (158, 10067), (164, 10112), (171, 10148), (175, 10181), (179, 10214), (180, 10226), (187, 10280), (190, 10319), (192, 10334), (196, 10343), (200, 10370), (208, 10421), (218, 10481), (221, 10490), (227, 10544), (238, 10607), (241, 10622),

(248, 10685), (261, 10775), (267, 10802), (277, 10895), (278, 10901), (281, 10916), (285, 10955), (295, 11033), (301, 11066), (311, 11105), (314, 11123), (315, 11126), (319, 11153), (322, 11210), (324, 11231), (338, 11342), (343, 11363), (345, 11399), (349, 11441), (350, 11453), (352, 11465), (360, 11510), (361, 11513), (365, 11531), (366, 11534), (367, 11537), (381, 11612), (391, 11645), (400, 11705), (411, 11771), (412, 11774), (413, 11777), (415, 11795), (429, 11894), (432, 11909), (433, 11912), (450, 12062), (452, 12083), (461, 12125), (465, 12152), (466, 12158), (482, 12290), (487, 12302), (499, 12389), (507, 12431), (514, 12467), (525, 12503), (531, 12542), (540, 12593), (545, 12632), (551, 12710), (559, 12761), (566, 12818), (585, 12956), (592, 13028), (612, 13172), (616, 13193), (638, 13370), (639, 13376), (678, 13700), (681, 13706), (689, 13766), (691, 13784), (694, 13817), (702, 13889), (709, 13928), (713, 13958), (724, 14024), (725, 14042), (729, 14072), (738, 14132), (751, 14222), (759, 14282),

Gene: Horus\_18 Start: 9926, Stop: 15514, Start Num: 28

Candidate Starts for Horus\_18:

(Start: 21 @9881 has 10 MA's), (Start: 28 @9926 has 1 MA's), (30, 9947), (34, 9968), (37, 10013), (Start: 38 @10028 has 1 MA's), (43, 10112), (51, 10154), (52, 10166), (62, 10229), (64, 10244), (66, 10253), (68, 10271), (69, 10277), (79, 10325), (103, 10460), (121, 10610), (125, 10640), (172, 10964), (185, 11060), (193, 11168), (201, 11210), (202, 11213), (203, 11219), (206, 11240), (217, 11321), (226, 11387), (230, 11414), (232, 11426), (234, 11444), (235, 11456), (241, 11480), (243, 11492), (246, 11531), (247, 11534), (248, 11543), (251, 11573), (265, 11678), (268, 11693), (271, 11723), (272, 11735), (277, 11780), (278, 11786), (281, 11801), (284, 11831), (286, 11852), (287, 11855), (295, 11918), (299, 11945), (300, 11948), (301, 11951), (302, 11957), (308, 11981), (309, 11984), (311, 11990), (313, 11996), (315, 12011), (318, 12029), (320, 12074), (327, 12158), (328, 12164), (332, 12191), (345, 12284), (346, 12293), (352, 12350), (353, 12362), (361, 12398), (373, 12446), (376, 12458), (381, 12497), (383, 12503), (384, 12506), (389, 12524), (390, 12527), (391, 12530), (396, 12554), (407, 12629), (418, 12692), (422, 12725), (426, 12800), (431, 12824), (432, 12836), (435, 12869), (440, 12932), (444, 12968), (448, 12998), (459, 13076), (460, 13079), (461, 13088), (475, 13199), (479, 13244), (480, 13247), (481, 13262), (490, 13307), (491, 13316), (492, 13325), (493, 13328), (509, 13433), (521, 13481), (523, 13487), (537, 13586), (538, 13589), (541, 13601), (553, 13718), (558, 13751), (563, 13802), (569, 13832), (575, 13892), (586, 13973), (589, 13994), (590, 13997), (591, 14027), (597, 14090), (598, 14099), (599, 14108), (618, 14222), (620, 14252), (626, 14300), (627, 14303), (630, 14333), (631, 14354), (653, 14552), (662, 14615), (664, 14621), (670, 14672), (692, 14864), (700, 14951), (705, 14978), (706, 14981), (718, 15056), (722, 15080), (727, 15119), (730, 15155), (734, 15176), (743, 15263), (749, 15305), (755, 15338), (756, 15350), (764, 15494),

Gene: Jalammah\_19 Start: 11050, Stop: 16590, Start Num: 8

Candidate Starts for Jalammah\_19:

(Start: 8 @11050 has 37 MA's), (Start: 14 @11101 has 1 MA's), (15, 11110), (16, 11113), (18, 11155), (35, 11266), (36, 11287), (42, 11407), (49, 11449), (60, 11515), (62, 11533), (65, 11554), (66, 11557), (68, 11575), (74, 11599), (86, 11683), (96, 11725), (98, 11740), (100, 11749), (122, 11917), (125, 11944), (142, 12061), (169, 12232), (172, 12262), (193, 12466), (202, 12511), (206, 12538), (207, 12550), (222, 12640), (226, 12685), (230, 12712), (234, 12742), (246, 12829), (247, 12832), (251, 12871), (260, 12955), (268, 12991), (272, 13033), (277, 13078), (278, 13084), (280, 13096), (281, 13099), (287, 13153), (291, 13192), (294, 13213), (295, 13216), (298, 13234), (304, 13261), (309, 13282), (311, 13288), (315, 13309), (319, 13336), (343, 13546), (359, 13624), (368, 13648), (373, 13660), (374, 13663), (385, 13678), (390, 13693), (391, 13696), (399, 13747), (412, 13828), (413, 13831), (419, 13864), (422, 13894), (424, 13918), (435, 13984), (469, 14251), (475, 14299), (479, 14344), (480, 14347), (481, 14362), (490, 14407), (491, 14416), (492, 14425), (499, 14476), (511, 14548), (517, 14566), (523, 14587), (537, 14686), (538, 14689), (544, 14722), (548, 14788), (550, 14806), (553, 14821), (558, 14854), (563, 14905), (570, 14956), (595, 15199), (596, 15202), (606, 15274), (607, 15277), (617, 15343), (618, 15346), (619, 15364), (625, 15424), (631, 15481), (634, 15499), (641, 15580), (642, 15583), (644, 15598), (665, 15757), (672, 15811), (680, 15877), (681,

15883), (688, 15943), (689, 15949), (693, 15979), (702, 16072), (707, 16096), (710, 16114), (713, 16138), (714, 16144), (717, 16165), (724, 16204), (740, 16345), (742, 16357), (750, 16408), (754, 16426), (763, 16576),

Gene: Jamzy\_19 Start: 9930, Stop: 14147, Start Num: 73

Candidate Starts for Jamzy\_19:

(Start: 73 @9930 has 23 MA's), (Start: 77 @9957 has 1 MA's), (114, 10203), (123, 10266), (131, 10323), (136, 10350), (140, 10392), (150, 10455), (153, 10470), (156, 10488), (159, 10506), (161, 10518), (164, 10551), (171, 10593), (173, 10608), (185, 10704), (186, 10713), (189, 10776), (191, 10791), (200, 10827), (208, 10878), (214, 10911), (215, 10920), (227, 11001), (236, 11067), (239, 11076), (240, 11085), (244, 11106), (259, 11241), (261, 11253), (281, 11394), (283, 11415), (287, 11448), (288, 11466), (290, 11484), (298, 11529), (311, 11583), (315, 11604), (331, 11667), (340, 11715), (343, 11730), (345, 11766), (365, 11820), (374, 11847), (383, 11853), (390, 11877), (391, 11880), (400, 11940), (405, 11973), (413, 12012), (415, 12030), (416, 12033), (422, 12075), (423, 12087), (427, 12120), (428, 12123), (432, 12144), (436, 12168), (437, 12171), (447, 12264), (449, 12285), (450, 12297), (452, 12318), (454, 12327), (456, 12336), (458, 12342), (489, 12495), (495, 12555), (498, 12564), (499, 12570), (505, 12606), (536, 12738), (553, 12876), (557, 12900), (583, 13098), (584, 13101), (603, 13263), (608, 13287), (609, 13290), (640, 13392), (671, 13497), (682, 13569), (686, 13593), (688, 13605), (691, 13629), (693, 13641), (701, 13725), (702, 13731), (710, 13773), (713, 13794), (719, 13827), (724, 13860), (726, 13881), (729, 13908), (738, 13968), (741, 13995), (742, 14004), (744, 14016), (759, 14118),

Gene: JasperJr\_17 Start: 10278, Stop: 15800, Start Num: 8

Candidate Starts for JasperJr\_17:

(Start: 8 @10278 has 37 MA's), (Start: 11 @10293 has 1 MA's), (Start: 12 @10299 has 1 MA's), (Start: 14 @10329 has 1 MA's), (15, 10338), (16, 10341), (18, 10383), (35, 10494), (36, 10515), (42, 10635), (49, 10677), (60, 10743), (62, 10761), (65, 10782), (66, 10785), (68, 10803), (74, 10827), (86, 10911), (87, 10914), (96, 10953), (98, 10968), (100, 10977), (122, 11145), (125, 11172), (142, 11289), (150, 11337), (169, 11460), (172, 11490), (193, 11694), (202, 11739), (206, 11766), (207, 11778), (222, 11868), (226, 11913), (230, 11940), (234, 11970), (246, 12057), (247, 12060), (251, 12099), (260, 12183), (268, 12219), (272, 12261), (277, 12306), (278, 12312), (280, 12324), (281, 12327), (287, 12381), (291, 12420), (294, 12441), (295, 12444), (298, 12462), (299, 12471), (304, 12489), (309, 12510), (311, 12516), (315, 12537), (319, 12564), (324, 12642), (359, 12831), (368, 12855), (373, 12867), (374, 12870), (385, 12885), (390, 12900), (391, 12903), (399, 12954), (412, 13035), (413, 13038), (419, 13071), (422, 13101), (424, 13125), (445, 13284), (469, 13458), (475, 13506), (479, 13551), (480, 13554), (481, 13569), (490, 13614), (491, 13623), (492, 13632), (499, 13683), (511, 13755), (517, 13773), (523, 13794), (537, 13893), (538, 13896), (544, 13929), (548, 13995), (550, 14013), (553, 14028), (558, 14061), (563, 14112), (570, 14163), (577, 14211), (595, 14406), (596, 14409), (606, 14481), (607, 14484), (617, 14550), (618, 14553), (619, 14571), (625, 14631), (631, 14688), (634, 14706), (641, 14787), (642, 14790), (644, 14805), (672, 15018), (680, 15084), (687, 15138), (688, 15150), (689, 15156), (702, 15279), (707, 15303), (710, 15321), (713, 15345), (714, 15351), (717, 15372), (724, 15411), (740, 15552), (742, 15564), (750, 15615), (754, 15633), (763, 15783),

Gene: JuJu\_17 Start: 10202, Stop: 15721, Start Num: 8

Candidate Starts for JuJu\_17:

(Start: 8 @10202 has 37 MA's), (Start: 11 @10217 has 1 MA's), (Start: 12 @10223 has 1 MA's), (Start: 14 @10253 has 1 MA's), (15, 10262), (16, 10265), (18, 10307), (35, 10418), (36, 10439), (62, 10685), (65, 10706), (66, 10709), (68, 10727), (74, 10751), (86, 10835), (88, 10841), (96, 10877), (98, 10892), (100, 10901), (103, 10916), (107, 10961), (122, 11069), (125, 11096), (132, 11129), (172, 11414), (193, 11618), (202, 11663), (226, 11837), (230, 11864), (234, 11894), (246, 11981), (251, 12023), (258, 12095), (268, 12143), (272, 12185), (277, 12230), (278, 12236), (280, 12248), (281, 12251), (287, 12305), (291, 12344), (294, 12365), (295, 12368), (298, 12386), (299, 12395), (304, 12413),

(309, 12434), (311, 12440), (315, 12461), (319, 12488), (324, 12566), (342, 12674), (355, 12740), (368, 12779), (390, 12824), (391, 12827), (399, 12878), (412, 12959), (413, 12962), (419, 12995), (422, 13025), (435, 13115), (444, 13196), (461, 13316), (469, 13382), (475, 13430), (479, 13475), (480, 13478), (481, 13493), (483, 13502), (490, 13538), (491, 13547), (492, 13556), (511, 13679), (523, 13718), (537, 13817), (538, 13820), (548, 13919), (550, 13937), (553, 13952), (558, 13985), (563, 14036), (570, 14087), (579, 14156), (595, 14330), (596, 14333), (604, 14399), (606, 14405), (607, 14408), (617, 14474), (618, 14477), (619, 14495), (625, 14555), (631, 14612), (634, 14630), (641, 14711), (644, 14729), (651, 14780), (665, 14888), (672, 14942), (680, 15008), (687, 15062), (688, 15074), (689, 15080), (693, 15110), (702, 15203), (707, 15227), (710, 15245), (713, 15269), (714, 15275), (717, 15296), (724, 15335), (740, 15476), (750, 15539), (754, 15557), (760, 15614), (763, 15707),

Gene: Kamaru\_18 Start: 9868, Stop: 15501, Start Num: 21

Candidate Starts for Kamaru\_18:

(Start: 21 @9868 has 10 MA's), (27, 9895), (Start: 28 @9913 has 1 MA's), (30, 9934), (34, 9955), (37, 10000), (Start: 38 @10015 has 1 MA's), (43, 10099), (51, 10141), (52, 10153), (62, 10216), (64, 10231), (66, 10240), (68, 10258), (69, 10264), (79, 10312), (103, 10447), (121, 10597), (125, 10627), (158, 10846), (169, 10921), (172, 10951), (193, 11155), (201, 11197), (202, 11200), (203, 11206), (206, 11227), (217, 11308), (226, 11374), (230, 11401), (232, 11413), (234, 11431), (235, 11443), (241, 11467), (243, 11479), (246, 11518), (247, 11521), (248, 11530), (251, 11560), (255, 11605), (265, 11665), (268, 11680), (271, 11710), (272, 11722), (277, 11767), (278, 11773), (281, 11788), (284, 11818), (286, 11839), (287, 11842), (295, 11905), (299, 11932), (300, 11935), (301, 11938), (302, 11944), (308, 11968), (309, 11971), (311, 11977), (313, 11983), (315, 11998), (318, 12016), (323, 12097), (327, 12145), (328, 12151), (332, 12178), (352, 12337), (353, 12349), (361, 12385), (376, 12445), (381, 12484), (383, 12490), (384, 12493), (390, 12514), (391, 12517), (407, 12616), (414, 12655), (418, 12679), (422, 12712), (425, 12757), (431, 12811), (439, 12898), (440, 12919), (444, 12955), (448, 12985), (459, 13063), (460, 13066), (461, 13075), (464, 13099), (474, 13180), (475, 13186), (479, 13231), (480, 13234), (481, 13249), (490, 13294), (491, 13303), (492, 13312), (493, 13315), (509, 13420), (521, 13468), (523, 13474), (537, 13573), (538, 13576), (541, 13588), (553, 13705), (558, 13738), (563, 13789), (565, 13801), (569, 13819), (575, 13879), (586, 13960), (589, 13981), (591, 14014), (597, 14077), (599, 14095), (618, 14209), (620, 14239), (622, 14248), (626, 14287), (627, 14290), (630, 14320), (631, 14341), (646, 14494), (653, 14545), (662, 14608), (664, 14614), (670, 14665), (692, 14851), (700, 14938), (705, 14965), (706, 14968), (718, 15043), (722, 15067), (727, 15106), (730, 15142), (734, 15163), (743, 15250), (749, 15292), (755, 15325), (756, 15337), (761, 15415), (764, 15481),

Gene: KappaFarmDelta\_17 Start: 10424, Stop: 15964, Start Num: 8

Candidate Starts for KappaFarmDelta\_17:

(Start: 8 @10424 has 37 MA's), (Start: 11 @10439 has 1 MA's), (Start: 12 @10445 has 1 MA's), (Start: 14 @10475 has 1 MA's), (15, 10484), (16, 10487), (18, 10529), (35, 10640), (36, 10661), (60, 10889), (62, 10907), (65, 10928), (66, 10931), (68, 10949), (74, 10973), (86, 11057), (88, 11063), (96, 11099), (98, 11114), (100, 11123), (122, 11291), (125, 11318), (142, 11435), (169, 11606), (172, 11636), (193, 11840), (202, 11885), (206, 11912), (226, 12059), (230, 12086), (234, 12116), (246, 12203), (247, 12206), (251, 12245), (253, 12251), (268, 12365), (272, 12407), (277, 12452), (278, 12458), (280, 12470), (281, 12473), (287, 12527), (291, 12566), (294, 12587), (295, 12590), (298, 12608), (304, 12635), (309, 12656), (311, 12662), (315, 12683), (319, 12710), (323, 12782), (355, 12983), (359, 12998), (368, 13022), (374, 13037), (390, 13067), (391, 13070), (399, 13121), (413, 13205), (419, 13238), (424, 13292), (459, 13547), (469, 13625), (475, 13673), (477, 13706), (479, 13718), (480, 13721), (481, 13736), (483, 13745), (490, 13781), (491, 13790), (492, 13799), (509, 13907), (521, 13955), (522, 13958), (523, 13961), (526, 13982), (538, 14063), (539, 14066), (553, 14192), (558, 14225), (562, 14273), (563, 14276), (566, 14291), (570, 14327), (595, 14570), (596, 14573), (606, 14645), (607, 14648), (617, 14714), (618, 14717), (619, 14735), (625, 14795), (631, 14852), (634, 14870), (641, 14951), (644, 14969), (672, 15182), (680, 15248), (688, 15314), (689, 15320), (693,

15350), (702, 15443), (707, 15467), (713, 15509), (717, 15536), (724, 15575), (740, 15716), (750, 15779), (754, 15797), (760, 15854),

Gene: KayGee\_16 Start: 9384, Stop: 14468, Start Num: 26

Candidate Starts for KayGee\_16:

(Start: 26 @9384 has 29 MA's), (41, 9540), (55, 9669), (59, 9699), (69, 9768), (72, 9780), (81, 9825), (85, 9867), (88, 9876), (96, 9912), (100, 9936), (114, 10050), (118, 10089), (120, 10095), (121, 10101), (123, 10110), (125, 10131), (151, 10302), (162, 10365), (168, 10410), (177, 10491), (193, 10650), (198, 10683), (202, 10695), (206, 10722), (212, 10779), (218, 10809), (221, 10821), (233, 10923), (234, 10926), (246, 11013), (253, 11061), (268, 11175), (278, 11268), (281, 11283), (283, 11304), (287, 11337), (289, 11367), (292, 11379), (298, 11418), (303, 11442), (304, 11445), (310, 11469), (315, 11493), (324, 11598), (331, 11646), (335, 11676), (339, 11691), (342, 11706), (345, 11745), (349, 11787), (350, 11799), (352, 11811), (354, 11826), (356, 11841), (360, 11856), (366, 11880), (377, 11919), (378, 11934), (379, 11940), (382, 11961), (389, 11985), (391, 11991), (411, 12117), (417, 12147), (423, 12198), (428, 12234), (432, 12255), (433, 12258), (441, 12330), (447, 12375), (450, 12408), (452, 12429), (462, 12483), (473, 12558), (487, 12642), (499, 12729), (537, 12915), (553, 13047), (558, 13077), (576, 13215), (583, 13266), (588, 13296), (609, 13452), (612, 13482), (643, 13662), (649, 13713), (659, 13740), (663, 13761), (678, 13857), (686, 13905), (689, 13923), (702, 14046), (707, 14070), (709, 14085), (713, 14115), (717, 14142), (719, 14148), (724, 14181), (733, 14250), (735, 14253), (738, 14289), (751, 14379),

Gene: Kenna\_17 Start: 9881, Stop: 15508, Start Num: 21

Candidate Starts for Kenna\_17:

(Start: 21 @9881 has 10 MA's), (27, 9908), (Start: 28 @9926 has 1 MA's), (30, 9947), (34, 9968), (37, 10013), (Start: 38 @10028 has 1 MA's), (43, 10112), (51, 10154), (52, 10166), (62, 10229), (64, 10244), (66, 10253), (68, 10271), (69, 10277), (79, 10325), (103, 10460), (121, 10610), (125, 10640), (172, 10964), (185, 11060), (193, 11168), (202, 11213), (203, 11219), (206, 11240), (209, 11264), (217, 11321), (226, 11387), (230, 11414), (232, 11426), (234, 11444), (235, 11456), (241, 11480), (243, 11492), (246, 11531), (247, 11534), (248, 11543), (251, 11573), (255, 11618), (265, 11678), (268, 11693), (271, 11723), (272, 11735), (277, 11780), (278, 11786), (281, 11801), (284, 11831), (286, 11852), (287, 11855), (295, 11918), (299, 11945), (300, 11948), (301, 11951), (302, 11957), (308, 11981), (309, 11984), (311, 11990), (313, 11996), (315, 12011), (318, 12029), (320, 12074), (327, 12158), (328, 12164), (332, 12191), (345, 12284), (346, 12293), (352, 12350), (353, 12362), (361, 12398), (362, 12404), (373, 12446), (376, 12458), (381, 12497), (383, 12503), (384, 12506), (389, 12524), (390, 12527), (391, 12530), (396, 12554), (407, 12629), (414, 12668), (418, 12692), (422, 12725), (432, 12836), (435, 12869), (440, 12932), (444, 12968), (448, 12998), (459, 13076), (460, 13079), (461, 13088), (464, 13112), (474, 13193), (475, 13199), (479, 13244), (480, 13247), (481, 13262), (490, 13307), (491, 13316), (492, 13325), (493, 13328), (509, 13433), (521, 13481), (522, 13484), (523, 13487), (537, 13586), (538, 13589), (541, 13601), (553, 13718), (558, 13751), (563, 13802), (569, 13832), (575, 13892), (586, 13973), (589, 13994), (591, 14027), (598, 14099), (599, 14108), (618, 14222), (620, 14252), (622, 14261), (626, 14300), (627, 14303), (630, 14333), (631, 14354), (653, 14552), (662, 14615), (664, 14621), (670, 14672), (692, 14858), (700, 14945), (705, 14972), (706, 14975), (718, 15050), (722, 15074), (727, 15113), (730, 15149), (734, 15170), (743, 15257), (749, 15299), (755, 15332), (756, 15344), (761, 15422), (764, 15488),

Gene: Lauer\_15 Start: 9433, Stop: 14517, Start Num: 26

Candidate Starts for Lauer\_15:

(Start: 26 @9433 has 29 MA's), (41, 9589), (55, 9718), (59, 9748), (69, 9817), (72, 9829), (85, 9916), (88, 9925), (96, 9961), (100, 9985), (107, 10045), (114, 10099), (118, 10138), (120, 10144), (123, 10159), (125, 10180), (151, 10351), (162, 10414), (168, 10459), (177, 10540), (193, 10699), (198, 10732), (202, 10744), (206, 10771), (212, 10828), (218, 10858), (221, 10870), (233, 10972), (234, 10975), (246, 11062), (253, 11110), (268, 11224), (278, 11317), (281, 11332), (283, 11353), (287, 11386), (289, 11416), (292, 11428), (298, 11467), (303, 11491), (304, 11494), (310, 11518), (315,



11542), (324, 11647), (335, 11725), (342, 11755), (343, 11758), (345, 11794), (349, 11836), (352, 11860), (354, 11875), (356, 11890), (360, 11905), (366, 11929), (377, 11968), (378, 11983), (379, 11989), (382, 12010), (389, 12034), (391, 12040), (411, 12166), (417, 12196), (422, 12235), (428, 12283), (432, 12304), (433, 12307), (441, 12379), (447, 12424), (450, 12457), (452, 12478), (462, 12532), (473, 12607), (487, 12691), (499, 12778), (537, 12964), (553, 13096), (558, 13126), (576, 13264), (583, 13315), (588, 13345), (609, 13501), (612, 13531), (643, 13711), (649, 13762), (659, 13789), (663, 13810), (678, 13906), (686, 13954), (689, 13972), (702, 14095), (707, 14119), (709, 14134), (713, 14164), (717, 14191), (719, 14197), (724, 14230), (733, 14299), (735, 14302), (738, 14338), (751, 14428),

Gene: Leroy\_18 Start: 9882, Stop: 15515, Start Num: 21

Candidate Starts for Leroy\_18:

(Start: 21 @9882 has 10 MA's), (Start: 28 @9927 has 1 MA's), (30, 9948), (34, 9969), (37, 10014), (Start: 38 @10029 has 1 MA's), (43, 10113), (51, 10155), (52, 10167), (62, 10230), (64, 10245), (66, 10254), (68, 10272), (69, 10278), (79, 10326), (103, 10461), (121, 10611), (125, 10641), (169, 10935), (172, 10965), (193, 11169), (201, 11211), (202, 11214), (203, 11220), (206, 11241), (209, 11265), (217, 11322), (226, 11388), (230, 11415), (232, 11427), (234, 11445), (235, 11457), (241, 11481), (243, 11493), (246, 11532), (247, 11535), (248, 11544), (251, 11574), (253, 11580), (265, 11679), (268, 11694), (271, 11724), (272, 11736), (277, 11781), (278, 11787), (281, 11802), (284, 11832), (286, 11853), (287, 11856), (295, 11919), (299, 11946), (301, 11952), (308, 11982), (309, 11985), (311, 11991), (313, 11997), (315, 12012), (318, 12030), (323, 12111), (327, 12159), (328, 12165), (330, 12180), (332, 12192), (352, 12351), (353, 12363), (361, 12399), (362, 12405), (376, 12459), (381, 12498), (383, 12504), (384, 12507), (389, 12525), (390, 12528), (391, 12531), (396, 12555), (407, 12630), (418, 12693), (422, 12726), (425, 12771), (431, 12825), (432, 12837), (439, 12912), (440, 12933), (444, 12969), (448, 12999), (460, 13080), (461, 13089), (464, 13113), (475, 13200), (479, 13245), (480, 13248), (490, 13308), (491, 13317), (492, 13326), (509, 13434), (521, 13482), (523, 13488), (537, 13587), (538, 13590), (541, 13602), (553, 13719), (558, 13752), (563, 13803), (569, 13833), (575, 13893), (586, 13974), (589, 13995), (591, 14028), (598, 14100), (599, 14109), (618, 14223), (620, 14253), (622, 14262), (626, 14301), (627, 14304), (630, 14334), (631, 14355), (653, 14553), (662, 14616), (664, 14622), (670, 14673), (692, 14865), (700, 14952), (705, 14979), (706, 14982), (718, 15057), (722, 15081), (727, 15120), (730, 15156), (734, 15177), (743, 15264), (749, 15306), (755, 15339), (756, 15351), (764, 15495),

Gene: LitninMcQueen\_18 Start: 9869, Stop: 15502, Start Num: 21

Candidate Starts for LitninMcQueen\_18:

(Start: 21 @9869 has 10 MA's), (27, 9896), (Start: 28 @9914 has 1 MA's), (30, 9935), (34, 9956), (37, 10001), (Start: 38 @10016 has 1 MA's), (43, 10100), (51, 10142), (52, 10154), (62, 10217), (64, 10232), (66, 10241), (68, 10259), (69, 10265), (79, 10313), (103, 10448), (121, 10598), (125, 10628), (158, 10847), (169, 10922), (172, 10952), (193, 11156), (201, 11198), (202, 11201), (203, 11207), (206, 11228), (217, 11309), (226, 11375), (230, 11402), (232, 11414), (234, 11432), (235, 11444), (241, 11468), (243, 11480), (246, 11519), (247, 11522), (248, 11531), (251, 11561), (255, 11606), (265, 11666), (268, 11681), (271, 11711), (272, 11723), (277, 11768), (278, 11774), (281, 11789), (284, 11819), (286, 11840), (287, 11843), (295, 11906), (299, 11933), (300, 11936), (301, 11939), (302, 11945), (308, 11969), (309, 11972), (311, 11978), (313, 11984), (315, 11999), (318, 12017), (323, 12098), (327, 12146), (328, 12152), (332, 12179), (352, 12338), (353, 12350), (361, 12386), (376, 12446), (381, 12485), (383, 12491), (384, 12494), (390, 12515), (391, 12518), (407, 12617), (414, 12656), (418, 12680), (422, 12713), (425, 12758), (431, 12812), (439, 12899), (440, 12920), (444, 12956), (448, 12986), (459, 13064), (460, 13067), (461, 13076), (464, 13100), (474, 13181), (475, 13187), (479, 13232), (480, 13235), (481, 13250), (490, 13295), (491, 13304), (492, 13313), (493, 13316), (509, 13421), (521, 13469), (523, 13475), (537, 13574), (538, 13577), (541, 13589), (553, 13706), (558, 13739), (563, 13790), (569, 13820), (575, 13880), (586, 13961), (589, 13982), (591, 14015), (597, 14078), (599, 14096), (618, 14210), (620, 14240), (622, 14249), (626, 14288), (627, 14291), (630, 14321), (631, 14342), (646, 14495), (653, 14546), (662, 14609), (664, 14615),

(670, 14666), (692, 14852), (700, 14939), (705, 14966), (706, 14969), (718, 15044), (722, 15068), (727, 15107), (730, 15143), (734, 15164), (743, 15251), (749, 15293), (755, 15326), (756, 15338), (761, 15416), (764, 15482),

Gene: Lutum\_18 Start: 9881, Stop: 15508, Start Num: 21

Candidate Starts for Lutum\_18:

(Start: 21 @9881 has 10 MA's), (27, 9908), (Start: 28 @9926 has 1 MA's), (30, 9947), (34, 9968), (37, 10013), (Start: 38 @10028 has 1 MA's), (43, 10112), (51, 10154), (52, 10166), (62, 10229), (64, 10244), (66, 10253), (68, 10271), (69, 10277), (79, 10325), (103, 10460), (121, 10610), (125, 10640), (172, 10964), (185, 11060), (193, 11168), (202, 11213), (203, 11219), (206, 11240), (209, 11264), (217, 11321), (226, 11387), (230, 11414), (232, 11426), (234, 11444), (235, 11456), (241, 11480), (243, 11492), (246, 11531), (247, 11534), (248, 11543), (251, 11573), (255, 11618), (265, 11678), (268, 11693), (271, 11723), (272, 11735), (277, 11780), (278, 11786), (281, 11801), (284, 11831), (286, 11852), (287, 11855), (295, 11918), (299, 11945), (300, 11948), (301, 11951), (302, 11957), (308, 11981), (309, 11984), (311, 11990), (313, 11996), (315, 12011), (318, 12029), (320, 12074), (327, 12158), (328, 12164), (332, 12191), (345, 12284), (346, 12293), (352, 12350), (353, 12362), (361, 12398), (362, 12404), (373, 12446), (376, 12458), (381, 12497), (383, 12503), (384, 12506), (389, 12524), (390, 12527), (391, 12530), (396, 12554), (407, 12629), (414, 12668), (418, 12692), (422, 12725), (432, 12836), (435, 12869), (440, 12932), (444, 12968), (448, 12998), (459, 13076), (460, 13079), (461, 13088), (464, 13112), (474, 13193), (475, 13199), (479, 13244), (480, 13247), (481, 13262), (490, 13307), (491, 13316), (492, 13325), (493, 13328), (509, 13433), (521, 13481), (522, 13484), (523, 13487), (537, 13586), (538, 13589), (541, 13601), (553, 13718), (558, 13751), (563, 13802), (569, 13832), (575, 13892), (586, 13973), (589, 13994), (591, 14027), (598, 14099), (599, 14108), (618, 14222), (620, 14252), (622, 14261), (626, 14300), (627, 14303), (630, 14333), (631, 14354), (653, 14552), (662, 14615), (664, 14621), (670, 14672), (692, 14858), (700, 14945), (705, 14972), (706, 14975), (718, 15050), (722, 15074), (727, 15113), (730, 15149), (734, 15170), (743, 15257), (749, 15299), (755, 15332), (756, 15344), (761, 15422), (764, 15488),

Gene: Lysidious\_18 Start: 10777, Stop: 16320, Start Num: 8

Candidate Starts for Lysidious\_18:

(Start: 8 @10777 has 37 MA's), (Start: 14 @10828 has 1 MA's), (15, 10837), (16, 10840), (18, 10882), (35, 10993), (36, 11014), (42, 11134), (49, 11176), (60, 11242), (62, 11260), (65, 11281), (66, 11284), (68, 11302), (74, 11326), (86, 11410), (88, 11416), (96, 11452), (98, 11467), (100, 11476), (122, 11644), (125, 11671), (142, 11788), (169, 11959), (172, 11989), (193, 12193), (202, 12238), (206, 12265), (207, 12277), (222, 12367), (226, 12412), (230, 12439), (234, 12469), (246, 12556), (247, 12559), (251, 12598), (268, 12718), (272, 12760), (277, 12805), (278, 12811), (280, 12823), (281, 12826), (287, 12880), (291, 12919), (294, 12940), (295, 12943), (298, 12961), (299, 12970), (304, 12988), (309, 13009), (311, 13015), (315, 13036), (319, 13063), (342, 13270), (359, 13351), (368, 13375), (373, 13387), (374, 13390), (385, 13405), (390, 13420), (391, 13423), (399, 13474), (412, 13555), (413, 13558), (419, 13591), (422, 13621), (424, 13645), (435, 13711), (469, 13978), (475, 14026), (479, 14071), (480, 14074), (481, 14089), (490, 14134), (491, 14143), (492, 14152), (499, 14203), (511, 14275), (517, 14293), (523, 14314), (537, 14413), (538, 14416), (544, 14449), (548, 14515), (550, 14533), (553, 14548), (558, 14581), (563, 14632), (570, 14683), (595, 14926), (596, 14929), (606, 15001), (607, 15004), (617, 15070), (618, 15073), (619, 15091), (625, 15151), (631, 15208), (634, 15226), (641, 15307), (642, 15310), (644, 15325), (665, 15484), (672, 15538), (680, 15604), (681, 15610), (688, 15670), (689, 15676), (702, 15799), (707, 15823), (710, 15841), (713, 15865), (714, 15871), (717, 15892), (724, 15931), (740, 16072), (742, 16084), (750, 16135), (754, 16153), (760, 16210), (763, 16303),

Gene: MAnor\_16 Start: 9376, Stop: 14475, Start Num: 26

Candidate Starts for MAnor\_16:

(Start: 26 @9376 has 29 MA's), (41, 9532), (51, 9637), (55, 9661), (62, 9712), (69, 9760), (79, 9808), (81, 9817), (85, 9859), (87, 9865), (88, 9868), (96, 9904), (100, 9928), (104, 9955), (114, 10042), (118,

10081), (120, 10087), (123, 10102), (125, 10123), (151, 10294), (162, 10357), (168, 10402), (172, 10441), (177, 10483), (193, 10645), (197, 10654), (198, 10678), (202, 10690), (206, 10717), (207, 10729), (212, 10774), (218, 10804), (221, 10816), (233, 10918), (234, 10921), (246, 11008), (249, 11035), (255, 11095), (259, 11125), (264, 11146), (268, 11170), (278, 11263), (281, 11278), (282, 11287), (283, 11299), (287, 11332), (292, 11374), (302, 11434), (303, 11437), (304, 11440), (305, 11446), (310, 11464), (315, 11488), (324, 11593), (342, 11701), (343, 11704), (345, 11740), (352, 11806), (354, 11821), (356, 11836), (360, 11851), (365, 11872), (366, 11875), (367, 11878), (377, 11914), (378, 11929), (379, 11935), (382, 11956), (389, 11980), (391, 11986), (411, 12112), (417, 12142), (422, 12181), (428, 12229), (432, 12250), (433, 12253), (434, 12259), (441, 12325), (447, 12370), (450, 12403), (452, 12424), (462, 12478), (484, 12628), (487, 12637), (499, 12724), (536, 12901), (553, 13042), (558, 13072), (576, 13210), (588, 13291), (609, 13444), (612, 13474), (647, 13696), (648, 13705), (649, 13711), (659, 13747), (678, 13864), (686, 13912), (689, 13930), (702, 14053), (707, 14077), (709, 14092), (713, 14122), (717, 14149), (719, 14155), (724, 14188), (733, 14257), (735, 14260), (738, 14296), (747, 14368), (748, 14371), (751, 14386),

Gene: MScarn\_18 Start: 9601, Stop: 14400, Start Num: 73

Candidate Starts for MScarn\_18:

(Start: 73 @9601 has 23 MA's), (Start: 77 @9628 has 1 MA's), (79, 9634), (99, 9757), (112, 9859), (116, 9904), (119, 9916), (123, 9934), (126, 9961), (127, 9964), (129, 9979), (138, 10030), (139, 10033), (144, 10090), (146, 10093), (155, 10135), (158, 10153), (164, 10198), (171, 10234), (175, 10267), (179, 10300), (180, 10312), (187, 10366), (190, 10405), (192, 10420), (196, 10429), (200, 10456), (208, 10507), (218, 10567), (221, 10576), (227, 10630), (238, 10693), (241, 10708), (261, 10861), (267, 10888), (277, 10981), (278, 10987), (281, 11002), (285, 11041), (295, 11119), (301, 11152), (311, 11191), (314, 11209), (315, 11212), (319, 11239), (322, 11296), (324, 11317), (338, 11428), (343, 11449), (345, 11485), (349, 11527), (350, 11539), (352, 11551), (360, 11596), (361, 11599), (365, 11617), (366, 11620), (367, 11623), (381, 11698), (391, 11731), (400, 11791), (411, 11857), (412, 11860), (413, 11863), (415, 11881), (429, 11980), (432, 11995), (433, 11998), (450, 12148), (452, 12169), (461, 12211), (465, 12238), (466, 12244), (487, 12388), (499, 12475), (507, 12517), (514, 12553), (531, 12628), (540, 12679), (545, 12718), (547, 12742), (559, 12847), (566, 12904), (585, 13042), (592, 13117), (612, 13261), (616, 13282), (638, 13459), (639, 13465), (678, 13789), (681, 13795), (689, 13855), (694, 13906), (702, 13978), (709, 14017), (713, 14047), (724, 14113), (729, 14161), (738, 14221), (751, 14311), (759, 14371),

Gene: MaVan\_18 Start: 10619, Stop: 15748, Start Num: 26

Candidate Starts for MaVan\_18:

(23, 10598), (Start: 26 @10619 has 29 MA's), (29, 10646), (41, 10775), (49, 10871), (57, 10922), (67, 10979), (71, 11012), (72, 11015), (85, 11102), (89, 11114), (98, 11162), (99, 11165), (100, 11171), (106, 11225), (107, 11231), (113, 11279), (123, 11345), (125, 11366), (181, 11759), (182, 11762), (190, 11864), (202, 11930), (203, 11936), (206, 11957), (234, 12161), (237, 12179), (241, 12197), (243, 12209), (246, 12248), (248, 12260), (253, 12296), (257, 12353), (261, 12377), (263, 12383), (278, 12503), (281, 12518), (285, 12557), (294, 12632), (300, 12665), (304, 12680), (305, 12686), (306, 12692), (315, 12728), (325, 12836), (332, 12908), (342, 12962), (344, 12968), (360, 13112), (366, 13136), (379, 13196), (380, 13208), (381, 13214), (389, 13241), (390, 13244), (391, 13247), (405, 13340), (407, 13346), (415, 13397), (424, 13466), (430, 13499), (433, 13514), (434, 13520), (440, 13577), (442, 13589), (446, 13628), (447, 13631), (449, 13652), (450, 13664), (452, 13685), (453, 13688), (461, 13727), (462, 13739), (465, 13754), (484, 13895), (499, 13991), (510, 14057), (516, 14078), (519, 14084), (553, 14321), (558, 14351), (561, 14390), (580, 14525), (585, 14555), (588, 14576), (609, 14735), (612, 14768), (648, 14981), (655, 14999), (659, 15005), (678, 15134), (689, 15200), (694, 15251), (702, 15323), (709, 15362), (713, 15392), (719, 15425), (724, 15458), (735, 15530), (742, 15602), (750, 15656), (752, 15662), (759, 15719),

Gene: Malachai\_18 Start: 10785, Stop: 16274, Start Num: 8

Candidate Starts for Malachai\_18:

(Start: 8 @10785 has 37 MA's), (13, 10824), (Start: 14 @10836 has 1 MA's), (15, 10845), (16, 10848), (18, 10890), (35, 11001), (36, 11022), (42, 11142), (49, 11184), (60, 11250), (62, 11268), (64, 11283), (65, 11289), (66, 11292), (68, 11310), (74, 11334), (86, 11418), (96, 11460), (98, 11475), (100, 11484), (122, 11652), (125, 11679), (137, 11754), (142, 11796), (150, 11844), (169, 11967), (172, 11997), (193, 12201), (202, 12246), (206, 12273), (207, 12285), (222, 12375), (226, 12420), (230, 12447), (234, 12477), (246, 12564), (251, 12606), (268, 12726), (272, 12768), (277, 12813), (278, 12819), (280, 12831), (281, 12834), (287, 12888), (291, 12927), (294, 12948), (295, 12951), (298, 12969), (304, 12996), (311, 13023), (315, 13044), (319, 13071), (323, 13143), (355, 13344), (359, 13359), (368, 13383), (374, 13398), (390, 13428), (391, 13431), (399, 13482), (412, 13563), (413, 13566), (419, 13599), (422, 13629), (424, 13653), (435, 13719), (469, 13986), (475, 14034), (479, 14079), (480, 14082), (481, 14097), (490, 14142), (491, 14151), (492, 14160), (499, 14211), (511, 14283), (517, 14301), (523, 14322), (537, 14421), (538, 14424), (544, 14457), (548, 14523), (550, 14541), (553, 14556), (558, 14589), (563, 14640), (570, 14691), (595, 14934), (596, 14937), (607, 15012), (617, 15078), (618, 15081), (619, 15099), (625, 15159), (641, 15315), (642, 15318), (644, 15333), (672, 15552), (682, 15609), (684, 15624), (690, 15672), (695, 15717), (715, 15837), (716, 15846), (723, 15885), (732, 15957), (740, 16026), (742, 16038), (750, 16089), (754, 16107), (760, 16164), (763, 16257),

Gene: Malisha\_19 Start: 11668, Stop: 17280, Start Num: 22

Candidate Starts for Malisha\_19:

(Start: 22 @11668 has 5 MA's), (25, 11686), (27, 11695), (Start: 28 @11713 has 1 MA's), (30, 11734), (32, 11746), (37, 11800), (Start: 38 @11815 has 1 MA's), (58, 11992), (62, 12016), (66, 12040), (68, 12058), (76, 12103), (87, 12169), (88, 12172), (100, 12232), (121, 12397), (125, 12427), (146, 12583), (169, 12721), (185, 12847), (193, 12955), (198, 12988), (202, 13000), (206, 13027), (226, 13174), (230, 13201), (234, 13231), (241, 13267), (246, 13318), (247, 13321), (248, 13330), (253, 13366), (258, 13432), (268, 13480), (270, 13495), (271, 13510), (276, 13564), (277, 13567), (278, 13573), (280, 13585), (281, 13588), (286, 13639), (287, 13642), (291, 13681), (311, 13777), (315, 13798), (335, 14002), (342, 14032), (349, 14113), (352, 14137), (353, 14149), (361, 14185), (376, 14245), (381, 14284), (384, 14293), (390, 14314), (391, 14317), (407, 14416), (414, 14455), (418, 14479), (422, 14512), (425, 14557), (431, 14611), (432, 14623), (439, 14698), (440, 14719), (444, 14755), (448, 14785), (460, 14866), (461, 14875), (464, 14899), (474, 14980), (475, 14986), (479, 15031), (480, 15034), (490, 15094), (491, 15103), (492, 15112), (509, 15220), (521, 15268), (523, 15274), (537, 15373), (538, 15376), (541, 15388), (553, 15505), (558, 15538), (562, 15586), (563, 15589), (569, 15619), (575, 15679), (586, 15760), (589, 15781), (590, 15784), (597, 15877), (598, 15886), (613, 15988), (618, 16009), (620, 16039), (622, 16048), (626, 16087), (627, 16090), (628, 16093), (630, 16120), (636, 16174), (646, 16291), (658, 16375), (661, 16387), (662, 16399), (664, 16405), (666, 16432), (670, 16456), (692, 16633), (700, 16720), (704, 16738), (705, 16747), (718, 16825), (720, 16840), (722, 16849), (730, 16924), (731, 16933), (734, 16945), (743, 17032), (749, 17074), (755, 17107), (756, 17119), (761, 17194), (764, 17260),

Gene: Margaret\_19 Start: 10311, Stop: 14516, Start Num: 73

Candidate Starts for Margaret\_19:

(Start: 73 @10311 has 23 MA's), (Start: 77 @10338 has 1 MA's), (118, 10626), (123, 10647), (124, 10653), (128, 10686), (131, 10704), (135, 10728), (145, 10818), (148, 10827), (150, 10836), (156, 10869), (160, 10896), (162, 10905), (163, 10929), (186, 11082), (189, 11145), (191, 11160), (200, 11196), (205, 11226), (208, 11247), (215, 11289), (227, 11370), (239, 11445), (240, 11454), (244, 11475), (261, 11622), (281, 11763), (283, 11784), (287, 11817), (288, 11835), (291, 11856), (294, 11877), (298, 11898), (310, 11949), (311, 11952), (312, 11955), (315, 11973), (333, 12054), (340, 12084), (345, 12135), (365, 12189), (374, 12216), (391, 12249), (400, 12309), (412, 12378), (413, 12381), (426, 12483), (427, 12489), (432, 12513), (436, 12537), (437, 12540), (447, 12633), (450, 12666), (452, 12687), (454, 12696), (456, 12705), (458, 12711), (489, 12864), (498, 12933), (499, 12939), (505, 12975), (535, 13104), (553, 13245), (557, 13269), (561, 13314), (583, 13467), (584, 13470), (609, 13659), (612, 13689), (671, 13866), (682, 13938), (686, 13962), (688, 13974), (691,

13998), (693, 14010), (701, 14094), (702, 14100), (710, 14142), (713, 14163), (719, 14196), (724, 14229), (726, 14250), (729, 14277), (735, 14301), (738, 14337), (744, 14385), (759, 14487),

Gene: Mayweather\_17 Start: 10006, Stop: 15090, Start Num: 26

Candidate Starts for Mayweather\_17:

(Start: 26 @10006 has 29 MA's), (41, 10162), (55, 10291), (59, 10321), (69, 10390), (72, 10402), (75, 10417), (79, 10438), (81, 10447), (85, 10489), (88, 10498), (96, 10534), (100, 10558), (107, 10618), (114, 10672), (118, 10711), (120, 10717), (123, 10732), (125, 10753), (151, 10924), (162, 10987), (168, 11032), (177, 11113), (193, 11272), (198, 11305), (202, 11317), (206, 11344), (212, 11401), (218, 11431), (221, 11443), (233, 11545), (234, 11548), (246, 11635), (253, 11683), (268, 11797), (278, 11890), (281, 11905), (283, 11926), (287, 11959), (292, 12001), (298, 12040), (303, 12064), (304, 12067), (305, 12073), (310, 12091), (315, 12115), (324, 12220), (331, 12268), (342, 12328), (343, 12331), (345, 12367), (352, 12433), (354, 12448), (360, 12478), (365, 12499), (366, 12502), (377, 12541), (379, 12562), (382, 12583), (389, 12607), (391, 12613), (411, 12739), (417, 12769), (422, 12808), (428, 12856), (432, 12877), (433, 12880), (441, 12952), (447, 12997), (450, 13030), (452, 13051), (462, 13105), (473, 13180), (487, 13264), (499, 13351), (553, 13669), (558, 13699), (576, 13837), (583, 13888), (588, 13918), (609, 14071), (612, 14101), (647, 14311), (648, 14320), (649, 14326), (659, 14362), (678, 14479), (681, 14485), (686, 14527), (689, 14545), (702, 14668), (707, 14692), (709, 14707), (713, 14737), (717, 14764), (719, 14770), (724, 14803), (733, 14872), (735, 14875), (738, 14911), (747, 14983), (751, 15001),

Gene: Melba\_17 Start: 10274, Stop: 15796, Start Num: 8

Candidate Starts for Melba\_17:

(Start: 8 @10274 has 37 MA's), (Start: 11 @10289 has 1 MA's), (Start: 12 @10295 has 1 MA's), (Start: 14 @10325 has 1 MA's), (15, 10334), (16, 10337), (18, 10379), (35, 10490), (36, 10511), (42, 10631), (49, 10673), (60, 10739), (62, 10757), (65, 10778), (66, 10781), (68, 10799), (74, 10823), (86, 10907), (87, 10910), (96, 10949), (98, 10964), (100, 10973), (122, 11141), (125, 11168), (142, 11285), (169, 11456), (172, 11486), (193, 11690), (202, 11735), (206, 11762), (207, 11774), (222, 11864), (226, 11909), (230, 11936), (234, 11966), (246, 12053), (247, 12056), (251, 12095), (260, 12179), (268, 12215), (272, 12257), (277, 12302), (278, 12308), (280, 12320), (281, 12323), (287, 12377), (291, 12416), (294, 12437), (295, 12440), (298, 12458), (299, 12467), (304, 12485), (309, 12506), (311, 12512), (315, 12533), (319, 12560), (324, 12638), (359, 12827), (368, 12851), (373, 12863), (374, 12866), (385, 12881), (390, 12896), (391, 12899), (399, 12950), (412, 13031), (413, 13034), (419, 13067), (422, 13097), (424, 13121), (469, 13454), (475, 13502), (479, 13547), (480, 13550), (481, 13565), (490, 13610), (491, 13619), (492, 13628), (499, 13679), (511, 13751), (517, 13769), (523, 13790), (537, 13889), (538, 13892), (544, 13925), (548, 13991), (550, 14009), (553, 14024), (558, 14057), (563, 14108), (570, 14159), (577, 14207), (595, 14402), (596, 14405), (606, 14477), (607, 14480), (617, 14546), (618, 14549), (619, 14567), (625, 14627), (631, 14684), (634, 14702), (641, 14783), (642, 14786), (644, 14801), (672, 15014), (680, 15080), (687, 15134), (688, 15146), (689, 15152), (702, 15275), (707, 15299), (710, 15317), (713, 15341), (714, 15347), (717, 15368), (724, 15407), (740, 15548), (742, 15560), (750, 15611), (754, 15629), (763, 15779),

Gene: Mellie\_16 Start: 10014, Stop: 15557, Start Num: 8

Candidate Starts for Mellie\_16:

(Start: 8 @10014 has 37 MA's), (Start: 11 @10029 has 1 MA's), (Start: 12 @10035 has 1 MA's), (Start: 14 @10065 has 1 MA's), (15, 10074), (16, 10077), (18, 10119), (35, 10230), (36, 10251), (60, 10479), (62, 10497), (64, 10512), (65, 10518), (66, 10521), (68, 10539), (74, 10563), (86, 10647), (88, 10653), (96, 10689), (98, 10704), (100, 10713), (122, 10881), (125, 10908), (142, 11025), (169, 11196), (172, 11226), (193, 11430), (202, 11475), (206, 11502), (207, 11514), (222, 11604), (230, 11676), (234, 11706), (246, 11793), (247, 11796), (251, 11835), (268, 11955), (272, 11997), (277, 12042), (278, 12048), (280, 12060), (281, 12063), (287, 12117), (291, 12156), (294, 12177), (295, 12180), (298, 12198), (309, 12246), (311, 12252), (315, 12273), (319, 12300), (323, 12372), (342, 12507), (359, 12588), (368, 12612), (374, 12627), (390, 12657), (391, 12660), (399, 12711), (412, 12792), (413,

12795), (419, 12828), (422, 12858), (424, 12882), (435, 12948), (469, 13215), (472, 13233), (475, 13263), (479, 13308), (480, 13311), (481, 13326), (483, 13335), (490, 13371), (491, 13380), (492, 13389), (499, 13440), (511, 13512), (517, 13530), (523, 13551), (537, 13650), (538, 13653), (544, 13686), (548, 13752), (550, 13770), (553, 13785), (558, 13818), (563, 13869), (570, 13920), (595, 14163), (596, 14166), (606, 14238), (607, 14241), (617, 14307), (618, 14310), (619, 14328), (625, 14388), (631, 14445), (634, 14463), (641, 14544), (642, 14547), (644, 14562), (672, 14775), (680, 14841), (681, 14847), (688, 14907), (689, 14913), (702, 15036), (707, 15060), (710, 15078), (713, 15102), (714, 15108), (717, 15129), (724, 15168), (740, 15309), (742, 15321), (750, 15372), (754, 15390), (763, 15540),

Gene: MintFen\_17 Start: 10274, Stop: 15796, Start Num: 8

Candidate Starts for MintFen\_17:

(Start: 8 @10274 has 37 MA's), (Start: 11 @10289 has 1 MA's), (Start: 12 @10295 has 1 MA's), (Start: 14 @10325 has 1 MA's), (15, 10334), (16, 10337), (18, 10379), (35, 10490), (36, 10511), (42, 10631), (49, 10673), (60, 10739), (62, 10757), (65, 10778), (66, 10781), (68, 10799), (74, 10823), (86, 10907), (87, 10910), (96, 10949), (98, 10964), (100, 10973), (122, 11141), (125, 11168), (142, 11285), (169, 11456), (172, 11486), (193, 11690), (202, 11735), (206, 11762), (207, 11774), (222, 11864), (226, 11909), (230, 11936), (234, 11966), (246, 12053), (247, 12056), (251, 12095), (260, 12179), (268, 12215), (272, 12257), (277, 12302), (278, 12308), (280, 12320), (281, 12323), (287, 12377), (291, 12416), (294, 12437), (295, 12440), (298, 12458), (299, 12467), (304, 12485), (309, 12506), (311, 12512), (315, 12533), (319, 12560), (324, 12638), (359, 12827), (368, 12851), (373, 12863), (374, 12866), (385, 12881), (390, 12896), (391, 12899), (399, 12950), (412, 13031), (413, 13034), (419, 13067), (422, 13097), (424, 13121), (469, 13454), (475, 13502), (479, 13547), (480, 13550), (481, 13565), (490, 13610), (491, 13619), (492, 13628), (499, 13679), (511, 13751), (517, 13769), (523, 13790), (537, 13889), (538, 13892), (544, 13925), (548, 13991), (550, 14009), (553, 14024), (558, 14057), (563, 14108), (570, 14159), (577, 14207), (595, 14402), (596, 14405), (606, 14477), (607, 14480), (617, 14546), (618, 14549), (619, 14567), (625, 14627), (631, 14684), (634, 14702), (641, 14783), (642, 14786), (644, 14801), (672, 15014), (680, 15080), (687, 15134), (688, 15146), (689, 15152), (702, 15275), (707, 15299), (710, 15317), (713, 15341), (714, 15347), (717, 15368), (724, 15407), (740, 15548), (742, 15560), (750, 15611), (754, 15629), (763, 15779),

Gene: MissRona\_19 Start: 10619, Stop: 16108, Start Num: 8

Candidate Starts for MissRona\_19:

(Start: 8 @10619 has 37 MA's), (Start: 11 @10634 has 1 MA's), (Start: 12 @10640 has 1 MA's), (Start: 14 @10670 has 1 MA's), (15, 10679), (16, 10682), (18, 10724), (35, 10835), (36, 10856), (42, 10976), (49, 11018), (60, 11084), (62, 11102), (65, 11123), (66, 11126), (68, 11144), (74, 11168), (86, 11252), (96, 11294), (98, 11309), (100, 11318), (122, 11486), (125, 11513), (142, 11630), (169, 11801), (172, 11831), (193, 12035), (202, 12080), (206, 12107), (207, 12119), (209, 12131), (222, 12209), (226, 12254), (230, 12281), (234, 12311), (246, 12398), (247, 12401), (251, 12440), (257, 12503), (258, 12512), (268, 12560), (272, 12602), (277, 12647), (278, 12653), (281, 12668), (287, 12722), (291, 12761), (294, 12782), (295, 12785), (298, 12803), (304, 12830), (309, 12851), (311, 12857), (315, 12878), (318, 12896), (319, 12905), (355, 13178), (374, 13232), (390, 13262), (391, 13265), (399, 13316), (412, 13397), (413, 13400), (419, 13433), (422, 13463), (424, 13487), (435, 13553), (469, 13820), (475, 13868), (477, 13901), (479, 13913), (480, 13916), (490, 13976), (491, 13985), (492, 13994), (499, 14045), (511, 14117), (517, 14135), (523, 14156), (537, 14255), (538, 14258), (544, 14291), (548, 14357), (550, 14375), (553, 14390), (558, 14423), (563, 14474), (570, 14525), (579, 14594), (595, 14768), (596, 14771), (606, 14843), (607, 14846), (617, 14912), (618, 14915), (619, 14933), (625, 14993), (631, 15050), (634, 15068), (641, 15149), (642, 15152), (644, 15167), (665, 15338), (672, 15392), (684, 15464), (686, 15473), (690, 15509), (698, 15569), (699, 15587), (703, 15605), (712, 15650), (716, 15683), (732, 15794), (740, 15863), (750, 15926), (754, 15944), (763, 16094),

Gene: MunkgeeRoachy\_16 Start: 9677, Stop: 14815, Start Num: 26

Candidate Starts for MunkgeeRoachy\_16:

(Start: 22 @9653 has 5 MA's), (Start: 26 @9677 has 29 MA's), (29, 9704), (41, 9833), (44, 9908), (69, 10061), (70, 10064), (85, 10160), (88, 10169), (94, 10199), (96, 10205), (98, 10220), (99, 10223), (103, 10244), (110, 10316), (113, 10337), (123, 10403), (125, 10424), (142, 10541), (168, 10703), (172, 10742), (181, 10817), (198, 10976), (202, 10988), (206, 11015), (211, 11060), (212, 11072), (229, 11180), (232, 11201), (235, 11231), (241, 11255), (243, 11267), (246, 11306), (250, 11339), (263, 11441), (264, 11444), (267, 11462), (268, 11468), (278, 11561), (281, 11576), (285, 11615), (291, 11669), (298, 11711), (307, 11753), (314, 11783), (315, 11786), (325, 11894), (326, 11897), (329, 11948), (343, 12023), (350, 12113), (352, 12125), (360, 12170), (365, 12191), (366, 12194), (367, 12197), (381, 12272), (391, 12305), (395, 12326), (399, 12356), (407, 12404), (409, 12410), (413, 12437), (433, 12572), (447, 12689), (450, 12722), (452, 12743), (453, 12746), (465, 12812), (466, 12818), (467, 12833), (484, 12953), (487, 12962), (499, 13046), (553, 13367), (582, 13586), (588, 13622), (616, 13835), (648, 14027), (659, 14075), (663, 14096), (678, 14204), (689, 14270), (691, 14288), (702, 14393), (708, 14423), (709, 14432), (713, 14462), (724, 14528), (729, 14576), (738, 14636), (750, 14723), (759, 14786),

Gene: Murp\_17 Start: 10264, Stop: 15864, Start Num: 8

Candidate Starts for Murp\_17:

(Start: 8 @10264 has 37 MA's), (Start: 11 @10279 has 1 MA's), (Start: 12 @10285 has 1 MA's), (Start: 14 @10315 has 1 MA's), (15, 10324), (16, 10327), (18, 10369), (35, 10480), (36, 10501), (42, 10621), (50, 10669), (60, 10729), (62, 10747), (65, 10768), (66, 10771), (68, 10789), (86, 10897), (88, 10903), (96, 10939), (98, 10954), (100, 10963), (122, 11131), (125, 11158), (142, 11275), (169, 11446), (172, 11476), (185, 11572), (193, 11680), (202, 11725), (206, 11752), (207, 11764), (222, 11854), (226, 11899), (230, 11926), (234, 11956), (246, 12043), (251, 12085), (253, 12091), (268, 12205), (272, 12247), (277, 12292), (278, 12298), (281, 12313), (287, 12367), (291, 12406), (294, 12427), (295, 12430), (298, 12448), (299, 12457), (304, 12475), (309, 12496), (311, 12502), (315, 12523), (319, 12550), (321, 12598), (324, 12628), (355, 12802), (368, 12841), (374, 12856), (390, 12886), (391, 12889), (399, 12940), (412, 13021), (413, 13024), (419, 13057), (422, 13087), (424, 13111), (434, 13165), (435, 13177), (459, 13366), (469, 13444), (474, 13486), (479, 13537), (480, 13540), (481, 13555), (485, 13567), (490, 13600), (491, 13609), (502, 13723), (512, 13777), (515, 13795), (530, 13879), (532, 13885), (534, 13921), (572, 14245), (578, 14293), (579, 14305), (587, 14368), (592, 14437), (593, 14467), (594, 14470), (595, 14479), (596, 14482), (600, 14515), (606, 14554), (607, 14557), (617, 14623), (618, 14626), (619, 14644), (625, 14704), (631, 14761), (634, 14779), (641, 14860), (644, 14878), (672, 15079), (680, 15145), (688, 15211), (689, 15217), (702, 15343), (707, 15367), (710, 15385), (713, 15409), (714, 15415), (717, 15436), (724, 15475), (740, 15616), (750, 15679), (754, 15697), (760, 15757), (763, 15850),

Gene: Nibbles\_18 Start: 10619, Stop: 15748, Start Num: 26

Candidate Starts for Nibbles\_18:

(23, 10598), (Start: 26 @10619 has 29 MA's), (29, 10646), (41, 10775), (49, 10871), (57, 10922), (67, 10979), (71, 11012), (72, 11015), (85, 11102), (89, 11114), (98, 11162), (99, 11165), (100, 11171), (106, 11225), (107, 11231), (113, 11279), (123, 11345), (125, 11366), (181, 11759), (182, 11762), (190, 11864), (202, 11930), (203, 11936), (206, 11957), (234, 12161), (237, 12179), (239, 12185), (241, 12197), (243, 12209), (246, 12248), (248, 12260), (253, 12296), (257, 12353), (261, 12377), (278, 12503), (281, 12518), (285, 12557), (294, 12632), (300, 12665), (304, 12680), (305, 12686), (306, 12692), (315, 12728), (325, 12836), (332, 12908), (342, 12962), (360, 13112), (366, 13136), (379, 13196), (380, 13208), (381, 13214), (389, 13241), (390, 13244), (391, 13247), (405, 13340), (407, 13346), (415, 13397), (424, 13466), (430, 13499), (433, 13514), (434, 13520), (440, 13577), (442, 13589), (446, 13628), (447, 13631), (449, 13652), (450, 13664), (452, 13685), (453, 13688), (461, 13727), (462, 13739), (465, 13754), (484, 13895), (499, 13991), (510, 14057), (516, 14078), (519, 14084), (553, 14321), (558, 14351), (561, 14390), (580, 14525), (585, 14555), (588, 14576), (609, 14735), (612, 14768), (648, 14981), (655, 14999), (659, 15005), (678, 15134), (689, 15200), (694, 15251), (702, 15323), (709, 15362), (713, 15392), (719, 15425), (724, 15458), (735, 15530),

(742, 15602), (750, 15656), (752, 15662), (759, 15719),

Gene: Nina\_17 Start: 10662, Stop: 15809, Start Num: 26

Candidate Starts for Nina\_17:

(Start: 22 @10638 has 5 MA's), (Start: 26 @10662 has 29 MA's), (29, 10689), (41, 10818), (46, 10911), (47, 10914), (61, 11004), (65, 11028), (74, 11073), (75, 11082), (85, 11154), (87, 11160), (88, 11163), (93, 11190), (95, 11196), (98, 11214), (99, 11217), (103, 11238), (110, 11310), (113, 11331), (123, 11397), (125, 11418), (142, 11535), (168, 11697), (172, 11736), (181, 11811), (198, 11970), (202, 11982), (206, 12009), (211, 12054), (212, 12066), (226, 12156), (229, 12174), (232, 12195), (235, 12225), (241, 12249), (243, 12261), (246, 12300), (250, 12333), (263, 12435), (264, 12438), (268, 12462), (278, 12555), (281, 12570), (285, 12609), (291, 12663), (298, 12705), (300, 12717), (307, 12747), (314, 12777), (315, 12780), (325, 12888), (326, 12891), (329, 12942), (330, 12948), (343, 13017), (350, 13107), (352, 13119), (360, 13164), (365, 13185), (366, 13188), (367, 13191), (381, 13266), (391, 13299), (395, 13320), (399, 13350), (407, 13398), (409, 13404), (413, 13431), (433, 13566), (447, 13683), (450, 13716), (452, 13737), (465, 13806), (466, 13812), (467, 13827), (484, 13947), (487, 13956), (499, 14040), (553, 14361), (555, 14382), (582, 14580), (588, 14616), (616, 14829), (648, 15021), (659, 15069), (663, 15090), (678, 15198), (689, 15264), (691, 15282), (702, 15387), (708, 15417), (709, 15426), (713, 15456), (724, 15522), (729, 15570), (738, 15630), (750, 15717), (759, 15780),

Gene: Nodigi\_18 Start: 10594, Stop: 14802, Start Num: 73

Candidate Starts for Nodigi\_18:

(Start: 73 @10594 has 23 MA's), (Start: 77 @10621 has 1 MA's), (123, 10930), (131, 10987), (135, 11011), (140, 11056), (145, 11101), (150, 11119), (153, 11134), (156, 11152), (157, 11161), (164, 11215), (173, 11272), (183, 11353), (187, 11401), (189, 11440), (191, 11455), (194, 11464), (200, 11491), (205, 11521), (208, 11542), (227, 11665), (236, 11731), (245, 11794), (256, 11881), (268, 11950), (281, 12058), (283, 12079), (287, 12112), (288, 12130), (290, 12148), (294, 12172), (299, 12202), (311, 12247), (312, 12250), (315, 12268), (340, 12379), (342, 12391), (343, 12394), (345, 12430), (359, 12472), (365, 12484), (374, 12511), (391, 12544), (403, 12619), (412, 12673), (413, 12676), (415, 12694), (422, 12739), (427, 12784), (436, 12832), (437, 12835), (450, 12961), (454, 12991), (456, 13000), (458, 13006), (489, 13159), (494, 13204), (498, 13228), (499, 13234), (505, 13270), (518, 13327), (528, 13378), (536, 13423), (553, 13561), (558, 13591), (583, 13783), (609, 13960), (671, 14152), (682, 14224), (688, 14260), (691, 14284), (693, 14296), (696, 14338), (702, 14386), (713, 14449), (717, 14476), (719, 14482), (724, 14515), (726, 14536), (729, 14563), (735, 14587), (738, 14623), (741, 14650), (742, 14659), (744, 14671), (759, 14773),

Gene: Obliviate\_16 Start: 10043, Stop: 15586, Start Num: 8

Candidate Starts for Obliviate\_16:

(Start: 8 @10043 has 37 MA's), (Start: 11 @10058 has 1 MA's), (Start: 12 @10064 has 1 MA's), (Start: 14 @10094 has 1 MA's), (15, 10103), (16, 10106), (18, 10148), (35, 10259), (36, 10280), (60, 10508), (62, 10526), (64, 10541), (65, 10547), (66, 10550), (68, 10568), (74, 10592), (86, 10676), (88, 10682), (96, 10718), (98, 10733), (100, 10742), (122, 10910), (125, 10937), (142, 11054), (151, 11108), (169, 11225), (172, 11255), (193, 11459), (202, 11504), (206, 11531), (207, 11543), (222, 11633), (226, 11678), (230, 11705), (234, 11735), (246, 11822), (247, 11825), (251, 11864), (268, 11984), (272, 12026), (277, 12071), (278, 12077), (280, 12089), (281, 12092), (287, 12146), (291, 12185), (294, 12206), (295, 12209), (298, 12227), (304, 12254), (309, 12275), (311, 12281), (315, 12302), (319, 12329), (323, 12401), (342, 12536), (359, 12617), (368, 12641), (374, 12656), (390, 12686), (391, 12689), (399, 12740), (412, 12821), (413, 12824), (419, 12857), (422, 12887), (424, 12911), (435, 12977), (469, 13244), (472, 13262), (475, 13292), (479, 13337), (480, 13340), (481, 13355), (483, 13364), (490, 13400), (491, 13409), (492, 13418), (499, 13469), (511, 13541), (517, 13559), (523, 13580), (537, 13679), (538, 13682), (544, 13715), (548, 13781), (550, 13799), (553, 13814), (558, 13847), (563, 13898), (570, 13949), (595, 14192), (596, 14195), (606, 14267), (607, 14270), (617, 14336), (618, 14339), (619, 14357), (625, 14417), (631, 14474), (634, 14492), (641, 14573), (642,



14576), (644, 14591), (665, 14750), (672, 14804), (680, 14870), (681, 14876), (688, 14936), (689, 14942), (694, 14993), (702, 15065), (707, 15089), (710, 15107), (713, 15131), (714, 15137), (717, 15158), (724, 15197), (740, 15338), (742, 15350), (750, 15401), (754, 15419), (763, 15569),

Gene: Orla\_18 Start: 10598, Stop: 14806, Start Num: 73

Candidate Starts for Orla\_18:

(Start: 73 @10598 has 23 MA's), (Start: 77 @10625 has 1 MA's), (123, 10934), (131, 10991), (135, 11015), (140, 11060), (145, 11105), (150, 11123), (153, 11138), (156, 11156), (157, 11165), (164, 11219), (173, 11276), (183, 11357), (187, 11405), (189, 11444), (191, 11459), (194, 11468), (200, 11495), (205, 11525), (208, 11546), (227, 11669), (236, 11735), (245, 11798), (256, 11885), (268, 11954), (281, 12062), (283, 12083), (287, 12116), (288, 12134), (290, 12152), (294, 12176), (299, 12206), (311, 12251), (312, 12254), (315, 12272), (340, 12383), (342, 12395), (345, 12434), (359, 12476), (365, 12488), (369, 12500), (374, 12515), (391, 12548), (403, 12623), (412, 12677), (413, 12680), (415, 12698), (422, 12743), (426, 12782), (427, 12788), (432, 12812), (435, 12833), (436, 12836), (437, 12839), (450, 12965), (452, 12986), (454, 12995), (456, 13004), (458, 13010), (489, 13163), (494, 13208), (498, 13232), (499, 13238), (505, 13274), (513, 13307), (518, 13331), (528, 13382), (536, 13427), (553, 13565), (558, 13595), (583, 13787), (609, 13964), (671, 14156), (682, 14228), (688, 14264), (691, 14288), (693, 14300), (696, 14342), (702, 14390), (713, 14453), (717, 14480), (719, 14486), (724, 14519), (726, 14540), (729, 14567), (735, 14591), (738, 14627), (741, 14654), (742, 14663), (744, 14675), (759, 14777),

Gene: PCoral7\_17 Start: 10271, Stop: 15886, Start Num: 8

Candidate Starts for PCoral7\_17:

(Start: 7 @10235 has 1 MA's), (Start: 8 @10271 has 37 MA's), (Start: 12 @10292 has 1 MA's), (15, 10331), (18, 10376), (31, 10466), (33, 10475), (35, 10487), (36, 10508), (39, 10565), (43, 10637), (46, 10658), (54, 10700), (55, 10703), (58, 10730), (61, 10751), (62, 10754), (65, 10775), (68, 10796), (78, 10847), (79, 10850), (88, 10910), (115, 11093), (125, 11165), (154, 11351), (169, 11453), (170, 11468), (172, 11483), (178, 11540), (202, 11732), (220, 11852), (230, 11933), (234, 11963), (241, 11999), (246, 12050), (263, 12185), (264, 12188), (268, 12212), (274, 12263), (277, 12299), (278, 12305), (281, 12320), (287, 12374), (291, 12413), (295, 12437), (298, 12455), (309, 12503), (311, 12509), (314, 12527), (315, 12530), (317, 12545), (319, 12557), (321, 12605), (342, 12743), (349, 12824), (352, 12848), (353, 12860), (354, 12863), (361, 12896), (382, 12998), (389, 13025), (390, 13028), (391, 13031), (393, 13037), (399, 13082), (401, 13094), (403, 13106), (407, 13130), (410, 13145), (412, 13160), (413, 13163), (417, 13187), (420, 13214), (432, 13295), (443, 13379), (455, 13484), (461, 13517), (469, 13583), (470, 13592), (475, 13631), (477, 13664), (479, 13676), (480, 13679), (481, 13694), (483, 13703), (490, 13739), (491, 13748), (492, 13757), (521, 13913), (522, 13916), (523, 13919), (526, 13940), (538, 14021), (546, 14063), (553, 14150), (558, 14183), (560, 14192), (563, 14234), (579, 14348), (594, 14513), (606, 14597), (607, 14600), (610, 14630), (611, 14633), (617, 14666), (618, 14669), (625, 14747), (631, 14804), (644, 14921), (651, 14972), (668, 15074), (672, 15107), (680, 15173), (688, 15239), (689, 15245), (691, 15263), (694, 15296), (702, 15368), (710, 15410), (711, 15416), (713, 15434), (714, 15440), (717, 15461), (724, 15500), (740, 15641), (750, 15704), (760, 15779), (763, 15872),

Gene: Periwinkle\_20 Start: 10340, Stop: 15973, Start Num: 20

Candidate Starts for Periwinkle\_20:

(17, 10313), (Start: 20 @10340 has 1 MA's), (Start: 28 @10385 has 1 MA's), (30, 10406), (34, 10427), (37, 10472), (Start: 38 @10487 has 1 MA's), (43, 10571), (51, 10613), (52, 10625), (62, 10688), (64, 10703), (66, 10712), (68, 10730), (69, 10736), (79, 10784), (86, 10838), (103, 10919), (120, 11063), (121, 11069), (125, 11099), (158, 11318), (169, 11393), (172, 11423), (190, 11606), (193, 11627), (202, 11672), (203, 11678), (206, 11699), (217, 11780), (226, 11846), (230, 11873), (232, 11885), (234, 11903), (235, 11915), (241, 11939), (243, 11951), (246, 11990), (247, 11993), (248, 12002), (251, 12032), (255, 12077), (265, 12137), (268, 12152), (271, 12182), (272, 12194), (277, 12239), (278, 12245), (280, 12257), (281, 12260), (283, 12281), (286, 12311), (287, 12314), (295, 12377),

(299, 12404), (300, 12407), (301, 12410), (302, 12416), (308, 12440), (309, 12443), (311, 12449), (313, 12455), (315, 12470), (318, 12488), (323, 12569), (327, 12617), (328, 12623), (332, 12650), (352, 12809), (353, 12821), (361, 12857), (376, 12917), (381, 12956), (383, 12962), (384, 12965), (390, 12986), (391, 12989), (407, 13088), (414, 13127), (418, 13151), (422, 13184), (425, 13229), (431, 13283), (439, 13370), (440, 13391), (444, 13427), (448, 13457), (460, 13538), (461, 13547), (464, 13571), (474, 13652), (475, 13658), (479, 13703), (480, 13706), (490, 13766), (491, 13775), (492, 13784), (509, 13892), (521, 13940), (523, 13946), (537, 14045), (538, 14048), (541, 14060), (553, 14177), (558, 14210), (563, 14261), (569, 14291), (575, 14351), (586, 14432), (589, 14453), (591, 14486), (597, 14549), (598, 14558), (599, 14567), (618, 14681), (620, 14711), (622, 14720), (626, 14759), (627, 14762), (630, 14792), (631, 14813), (653, 15017), (662, 15080), (664, 15086), (670, 15137), (692, 15323), (700, 15410), (705, 15437), (706, 15440), (718, 15515), (722, 15539), (727, 15578), (730, 15614), (734, 15635), (743, 15722), (749, 15764), (755, 15797), (756, 15809), (761, 15887), (764, 15953),

Gene: Petra\_19 Start: 10705, Stop: 16197, Start Num: 14

Candidate Starts for Petra\_19:

(Start: 8 @10654 has 37 MA's), (Start: 11 @10669 has 1 MA's), (Start: 12 @10675 has 1 MA's), (Start: 14 @10705 has 1 MA's), (15, 10714), (16, 10717), (18, 10759), (35, 10870), (36, 10891), (60, 11119), (62, 11137), (65, 11158), (66, 11161), (68, 11179), (74, 11203), (86, 11287), (96, 11329), (98, 11344), (100, 11353), (122, 11521), (125, 11548), (142, 11665), (169, 11836), (172, 11866), (193, 12070), (202, 12115), (226, 12289), (230, 12316), (234, 12346), (246, 12433), (251, 12475), (253, 12481), (268, 12595), (270, 12610), (272, 12637), (277, 12682), (278, 12688), (281, 12703), (287, 12757), (291, 12796), (294, 12817), (295, 12820), (298, 12838), (304, 12865), (309, 12886), (311, 12892), (315, 12913), (319, 12940), (355, 13213), (368, 13252), (374, 13267), (390, 13297), (391, 13300), (399, 13351), (412, 13432), (413, 13435), (419, 13468), (422, 13498), (435, 13588), (469, 13855), (475, 13903), (479, 13948), (480, 13951), (481, 13966), (483, 13975), (490, 14011), (491, 14020), (492, 14029), (499, 14080), (511, 14152), (517, 14170), (523, 14191), (537, 14290), (538, 14293), (544, 14326), (548, 14392), (550, 14410), (553, 14425), (558, 14458), (563, 14509), (570, 14560), (595, 14803), (596, 14806), (606, 14878), (607, 14881), (617, 14947), (618, 14950), (619, 14968), (625, 15028), (631, 15085), (634, 15103), (641, 15184), (642, 15187), (644, 15202), (665, 15361), (672, 15415), (680, 15481), (688, 15547), (689, 15553), (702, 15676), (707, 15700), (710, 15718), (713, 15742), (714, 15748), (717, 15769), (724, 15808), (740, 15949), (742, 15961), (750, 16012), (754, 16030), (760, 16087), (763, 16180),

Gene: Phabuloso\_18 Start: 9869, Stop: 15502, Start Num: 21

Candidate Starts for Phabuloso\_18:

(Start: 21 @9869 has 10 MA's), (27, 9896), (Start: 28 @9914 has 1 MA's), (30, 9935), (34, 9956), (37, 10001), (Start: 38 @10016 has 1 MA's), (43, 10100), (51, 10142), (52, 10154), (62, 10217), (64, 10232), (66, 10241), (68, 10259), (69, 10265), (79, 10313), (103, 10448), (121, 10598), (125, 10628), (158, 10847), (169, 10922), (172, 10952), (193, 11156), (201, 11198), (202, 11201), (203, 11207), (206, 11228), (217, 11309), (226, 11375), (230, 11402), (232, 11414), (234, 11432), (235, 11444), (241, 11468), (243, 11480), (246, 11519), (247, 11522), (248, 11531), (251, 11561), (255, 11606), (265, 11666), (268, 11681), (271, 11711), (272, 11723), (277, 11768), (278, 11774), (281, 11789), (284, 11819), (286, 11840), (287, 11843), (295, 11906), (299, 11933), (300, 11936), (301, 11939), (302, 11945), (308, 11969), (309, 11972), (311, 11978), (313, 11984), (315, 11999), (318, 12017), (323, 12098), (327, 12146), (328, 12152), (332, 12179), (352, 12338), (353, 12350), (361, 12386), (376, 12446), (381, 12485), (383, 12491), (384, 12494), (390, 12515), (391, 12518), (407, 12617), (414, 12656), (418, 12680), (422, 12713), (425, 12758), (431, 12812), (439, 12899), (440, 12920), (444, 12956), (448, 12986), (459, 13064), (460, 13067), (461, 13076), (464, 13100), (474, 13181), (475, 13187), (479, 13232), (480, 13235), (481, 13250), (490, 13295), (491, 13304), (492, 13313), (493, 13316), (509, 13421), (521, 13469), (523, 13475), (537, 13574), (538, 13577), (541, 13589), (553, 13706), (558, 13739), (563, 13790), (569, 13820), (575, 13880), (586, 13961), (589, 13982), (591, 14015), (597, 14078), (599, 14096), (618, 14210), (620, 14240), (622, 14249), (626, 14288),

(627, 14291), (630, 14321), (631, 14342), (646, 14495), (653, 14546), (662, 14609), (664, 14615), (670, 14666), (692, 14852), (700, 14939), (705, 14966), (706, 14969), (718, 15044), (722, 15068), (727, 15107), (730, 15143), (734, 15164), (743, 15251), (749, 15293), (755, 15326), (756, 15338), (761, 15416), (764, 15482),

Gene: Phistory\_19 Start: 10653, Stop: 16280, Start Num: 19

Candidate Starts for Phistory\_19:

(Start: 19 @10653 has 1 MA's), (24, 10659), (Start: 28 @10698 has 1 MA's), (37, 10785), (43, 10884), (51, 10926), (52, 10938), (62, 11001), (64, 11016), (66, 11025), (68, 11043), (69, 11049), (79, 11097), (91, 11172), (103, 11232), (121, 11382), (125, 11412), (169, 11706), (172, 11736), (190, 11919), (193, 11940), (201, 11982), (202, 11985), (203, 11991), (206, 12012), (207, 12024), (216, 12084), (220, 12105), (226, 12159), (230, 12186), (232, 12198), (234, 12216), (235, 12228), (241, 12252), (243, 12264), (246, 12303), (247, 12306), (248, 12315), (252, 12348), (258, 12417), (263, 12438), (268, 12465), (269, 12471), (272, 12507), (273, 12510), (277, 12552), (278, 12558), (280, 12570), (281, 12573), (286, 12624), (287, 12627), (295, 12690), (296, 12699), (299, 12717), (300, 12720), (302, 12729), (311, 12762), (315, 12783), (316, 12789), (317, 12798), (320, 12846), (324, 12888), (327, 12930), (332, 12963), (341, 13014), (342, 13017), (345, 13056), (346, 13065), (352, 13122), (353, 13134), (361, 13170), (376, 13230), (381, 13269), (383, 13275), (390, 13299), (391, 13302), (394, 13320), (407, 13401), (418, 13464), (422, 13497), (426, 13572), (431, 13596), (432, 13608), (435, 13641), (440, 13704), (444, 13740), (448, 13770), (459, 13848), (460, 13851), (461, 13860), (464, 13884), (475, 13971), (479, 14016), (480, 14019), (481, 14034), (490, 14079), (491, 14088), (492, 14097), (493, 14100), (509, 14205), (521, 14253), (523, 14259), (537, 14358), (538, 14361), (541, 14373), (553, 14490), (558, 14523), (563, 14574), (569, 14604), (575, 14664), (586, 14745), (589, 14766), (590, 14769), (597, 14862), (599, 14880), (618, 14994), (620, 15024), (622, 15033), (626, 15072), (627, 15075), (630, 15105), (631, 15126), (653, 15324), (662, 15387), (664, 15393), (666, 15420), (670, 15444), (692, 15630), (700, 15717), (705, 15744), (706, 15747), (718, 15822), (722, 15846), (727, 15885), (730, 15921), (734, 15942), (743, 16029), (749, 16071), (755, 16104), (756, 16116), (761, 16194), (764, 16260),

Gene: PhrostedPhlake\_18 Start: 10632, Stop: 16172, Start Num: 8

Candidate Starts for PhrostedPhlake\_18:

(Start: 8 @10632 has 37 MA's), (Start: 11 @10647 has 1 MA's), (Start: 12 @10653 has 1 MA's), (Start: 14 @10683 has 1 MA's), (15, 10692), (18, 10737), (35, 10848), (36, 10869), (60, 11097), (62, 11115), (65, 11136), (66, 11139), (68, 11157), (74, 11181), (86, 11265), (88, 11271), (96, 11307), (98, 11322), (100, 11331), (107, 11391), (122, 11499), (125, 11526), (142, 11643), (151, 11697), (158, 11739), (169, 11814), (172, 11844), (193, 12048), (202, 12093), (226, 12267), (230, 12294), (234, 12324), (246, 12411), (251, 12453), (257, 12516), (268, 12573), (272, 12615), (277, 12660), (278, 12666), (281, 12681), (287, 12735), (291, 12774), (294, 12795), (295, 12798), (298, 12816), (304, 12843), (309, 12864), (311, 12870), (315, 12891), (319, 12918), (368, 13230), (374, 13245), (390, 13275), (391, 13278), (399, 13329), (412, 13410), (413, 13413), (419, 13446), (422, 13476), (435, 13566), (469, 13833), (475, 13881), (477, 13914), (479, 13926), (480, 13929), (481, 13944), (483, 13953), (490, 13989), (491, 13998), (492, 14007), (509, 14115), (521, 14163), (522, 14166), (523, 14169), (538, 14271), (539, 14274), (553, 14400), (558, 14433), (562, 14481), (563, 14484), (570, 14535), (579, 14604), (595, 14778), (596, 14781), (606, 14853), (607, 14856), (617, 14922), (618, 14925), (619, 14943), (625, 15003), (631, 15060), (634, 15078), (641, 15159), (642, 15162), (644, 15177), (665, 15336), (672, 15390), (680, 15456), (688, 15522), (689, 15528), (693, 15558), (702, 15651), (707, 15675), (710, 15693), (713, 15717), (714, 15723), (717, 15744), (724, 15783), (740, 15924), (750, 15987), (754, 16005), (763, 16155),

Gene: Pipp\_17 Start: 10133, Stop: 15790, Start Num: 5

Candidate Starts for Pipp\_17:

(4, 10094), (Start: 5 @10133 has 1 MA's), (Start: 8 @10247 has 37 MA's), (Start: 11 @10262 has 1 MA's), (Start: 12 @10268 has 1 MA's), (Start: 14 @10298 has 1 MA's), (15, 10307), (16, 10310), (18,

10352), (35, 10463), (36, 10484), (62, 10730), (65, 10751), (66, 10754), (68, 10772), (74, 10796), (86, 10880), (88, 10886), (96, 10922), (98, 10937), (100, 10946), (103, 10961), (107, 11006), (122, 11114), (125, 11141), (132, 11174), (142, 11258), (172, 11459), (193, 11663), (203, 11714), (206, 11735), (207, 11747), (222, 11837), (226, 11882), (230, 11909), (234, 11939), (246, 12026), (247, 12029), (251, 12068), (258, 12140), (268, 12188), (272, 12230), (277, 12275), (278, 12281), (280, 12293), (281, 12296), (287, 12350), (291, 12389), (294, 12410), (295, 12413), (298, 12431), (304, 12458), (309, 12479), (311, 12485), (315, 12506), (342, 12740), (355, 12806), (368, 12845), (374, 12860), (390, 12890), (391, 12893), (399, 12944), (412, 13025), (413, 13028), (419, 13061), (422, 13091), (435, 13181), (461, 13382), (469, 13448), (475, 13496), (479, 13541), (480, 13544), (481, 13559), (483, 13568), (490, 13604), (491, 13613), (492, 13622), (511, 13745), (523, 13784), (537, 13883), (538, 13886), (548, 13985), (550, 14003), (553, 14018), (558, 14051), (563, 14102), (570, 14153), (579, 14222), (595, 14396), (596, 14399), (604, 14465), (606, 14471), (607, 14474), (617, 14540), (618, 14543), (619, 14561), (625, 14621), (631, 14678), (634, 14696), (641, 14777), (644, 14795), (651, 14846), (665, 14954), (672, 15008), (680, 15074), (687, 15128), (688, 15140), (689, 15146), (693, 15176), (702, 15269), (707, 15293), (710, 15311), (713, 15335), (714, 15341), (717, 15362), (724, 15401), (740, 15542), (750, 15605), (754, 15623), (760, 15680), (763, 15773),

Gene: Pons\_16 Start: 9384, Stop: 14465, Start Num: 26

Candidate Starts for Pons\_16:

(Start: 26 @9384 has 29 MA's), (41, 9540), (55, 9669), (59, 9699), (69, 9768), (72, 9780), (75, 9795), (79, 9816), (81, 9825), (85, 9867), (88, 9876), (96, 9912), (100, 9936), (107, 9996), (114, 10050), (118, 10089), (120, 10095), (123, 10110), (125, 10131), (134, 10185), (151, 10302), (162, 10365), (168, 10410), (172, 10449), (177, 10491), (193, 10650), (198, 10683), (202, 10695), (206, 10722), (212, 10779), (218, 10809), (221, 10821), (233, 10923), (234, 10926), (246, 11013), (253, 11061), (268, 11175), (274, 11226), (278, 11268), (281, 11283), (282, 11292), (283, 11304), (287, 11337), (292, 11379), (302, 11439), (303, 11442), (304, 11445), (305, 11451), (310, 11469), (315, 11493), (324, 11598), (331, 11646), (342, 11706), (343, 11709), (345, 11745), (354, 11826), (360, 11856), (365, 11877), (366, 11880), (367, 11883), (382, 11961), (389, 11985), (391, 11991), (411, 12117), (417, 12147), (422, 12186), (428, 12234), (432, 12255), (433, 12258), (434, 12264), (441, 12330), (447, 12375), (450, 12408), (452, 12429), (462, 12483), (484, 12633), (487, 12642), (499, 12729), (553, 13047), (558, 13077), (576, 13215), (588, 13296), (609, 13446), (612, 13476), (647, 13686), (648, 13695), (649, 13701), (659, 13737), (678, 13854), (681, 13860), (686, 13902), (689, 13920), (702, 14043), (707, 14067), (709, 14082), (713, 14112), (717, 14139), (719, 14145), (724, 14178), (733, 14247), (735, 14250), (738, 14286), (747, 14358), (751, 14376),

Gene: PotPie\_16 Start: 10237, Stop: 15330, Start Num: 26

Candidate Starts for PotPie\_16:

(Start: 26 @10237 has 29 MA's), (41, 10393), (55, 10522), (59, 10552), (69, 10621), (72, 10633), (79, 10669), (81, 10678), (85, 10720), (88, 10729), (96, 10765), (100, 10789), (114, 10903), (118, 10942), (123, 10963), (125, 10984), (151, 11155), (162, 11218), (168, 11263), (177, 11344), (193, 11503), (198, 11536), (202, 11548), (206, 11575), (212, 11632), (218, 11662), (221, 11674), (233, 11776), (234, 11779), (246, 11866), (253, 11914), (268, 12028), (278, 12121), (281, 12136), (283, 12157), (287, 12190), (289, 12220), (292, 12232), (298, 12271), (303, 12295), (304, 12298), (310, 12322), (315, 12346), (324, 12451), (335, 12529), (342, 12559), (343, 12562), (345, 12598), (349, 12640), (352, 12664), (354, 12679), (356, 12694), (360, 12709), (366, 12733), (377, 12772), (378, 12787), (379, 12793), (389, 12838), (391, 12844), (411, 12970), (417, 13000), (423, 13051), (428, 13087), (432, 13108), (433, 13111), (441, 13183), (447, 13228), (450, 13261), (452, 13282), (462, 13336), (473, 13411), (487, 13495), (499, 13582), (553, 13900), (558, 13930), (576, 14068), (583, 14119), (588, 14149), (609, 14314), (612, 14344), (643, 14524), (649, 14575), (659, 14602), (663, 14623), (678, 14719), (686, 14767), (689, 14785), (702, 14908), (707, 14932), (709, 14947), (713, 14977), (717, 15004), (719, 15010), (724, 15043), (733, 15112), (735, 15115), (738, 15151), (751, 15241),

Gene: PrincePatrick\_17 Start: 10339, Stop: 15960, Start Num: 8

Candidate Starts for PrincePatrick\_17:

(Start: 7 @10303 has 1 MA's), (Start: 8 @10339 has 37 MA's), (Start: 12 @10360 has 1 MA's), (15, 10399), (18, 10444), (31, 10534), (33, 10543), (35, 10555), (36, 10576), (39, 10633), (43, 10705), (46, 10726), (54, 10768), (55, 10771), (58, 10798), (61, 10819), (62, 10822), (65, 10843), (68, 10864), (78, 10915), (79, 10918), (88, 10978), (115, 11161), (125, 11233), (154, 11419), (169, 11521), (170, 11536), (172, 11551), (178, 11608), (202, 11800), (220, 11920), (230, 12001), (234, 12031), (241, 12067), (246, 12118), (251, 12160), (258, 12232), (266, 12268), (268, 12280), (274, 12331), (278, 12373), (281, 12388), (287, 12442), (291, 12481), (295, 12505), (298, 12523), (309, 12571), (311, 12577), (314, 12595), (315, 12598), (317, 12613), (319, 12625), (321, 12673), (324, 12703), (334, 12778), (349, 12892), (352, 12916), (353, 12928), (354, 12931), (361, 12964), (382, 13066), (391, 13099), (399, 13150), (401, 13162), (403, 13174), (407, 13198), (413, 13234), (417, 13258), (420, 13285), (432, 13366), (443, 13450), (455, 13555), (461, 13588), (469, 13654), (470, 13663), (475, 13702), (477, 13735), (479, 13747), (480, 13750), (481, 13765), (483, 13774), (490, 13810), (491, 13819), (492, 13828), (497, 13870), (521, 13984), (522, 13987), (523, 13990), (526, 14011), (538, 14092), (546, 14134), (553, 14221), (558, 14254), (560, 14263), (563, 14305), (579, 14419), (606, 14668), (607, 14671), (610, 14701), (611, 14704), (615, 14728), (617, 14737), (618, 14740), (625, 14818), (631, 14875), (644, 14992), (651, 15043), (672, 15181), (680, 15247), (688, 15313), (689, 15319), (691, 15337), (700, 15430), (702, 15442), (711, 15490), (713, 15508), (714, 15514), (717, 15535), (724, 15574), (740, 15715), (750, 15778), (760, 15853), (763, 15946),

Gene: PsychoKiller\_16 Start: 9629, Stop: 14767, Start Num: 26

Candidate Starts for PsychoKiller\_16:

(Start: 22 @9605 has 5 MA's), (Start: 26 @9629 has 29 MA's), (29, 9656), (41, 9785), (44, 9860), (69, 10013), (70, 10016), (85, 10112), (88, 10121), (94, 10151), (96, 10157), (98, 10172), (99, 10175), (103, 10196), (110, 10268), (113, 10289), (123, 10355), (125, 10376), (142, 10493), (168, 10655), (172, 10694), (181, 10769), (198, 10928), (202, 10940), (206, 10967), (211, 11012), (212, 11024), (226, 11114), (229, 11132), (232, 11153), (235, 11183), (241, 11207), (243, 11219), (246, 11258), (250, 11291), (263, 11393), (264, 11396), (268, 11420), (278, 11513), (281, 11528), (285, 11567), (306, 11702), (307, 11705), (315, 11738), (325, 11846), (326, 11849), (329, 11900), (343, 11975), (352, 12077), (360, 12122), (365, 12143), (366, 12146), (367, 12149), (381, 12224), (391, 12257), (395, 12278), (399, 12308), (407, 12356), (409, 12362), (413, 12389), (433, 12524), (447, 12641), (450, 12674), (452, 12695), (465, 12764), (466, 12770), (467, 12785), (484, 12905), (487, 12914), (499, 12998), (553, 13319), (582, 13538), (588, 13574), (616, 13787), (648, 13979), (659, 14027), (663, 14048), (678, 14156), (689, 14222), (691, 14240), (702, 14345), (708, 14375), (709, 14384), (713, 14414), (724, 14480), (729, 14528), (738, 14588), (750, 14675), (759, 14738),

Gene: Quasar\_16 Start: 10238, Stop: 15376, Start Num: 26

Candidate Starts for Quasar\_16:

(Start: 22 @10214 has 5 MA's), (Start: 26 @10238 has 29 MA's), (29, 10265), (41, 10394), (44, 10469), (69, 10622), (70, 10625), (85, 10721), (88, 10730), (94, 10760), (96, 10766), (98, 10781), (99, 10784), (103, 10805), (110, 10877), (113, 10898), (123, 10964), (125, 10985), (142, 11102), (168, 11264), (172, 11303), (181, 11378), (198, 11537), (202, 11549), (206, 11576), (211, 11621), (212, 11633), (226, 11723), (229, 11741), (232, 11762), (235, 11792), (241, 11816), (243, 11828), (246, 11867), (250, 11900), (263, 12002), (264, 12005), (268, 12029), (269, 12035), (278, 12122), (281, 12137), (285, 12176), (307, 12314), (314, 12344), (315, 12347), (325, 12455), (326, 12458), (329, 12509), (343, 12584), (352, 12686), (360, 12731), (365, 12752), (366, 12755), (367, 12758), (381, 12833), (391, 12866), (395, 12887), (399, 12917), (407, 12965), (409, 12971), (413, 12998), (433, 13133), (447, 13250), (450, 13283), (452, 13304), (453, 13307), (465, 13373), (466, 13379), (467, 13394), (484, 13514), (487, 13523), (499, 13607), (553, 13928), (582, 14147), (588, 14183), (616, 14396), (648, 14588), (659, 14636), (663, 14657), (678, 14765), (689, 14831), (691, 14849), (702, 14954), (708, 14984), (709, 14993), (713, 15023), (724, 15089), (729, 15137), (738, 15197), (750, 15284), (759, 15347),

Gene: REQ2\_18 Start: 12445, Stop: 18258, Start Num: 1

Candidate Starts for REQ2\_18:

(Start: 1 @12445 has 1 MA's), (3, 12493), (9, 12664), (Start: 26 @12805 has 29 MA's), (40, 12958), (41, 12970), (44, 13045), (45, 13051), (48, 13060), (56, 13114), (61, 13147), (69, 13198), (70, 13201), (80, 13252), (88, 13306), (89, 13309), (100, 13366), (101, 13369), (105, 13402), (106, 13420), (108, 13447), (109, 13450), (114, 13480), (117, 13531), (120, 13540), (130, 13630), (188, 14125), (204, 14227), (213, 14308), (219, 14338), (228, 14407), (233, 14452), (244, 14515), (258, 14668), (274, 14767), (277, 14803), (278, 14809), (279, 14818), (281, 14824), (290, 14914), (296, 14950), (303, 14983), (310, 15010), (315, 15034), (317, 15049), (319, 15061), (325, 15142), (341, 15244), (371, 15430), (373, 15445), (388, 15517), (392, 15529), (394, 15544), (400, 15589), (405, 15622), (408, 15631), (414, 15667), (434, 15802), (438, 15826), (439, 15838), (440, 15859), (441, 15871), (451, 15961), (468, 16075), (472, 16093), (478, 16150), (496, 16264), (500, 16297), (524, 16405), (528, 16441), (533, 16480), (537, 16498), (542, 16519), (543, 16522), (552, 16615), (571, 16750), (574, 16771), (581, 16828), (621, 17152), (624, 17185), (633, 17263), (639, 17308), (642, 17347), (645, 17377), (646, 17392), (650, 17410), (654, 17443), (676, 17611), (736, 18052), (737, 18064), (739, 18094), (740, 18097), (746, 18142), (755, 18190),

Gene: RanchParmCat\_19 Start: 10311, Stop: 14516, Start Num: 73

Candidate Starts for RanchParmCat\_19:

(Start: 73 @10311 has 23 MA's), (Start: 77 @10338 has 1 MA's), (118, 10626), (123, 10647), (124, 10653), (128, 10686), (131, 10704), (135, 10728), (145, 10818), (148, 10827), (150, 10836), (156, 10869), (160, 10896), (162, 10905), (163, 10929), (186, 11082), (189, 11145), (191, 11160), (200, 11196), (205, 11226), (208, 11247), (215, 11289), (227, 11370), (239, 11445), (240, 11454), (244, 11475), (261, 11622), (281, 11763), (283, 11784), (286, 11814), (287, 11817), (288, 11835), (291, 11856), (294, 11877), (298, 11898), (310, 11949), (311, 11952), (312, 11955), (315, 11973), (333, 12054), (340, 12084), (345, 12135), (365, 12189), (374, 12216), (391, 12249), (400, 12309), (412, 12378), (413, 12381), (426, 12483), (427, 12489), (436, 12537), (437, 12540), (447, 12633), (450, 12666), (452, 12687), (454, 12696), (456, 12705), (458, 12711), (489, 12864), (498, 12933), (499, 12939), (505, 12975), (535, 13104), (553, 13245), (557, 13269), (561, 13314), (583, 13467), (584, 13470), (609, 13659), (612, 13689), (671, 13866), (682, 13938), (686, 13962), (688, 13974), (691, 13998), (693, 14010), (701, 14094), (702, 14100), (710, 14142), (713, 14163), (719, 14196), (724, 14229), (726, 14250), (729, 14277), (735, 14301), (738, 14337), (744, 14385), (759, 14487),

Gene: RedBaron\_17 Start: 9673, Stop: 14811, Start Num: 26

Candidate Starts for RedBaron\_17:

(Start: 22 @9649 has 5 MA's), (Start: 26 @9673 has 29 MA's), (29, 9700), (41, 9829), (44, 9904), (69, 10057), (70, 10060), (85, 10156), (88, 10165), (94, 10195), (96, 10201), (98, 10216), (99, 10219), (103, 10240), (110, 10312), (113, 10333), (123, 10399), (125, 10420), (142, 10537), (168, 10699), (172, 10738), (181, 10813), (206, 11011), (223, 11119), (232, 11197), (234, 11215), (237, 11233), (246, 11302), (247, 11305), (248, 11314), (252, 11347), (267, 11458), (268, 11464), (278, 11557), (281, 11572), (298, 11707), (305, 11740), (315, 11782), (325, 11890), (329, 11944), (342, 12016), (343, 12019), (352, 12121), (360, 12166), (362, 12175), (365, 12187), (366, 12190), (367, 12193), (381, 12268), (382, 12271), (383, 12274), (386, 12286), (389, 12295), (391, 12301), (397, 12343), (399, 12352), (407, 12400), (413, 12433), (433, 12568), (447, 12685), (450, 12718), (452, 12739), (465, 12808), (466, 12814), (484, 12949), (487, 12958), (499, 13042), (553, 13363), (582, 13582), (588, 13618), (648, 14023), (659, 14071), (663, 14092), (678, 14200), (689, 14266), (691, 14284), (702, 14389), (708, 14419), (709, 14428), (713, 14458), (724, 14524), (729, 14572), (738, 14632), (750, 14719), (759, 14782),

Gene: Samba\_17 Start: 10382, Stop: 15874, Start Num: 8

Candidate Starts for Samba\_17:

(Start: 8 @10382 has 37 MA's), (Start: 11 @10397 has 1 MA's), (Start: 12 @10403 has 1 MA's), (Start: 14 @10433 has 1 MA's), (15, 10442), (16, 10445), (18, 10487), (35, 10598), (36, 10619), (42, 10739),

(49, 10781), (60, 10847), (62, 10865), (64, 10880), (65, 10886), (66, 10889), (68, 10907), (74, 10931), (86, 11015), (96, 11057), (98, 11072), (100, 11081), (122, 11249), (125, 11276), (142, 11393), (169, 11564), (172, 11594), (193, 11798), (202, 11843), (206, 11870), (207, 11882), (222, 11972), (226, 12017), (230, 12044), (234, 12074), (246, 12161), (251, 12203), (257, 12266), (258, 12275), (268, 12323), (272, 12365), (277, 12410), (278, 12416), (280, 12428), (281, 12431), (287, 12485), (291, 12524), (294, 12545), (295, 12548), (298, 12566), (299, 12575), (309, 12614), (311, 12620), (314, 12638), (315, 12641), (319, 12668), (355, 12941), (363, 12968), (368, 12980), (373, 12992), (374, 12995), (390, 13025), (391, 13028), (399, 13079), (412, 13160), (413, 13163), (419, 13196), (422, 13226), (424, 13250), (435, 13316), (469, 13583), (475, 13631), (479, 13676), (480, 13679), (481, 13694), (490, 13739), (491, 13748), (492, 13757), (499, 13808), (511, 13880), (517, 13898), (523, 13919), (537, 14018), (538, 14021), (544, 14054), (548, 14120), (550, 14138), (553, 14153), (558, 14186), (563, 14237), (570, 14288), (595, 14531), (596, 14534), (606, 14606), (607, 14609), (617, 14675), (618, 14678), (619, 14696), (625, 14756), (641, 14912), (642, 14915), (644, 14930), (665, 15101), (672, 15155), (682, 15212), (684, 15227), (690, 15275), (695, 15320), (715, 15440), (716, 15449), (723, 15488), (732, 15560), (740, 15629), (750, 15692), (754, 15710), (763, 15860),

Gene: ShawBrad\_18 Start: 9931, Stop: 15516, Start Num: 28

Candidate Starts for ShawBrad\_18:

(Start: 21 @9886 has 10 MA's), (Start: 28 @9931 has 1 MA's), (30, 9952), (34, 9973), (37, 10018), (Start: 38 @10033 has 1 MA's), (43, 10117), (51, 10159), (52, 10171), (62, 10234), (64, 10249), (66, 10258), (68, 10276), (69, 10282), (79, 10330), (103, 10465), (121, 10615), (125, 10645), (169, 10939), (172, 10969), (193, 11173), (201, 11215), (202, 11218), (203, 11224), (206, 11245), (217, 11326), (226, 11392), (230, 11419), (232, 11431), (234, 11449), (235, 11461), (241, 11485), (243, 11497), (246, 11536), (247, 11539), (248, 11548), (251, 11578), (255, 11623), (265, 11683), (268, 11698), (271, 11728), (272, 11740), (277, 11785), (278, 11791), (280, 11803), (281, 11806), (283, 11827), (286, 11857), (287, 11860), (295, 11923), (299, 11950), (300, 11953), (301, 11956), (302, 11962), (308, 11986), (309, 11989), (311, 11995), (313, 12001), (315, 12016), (318, 12034), (323, 12115), (327, 12163), (328, 12169), (332, 12196), (345, 12289), (347, 12322), (352, 12352), (364, 12415), (371, 12433), (376, 12460), (407, 12631), (418, 12694), (422, 12727), (426, 12802), (431, 12826), (432, 12838), (435, 12871), (440, 12934), (444, 12970), (448, 13000), (459, 13078), (460, 13081), (461, 13090), (475, 13201), (479, 13246), (480, 13249), (481, 13264), (490, 13309), (491, 13318), (492, 13327), (493, 13330), (509, 13435), (521, 13483), (523, 13489), (537, 13588), (538, 13591), (541, 13603), (553, 13720), (558, 13753), (563, 13804), (569, 13834), (575, 13894), (586, 13975), (589, 13996), (591, 14029), (597, 14092), (599, 14110), (618, 14224), (620, 14254), (622, 14263), (626, 14302), (627, 14305), (630, 14335), (631, 14356), (653, 14554), (662, 14617), (664, 14623), (670, 14674), (692, 14866), (700, 14953), (705, 14980), (706, 14983), (718, 15058), (722, 15082), (727, 15121), (730, 15157), (734, 15178), (743, 15265), (749, 15307), (755, 15340), (756, 15352), (764, 15496),

Gene: SheckWes\_15 Start: 9372, Stop: 14465, Start Num: 26

Candidate Starts for SheckWes\_15:

(Start: 26 @9372 has 29 MA's), (41, 9528), (51, 9633), (55, 9657), (62, 9708), (64, 9723), (69, 9756), (79, 9804), (81, 9813), (85, 9855), (87, 9861), (88, 9864), (96, 9900), (100, 9924), (104, 9951), (114, 10038), (118, 10077), (120, 10083), (123, 10098), (125, 10119), (134, 10173), (151, 10290), (162, 10353), (168, 10398), (172, 10437), (177, 10479), (193, 10641), (197, 10650), (198, 10674), (202, 10686), (206, 10713), (207, 10725), (212, 10770), (218, 10800), (221, 10812), (233, 10914), (234, 10917), (246, 11004), (249, 11031), (255, 11091), (259, 11121), (264, 11142), (268, 11166), (274, 11217), (278, 11259), (281, 11274), (282, 11283), (283, 11295), (287, 11328), (292, 11370), (302, 11430), (303, 11433), (304, 11436), (305, 11442), (310, 11460), (315, 11484), (322, 11568), (324, 11589), (331, 11637), (342, 11697), (343, 11700), (345, 11736), (352, 11802), (354, 11817), (360, 11847), (365, 11868), (366, 11871), (367, 11874), (382, 11952), (389, 11976), (391, 11982), (411, 12108), (417, 12138), (422, 12177), (428, 12225), (432, 12246), (433, 12249), (434, 12255), (441, 12321), (447, 12366), (450, 12399), (452, 12420), (462, 12474), (484, 12624), (487, 12633), (499,

12720), (536, 12897), (553, 13038), (558, 13068), (576, 13206), (588, 13287), (609, 13440), (612, 13470), (647, 13686), (648, 13695), (649, 13701), (659, 13737), (678, 13854), (681, 13860), (686, 13902), (689, 13920), (702, 14043), (707, 14067), (709, 14082), (713, 14112), (717, 14139), (719, 14145), (724, 14178), (733, 14247), (735, 14250), (738, 14286), (747, 14358), (748, 14361), (751, 14376),

Gene: SketchMex\_15 Start: 9616, Stop: 14415, Start Num: 73

Candidate Starts for SketchMex\_15:

(Start: 73 @9616 has 23 MA's), (Start: 77 @9643 has 1 MA's), (99, 9772), (112, 9874), (116, 9919), (119, 9931), (123, 9949), (126, 9976), (127, 9979), (129, 9994), (138, 10045), (139, 10048), (144, 10105), (146, 10108), (155, 10150), (158, 10168), (164, 10213), (171, 10249), (175, 10282), (179, 10315), (180, 10327), (187, 10381), (190, 10420), (192, 10435), (196, 10444), (200, 10471), (208, 10522), (215, 10564), (218, 10582), (221, 10591), (227, 10645), (238, 10708), (241, 10723), (248, 10786), (261, 10876), (267, 10903), (277, 10996), (278, 11002), (281, 11017), (285, 11056), (295, 11134), (301, 11167), (311, 11206), (314, 11224), (315, 11227), (319, 11254), (322, 11311), (324, 11332), (330, 11395), (335, 11431), (338, 11443), (343, 11464), (345, 11500), (349, 11542), (350, 11554), (352, 11566), (360, 11611), (361, 11614), (365, 11632), (366, 11635), (367, 11638), (381, 11713), (383, 11719), (391, 11746), (400, 11806), (403, 11821), (411, 11872), (412, 11875), (413, 11878), (415, 11896), (429, 11995), (432, 12010), (433, 12013), (450, 12163), (452, 12184), (461, 12226), (465, 12253), (466, 12259), (482, 12391), (487, 12403), (499, 12490), (507, 12532), (514, 12568), (531, 12643), (540, 12694), (545, 12733), (551, 12811), (559, 12862), (566, 12919), (585, 13057), (592, 13132), (612, 13276), (616, 13297), (638, 13474), (639, 13480), (678, 13804), (681, 13810), (689, 13870), (691, 13888), (694, 13921), (702, 13993), (709, 14032), (713, 14062), (724, 14128), (729, 14176), (738, 14236), (751, 14326), (759, 14386),

Gene: Sopespian\_16 Start: 9630, Stop: 14768, Start Num: 26

Candidate Starts for Sopespian\_16:

(Start: 22 @9606 has 5 MA's), (Start: 26 @9630 has 29 MA's), (29, 9657), (41, 9786), (44, 9861), (69, 10014), (70, 10017), (85, 10113), (88, 10122), (94, 10152), (96, 10158), (98, 10173), (99, 10176), (103, 10197), (110, 10269), (113, 10290), (123, 10356), (125, 10377), (142, 10494), (168, 10656), (172, 10695), (181, 10770), (198, 10929), (202, 10941), (206, 10968), (211, 11013), (212, 11025), (226, 11115), (229, 11133), (232, 11154), (235, 11184), (241, 11208), (243, 11220), (246, 11259), (250, 11292), (263, 11394), (264, 11397), (268, 11421), (278, 11514), (281, 11529), (285, 11568), (306, 11703), (307, 11706), (315, 11739), (325, 11847), (326, 11850), (329, 11901), (343, 11976), (350, 12066), (352, 12078), (360, 12123), (365, 12144), (366, 12147), (367, 12150), (381, 12225), (391, 12258), (395, 12279), (399, 12309), (407, 12357), (409, 12363), (413, 12390), (433, 12525), (447, 12642), (450, 12675), (452, 12696), (465, 12765), (466, 12771), (467, 12786), (484, 12906), (487, 12915), (499, 12999), (553, 13320), (582, 13539), (588, 13575), (616, 13788), (648, 13980), (659, 14028), (663, 14049), (678, 14157), (689, 14223), (691, 14241), (702, 14346), (708, 14376), (709, 14385), (713, 14415), (724, 14481), (729, 14529), (738, 14589), (750, 14676), (759, 14739),

Gene: Spooky\_18 Start: 9874, Stop: 15489, Start Num: 22

Candidate Starts for Spooky\_18:

(Start: 22 @9874 has 5 MA's), (Start: 28 @9919 has 1 MA's), (30, 9940), (34, 9961), (37, 10006), (66, 10246), (82, 10339), (83, 10351), (87, 10375), (88, 10378), (100, 10438), (102, 10447), (103, 10453), (110, 10525), (121, 10603), (123, 10612), (125, 10633), (185, 11053), (193, 11161), (198, 11194), (202, 11206), (206, 11233), (226, 11380), (230, 11407), (234, 11437), (241, 11473), (246, 11524), (247, 11527), (248, 11536), (253, 11572), (258, 11638), (268, 11686), (276, 11770), (277, 11773), (278, 11779), (280, 11791), (281, 11794), (286, 11845), (287, 11848), (291, 11887), (311, 11983), (315, 12004), (335, 12208), (342, 12238), (349, 12319), (352, 12343), (353, 12355), (361, 12391), (376, 12451), (381, 12490), (383, 12496), (384, 12499), (390, 12520), (391, 12523), (407, 12622), (414, 12661), (418, 12685), (422, 12718), (425, 12763), (431, 12817), (432, 12829), (439, 12904), (440, 12925), (444, 12961), (448, 12991), (460, 13072), (461, 13081), (464, 13105), (474, 13186),



(475, 13192), (479, 13237), (480, 13240), (481, 13255), (490, 13300), (491, 13309), (492, 13318), (509, 13426), (517, 13459), (521, 13474), (523, 13480), (537, 13579), (538, 13582), (539, 13585), (541, 13594), (553, 13711), (558, 13744), (562, 13792), (563, 13795), (569, 13825), (575, 13885), (586, 13966), (589, 13987), (590, 13990), (597, 14083), (598, 14092), (613, 14194), (618, 14215), (620, 14245), (622, 14254), (626, 14293), (627, 14296), (628, 14299), (630, 14326), (636, 14380), (646, 14497), (658, 14581), (661, 14593), (662, 14605), (664, 14611), (666, 14638), (670, 14662), (692, 14839), (700, 14926), (704, 14944), (705, 14953), (718, 15031), (721, 15049), (731, 15139), (734, 15151), (743, 15238), (749, 15280), (755, 15313), (756, 15325), (764, 15469),

Gene: Squiddly\_20 Start: 11289, Stop: 16901, Start Num: 22

Candidate Starts for Squiddly\_20:

(Start: 22 @11289 has 5 MA's), (25, 11307), (27, 11316), (Start: 28 @11334 has 1 MA's), (30, 11355), (32, 11367), (37, 11421), (Start: 38 @11436 has 1 MA's), (57, 11604), (58, 11613), (62, 11637), (66, 11661), (68, 11679), (76, 11724), (87, 11790), (88, 11793), (100, 11853), (121, 12018), (125, 12048), (146, 12204), (169, 12342), (170, 12357), (185, 12468), (193, 12576), (201, 12618), (202, 12621), (203, 12627), (206, 12648), (207, 12660), (226, 12795), (230, 12822), (234, 12852), (237, 12870), (246, 12939), (248, 12951), (258, 13053), (268, 13101), (272, 13143), (277, 13188), (278, 13194), (280, 13206), (281, 13209), (283, 13230), (286, 13260), (287, 13263), (290, 13299), (291, 13302), (305, 13377), (311, 13398), (315, 13419), (322, 13503), (331, 13593), (349, 13734), (353, 13770), (360, 13803), (361, 13806), (365, 13824), (376, 13866), (381, 13905), (383, 13911), (384, 13914), (390, 13935), (391, 13938), (407, 14037), (414, 14076), (422, 14133), (426, 14208), (432, 14244), (440, 14340), (444, 14376), (448, 14406), (459, 14484), (460, 14487), (461, 14496), (464, 14520), (467, 14544), (471, 14577), (474, 14601), (475, 14607), (477, 14640), (479, 14652), (480, 14655), (481, 14670), (486, 14688), (490, 14715), (491, 14724), (492, 14733), (493, 14736), (509, 14841), (521, 14889), (523, 14895), (538, 14997), (541, 15009), (553, 15126), (558, 15159), (563, 15210), (565, 15222), (569, 15240), (575, 15300), (586, 15381), (589, 15402), (597, 15498), (599, 15516), (602, 15540), (613, 15609), (618, 15630), (620, 15660), (622, 15669), (626, 15708), (627, 15711), (628, 15714), (630, 15741), (636, 15795), (646, 15912), (658, 15996), (661, 16008), (662, 16020), (664, 16026), (666, 16053), (670, 16077), (692, 16254), (700, 16341), (704, 16359), (705, 16368), (718, 16446), (720, 16461), (722, 16470), (730, 16545), (731, 16554), (734, 16566), (743, 16653), (749, 16695), (755, 16728), (756, 16740), (761, 16815), (764, 16881),

Gene: Starburst\_17 Start: 9629, Stop: 14767, Start Num: 26

Candidate Starts for Starburst\_17:

(Start: 22 @9605 has 5 MA's), (Start: 26 @9629 has 29 MA's), (29, 9656), (41, 9785), (44, 9860), (69, 10013), (70, 10016), (85, 10112), (88, 10121), (94, 10151), (96, 10157), (98, 10172), (99, 10175), (103, 10196), (110, 10268), (113, 10289), (123, 10355), (125, 10376), (142, 10493), (168, 10655), (172, 10694), (181, 10769), (198, 10928), (202, 10940), (206, 10967), (211, 11012), (212, 11024), (226, 11114), (229, 11132), (232, 11153), (235, 11183), (241, 11207), (243, 11219), (246, 11258), (250, 11291), (263, 11393), (264, 11396), (268, 11420), (269, 11426), (278, 11513), (281, 11528), (285, 11567), (307, 11705), (314, 11735), (315, 11738), (325, 11846), (326, 11849), (329, 11900), (343, 11975), (352, 12077), (360, 12122), (365, 12143), (366, 12146), (367, 12149), (381, 12224), (391, 12257), (395, 12278), (399, 12308), (407, 12356), (409, 12362), (413, 12389), (433, 12524), (447, 12641), (450, 12674), (452, 12695), (465, 12764), (466, 12770), (467, 12785), (484, 12905), (487, 12914), (499, 12998), (553, 13319), (582, 13538), (588, 13574), (616, 13787), (648, 13979), (659, 14027), (663, 14048), (678, 14156), (689, 14222), (691, 14240), (697, 14300), (702, 14345), (708, 14375), (709, 14384), (713, 14414), (724, 14480), (729, 14528), (738, 14588), (750, 14675), (759, 14738),

Gene: SteamedHams\_18 Start: 9646, Stop: 14433, Start Num: 73

Candidate Starts for SteamedHams\_18:

(Start: 73 @9646 has 23 MA's), (Start: 77 @9673 has 1 MA's), (90, 9751), (99, 9802), (109, 9889), (112, 9904), (119, 9961), (123, 9979), (126, 10006), (127, 10009), (139, 10078), (144, 10135), (155,

10180), (158, 10198), (164, 10243), (171, 10279), (175, 10312), (182, 10360), (183, 10363), (187, 10411), (190, 10450), (192, 10465), (217, 10606), (225, 10657), (227, 10675), (235, 10729), (261, 10906), (267, 10933), (277, 11026), (278, 11032), (281, 11047), (285, 11086), (286, 11098), (295, 11164), (311, 11236), (314, 11254), (315, 11257), (319, 11284), (345, 11530), (352, 11596), (360, 11641), (365, 11662), (366, 11665), (367, 11668), (377, 11704), (381, 11743), (383, 11749), (391, 11776), (412, 11905), (413, 11908), (415, 11926), (434, 12049), (436, 12064), (450, 12193), (452, 12214), (461, 12256), (465, 12283), (466, 12289), (482, 12421), (487, 12433), (499, 12520), (507, 12562), (514, 12598), (540, 12724), (545, 12763), (559, 12892), (566, 12949), (573, 12991), (585, 13084), (592, 13159), (600, 13222), (612, 13303), (616, 13324), (638, 13501), (639, 13507), (667, 13726), (674, 13804), (678, 13822), (681, 13828), (689, 13888), (691, 13906), (694, 13939), (702, 14011), (709, 14050), (713, 14080), (724, 14146), (729, 14194), (738, 14254), (751, 14344), (759, 14404),

Gene: SummitAcademy\_15 Start: 9452, Stop: 14545, Start Num: 26

Candidate Starts for SummitAcademy\_15:

(Start: 26 @9452 has 29 MA's), (41, 9608), (55, 9737), (59, 9767), (69, 9836), (72, 9848), (79, 9884), (85, 9935), (88, 9944), (96, 9980), (100, 10004), (107, 10064), (114, 10118), (118, 10157), (120, 10163), (123, 10178), (125, 10199), (151, 10370), (162, 10433), (168, 10478), (177, 10559), (193, 10718), (198, 10751), (202, 10763), (206, 10790), (212, 10847), (218, 10877), (221, 10889), (233, 10991), (234, 10994), (246, 11081), (253, 11129), (268, 11243), (278, 11336), (281, 11351), (283, 11372), (287, 11405), (289, 11435), (292, 11447), (298, 11486), (303, 11510), (304, 11513), (310, 11537), (315, 11561), (324, 11666), (335, 11744), (342, 11774), (343, 11777), (345, 11813), (349, 11855), (352, 11879), (354, 11894), (356, 11909), (360, 11924), (366, 11948), (377, 11987), (378, 12002), (379, 12008), (382, 12029), (389, 12053), (391, 12059), (411, 12185), (417, 12215), (423, 12266), (428, 12302), (432, 12323), (433, 12326), (441, 12398), (447, 12443), (450, 12476), (452, 12497), (462, 12551), (473, 12626), (487, 12710), (499, 12797), (553, 13115), (558, 13145), (576, 13283), (583, 13334), (588, 13364), (609, 13529), (612, 13559), (643, 13739), (649, 13790), (659, 13817), (663, 13838), (678, 13934), (686, 13982), (689, 14000), (702, 14123), (707, 14147), (709, 14162), (713, 14192), (717, 14219), (719, 14225), (724, 14258), (733, 14327), (735, 14330), (738, 14366), (751, 14456),

Gene: Survivors\_18 Start: 10474, Stop: 15597, Start Num: 26

Candidate Starts for Survivors\_18:

(23, 10453), (Start: 26 @10474 has 29 MA's), (29, 10501), (41, 10630), (49, 10726), (57, 10777), (67, 10834), (71, 10867), (72, 10870), (85, 10957), (89, 10969), (98, 11017), (99, 11020), (100, 11026), (106, 11080), (107, 11086), (113, 11134), (123, 11200), (125, 11221), (181, 11614), (182, 11617), (190, 11719), (202, 11785), (203, 11791), (206, 11812), (234, 12016), (237, 12034), (239, 12040), (241, 12052), (243, 12064), (246, 12103), (248, 12115), (253, 12151), (257, 12208), (261, 12232), (263, 12238), (278, 12358), (281, 12373), (285, 12412), (294, 12487), (300, 12520), (304, 12535), (305, 12541), (306, 12547), (315, 12583), (325, 12691), (332, 12763), (342, 12817), (360, 12967), (366, 12991), (379, 13051), (380, 13063), (381, 13069), (389, 13096), (390, 13099), (391, 13102), (405, 13195), (407, 13201), (415, 13252), (424, 13321), (430, 13354), (433, 13369), (434, 13375), (440, 13432), (442, 13444), (446, 13483), (447, 13486), (449, 13507), (450, 13519), (452, 13540), (453, 13543), (461, 13582), (462, 13594), (465, 13609), (484, 13750), (499, 13846), (510, 13912), (516, 13933), (519, 13939), (553, 14176), (558, 14206), (561, 14245), (580, 14380), (585, 14410), (588, 14431), (605, 14569), (612, 14617), (655, 14848), (659, 14854), (678, 14983), (689, 15049), (694, 15100), (702, 15172), (709, 15211), (713, 15241), (719, 15274), (724, 15307), (735, 15379), (742, 15451), (750, 15505), (752, 15511), (759, 15568),

Gene: SweatNTears\_18 Start: 10127, Stop: 14926, Start Num: 73

Candidate Starts for SweatNTears\_18:

(Start: 73 @10127 has 23 MA's), (Start: 77 @10154 has 1 MA's), (79, 10160), (99, 10283), (112, 10385), (116, 10430), (119, 10442), (123, 10460), (126, 10487), (127, 10490), (129, 10505), (138,

10556), (139, 10559), (144, 10616), (146, 10619), (155, 10661), (158, 10679), (164, 10724), (171, 10760), (175, 10793), (179, 10826), (180, 10838), (187, 10892), (190, 10931), (192, 10946), (196, 10955), (200, 10982), (208, 11033), (218, 11093), (221, 11102), (227, 11156), (238, 11219), (241, 11234), (248, 11297), (261, 11387), (267, 11414), (275, 11495), (277, 11507), (278, 11513), (281, 11528), (284, 11558), (285, 11567), (295, 11645), (301, 11678), (311, 11717), (314, 11735), (315, 11738), (319, 11765), (322, 11822), (324, 11843), (338, 11954), (343, 11975), (345, 12011), (349, 12053), (350, 12065), (352, 12077), (360, 12122), (361, 12125), (365, 12143), (366, 12146), (367, 12149), (381, 12224), (391, 12257), (400, 12317), (411, 12383), (412, 12386), (413, 12389), (415, 12407), (429, 12506), (432, 12521), (433, 12524), (450, 12674), (452, 12695), (461, 12737), (465, 12764), (466, 12770), (482, 12902), (487, 12914), (499, 13001), (507, 13043), (514, 13079), (531, 13154), (540, 13205), (545, 13244), (547, 13268), (559, 13373), (566, 13430), (585, 13568), (592, 13643), (612, 13787), (616, 13808), (638, 13985), (639, 13991), (678, 14315), (681, 14321), (689, 14381), (691, 14399), (694, 14432), (702, 14504), (709, 14543), (713, 14573), (724, 14639), (729, 14687), (738, 14747), (751, 14837), (759, 14897),

Gene: Toast\_17 Start: 10235, Stop: 15886, Start Num: 7

Candidate Starts for Toast\_17:

(Start: 7 @10235 has 1 MA's), (Start: 8 @10271 has 37 MA's), (Start: 12 @10292 has 1 MA's), (15, 10331), (18, 10376), (31, 10466), (33, 10475), (35, 10487), (36, 10508), (39, 10565), (43, 10637), (46, 10658), (54, 10700), (55, 10703), (58, 10730), (61, 10751), (62, 10754), (65, 10775), (68, 10796), (78, 10847), (79, 10850), (88, 10910), (115, 11093), (125, 11165), (154, 11351), (169, 11453), (170, 11468), (172, 11483), (178, 11540), (202, 11732), (220, 11852), (230, 11933), (234, 11963), (241, 11999), (246, 12050), (263, 12185), (264, 12188), (268, 12212), (274, 12263), (277, 12299), (278, 12305), (281, 12320), (287, 12374), (291, 12413), (295, 12437), (298, 12455), (309, 12503), (311, 12509), (314, 12527), (315, 12530), (317, 12545), (319, 12557), (321, 12605), (342, 12743), (349, 12824), (352, 12848), (353, 12860), (354, 12863), (361, 12896), (382, 12998), (389, 13025), (390, 13028), (391, 13031), (393, 13037), (399, 13082), (401, 13094), (403, 13106), (407, 13130), (410, 13145), (412, 13160), (413, 13163), (417, 13187), (420, 13214), (432, 13295), (443, 13379), (455, 13484), (461, 13517), (469, 13583), (470, 13592), (475, 13631), (477, 13664), (479, 13676), (480, 13679), (481, 13694), (483, 13703), (490, 13739), (491, 13748), (492, 13757), (521, 13913), (522, 13916), (523, 13919), (526, 13940), (538, 14021), (546, 14063), (553, 14150), (558, 14183), (560, 14192), (563, 14234), (579, 14348), (594, 14513), (606, 14597), (607, 14600), (610, 14630), (611, 14633), (617, 14666), (618, 14669), (625, 14747), (631, 14804), (644, 14921), (651, 14972), (668, 15074), (672, 15107), (680, 15173), (688, 15239), (689, 15245), (691, 15263), (694, 15296), (702, 15368), (710, 15410), (711, 15416), (713, 15434), (714, 15440), (717, 15461), (724, 15500), (740, 15641), (750, 15704), (760, 15779), (763, 15872),

Gene: Tolls\_18 Start: 9649, Stop: 14436, Start Num: 73

Candidate Starts for Tolls\_18:

(Start: 73 @9649 has 23 MA's), (Start: 77 @9676 has 1 MA's), (90, 9754), (99, 9805), (109, 9892), (112, 9907), (119, 9964), (123, 9982), (126, 10009), (127, 10012), (139, 10081), (144, 10138), (155, 10183), (158, 10201), (164, 10246), (167, 10261), (171, 10282), (175, 10315), (182, 10363), (183, 10366), (187, 10414), (190, 10453), (192, 10468), (225, 10660), (227, 10678), (242, 10762), (261, 10909), (267, 10936), (277, 11029), (278, 11035), (281, 11050), (285, 11089), (286, 11101), (295, 11167), (311, 11239), (314, 11257), (315, 11260), (319, 11287), (345, 11533), (352, 11599), (360, 11644), (365, 11665), (366, 11668), (367, 11671), (377, 11707), (381, 11746), (383, 11752), (391, 11779), (412, 11908), (413, 11911), (415, 11929), (434, 12052), (436, 12067), (450, 12196), (452, 12217), (461, 12259), (465, 12286), (466, 12292), (482, 12424), (487, 12436), (499, 12523), (507, 12565), (514, 12601), (540, 12727), (545, 12766), (559, 12895), (566, 12952), (573, 12994), (585, 13087), (592, 13162), (600, 13225), (612, 13306), (616, 13327), (638, 13504), (639, 13510), (667, 13729), (674, 13807), (678, 13825), (681, 13831), (689, 13891), (691, 13909), (694, 13942), (702, 14014), (709, 14053), (713, 14083), (724, 14149), (729, 14197), (738, 14257), (751, 14347), (759, 14407),

Gene: Troje\_16 Start: 9601, Stop: 14397, Start Num: 73

Candidate Starts for Troje\_16:

(Start: 73 @9601 has 23 MA's), (Start: 77 @9628 has 1 MA's), (79, 9634), (99, 9757), (112, 9859), (116, 9904), (119, 9916), (123, 9934), (126, 9961), (127, 9964), (129, 9979), (138, 10030), (139, 10033), (144, 10090), (146, 10093), (155, 10135), (158, 10153), (164, 10198), (171, 10234), (175, 10267), (179, 10300), (180, 10312), (187, 10366), (190, 10405), (192, 10420), (196, 10429), (200, 10456), (208, 10507), (218, 10567), (221, 10576), (227, 10630), (238, 10693), (241, 10708), (261, 10861), (267, 10888), (275, 10969), (277, 10981), (278, 10987), (281, 11002), (285, 11041), (295, 11119), (301, 11152), (311, 11191), (314, 11209), (315, 11212), (319, 11239), (322, 11296), (324, 11317), (330, 11380), (338, 11428), (343, 11449), (345, 11485), (349, 11527), (352, 11551), (360, 11596), (361, 11599), (365, 11617), (366, 11620), (367, 11623), (381, 11698), (383, 11704), (391, 11731), (400, 11791), (411, 11857), (412, 11860), (413, 11863), (415, 11881), (429, 11980), (432, 11995), (433, 11998), (450, 12148), (452, 12169), (461, 12211), (465, 12238), (466, 12244), (487, 12388), (499, 12475), (507, 12517), (514, 12553), (531, 12628), (540, 12679), (545, 12718), (551, 12796), (559, 12847), (566, 12904), (585, 13042), (592, 13114), (612, 13258), (616, 13279), (638, 13456), (639, 13462), (678, 13786), (681, 13792), (689, 13852), (691, 13870), (694, 13903), (702, 13975), (709, 14014), (713, 14044), (724, 14110), (725, 14128), (729, 14158), (738, 14218), (751, 14308), (759, 14368),

Gene: Typhonomachy\_17 Start: 9629, Stop: 14767, Start Num: 26

Candidate Starts for Typhonomachy\_17:

(Start: 22 @9605 has 5 MA's), (Start: 26 @9629 has 29 MA's), (29, 9656), (41, 9785), (44, 9860), (69, 10013), (70, 10016), (85, 10112), (88, 10121), (94, 10151), (96, 10157), (98, 10172), (99, 10175), (103, 10196), (110, 10268), (113, 10289), (123, 10355), (125, 10376), (142, 10493), (168, 10655), (172, 10694), (181, 10769), (198, 10928), (202, 10940), (206, 10967), (211, 11012), (212, 11024), (226, 11114), (229, 11132), (232, 11153), (235, 11183), (241, 11207), (243, 11219), (246, 11258), (250, 11291), (252, 11303), (263, 11393), (264, 11396), (268, 11420), (278, 11513), (281, 11528), (285, 11567), (291, 11621), (298, 11663), (307, 11705), (314, 11735), (315, 11738), (325, 11846), (326, 11849), (329, 11900), (343, 11975), (350, 12065), (352, 12077), (358, 12116), (360, 12122), (365, 12143), (366, 12146), (367, 12149), (381, 12224), (391, 12257), (395, 12278), (399, 12308), (407, 12356), (409, 12362), (413, 12389), (433, 12524), (447, 12641), (450, 12674), (452, 12695), (465, 12764), (466, 12770), (467, 12785), (484, 12905), (487, 12914), (499, 12998), (553, 13319), (582, 13538), (588, 13574), (616, 13787), (648, 13979), (659, 14027), (663, 14048), (678, 14156), (689, 14222), (691, 14240), (702, 14345), (708, 14375), (709, 14384), (713, 14414), (724, 14480), (729, 14528), (738, 14588), (750, 14675), (759, 14738),

Gene: UmaThurman\_17 Start: 10381, Stop: 15924, Start Num: 8

Candidate Starts for UmaThurman\_17:

(Start: 8 @10381 has 37 MA's), (Start: 11 @10396 has 1 MA's), (Start: 12 @10402 has 1 MA's), (Start: 14 @10432 has 1 MA's), (15, 10441), (16, 10444), (18, 10486), (35, 10597), (36, 10618), (60, 10846), (62, 10864), (64, 10879), (65, 10885), (66, 10888), (68, 10906), (74, 10930), (86, 11014), (87, 11017), (96, 11056), (98, 11071), (100, 11080), (122, 11248), (125, 11275), (172, 11593), (193, 11797), (202, 11842), (203, 11848), (206, 11869), (207, 11881), (222, 11971), (226, 12016), (230, 12043), (234, 12073), (246, 12160), (247, 12163), (251, 12202), (268, 12322), (272, 12364), (277, 12409), (278, 12415), (281, 12430), (287, 12484), (291, 12523), (294, 12544), (295, 12547), (298, 12565), (299, 12574), (309, 12613), (311, 12619), (315, 12640), (319, 12667), (342, 12874), (355, 12940), (368, 12979), (374, 12994), (390, 13024), (391, 13027), (399, 13078), (412, 13159), (413, 13162), (419, 13195), (422, 13225), (424, 13249), (469, 13582), (475, 13630), (479, 13675), (480, 13678), (481, 13693), (490, 13738), (491, 13747), (492, 13756), (499, 13807), (511, 13879), (517, 13897), (523, 13918), (537, 14017), (538, 14020), (544, 14053), (548, 14119), (550, 14137), (553, 14152), (558, 14185), (563, 14236), (570, 14287), (577, 14335), (595, 14530), (596, 14533), (606, 14605), (607, 14608), (617, 14674), (618, 14677), (619, 14695), (625, 14755), (631, 14812), (634, 14830), (641,

14911), (642, 14914), (644, 14929), (665, 15088), (672, 15142), (680, 15208), (687, 15262), (688, 15274), (689, 15280), (702, 15403), (707, 15427), (710, 15445), (713, 15469), (714, 15475), (717, 15496), (724, 15535), (740, 15676), (742, 15688), (750, 15739), (754, 15757), (763, 15907),

Gene: Utz\_17 Start: 10248, Stop: 15791, Start Num: 8

Candidate Starts for Utz\_17:

(Start: 8 @10248 has 37 MA's), (Start: 11 @10263 has 1 MA's), (Start: 12 @10269 has 1 MA's), (Start: 14 @10299 has 1 MA's), (15, 10308), (16, 10311), (18, 10353), (35, 10464), (36, 10485), (42, 10605), (49, 10647), (60, 10713), (62, 10731), (65, 10752), (66, 10755), (68, 10773), (74, 10797), (86, 10881), (87, 10884), (96, 10923), (98, 10938), (100, 10947), (122, 11115), (125, 11142), (142, 11259), (169, 11430), (172, 11460), (193, 11664), (202, 11709), (206, 11736), (207, 11748), (222, 11838), (230, 11910), (234, 11940), (246, 12027), (247, 12030), (251, 12069), (268, 12189), (272, 12231), (277, 12276), (278, 12282), (280, 12294), (281, 12297), (287, 12351), (291, 12390), (294, 12411), (295, 12414), (298, 12432), (309, 12480), (311, 12486), (315, 12507), (319, 12534), (355, 12807), (368, 12846), (374, 12861), (390, 12891), (391, 12894), (399, 12945), (412, 13026), (413, 13029), (419, 13062), (422, 13092), (424, 13116), (435, 13182), (469, 13449), (472, 13467), (475, 13497), (479, 13542), (480, 13545), (481, 13560), (483, 13569), (490, 13605), (491, 13614), (492, 13623), (499, 13674), (511, 13746), (517, 13764), (523, 13785), (537, 13884), (538, 13887), (544, 13920), (548, 13986), (550, 14004), (553, 14019), (558, 14052), (563, 14103), (570, 14154), (595, 14397), (596, 14400), (606, 14472), (607, 14475), (617, 14541), (618, 14544), (619, 14562), (625, 14622), (631, 14679), (634, 14697), (641, 14778), (642, 14781), (644, 14796), (672, 15009), (680, 15075), (688, 15141), (689, 15147), (702, 15270), (707, 15294), (710, 15312), (713, 15336), (714, 15342), (717, 15363), (724, 15402), (740, 15543), (750, 15606), (754, 15624), (757, 15651), (760, 15681), (763, 15774),

Gene: Vine\_17 Start: 10381, Stop: 15480, Start Num: 26

Candidate Starts for Vine\_17:

(Start: 26 @10381 has 29 MA's), (41, 10537), (55, 10666), (59, 10696), (69, 10765), (72, 10777), (79, 10813), (81, 10822), (85, 10864), (88, 10873), (96, 10909), (100, 10933), (107, 10993), (114, 11047), (118, 11086), (123, 11107), (125, 11128), (149, 11287), (151, 11299), (162, 11362), (168, 11407), (177, 11488), (193, 11647), (198, 11680), (202, 11692), (206, 11719), (212, 11776), (218, 11806), (221, 11818), (233, 11920), (234, 11923), (246, 12010), (252, 12055), (253, 12058), (268, 12172), (278, 12265), (281, 12280), (283, 12301), (287, 12334), (289, 12364), (292, 12376), (298, 12415), (303, 12439), (304, 12442), (310, 12466), (315, 12490), (324, 12595), (335, 12673), (342, 12703), (343, 12706), (345, 12742), (349, 12784), (352, 12808), (354, 12823), (356, 12838), (360, 12853), (366, 12877), (377, 12916), (378, 12931), (379, 12937), (382, 12958), (389, 12982), (391, 12988), (411, 13114), (417, 13144), (423, 13195), (428, 13231), (432, 13252), (433, 13255), (441, 13327), (447, 13372), (450, 13405), (452, 13426), (462, 13480), (473, 13555), (487, 13639), (499, 13726), (537, 13912), (553, 14044), (558, 14074), (576, 14212), (583, 14263), (588, 14293), (599, 14398), (609, 14449), (612, 14479), (643, 14659), (649, 14710), (659, 14752), (663, 14773), (678, 14869), (686, 14917), (689, 14935), (702, 15058), (707, 15082), (709, 15097), (713, 15127), (717, 15154), (719, 15160), (724, 15193), (733, 15262), (735, 15265), (738, 15301), (751, 15391),

Gene: Walrus\_18 Start: 10497, Stop: 16019, Start Num: 12

Candidate Starts for Walrus\_18:

(Start: 8 @10476 has 37 MA's), (Start: 11 @10491 has 1 MA's), (Start: 12 @10497 has 1 MA's), (Start: 14 @10527 has 1 MA's), (15, 10536), (16, 10539), (18, 10581), (35, 10692), (36, 10713), (42, 10833), (60, 10941), (62, 10959), (66, 10983), (68, 11001), (74, 11025), (86, 11109), (88, 11115), (96, 11151), (98, 11166), (100, 11175), (103, 11190), (107, 11235), (108, 11256), (122, 11343), (125, 11370), (132, 11403), (142, 11487), (151, 11541), (158, 11583), (169, 11658), (172, 11688), (193, 11892), (202, 11937), (226, 12111), (230, 12138), (234, 12168), (246, 12255), (247, 12258), (251, 12297), (253, 12303), (257, 12360), (268, 12417), (272, 12459), (277, 12504), (278, 12510), (281, 12525), (287, 12579), (291, 12618), (294, 12639), (295, 12642), (298, 12660), (304, 12687), (309, 12708), (311,

12714), (315, 12735), (323, 12834), (355, 13035), (359, 13050), (368, 13074), (374, 13089), (390, 13119), (391, 13122), (399, 13173), (412, 13254), (413, 13257), (419, 13290), (422, 13320), (424, 13344), (435, 13410), (469, 13677), (475, 13725), (479, 13770), (480, 13773), (481, 13788), (486, 13806), (490, 13833), (491, 13842), (492, 13851), (499, 13902), (511, 13974), (517, 13992), (523, 14013), (537, 14112), (538, 14115), (544, 14148), (548, 14214), (550, 14232), (553, 14247), (558, 14280), (563, 14331), (570, 14382), (595, 14625), (596, 14628), (606, 14700), (607, 14703), (617, 14769), (618, 14772), (619, 14790), (625, 14850), (631, 14907), (634, 14925), (641, 15006), (642, 15009), (644, 15024), (665, 15183), (672, 15237), (680, 15303), (681, 15309), (688, 15369), (689, 15375), (702, 15498), (707, 15522), (710, 15540), (713, 15564), (714, 15570), (717, 15591), (724, 15630), (740, 15771), (742, 15783), (750, 15834), (754, 15852), (762, 15981), (763, 16002),

Gene: Whack\_16 Start: 10349, Stop: 16249, Start Num: 1

Candidate Starts for Whack\_16:

(Start: 1 @10349 has 1 MA's), (2, 10358), (3, 10397), (6, 10445), (41, 10874), (44, 10949), (45, 10955), (56, 11018), (57, 11021), (62, 11054), (69, 11102), (70, 11105), (84, 11192), (89, 11213), (92, 11231), (100, 11270), (105, 11306), (109, 11354), (114, 11384), (120, 11444), (134, 11567), (162, 11777), (165, 11819), (188, 12029), (195, 12083), (204, 12134), (213, 12215), (231, 12341), (233, 12359), (262, 12593), (274, 12674), (277, 12710), (278, 12716), (281, 12731), (286, 12782), (287, 12785), (293, 12836), (297, 12860), (298, 12866), (305, 12899), (313, 12926), (315, 12941), (320, 13004), (322, 13025), (327, 13088), (335, 13145), (347, 13247), (372, 13343), (387, 13400), (389, 13406), (390, 13409), (406, 13511), (410, 13529), (414, 13553), (447, 13802), (449, 13823), (457, 13880), (476, 14024), (488, 14081), (501, 14183), (503, 14207), (504, 14210), (520, 14270), (523, 14276), (529, 14324), (543, 14399), (549, 14498), (554, 14549), (556, 14555), (567, 14636), (568, 14645), (601, 14966), (605, 14990), (610, 15026), (617, 15065), (622, 15110), (629, 15170), (632, 15212), (637, 15242), (638, 15245), (656, 15416), (657, 15419), (660, 15446), (673, 15578), (675, 15593), (677, 15599), (679, 15608), (685, 15656), (717, 15905), (728, 15977), (736, 16052), (740, 16097), (744, 16127), (745, 16136), (753, 16172), (755, 16187),

Gene: Whitney\_19 Start: 10672, Stop: 16305, Start Num: 22

Candidate Starts for Whitney\_19:

(Start: 22 @10672 has 5 MA's), (Start: 28 @10717 has 1 MA's), (30, 10738), (34, 10759), (37, 10804), (Start: 38 @10819 has 1 MA's), (43, 10903), (51, 10945), (52, 10957), (62, 11020), (64, 11035), (66, 11044), (68, 11062), (69, 11068), (79, 11116), (103, 11251), (121, 11401), (125, 11431), (158, 11650), (169, 11725), (172, 11755), (193, 11959), (202, 12004), (203, 12010), (206, 12031), (209, 12055), (217, 12112), (226, 12178), (230, 12205), (232, 12217), (234, 12235), (235, 12247), (241, 12271), (243, 12283), (246, 12322), (247, 12325), (248, 12334), (251, 12364), (255, 12409), (265, 12469), (268, 12484), (271, 12514), (272, 12526), (277, 12571), (278, 12577), (281, 12592), (284, 12622), (286, 12643), (287, 12646), (295, 12709), (299, 12736), (300, 12739), (301, 12742), (302, 12748), (308, 12772), (309, 12775), (311, 12781), (313, 12787), (315, 12802), (318, 12820), (320, 12865), (327, 12949), (328, 12955), (332, 12982), (345, 13075), (346, 13084), (352, 13141), (353, 13153), (361, 13189), (362, 13195), (373, 13237), (376, 13249), (381, 13288), (383, 13294), (384, 13297), (389, 13315), (390, 13318), (391, 13321), (396, 13345), (407, 13420), (414, 13459), (418, 13483), (422, 13516), (432, 13627), (435, 13660), (440, 13723), (444, 13759), (448, 13789), (459, 13867), (460, 13870), (461, 13879), (464, 13903), (475, 13990), (479, 14035), (480, 14038), (481, 14053), (490, 14098), (491, 14107), (492, 14116), (493, 14119), (509, 14224), (521, 14272), (523, 14278), (537, 14377), (538, 14380), (541, 14392), (553, 14509), (558, 14542), (563, 14593), (569, 14623), (575, 14683), (586, 14764), (589, 14785), (590, 14788), (591, 14818), (597, 14881), (598, 14890), (599, 14899), (618, 15013), (620, 15043), (626, 15091), (627, 15094), (630, 15124), (631, 15145), (653, 15343), (662, 15406), (664, 15412), (670, 15463), (692, 15655), (700, 15742), (705, 15769), (706, 15772), (718, 15847), (722, 15871), (727, 15910), (730, 15946), (734, 15967), (743, 16054), (749, 16096), (755, 16129), (756, 16141), (764, 16285),

Gene: William\_17 Start: 10217, Stop: 15835, Start Num: 8

Candidate Starts for William\_17:

(Start: 7 @10181 has 1 MA's), (Start: 8 @10217 has 37 MA's), (Start: 12 @10238 has 1 MA's), (16, 10280), (18, 10322), (31, 10412), (33, 10421), (35, 10433), (36, 10454), (41, 10520), (43, 10583), (46, 10604), (54, 10646), (55, 10649), (58, 10676), (61, 10697), (62, 10700), (65, 10721), (68, 10742), (78, 10793), (79, 10796), (88, 10856), (115, 11039), (125, 11111), (154, 11297), (169, 11399), (170, 11414), (172, 11429), (178, 11486), (202, 11678), (220, 11798), (230, 11879), (234, 11909), (241, 11945), (246, 11996), (263, 12131), (264, 12134), (268, 12158), (274, 12209), (277, 12245), (278, 12251), (281, 12266), (287, 12320), (291, 12359), (295, 12383), (298, 12401), (309, 12449), (311, 12455), (314, 12473), (315, 12476), (317, 12491), (319, 12503), (321, 12551), (342, 12689), (349, 12770), (352, 12794), (353, 12806), (354, 12809), (361, 12842), (382, 12944), (389, 12971), (390, 12974), (391, 12977), (393, 12983), (401, 13040), (403, 13052), (407, 13076), (410, 13091), (412, 13106), (413, 13109), (417, 13133), (420, 13160), (432, 13241), (443, 13325), (455, 13430), (461, 13463), (469, 13529), (470, 13538), (475, 13577), (477, 13610), (479, 13622), (480, 13625), (481, 13640), (483, 13649), (490, 13685), (491, 13694), (492, 13703), (521, 13859), (522, 13862), (523, 13865), (526, 13886), (538, 13967), (546, 14009), (553, 14096), (558, 14129), (560, 14138), (563, 14180), (579, 14294), (606, 14543), (607, 14546), (610, 14576), (611, 14579), (615, 14603), (617, 14612), (618, 14615), (625, 14693), (631, 14750), (644, 14867), (651, 14918), (672, 15056), (680, 15122), (688, 15188), (689, 15194), (691, 15212), (700, 15305), (702, 15317), (711, 15365), (713, 15383), (714, 15389), (717, 15410), (724, 15449), (740, 15590), (750, 15653), (760, 15728), (763, 15821),

Gene: Wisp\_16 Start: 10065, Stop: 15509, Start Num: 14

Candidate Starts for Wisp\_16:

(Start: 8 @10014 has 37 MA's), (Start: 11 @10029 has 1 MA's), (Start: 12 @10035 has 1 MA's), (Start: 14 @10065 has 1 MA's), (15, 10074), (16, 10077), (18, 10119), (35, 10230), (36, 10251), (42, 10371), (49, 10413), (55, 10446), (60, 10479), (62, 10497), (64, 10512), (65, 10518), (66, 10521), (68, 10539), (74, 10563), (86, 10647), (96, 10689), (98, 10704), (100, 10713), (122, 10881), (125, 10908), (142, 11025), (169, 11196), (172, 11226), (193, 11430), (202, 11475), (206, 11502), (207, 11514), (222, 11604), (226, 11649), (230, 11676), (234, 11706), (246, 11793), (247, 11796), (251, 11835), (257, 11898), (268, 11955), (272, 11997), (277, 12042), (278, 12048), (280, 12060), (281, 12063), (287, 12117), (291, 12156), (294, 12177), (295, 12180), (298, 12198), (304, 12225), (309, 12246), (311, 12252), (314, 12270), (315, 12273), (316, 12279), (319, 12300), (355, 12573), (363, 12600), (368, 12612), (374, 12627), (390, 12657), (391, 12660), (412, 12792), (413, 12795), (419, 12828), (422, 12858), (424, 12882), (435, 12948), (469, 13215), (475, 13263), (479, 13308), (480, 13311), (481, 13326), (490, 13371), (491, 13380), (492, 13389), (499, 13440), (511, 13512), (517, 13530), (523, 13551), (537, 13650), (538, 13653), (544, 13686), (548, 13752), (550, 13770), (553, 13785), (558, 13818), (563, 13869), (570, 13920), (595, 14163), (596, 14166), (606, 14238), (607, 14241), (617, 14307), (618, 14310), (619, 14328), (625, 14388), (641, 14544), (642, 14547), (644, 14562), (665, 14733), (672, 14787), (682, 14844), (684, 14859), (690, 14907), (695, 14952), (715, 15072), (716, 15081), (723, 15120), (732, 15192), (740, 15261), (742, 15273), (750, 15324), (754, 15342), (760, 15399), (763, 15492),

Gene: Wocket\_18 Start: 10497, Stop: 15983, Start Num: 8

Candidate Starts for Wocket\_18:

(Start: 8 @10497 has 37 MA's), (Start: 11 @10512 has 1 MA's), (Start: 14 @10548 has 1 MA's), (15, 10557), (16, 10560), (18, 10602), (35, 10713), (36, 10734), (42, 10854), (60, 10962), (62, 10980), (65, 11001), (66, 11004), (68, 11022), (74, 11046), (79, 11076), (86, 11130), (88, 11136), (96, 11172), (98, 11187), (100, 11196), (122, 11364), (125, 11391), (151, 11562), (158, 11604), (169, 11679), (172, 11709), (193, 11913), (202, 11958), (203, 11964), (206, 11985), (207, 11997), (222, 12087), (226, 12132), (230, 12159), (234, 12189), (246, 12276), (251, 12318), (258, 12390), (268, 12438), (272, 12480), (277, 12525), (278, 12531), (281, 12546), (287, 12600), (291, 12639), (294, 12660), (295, 12663), (298, 12681), (304, 12708), (309, 12729), (311, 12735), (315, 12756), (319, 12783), (368, 13095), (374, 13110), (390, 13140), (391, 13143), (399, 13194), (412, 13275), (413, 13278), (419,

13311), (422, 13341), (424, 13365), (435, 13431), (469, 13698), (474, 13740), (475, 13746), (477, 13779), (479, 13791), (480, 13794), (481, 13809), (486, 13827), (490, 13854), (491, 13863), (492, 13872), (509, 13980), (521, 14028), (522, 14031), (523, 14034), (526, 14055), (538, 14136), (539, 14139), (553, 14265), (558, 14298), (562, 14346), (563, 14349), (566, 14364), (570, 14400), (596, 14646), (606, 14718), (607, 14721), (617, 14787), (618, 14790), (619, 14808), (625, 14868), (641, 15024), (644, 15042), (665, 15207), (672, 15261), (682, 15318), (684, 15333), (690, 15381), (695, 15426), (715, 15546), (716, 15555), (723, 15594), (732, 15666), (740, 15735), (750, 15798), (754, 15816), (758, 15846),

Gene: Yarn\_15 Start: 9639, Stop: 14426, Start Num: 73

Candidate Starts for Yarn\_15:

(Start: 73 @9639 has 23 MA's), (Start: 77 @9666 has 1 MA's), (90, 9744), (99, 9795), (109, 9882), (112, 9897), (119, 9954), (123, 9972), (126, 9999), (127, 10002), (139, 10071), (144, 10128), (155, 10173), (158, 10191), (164, 10236), (171, 10272), (175, 10305), (182, 10353), (183, 10356), (187, 10404), (190, 10443), (192, 10458), (225, 10650), (227, 10668), (242, 10752), (261, 10899), (267, 10926), (277, 11019), (278, 11025), (281, 11040), (285, 11079), (286, 11091), (295, 11157), (311, 11229), (314, 11247), (315, 11250), (319, 11277), (345, 11523), (352, 11589), (360, 11634), (365, 11655), (366, 11658), (367, 11661), (377, 11697), (381, 11736), (383, 11742), (391, 11769), (412, 11898), (413, 11901), (415, 11919), (434, 12042), (436, 12057), (450, 12186), (452, 12207), (461, 12249), (465, 12276), (466, 12282), (482, 12414), (487, 12426), (499, 12513), (507, 12555), (514, 12591), (540, 12717), (545, 12756), (559, 12885), (566, 12942), (573, 12984), (585, 13077), (592, 13152), (600, 13215), (612, 13296), (616, 13317), (638, 13494), (639, 13500), (667, 13719), (674, 13797), (678, 13815), (681, 13821), (689, 13881), (691, 13899), (694, 13932), (702, 14004), (709, 14043), (713, 14073), (724, 14139), (729, 14187), (738, 14247), (751, 14337), (759, 14397),

Gene: Yucky\_18 Start: 10241, Stop: 15340, Start Num: 26

Candidate Starts for Yucky\_18:

(Start: 26 @10241 has 29 MA's), (41, 10397), (59, 10556), (69, 10625), (79, 10673), (85, 10724), (88, 10733), (96, 10769), (100, 10793), (107, 10853), (114, 10907), (118, 10946), (120, 10952), (123, 10967), (125, 10988), (149, 11147), (151, 11159), (162, 11222), (168, 11267), (177, 11348), (193, 11507), (198, 11540), (202, 11552), (206, 11579), (212, 11636), (218, 11666), (221, 11678), (233, 11780), (234, 11783), (246, 11870), (252, 11915), (253, 11918), (268, 12032), (278, 12125), (281, 12140), (283, 12161), (287, 12194), (289, 12224), (292, 12236), (298, 12275), (303, 12299), (304, 12302), (310, 12326), (315, 12350), (324, 12455), (331, 12503), (335, 12533), (339, 12548), (342, 12563), (345, 12602), (349, 12644), (352, 12668), (354, 12683), (356, 12698), (360, 12713), (366, 12737), (377, 12776), (378, 12791), (379, 12797), (382, 12818), (389, 12842), (391, 12848), (411, 12974), (417, 13004), (421, 13040), (422, 13043), (428, 13091), (432, 13112), (433, 13115), (441, 13187), (447, 13232), (450, 13265), (452, 13286), (462, 13340), (473, 13415), (487, 13499), (499, 13586), (537, 13772), (553, 13904), (558, 13934), (576, 14072), (583, 14123), (588, 14153), (599, 14258), (609, 14309), (612, 14339), (643, 14519), (649, 14570), (659, 14612), (663, 14633), (678, 14729), (686, 14777), (689, 14795), (702, 14918), (707, 14942), (709, 14957), (713, 14987), (717, 15014), (719, 15020), (724, 15053), (733, 15122), (735, 15125), (738, 15161), (751, 15251),

Gene: Yummy\_17 Start: 9515, Stop: 14311, Start Num: 73

Candidate Starts for Yummy\_17:

(Start: 73 @9515 has 23 MA's), (Start: 77 @9542 has 1 MA's), (79, 9548), (99, 9671), (112, 9773), (116, 9818), (119, 9830), (123, 9848), (126, 9875), (127, 9878), (129, 9893), (138, 9944), (139, 9947), (144, 10004), (146, 10007), (147, 10010), (155, 10049), (158, 10067), (164, 10112), (171, 10148), (175, 10181), (179, 10214), (180, 10226), (187, 10280), (190, 10319), (192, 10334), (196, 10343), (200, 10370), (208, 10421), (218, 10481), (221, 10490), (227, 10544), (238, 10607), (241, 10622), (248, 10685), (261, 10775), (267, 10802), (277, 10895), (278, 10901), (281, 10916), (285, 10955), (295, 11033), (301, 11066), (311, 11105), (314, 11123), (315, 11126), (319, 11153), (322, 11210), (324, 11231), (338, 11342), (343, 11363), (345, 11399), (349, 11441), (350, 11453), (352, 11465),



(360, 11510), (361, 11513), (365, 11531), (366, 11534), (367, 11537), (381, 11612), (391, 11645), (400, 11705), (411, 11771), (412, 11774), (413, 11777), (415, 11795), (429, 11894), (432, 11909), (433, 11912), (450, 12062), (452, 12083), (461, 12125), (465, 12152), (466, 12158), (482, 12290), (487, 12302), (499, 12389), (507, 12431), (514, 12467), (525, 12503), (531, 12542), (540, 12593), (545, 12632), (551, 12710), (559, 12761), (566, 12818), (585, 12956), (592, 13028), (612, 13172), (616, 13193), (638, 13370), (639, 13376), (678, 13700), (681, 13706), (689, 13766), (691, 13784), (694, 13817), (702, 13889), (709, 13928), (713, 13958), (724, 14024), (725, 14042), (729, 14072), (738, 14132), (751, 14222), (759, 14282),

Gene: Zarbodnamra\_17 Start: 10273, Stop: 15795, Start Num: 8

Candidate Starts for Zarbodnamra\_17:

(Start: 8 @10273 has 37 MA's), (Start: 11 @10288 has 1 MA's), (Start: 12 @10294 has 1 MA's), (Start: 14 @10324 has 1 MA's), (15, 10333), (16, 10336), (18, 10378), (35, 10489), (36, 10510), (60, 10738), (62, 10756), (64, 10771), (65, 10777), (66, 10780), (68, 10798), (74, 10822), (86, 10906), (87, 10909), (96, 10948), (98, 10963), (100, 10972), (122, 11140), (125, 11167), (169, 11455), (172, 11485), (193, 11689), (202, 11734), (206, 11761), (207, 11773), (222, 11863), (226, 11908), (230, 11935), (234, 11965), (246, 12052), (247, 12055), (251, 12094), (260, 12178), (268, 12214), (272, 12256), (277, 12301), (278, 12307), (280, 12319), (281, 12322), (287, 12376), (291, 12415), (294, 12436), (295, 12439), (298, 12457), (299, 12466), (304, 12484), (309, 12505), (311, 12511), (315, 12532), (319, 12559), (324, 12637), (359, 12826), (368, 12850), (373, 12862), (374, 12865), (385, 12880), (390, 12895), (391, 12898), (399, 12949), (412, 13030), (413, 13033), (419, 13066), (422, 13096), (424, 13120), (469, 13453), (475, 13501), (479, 13546), (480, 13549), (481, 13564), (490, 13609), (491, 13618), (492, 13627), (499, 13678), (511, 13750), (517, 13768), (523, 13789), (537, 13888), (538, 13891), (544, 13924), (548, 13990), (550, 14008), (553, 14023), (558, 14056), (563, 14107), (570, 14158), (595, 14401), (596, 14404), (606, 14476), (607, 14479), (617, 14545), (618, 14548), (619, 14566), (625, 14626), (631, 14683), (634, 14701), (641, 14782), (642, 14785), (644, 14800), (665, 14959), (672, 15013), (680, 15079), (681, 15085), (688, 15145), (689, 15151), (702, 15274), (707, 15298), (710, 15316), (713, 15340), (714, 15346), (717, 15367), (724, 15406), (740, 15547), (742, 15559), (750, 15610), (754, 15628), (763, 15778),

Gene: Zareef\_20 Start: 10620, Stop: 15749, Start Num: 26

Candidate Starts for Zareef\_20:

(23, 10599), (Start: 26 @10620 has 29 MA's), (29, 10647), (41, 10776), (49, 10872), (57, 10923), (67, 10980), (71, 11013), (72, 11016), (85, 11103), (89, 11115), (98, 11163), (99, 11166), (100, 11172), (101, 11175), (106, 11226), (107, 11232), (113, 11280), (123, 11346), (125, 11367), (181, 11760), (182, 11763), (190, 11865), (199, 11922), (201, 11928), (202, 11931), (203, 11937), (206, 11958), (222, 12060), (224, 12087), (234, 12162), (237, 12180), (241, 12198), (243, 12210), (246, 12249), (253, 12297), (257, 12354), (261, 12378), (263, 12384), (278, 12504), (281, 12519), (285, 12558), (294, 12633), (300, 12666), (304, 12681), (305, 12687), (306, 12693), (315, 12729), (325, 12837), (332, 12909), (342, 12963), (352, 13068), (360, 13113), (366, 13137), (374, 13167), (379, 13197), (380, 13209), (381, 13215), (389, 13242), (391, 13248), (405, 13341), (407, 13347), (415, 13398), (424, 13467), (430, 13500), (433, 13515), (434, 13521), (440, 13578), (447, 13632), (449, 13653), (450, 13665), (452, 13686), (453, 13689), (465, 13755), (484, 13896), (499, 13992), (504, 14025), (510, 14058), (516, 14079), (519, 14085), (553, 14322), (558, 14352), (580, 14526), (585, 14556), (588, 14577), (612, 14769), (614, 14778), (635, 14859), (655, 15000), (659, 15006), (678, 15135), (689, 15201), (694, 15252), (702, 15324), (709, 15363), (710, 15366), (713, 15393), (719, 15426), (724, 15459), (735, 15531), (742, 15603), (750, 15657), (752, 15663), (759, 15720),

Gene: ZiggyZoo\_16 Start: 10043, Stop: 15586, Start Num: 8

Candidate Starts for ZiggyZoo\_16:

(Start: 8 @10043 has 37 MA's), (Start: 11 @10058 has 1 MA's), (Start: 12 @10064 has 1 MA's), (Start: 14 @10094 has 1 MA's), (15, 10103), (16, 10106), (18, 10148), (35, 10259), (36, 10280), (60, 10508), (62, 10526), (64, 10541), (65, 10547), (66, 10550), (68, 10568), (74, 10592), (86, 10676), (88, 10682),

(96, 10718), (98, 10733), (100, 10742), (122, 10910), (125, 10937), (142, 11054), (151, 11108), (169, 11225), (172, 11255), (193, 11459), (202, 11504), (206, 11531), (207, 11543), (222, 11633), (226, 11678), (230, 11705), (234, 11735), (246, 11822), (247, 11825), (251, 11864), (268, 11984), (272, 12026), (277, 12071), (278, 12077), (280, 12089), (281, 12092), (287, 12146), (291, 12185), (294, 12206), (295, 12209), (298, 12227), (304, 12254), (309, 12275), (311, 12281), (315, 12302), (319, 12329), (323, 12401), (342, 12536), (359, 12617), (368, 12641), (374, 12656), (390, 12686), (391, 12689), (399, 12740), (412, 12821), (413, 12824), (419, 12857), (422, 12887), (424, 12911), (435, 12977), (469, 13244), (472, 13262), (475, 13292), (479, 13337), (480, 13340), (481, 13355), (483, 13364), (490, 13400), (491, 13409), (492, 13418), (499, 13469), (511, 13541), (517, 13559), (523, 13580), (537, 13679), (538, 13682), (544, 13715), (548, 13781), (550, 13799), (553, 13814), (558, 13847), (563, 13898), (570, 13949), (595, 14192), (596, 14195), (606, 14267), (607, 14270), (617, 14336), (618, 14339), (619, 14357), (625, 14417), (631, 14474), (634, 14492), (641, 14573), (642, 14576), (644, 14591), (665, 14750), (672, 14804), (680, 14870), (681, 14876), (688, 14936), (689, 14942), (694, 14993), (702, 15065), (707, 15089), (710, 15107), (713, 15131), (714, 15137), (717, 15158), (724, 15197), (740, 15338), (742, 15350), (750, 15401), (754, 15419), (763, 15569),