

Item	Label	Unit	Quantity	Price	Total
1	Xenon	ph	2	140	280
2	Benz	ph	2	140	280
3	Mod	ph	2	140	280
4	Eisa	ph	2	140	280
5	Benz	ph	2	140	280
6	Kea	ph	2	140	280
7	Circ	ph	2	140	280
8	Bow	ph	2	140	280
9	Con	ph	2	140	280
10	Tim	ph	2	140	280
11	Ch	ph	2	140	280
12	JEI	ph	2	140	280
13	Mu	ph	2	140	280
14	Heis	ph	2	140	280
15	Ink	ph	2	140	280
16	Br	ph	2	140	280
17	Go	ph	2	140	280
18	Ca	ph	2	140	280
19	Syl	ph	2	140	280
20	Luc	ph	2	140	280
21	Nir	ph	2	140	280
22	Ar	ph	2	140	280
23	Iss	ph	2	140	280
24	Tai	ph	2	140	280
25	Tea	ph	2	140	280
26	Ca	ph	2	140	280
27	Sci	ph	2	140	280
28	Ac	ph	2	140	280
29	Tr	ph	2	140	280
30	Mil	ph	2	140	280
31	Br	ph	2	140	280
32	Ter	ph	2	140	280
33	De	ph	2	140	280
34	Da	ph	2	140	280
35	To	ph	2	140	280
36	Lil	ph	2	140	280
37	Bo	ph	2	140	280
38	Ch	ph	2	140	280
39	Sh	ph	2	140	280
40	Ph	ph	2	140	280
41	Gr	ph	2	140	280
42	Zip	ph	2	140	280
43	In	ph	2	140	280
44	Me	ph	2	140	280
45	Ca	ph	2	140	280
46	Ma	ph	2	140	280
47	Th	ph	2	140	280
48	Ar	ph	2	140	280
49	Na	ph	2	140	280
50	Ke	ph	2	140	280





Item	Code	Lot	Quantity	Unit	Description
I51:	S...	...	...	...	...
I52:	M...	...	...	...	...
I53:	O...	...	...	...	...
I54:	N...	...	...	...	...
I55:	M...	...	...	...	...
I56:	U...	...	...	...	...
I57:	A...	...	...	...	...
I58:	A...	...	...	...	...
I59:	R...	...	...	...	...
I60:	N...	...	...	...	...
I61:	C...	...	...	...	...
I62:	D...	...	...	...	...
I63:	D...	...	...	...	...
I64:	C...	...	...	...	...
I65:	N...	...	...	...	...
I66:	N...	...	...	...	...
I67:	D...	...	...	...	...
I68:	E...	...	...	...	...
I69:	G...	...	...	...	...
I70:	E...	...	...	...	...
I71:	P...	...	...	...	...
I72:	Y...	...	...	...	...
I73:	A...	...	...	...	...
I74:	S...	...	...	...	...
I75:	S...	...	...	...	...
I76:	D...	...	...	...	...
I77:	J...	...	...	...	...

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 215824 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215824 has 217 members, 51 are drafts.

Phages represented in each track:

- Track 1 : Xenomorph\_20
- Track 2 : Benllo\_20
- Track 3 : Mooshroom\_21, Kardesai\_20, Hankly\_20
- Track 4 : Elsa\_22, Arcadia\_22, Nason\_22
- Track 5 : BenitoAntonio\_22
- Track 6 : KeaneyLin\_20, GoCrazy\_20
- Track 7 : Circum\_22
- Track 8 : Bowling\_21, Dynamite\_21, NapoleonB\_21
- Track 9 : Correa\_21
- Track 10 : Tribby\_22
- Track 11 : Cheesy\_22
- Track 12 : JEGGS\_21
- Track 13 : Mudcat\_21
- Track 14 : Heisenberger\_21
- Track 15 : Inked\_28
- Track 16 : Brunswick\_26
- Track 17 : Gordon\_26
- Track 18 : CastorTray\_28
- Track 19 : Synopsis\_25
- Track 20 : LucySwiss\_26, Nightmare\_27
- Track 21 : Niktson\_26, ElephantMan\_26
- Track 22 : AreFloNak\_26, Nivinsha\_26
- Track 23 : Issa\_26
- Track 24 : Tatanka\_26
- Track 25 : Teacup\_26
- Track 26 : CapnMurica\_26
- Track 27 : ScienceWizSam\_28
- Track 28 : Acai\_26
- Track 29 : Trustiboi\_27
- Track 30 : MiniBagel\_26
- Track 31 : Breylor17\_27
- Track 32 : Tenno\_27
- Track 33 : DevitoJr\_26
- Track 34 : Darby\_26
- Track 35 : Tokki\_27
- Track 36 : LilHuddy\_27
- Track 37 : Bouchard\_27

- Track 38 : Chlochlo\_27
- Track 39 : Shepard\_27
- Track 40 : Phaby\_27
- Track 41 : Giantsbane\_27
- Track 42 : Zippen\_26
- Track 43 : Ingrid\_26, Loretta\_26
- Track 44 : MediumFry\_24
- Track 45 : Caterpillar\_24
- Track 46 : Makai\_26, Truckee\_25
- Track 47 : TrixiePhattel\_27
- Track 48 : Argan\_25
- Track 49 : Navi1117\_27
- Track 50 : KevinMinion\_26
- Track 51 : Renaldo\_31
- Track 52 : Phaila\_25
- Track 53 : BarbieDoll\_29
- Track 54 : Kinny\_29
- Track 55 : Zeina\_26
- Track 56 : Leathea\_26
- Track 57 : Tenney120\_27
- Track 58 : Uzumaki\_26
- Track 59 : GantcherGoblin\_25
- Track 60 : Lewando\_29
- Track 61 : Biscute\_30
- Track 62 : Natasha\_22
- Track 63 : Egad\_23
- Track 64 : ProfFrink\_23, MrAaronian\_23, Djungelskog\_23
- Track 65 : Stayer\_23, BronxBay\_23
- Track 66 : Sporto\_24
- Track 67 : StarLord\_23, Sloopyjoe\_23
- Track 68 : RustyBoy\_22
- Track 69 : Salk\_23, Linda\_23
- Track 70 : Raunak\_23
- Track 71 : Boog\_22
- Track 72 : PowellDog\_24
- Track 73 : Shiba\_23
- Track 74 : DoctorPepper\_23
- Track 75 : HerbBucket\_22
- Track 76 : Michelle\_23
- Track 77 : CherryBlossom\_23
- Track 78 : Jaylociraptor\_23, Indigenous\_23
- Track 79 : Maya\_23
- Track 80 : FrodoSwaggins\_23, Popy\_23
- Track 81 : Meibysrarus\_23
- Track 82 : Hoshi\_23, Esketit\_23
- Track 83 : HazuAndZazu\_23
- Track 84 : TaidaOne\_23
- Track 85 : Namu\_23, Rima\_23
- Track 86 : OlympicHelado\_23
- Track 87 : TonyStarch\_23
- Track 88 : DrGrey\_23
- Track 89 : GirlPower\_22
- Track 90 : Spectropatronm\_23

- Track 91 : Soshi\_23
- Track 92 : TieDye\_22
- Track 93 : IceWarrior\_23
- Track 94 : Madamoto\_23
- Track 95 : FidgetOrca\_23
- Track 96 : PherryCruz\_18, RavenPuff\_18
- Track 97 : RosaAsantewaa\_19
- Track 98 : Bilo\_19
- Track 99 : SheRa\_19
- Track 100 : Scap1\_19
- Track 101 : Annihilus\_19
- Track 102 : HotFries\_18
- Track 103 : GoblinVoyage\_19
- Track 104 : Moozy\_19
- Track 105 : Doxi13\_19
- Track 106 : LibertyBell\_21
- Track 107 : Thiqqums\_21, Miek\_21, SendItCS\_20, CrickKo\_21, Rainydai\_21, Regigigas\_22
- Track 108 : FromIndy\_22
- Track 109 : Bing\_24
- Track 110 : Kardashian\_22
- Track 111 : ClubPenguin\_22
- Track 112 : Pepy6\_035
- Track 113 : Poco6\_036
- Track 114 : Figliar\_32
- Track 115 : FortCran\_29, Artorias\_29
- Track 116 : JulesRay\_31
- Track 117 : Madvan\_32
- Track 118 : Vardy\_32
- Track 119 : Phepper\_32
- Track 120 : Schwartz33\_33
- Track 121 : Perkunas\_31, Talon44\_31
- Track 122 : AlainaMarie\_32, EndAve\_32
- Track 123 : Kerry\_29, Odesza\_29, Gill\_29, Tanis\_29, Gravy\_29
- Track 124 : Runhaar\_32, Burley\_32
- Track 125 : Zeph\_33
- Track 126 : BetterYeti\_34, Gusicorn\_35
- Track 127 : Dancer\_31
- Track 128 : Rickmore\_31
- Track 129 : Chickenjars\_32
- Track 130 : Duffington\_32
- Track 131 : Hydrus\_33
- Track 132 : TenaciousP\_33, Jodelie19\_33
- Track 133 : Nithya\_32
- Track 134 : Kenosha\_32
- Track 135 : Pherobrine\_31
- Track 136 : Citrus\_31
- Track 137 : Avazak\_29
- Track 138 : Capybara\_29
- Track 139 : Demure\_31
- Track 140 : Crocheter\_32
- Track 141 : Mysticmoon\_32
- Track 142 : Fazel\_30

- Track 143 : Conley\_30
- Track 144 : BluerMoon\_35
- Track 145 : Hortihabitatio\_33
- Track 146 : Petito\_31
- Track 147 : Secretariat\_30
- Track 148 : Trufflozitus\_32
- Track 149 : Captrips\_29
- Track 150 : Eddiemania\_33
- Track 151 : ShaggyRogers\_35
- Track 152 : Mossy\_33
- Track 153 : OlgasClover\_32
- Track 154 : NoPickles\_29
- Track 155 : MajinBuu\_33
- Track 156 : Untouchable\_32
- Track 157 : Arataki\_30
- Track 158 : Aflac\_32
- Track 159 : Roney\_29
- Track 160 : Nadmeg\_33
- Track 161 : OhMyWard\_32
- Track 162 : Damascus\_24
- Track 163 : DizzyRudy\_24
- Track 164 : Count\_30
- Track 165 : Camille\_24
- Track 166 : Arzan\_22
- Track 167 : Jazzy4900\_24, Sunny4976\_23
- Track 168 : Elver\_39, Paella\_40, Qui\_40
- Track 169 : Gandionco\_41
- Track 170 : Eevee\_26
- Track 171 : Pippin15\_25
- Track 172 : Yotsuba\_26
- Track 173 : AddiRose\_25
- Track 174 : Sweetclover\_24
- Track 175 : Serenabean\_25
- Track 176 : Daddyjeff\_25
- Track 177 : JoyLin\_26

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

The start number called the most often in the published annotations is 17, it was called in 129 of the 166 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Acai\_26, AddiRose\_25, Aflac\_32, AlainaMarie\_32, Annihilus\_19, Arataki\_30, Arcadia\_22, AreFloNak\_26, Argan\_25, Artorias\_29, Avazak\_29, BenitoAntonio\_22, Benllo\_20, BetterYeti\_34, Bilo\_19, Biscute\_30, BluerMoon\_35, Bouchard\_27, Bowling\_21, Breylor17\_27, BronxBay\_23, Brunswick\_26, Burley\_32, Camille\_24, CapnMurica\_26, Captrips\_29, Copybara\_29, CastorTray\_28, Caterpillar\_24, Cheesy\_22, Chikenjars\_32, Chlochlo\_27, Circum\_22, Citrus\_31, Conley\_30, Correa\_21, Count\_30, Crocheter\_32, Daddyjeff\_25, Damascus\_24, Dancer\_31, Darby\_26, Demure\_31, DevitoJr\_26, DizzyRudy\_24, Djungelskog\_23,



DoctorPepper\_23, Doxi13\_19, Duffington\_32, Dynamite\_21, Eddiemania\_33, Eevee\_26, ElephantMan\_26, Elsa\_22, Elver\_39, EndAve\_32, Fazel\_30, Figliar\_32, FortCran\_29, GantcherGoblin\_25, Giantsbane\_27, Gill\_29, GoCrazy\_20, GoblinVoyage\_19, Gordon\_26, Gravy\_29, Gusicorn\_35, Hankly\_20, Heisenberger\_21, HerbBucket\_22, Hortihabitatio\_33, HotFries\_18, Hydrus\_33, Ingrid\_26, Inked\_28, Issa\_26, JEGGS\_21, Jodelie19\_33, JoyLin\_26, JulesRay\_31, Kardesai\_20, KeaneyLin\_20, Kenosha\_32, Kerry\_29, Kinny\_29, Leatheia\_26, Lewando\_29, LilHuddy\_27, Linda\_23, Loretta\_26, LucySwiss\_26, Madvan\_32, MajinBuu\_33, Makai\_26, MediumFry\_24, Michelle\_23, MiniBagel\_26, Mooshroom\_21, Mossy\_33, MrAaronian\_23, Mudcat\_21, Mysticmoon\_32, Nadmeg\_33, NapoleonB\_21, Nason\_22, Navi1117\_27, Nightmare\_27, Niktson\_26, Nithya\_32, Nivinsha\_26, NoPickles\_29, Odesza\_29, OhMyWard\_32, OlgasClover\_32, Paella\_40, Pepy6\_035, Perkunas\_31, Petito\_31, Phaby\_27, Phaila\_25, Phepper\_32, Pherobrine\_31, PherryCruz\_18, Pippin15\_25, Poco6\_036, PowellDog\_24, ProfFrink\_23, Qui\_40, RavenPuff\_18, Rickmore\_31, Roney\_29, RosaAsantewaa\_19, Runhaar\_32, RustyBoy\_22, Salk\_23, Schwartz33\_33, ScienceWizSam\_28, Secretariat\_30, Serenabean\_25, ShaggyRogers\_35, SheRa\_19, Shepard\_27, Sloopyjoe\_23, Sporto\_24, StarLord\_23, Stayer\_23, Sweetclover\_24, Synepsis\_25, Talon44\_31, Tanis\_29, Tatanka\_26, Teacup\_26, TenaciousP\_33, Tenney120\_27, Tenno\_27, Tokki\_27, Tribby\_22, Truckee\_25, Trufflozitus\_32, Trustiboi\_27, Untouchable\_32, Uzumaki\_26, Vardy\_32, Xenomorph\_20, Zeina\_26, Zeph\_33, Zippen\_26,

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

- BarbieDoll\_29, Boog\_22, Egad\_23, Gandionco\_41, KevinMinion\_26, Moozy\_19, Natasha\_22, Raunak\_23, Renaldo\_31, Scap1\_19, Shiba\_23, TrixiePhattel\_27, Yotsuba\_26,

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

- Arzan\_22, Bing\_24, CherryBlossom\_23, ClubPenguin\_22, CricKo\_21, DrGrey\_23, Esketit\_23, FidgetOrca\_23, FrodoSwaggins\_23, FromIndy\_22, GirlPower\_22, HazuAndZazu\_23, Hoshi\_23, IceWarrior\_23, Indigenous\_23, Jaylociraptor\_23, Jazzy4900\_24, Kardashian\_22, LibertyBell\_21, Madamato\_23, Maya\_23, Meibysrarus\_23, Miek\_21, Namu\_23, OlympicHelado\_23, Popy\_23, Rainydai\_21, Regigigas\_22, Rima\_23, SendItCS\_20, Soshi\_23, Spectropatronm\_23, Sunny4976\_23, TaidaOne\_23, Thiqqums\_21, TieDye\_22, TonyStarch\_23,

### Summary by start number:

Start 2:

- Found in 33 of 217 ( 15.2% ) of genes in pham
- Manual Annotations of this start: 31 of 166
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bing\_24 (BI5), CherryBlossom\_23 (BI1), CricKo\_21 (BI4), DrGrey\_23 (BI1), Esketit\_23 (BI1), FidgetOrca\_23 (BI1), FrodoSwaggins\_23 (BI1), FromIndy\_22 (BI4), GirlPower\_22 (BI1), HazuAndZazu\_23 (BI1), Hoshi\_23 (BI1), IceWarrior\_23 (BI1), Indigenous\_23 (BI1), Jaylociraptor\_23 (BI1), Kardashian\_22 (BI6), LibertyBell\_21 (BI3), Madamato\_23 (BI1), Maya\_23 (BI1), Meibysrarus\_23 (BI1), Miek\_21 (BI4), Namu\_23 (BI1), OlympicHelado\_23 (BI1), Popy\_23 (BI1), Rainydai\_21 (BI4), Regigigas\_22 (BI4), Rima\_23 (BI1), SendItCS\_20 (BI4), Soshi\_23 (BI1), Spectropatronm\_23 (BI1), TaidaOne\_23 (BI1), Thiqqums\_21 (BI4), TieDye\_22 (BI1), TonyStarch\_23 (BI1),

Start 4:

- Found in 4 of 217 ( 1.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Arzan\_22 (FI), Jazzy4900\_24 (FI), Sunny4976\_23 (FI),

Start 14:

- Found in 1 of 217 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 166
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ClubPenguin\_22 (BI7),

Start 16:

- Found in 109 of 217 ( 50.2% ) of genes in pham
- Manual Annotations of this start: 2 of 166
- Called 3.7% of time when present
- Phage (with cluster) where this start called: BarbieDoll\_29 (AU6), Moozy\_19 (BI2), Natasha\_22 (AW), Scap1\_19 (BI2),

Start 17:

- Found in 180 of 217 ( 82.9% ) of genes in pham
- Manual Annotations of this start: 129 of 166
- Called 92.8% of time when present
- Phage (with cluster) where this start called: Acai\_26 (AU1), AddiRose\_25 (JA), Aflac\_32 (DJ), AlainaMarie\_32 (DJ), Annihilus\_19 (BI2), Arataki\_30 (DJ), Arcadia\_22 (AM), AreFloNak\_26 (AU1), Argan\_25 (AU6), Artorias\_29 (DJ), Avazak\_29 (DJ), BenitoAntonio\_22 (AM), Benllo\_20 (AM), BetterYeti\_34 (DJ), Bilo\_19 (BI2), Biscute\_30 (AU6), BluerMoon\_35 (DJ), Bouchard\_27 (AU2), Bowling\_21 (AM), Breylor17\_27 (AU1), BronxBay\_23 (AW), Brunswick\_26 (AU1), Burley\_32 (DJ), Camille\_24 (EL), CapnMurica\_26 (AU1), Captrips\_29 (DJ), Capybara\_29 (DJ), CastorTray\_28 (AU1), Caterpillar\_24 (AU4), Cheesy\_22 (AM), Chikenjars\_32 (DJ), Chlochlo\_27 (AU2), Circum\_22 (AM), Citrus\_31 (DJ), Conley\_30 (DJ), Correa\_21 (AM), Count\_30 (EL), Crocheter\_32 (DJ), Daddyjeff\_25 (JA), Damascus\_24 (EL), Dancer\_31 (DJ), Darby\_26 (AU1), Demure\_31 (DJ), DevitoJr\_26 (AU1), DizzyRudy\_24 (EL), Djungelskog\_23 (AW), DoctorPepper\_23 (AW), Doxi13\_19 (BI2), Duffington\_32 (DJ), Dynamite\_21 (AM), Eddiemania\_33 (DJ), Eevee\_26 (JA), ElephantMan\_26 (AU1), Elsa\_22 (AM), Elver\_39 (FK), EndAve\_32 (DJ), Fazel\_30 (DJ), Figliar\_32 (DJ), FortCran\_29 (DJ), GantcherGoblin\_25 (AU6), Giantsbane\_27 (AU2), Gill\_29 (DJ), GoCrazy\_20 (AM), GoblinVoyage\_19 (BI2), Gordon\_26 (AU1), Gravy\_29 (DJ), Gusicorn\_35 (DJ), Hankly\_20 (AM), Heisenberger\_21 (AM), HerbBucket\_22 (AW), Hortihabitatio\_33 (DJ), HotFries\_18 (BI2), Hydrus\_33 (DJ), Ingrid\_26 (AU3), Inked\_28 (AU), Issa\_26 (AU1), JEGGS\_21 (AM), Jodelie19\_33 (DJ), JoyLin\_26 (JA), JulesRay\_31 (DJ), Kardesai\_20 (AM), KeaneyLin\_20 (AM), Kenosha\_32 (DJ), Kerry\_29 (DJ), Kinny\_29 (AU6), Leathea\_26 (AU6), Lewando\_29 (AU6), LilHuddy\_27 (AU2), Linda\_23 (AW), Loretta\_26 (AU3), LucySwiss\_26 (AU1), Madvan\_32 (DJ), MajinBuu\_33 (DJ), Makai\_26 (AU5), MediumFry\_24 (AU4), Michelle\_23 (AW), MiniBagel\_26 (AU1), Mooshroom\_21 (AM), Mossy\_33 (DJ), MrAaronian\_23 (AW), Mudcat\_21 (AM), Mysticmoon\_32 (DJ), Nadmeg\_33 (DJ), NapoleonB\_21 (AM), Nason\_22 (AM), Navi1117\_27 (AU6), Nightmare\_27 (AU1), Niktson\_26 (AU1), Nithya\_32 (DJ), Nivinsha\_26 (AU1), NoPickles\_29 (DJ), Odesza\_29 (DJ), OhMyWard\_32 (DJ), OlgasClover\_32 (DJ), Paella\_40 (FK), Pepy6\_035 (CC), Perkunas\_31 (DJ), Petite\_31 (DJ), Phaby\_27 (AU2), Phaila\_25

(AU6), Phepper\_32 (DJ), Pherobrine\_31 (DJ), PherryCruz\_18 (BI2), Pippin15\_25 (JA), Poco6\_036 (CC), PowellDog\_24 (AW), ProfFrink\_23 (AW), Qui\_40 (FK), RavenPuff\_18 (BI2), Rickmore\_31 (DJ), Roney\_29 (DJ), RosaAsantewaa\_19 (BI2), Runhaar\_32 (DJ), RustyBoy\_22 (AW), Salk\_23 (AW), Schwartz33\_33 (DJ), ScienceWizSam\_28 (AU1), Secretariat\_30 (DJ), Serenabean\_25 (JA), ShaggyRogers\_35 (DJ), SheRa\_19 (BI2), Shepard\_27 (AU2), Sloopyjoe\_23 (AW), Sporto\_24 (AW), StarLord\_23 (AW), Stayer\_23 (AW), Sweetclover\_24 (JA), Synopsis\_25 (AU1), Talon44\_31 (DJ), Tanis\_29 (DJ), Tatanka\_26 (AU1), Teacup\_26 (AU1), TenaciousP\_33 (DJ), Tenney120\_27 (AU6), Tenno\_27 (AU1), Tokki\_27 (AU2), Tribby\_22 (AM), Truckee\_25 (AU5), Trufflozitus\_32 (DJ), Trustiboi\_27 (AU1), Untouchable\_32 (DJ), Uzumaki\_26 (AU6), Vardy\_32 (DJ), Xenomorph\_20 (AM), Zeina\_26 (AU6), Zeph\_33 (DJ), Zippen\_26 (AU3),

Start 20:

- Found in 180 of 217 ( 82.9% ) of genes in pham
- Manual Annotations of this start: 3 of 166
- Called 3.3% of time when present
- Phage (with cluster) where this start called: Boog\_22 (AW), Egad\_23 (AW), Gandionco\_41 (FK), Raunak\_23 (AW), Shiba\_23 (AW), Yotsuba\_26 (JA),

Start 29:

- Found in 11 of 217 ( 5.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 9.1% of time when present
- Phage (with cluster) where this start called: KevinMinion\_26 (AU6),

Start 32:

- Found in 39 of 217 ( 18.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.6% of time when present
- Phage (with cluster) where this start called: Renaldo\_31 (AU6),

Start 47:

- Found in 111 of 217 ( 51.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.9% of time when present
- Phage (with cluster) where this start called: TrixiePhattel\_27 (AU6),

### **Summary by clusters:**

There are 22 clusters represented in this pham: DJ, FI, FK, JA, AU1, AU3, AU2, AU5, AU4, AU6, EL, CC, AM, AU, AW, BI6, BI7, BI4, BI5, BI2, BI3, BI1,

Info for manual annotations of cluster AM:

- Start number 17 was manually annotated 19 times for cluster AM.

Info for manual annotations of cluster AU:

- Start number 17 was manually annotated 1 time for cluster AU.

Info for manual annotations of cluster AU1:

- Start number 17 was manually annotated 17 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 17 was manually annotated 5 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 17 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 17 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 17 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 17 was manually annotated 5 times for cluster AU6.

Info for manual annotations of cluster AW:

- Start number 17 was manually annotated 12 times for cluster AW.
- Start number 20 was manually annotated 2 times for cluster AW.

Info for manual annotations of cluster BI1:

- Start number 2 was manually annotated 23 times for cluster BI1.

Info for manual annotations of cluster BI2:

- Start number 16 was manually annotated 2 times for cluster BI2.
- Start number 17 was manually annotated 9 times for cluster BI2.

Info for manual annotations of cluster BI3:

- Start number 2 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:

- Start number 2 was manually annotated 5 times for cluster BI4.

Info for manual annotations of cluster BI5:

- Start number 2 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:

- Start number 2 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:

- Start number 14 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster DJ:

- Start number 17 was manually annotated 43 times for cluster DJ.

Info for manual annotations of cluster EL:

- Start number 17 was manually annotated 4 times for cluster EL.

Info for manual annotations of cluster FK:

- Start number 17 was manually annotated 2 times for cluster FK.

Info for manual annotations of cluster JA:

- Start number 17 was manually annotated 6 times for cluster JA.

- Start number 20 was manually annotated 1 time for cluster JA.

### **Gene Information:**

Gene: Acai\_26 Start: 20116, Stop: 24702, Start Num: 17

Candidate Starts for Acai\_26:

(Start: 16 @20095 has 2 MA's), (Start: 17 @20116 has 129 MA's), (Start: 20 @20146 has 3 MA's), (28, 20200), (32, 20221), (37, 20257), (47, 20335), (57, 20395), (62, 20419), (64, 20431), (67, 20461), (70, 20512), (74, 20542), (75, 20584), (76, 20602), (80, 20644), (82, 20674), (84, 20719), (85, 20731), (92, 20785), (95, 20800), (97, 20812), (101, 20833), (114, 20926), (117, 20959), (120, 20974), (126, 21022), (145, 21193), (160, 21307), (161, 21310), (167, 21358), (189, 21472), (196, 21496), (199, 21511), (203, 21523), (217, 21598), (235, 21691), (239, 21706), (240, 21712), (245, 21730), (261, 21802), (278, 21868), (299, 21970), (301, 21976), (311, 22009), (312, 22012), (319, 22039), (336, 22153), (344, 22210), (346, 22222), (358, 22276), (361, 22285), (362, 22288), (367, 22309), (376, 22354), (382, 22375), (399, 22471), (406, 22492), (413, 22513), (416, 22531), (417, 22534), (428, 22585), (433, 22615), (435, 22630), (437, 22642), (466, 22762), (470, 22792), (490, 22870), (493, 22885), (496, 22894), (498, 22906), (503, 22927), (506, 22936), (514, 22981), (515, 22984), (516, 22993), (523, 23014), (530, 23044), (536, 23056), (542, 23077), (544, 23083), (549, 23104), (557, 23128), (558, 23137), (568, 23191), (574, 23206), (577, 23215), (589, 23254), (592, 23266), (594, 23272), (602, 23296), (604, 23305), (624, 23380), (625, 23383), (629, 23401), (646, 23467), (649, 23476), (661, 23530), (662, 23533), (693, 23659), (694, 23662), (700, 23683), (708, 23716), (710, 23725), (723, 23785), (728, 23806), (735, 23839), (741, 23872), (750, 23929), (762, 23989), (766, 24013), (778, 24091), (779, 24103), (798, 24229), (806, 24271), (816, 24319), (823, 24352), (827, 24364), (830, 24370), (833, 24391), (834, 24394), (835, 24400), (841, 24439), (846, 24466), (851, 24493), (884, 24652), (889, 24679),

Gene: AddiRose\_25 Start: 18536, Stop: 23140, Start Num: 17

Candidate Starts for AddiRose\_25:

(Start: 17 @18536 has 129 MA's), (Start: 20 @18569 has 3 MA's), (41, 18692), (43, 18716), (54, 18806), (58, 18824), (61, 18836), (67, 18881), (71, 18938), (75, 19004), (80, 19064), (88, 19175), (92, 19205), (95, 19220), (113, 19343), (114, 19346), (116, 19367), (120, 19394), (127, 19451), (134, 19541), (144, 19610), (146, 19625), (148, 19646), (151, 19667), (174, 19808), (178, 19829), (183, 19850), (192, 19904), (229, 20093), (319, 20480), (336, 20606), (340, 20636), (361, 20738), (364, 20750), (373, 20789), (413, 20966), (417, 20987), (422, 21011), (423, 21014), (431, 21050), (457, 21179), (472, 21251), (475, 21272), (480, 21290), (489, 21323), (493, 21341), (498, 21362), (500, 21368), (503, 21383), (511, 21422), (519, 21458), (526, 21482), (528, 21491), (532, 21506), (545, 21548), (557, 21590), (558, 21599), (561, 21626), (562, 21629), (569, 21656), (574, 21668), (577, 21677), (595, 21737), (604, 21767), (612, 21794), (652, 21950), (664, 22001), (672, 22037), (682, 22076), (687, 22103), (691, 22115), (696, 22133), (702, 22154), (709, 22181), (714, 22199), (723, 22247), (732, 22289), (759, 22433), (764, 22457), (765, 22466), (766, 22475), (772, 22508), (778, 22553), (786, 22607), (794, 22679), (800, 22703), (810, 22757), (813, 22772), (816, 22781), (817, 22793), (820, 22802), (823, 22814), (826, 22823), (840, 22901), (842, 22904), (859, 22976), (888, 23129),

Gene: Aflac\_32 Start: 23512, Stop: 28626, Start Num: 17

Candidate Starts for Aflac\_32:

(Start: 17 @23512 has 129 MA's), (Start: 20 @23542 has 3 MA's), (25, 23587), (47, 23731), (58, 23797), (67, 23857), (68, 23878), (75, 23980), (83, 24106), (86, 24142), (92, 24181), (101, 24229), (106, 24271), (112, 24343), (117, 24391), (131, 24517), (139, 24592), (140, 24604), (145, 24625), (157, 24730), (158, 24733), (203, 24955), (215, 25021), (232, 25111), (241, 25147), (255, 25198), (262, 25246), (265, 25258), (293, 25402), (301, 25441), (308, 25468), (336, 25630), (342, 25678),

(345, 25693), (346, 25699), (351, 25717), (362, 25765), (376, 25831), (388, 25882), (389, 25894), (392, 25912), (405, 25966), (417, 26011), (421, 26032), (424, 26041), (428, 26062), (432, 26083), (442, 26137), (443, 26140), (445, 26149), (451, 26170), (453, 26182), (458, 26203), (460, 26209), (464, 26227), (470, 26263), (476, 26293), (489, 26341), (493, 26353), (495, 26359), (496, 26362), (498, 26374), (499, 26377), (504, 26398), (511, 26434), (524, 26488), (525, 26491), (534, 26512), (538, 26524), (539, 26527), (551, 26575), (556, 26590), (557, 26593), (558, 26602), (560, 26623), (566, 26650), (567, 26653), (573, 26677), (577, 26689), (582, 26710), (584, 26722), (586, 26731), (590, 26743), (598, 26770), (608, 26803), (610, 26809), (615, 26827), (628, 26881), (632, 26896), (650, 26965), (676, 27076), (705, 27187), (717, 27232), (732, 27322), (757, 27466), (767, 27529), (771, 27556), (781, 27628), (783, 27640), (784, 27649), (789, 27703), (793, 27724), (795, 27736), (831, 27898), (847, 27985), (855, 28003), (861, 28033), (868, 28051), (869, 28054), (872, 28066), (878, 28093), (893, 28204), (899, 28267), (901, 28279), (909, 28327), (917, 28381), (921, 28408), (938, 28522), (948, 28612),

Gene: AlainaMarie\_32 Start: 23499, Stop: 28610, Start Num: 17

Candidate Starts for AlainaMarie\_32:

(Start: 17 @23499 has 129 MA's), (Start: 20 @23529 has 3 MA's), (25, 23574), (47, 23718), (58, 23784), (67, 23844), (68, 23865), (75, 23967), (82, 24057), (83, 24093), (86, 24129), (92, 24168), (101, 24216), (106, 24258), (112, 24330), (117, 24378), (131, 24504), (139, 24579), (140, 24591), (145, 24612), (157, 24717), (158, 24720), (203, 24942), (215, 25008), (216, 25011), (229, 25080), (232, 25098), (255, 25185), (267, 25254), (286, 25356), (287, 25359), (293, 25386), (301, 25425), (308, 25452), (336, 25614), (342, 25662), (346, 25683), (351, 25701), (353, 25716), (362, 25749), (376, 25815), (387, 25863), (388, 25866), (391, 25887), (392, 25896), (405, 25950), (417, 25995), (421, 26016), (424, 26025), (431, 26058), (432, 26067), (435, 26091), (442, 26121), (443, 26124), (445, 26133), (448, 26145), (451, 26154), (453, 26166), (458, 26187), (460, 26193), (470, 26247), (476, 26277), (489, 26325), (493, 26337), (495, 26343), (496, 26346), (499, 26361), (504, 26382), (511, 26418), (524, 26472), (525, 26475), (528, 26487), (534, 26496), (538, 26508), (539, 26511), (542, 26526), (549, 26553), (551, 26559), (556, 26574), (557, 26577), (558, 26586), (559, 26601), (560, 26607), (564, 26622), (566, 26634), (567, 26637), (577, 26673), (582, 26694), (584, 26706), (586, 26715), (590, 26727), (598, 26754), (605, 26778), (608, 26787), (610, 26793), (615, 26811), (632, 26880), (650, 26949), (686, 27105), (732, 27306), (757, 27450), (767, 27513), (771, 27540), (781, 27612), (783, 27624), (784, 27633), (789, 27687), (793, 27708), (795, 27720), (831, 27882), (847, 27969), (855, 27987), (861, 28017), (868, 28035), (869, 28038), (872, 28050), (878, 28077), (893, 28188), (901, 28263), (909, 28311), (917, 28365), (921, 28392), (938, 28506), (948, 28596),

Gene: Annihilus\_19 Start: 13516, Stop: 18744, Start Num: 17

Candidate Starts for Annihilus\_19:

(Start: 16 @13495 has 2 MA's), (Start: 17 @13516 has 129 MA's), (Start: 20 @13546 has 3 MA's), (40, 13648), (43, 13699), (58, 13807), (75, 13990), (83, 14116), (86, 14152), (92, 14191), (106, 14281), (148, 14668), (171, 14818), (176, 14842), (189, 14914), (238, 15145), (261, 15223), (264, 15241), (265, 15244), (275, 15277), (298, 15385), (318, 15445), (336, 15526), (346, 15595), (358, 15649), (379, 15736), (380, 15739), (382, 15748), (401, 15850), (414, 15886), (417, 15904), (428, 15955), (449, 16057), (452, 16069), (455, 16084), (469, 16153), (470, 16162), (476, 16192), (488, 16237), (495, 16258), (502, 16288), (505, 16300), (506, 16303), (510, 16324), (511, 16333), (519, 16369), (528, 16402), (554, 16486), (561, 16531), (562, 16534), (563, 16537), (577, 16582), (586, 16612), (600, 16657), (604, 16672), (614, 16705), (619, 16726), (621, 16735), (623, 16744), (629, 16768), (630, 16771), (633, 16780), (637, 16801), (640, 16813), (648, 16840), (657, 16879), (662, 16900), (670, 16936), (672, 16942), (706, 17074), (708, 17083), (710, 17092), (713, 17101), (714, 17104), (717, 17116), (718, 17119), (719, 17128), (721, 17137), (740, 17230), (747, 17284), (766, 17392), (769, 17407), (775, 17446), (777, 17461), (797, 17605), (843, 17839), (860, 17914), (905, 18193), (906, 18196), (910, 18217), (915, 18265), (917, 18271), (933, 18379), (939, 18424), (942, 18451), (950, 18553), (961, 18706),

Gene: Arataki\_30 Start: 22605, Stop: 27719, Start Num: 17

Candidate Starts for Arataki\_30:

(Start: 17 @22605 has 129 MA's), (Start: 20 @22635 has 3 MA's), (25, 22680), (47, 22824), (53, 22869), (54, 22872), (57, 22884), (58, 22890), (67, 22950), (68, 22971), (75, 23073), (77, 23109), (83, 23199), (92, 23274), (97, 23301), (101, 23322), (104, 23346), (106, 23364), (117, 23484), (133, 23640), (139, 23685), (145, 23718), (157, 23823), (158, 23826), (168, 23892), (171, 23901), (199, 24036), (215, 24114), (232, 24204), (255, 24291), (262, 24339), (278, 24414), (293, 24495), (301, 24534), (308, 24561), (333, 24702), (336, 24723), (345, 24786), (346, 24792), (351, 24810), (352, 24816), (362, 24858), (365, 24870), (367, 24879), (376, 24924), (386, 24966), (388, 24975), (389, 24987), (391, 24996), (392, 25005), (405, 25059), (417, 25104), (421, 25125), (424, 25134), (429, 25158), (430, 25161), (431, 25167), (442, 25230), (443, 25233), (445, 25242), (448, 25254), (450, 25260), (451, 25263), (453, 25275), (458, 25296), (460, 25302), (461, 25305), (466, 25326), (470, 25356), (473, 25371), (476, 25386), (489, 25434), (493, 25446), (495, 25452), (496, 25455), (498, 25467), (499, 25470), (511, 25527), (524, 25581), (534, 25605), (538, 25617), (539, 25620), (550, 25665), (551, 25668), (556, 25683), (557, 25686), (558, 25695), (559, 25710), (560, 25716), (561, 25722), (566, 25743), (567, 25746), (571, 25758), (574, 25773), (577, 25782), (582, 25803), (584, 25815), (590, 25836), (598, 25863), (608, 25896), (610, 25902), (615, 25920), (622, 25950), (632, 25989), (650, 26058), (679, 26181), (697, 26250), (717, 26325), (732, 26415), (757, 26559), (767, 26622), (777, 26688), (781, 26721), (783, 26733), (789, 26796), (793, 26817), (795, 26829), (800, 26850), (831, 26991), (847, 27078), (855, 27096), (861, 27126), (868, 27144), (869, 27147), (872, 27159), (878, 27186), (893, 27297), (901, 27372), (912, 27441), (917, 27474), (920, 27498), (938, 27615), (948, 27705),

Gene: Arcadia\_22 Start: 17670, Stop: 22148, Start Num: 17

Candidate Starts for Arcadia\_22:

(Start: 16 @17649 has 2 MA's), (Start: 17 @17670 has 129 MA's), (Start: 20 @17700 has 3 MA's), (23, 17733), (28, 17754), (64, 17985), (67, 18015), (74, 18096), (75, 18138), (76, 18156), (80, 18198), (85, 18285), (92, 18339), (95, 18354), (101, 18387), (114, 18480), (120, 18528), (122, 18543), (127, 18585), (131, 18639), (139, 18714), (145, 18747), (158, 18855), (168, 18921), (176, 18954), (179, 18963), (181, 18966), (184, 18984), (243, 19266), (253, 19290), (257, 19320), (297, 19479), (312, 19539), (336, 19668), (342, 19716), (353, 19770), (356, 19782), (358, 19791), (361, 19800), (367, 19824), (376, 19869), (382, 19890), (395, 19965), (403, 19998), (413, 20028), (417, 20049), (421, 20070), (433, 20130), (434, 20136), (442, 20175), (443, 20178), (447, 20193), (461, 20256), (466, 20277), (470, 20307), (476, 20337), (481, 20355), (493, 20403), (499, 20427), (503, 20445), (506, 20454), (507, 20463), (509, 20469), (512, 20490), (519, 20520), (528, 20553), (529, 20559), (530, 20562), (536, 20574), (542, 20595), (557, 20646), (558, 20655), (562, 20685), (564, 20691), (574, 20724), (577, 20733), (586, 20763), (589, 20772), (592, 20784), (604, 20823), (612, 20850), (614, 20856), (615, 20859), (618, 20874), (625, 20901), (629, 20919), (633, 20931), (641, 20967), (667, 21069), (682, 21132), (690, 21168), (691, 21171), (693, 21177), (697, 21192), (702, 21210), (708, 21234), (712, 21249), (713, 21252), (718, 21270), (723, 21303), (728, 21324), (740, 21381), (747, 21435), (749, 21444), (760, 21498), (776, 21525), (778, 21543), (785, 21591), (786, 21597), (794, 21669), (810, 21747), (814, 21762), (821, 21801), (830, 21825), (840, 21894), (845, 21915), (867, 22008), (890, 22137),

Gene: AreFloNak\_26 Start: 20074, Stop: 24663, Start Num: 17

Candidate Starts for AreFloNak\_26:

(Start: 16 @20053 has 2 MA's), (Start: 17 @20074 has 129 MA's), (Start: 20 @20104 has 3 MA's), (28, 20158), (32, 20179), (37, 20215), (47, 20293), (57, 20353), (62, 20377), (64, 20389), (67, 20419), (70, 20470), (74, 20500), (75, 20542), (76, 20560), (80, 20602), (82, 20632), (84, 20677), (85, 20689), (92, 20743), (95, 20758), (97, 20770), (101, 20791), (114, 20884), (117, 20917), (120, 20932), (126, 20980), (145, 21151), (160, 21265), (161, 21268), (189, 21430), (196, 21454), (199, 21469), (203, 21481), (217, 21556), (235, 21649), (239, 21664), (240, 21670), (245, 21688), (261, 21760), (273, 21811), (278, 21826), (284, 21856), (299, 21928), (301, 21934), (311, 21967), (312, 21970), (319,

21997), (336, 22111), (344, 22168), (346, 22180), (358, 22234), (361, 22243), (362, 22246), (367, 22267), (376, 22312), (382, 22333), (389, 22375), (392, 22393), (406, 22450), (413, 22471), (417, 22492), (433, 22573), (435, 22588), (436, 22591), (442, 22618), (443, 22621), (455, 22672), (470, 22750), (473, 22765), (474, 22768), (478, 22786), (479, 22792), (481, 22798), (484, 22807), (493, 22843), (496, 22852), (503, 22885), (514, 22939), (515, 22942), (519, 22960), (523, 22972), (530, 23002), (536, 23017), (540, 23026), (542, 23038), (547, 23059), (558, 23098), (569, 23155), (574, 23167), (577, 23176), (589, 23215), (592, 23227), (602, 23257), (604, 23266), (615, 23302), (624, 23341), (625, 23344), (629, 23362), (631, 23368), (646, 23428), (649, 23437), (661, 23491), (662, 23494), (665, 23503), (693, 23620), (694, 23623), (700, 23644), (708, 23677), (709, 23680), (710, 23686), (713, 23695), (719, 23722), (728, 23767), (741, 23833), (748, 23884), (750, 23890), (762, 23950), (776, 24034), (778, 24052), (779, 24064), (805, 24223), (806, 24232), (816, 24280), (823, 24313), (827, 24325), (830, 24331), (833, 24352), (834, 24355), (835, 24361), (841, 24400), (846, 24427), (884, 24613), (889, 24640),

Gene: Argan\_25 Start: 18963, Stop: 23600, Start Num: 17

Candidate Starts for Argan\_25:

(Start: 16 @18942 has 2 MA's), (Start: 17 @18963 has 129 MA's), (Start: 20 @18993 has 3 MA's), (28, 19047), (29, 19056), (58, 19326), (59, 19329), (67, 19386), (68, 19407), (74, 19467), (75, 19509), (80, 19569), (84, 19644), (92, 19710), (95, 19725), (101, 19758), (105, 19797), (106, 19800), (112, 19836), (114, 19851), (120, 19899), (140, 20097), (151, 20172), (158, 20226), (161, 20235), (169, 20295), (180, 20337), (189, 20397), (190, 20403), (193, 20412), (198, 20427), (199, 20436), (220, 20535), (221, 20547), (224, 20568), (294, 20853), (308, 20913), (312, 20922), (336, 21063), (342, 21111), (343, 21117), (347, 21135), (349, 21141), (358, 21186), (361, 21195), (367, 21219), (371, 21237), (381, 21282), (382, 21285), (385, 21294), (395, 21360), (406, 21402), (410, 21414), (413, 21423), (417, 21444), (428, 21495), (433, 21525), (435, 21540), (445, 21582), (450, 21600), (460, 21648), (461, 21651), (471, 21708), (498, 21816), (501, 21825), (511, 21876), (519, 21912), (528, 21945), (530, 21954), (536, 21966), (542, 21987), (549, 22014), (557, 22038), (558, 22047), (574, 22116), (575, 22119), (576, 22122), (577, 22125), (586, 22155), (592, 22176), (599, 22197), (604, 22215), (607, 22224), (612, 22242), (627, 22302), (635, 22335), (638, 22350), (640, 22356), (641, 22359), (654, 22404), (661, 22440), (662, 22443), (664, 22449), (667, 22461), (668, 22464), (696, 22581), (697, 22584), (702, 22602), (711, 22638), (721, 22680), (725, 22704), (740, 22773), (747, 22827), (750, 22839), (772, 22956), (778, 23001), (807, 23184), (810, 23205), (816, 23229), (830, 23280), (840, 23349), (841, 23352), (845, 23367),

Gene: Artorias\_29 Start: 20505, Stop: 25607, Start Num: 17

Candidate Starts for Artorias\_29:

(Start: 17 @20505 has 129 MA's), (Start: 20 @20535 has 3 MA's), (42, 20673), (46, 20718), (47, 20724), (49, 20733), (50, 20748), (53, 20769), (58, 20790), (64, 20820), (67, 20850), (68, 20871), (75, 20973), (80, 21033), (84, 21108), (85, 21120), (88, 21144), (92, 21174), (95, 21189), (101, 21222), (106, 21264), (111, 21315), (118, 21369), (119, 21372), (129, 21471), (132, 21495), (145, 21591), (157, 21696), (158, 21699), (169, 21768), (171, 21774), (172, 21780), (209, 21957), (220, 22008), (229, 22059), (241, 22113), (242, 22116), (293, 22368), (294, 22371), (309, 22446), (322, 22503), (334, 22587), (336, 22596), (348, 22671), (351, 22683), (353, 22698), (354, 22701), (359, 22722), (371, 22770), (376, 22797), (382, 22818), (385, 22827), (388, 22848), (389, 22860), (391, 22869), (392, 22878), (405, 22932), (406, 22935), (413, 22956), (421, 22998), (427, 23025), (430, 23034), (432, 23049), (433, 23058), (435, 23073), (437, 23085), (440, 23094), (448, 23127), (451, 23136), (469, 23220), (470, 23229), (473, 23244), (474, 23247), (478, 23265), (489, 23307), (496, 23328), (499, 23343), (501, 23349), (509, 23385), (511, 23400), (525, 23457), (528, 23469), (534, 23478), (538, 23490), (541, 23502), (542, 23508), (547, 23529), (551, 23541), (557, 23559), (558, 23568), (559, 23583), (560, 23589), (563, 23601), (573, 23643), (574, 23646), (577, 23655), (582, 23676), (584, 23688), (598, 23736), (601, 23745), (608, 23769), (610, 23775), (615, 23793), (616, 23802), (622, 23823), (639, 23892), (644, 23910), (650, 23931), (691, 24102), (705, 24153), (734, 24297), (745, 24366), (757, 24432), (765, 24483), (783, 24606), (789, 24669), (799, 24717), (800, 24723),



(802, 24732), (811, 24780), (828, 24852), (839, 24912), (844, 24933), (845, 24936), (856, 24987), (858, 24996), (861, 25014), (869, 25035), (872, 25047), (885, 25140), (893, 25185), (901, 25260), (903, 25278), (907, 25299), (920, 25386), (937, 25497), (948, 25593),

Gene: Arzan\_22 Start: 17242, Stop: 22302, Start Num: 4

Candidate Starts for Arzan\_22:

(4, 17242), (5, 17272), (8, 17326), (11, 17347), (29, 17554), (30, 17560), (31, 17563), (47, 17683), (52, 17716), (58, 17749), (65, 17788), (68, 17830), (73, 17881), (75, 17932), (83, 18058), (85, 18079), (92, 18133), (98, 18163), (114, 18265), (116, 18286), (121, 18322), (126, 18361), (139, 18499), (145, 18532), (153, 18604), (155, 18625), (157, 18637), (158, 18640), (166, 18691), (173, 18724), (180, 18751), (183, 18769), (199, 18850), (208, 18949), (212, 18985), (218, 19021), (223, 19066), (243, 19171), (268, 19306), (295, 19468), (296, 19471), (306, 19531), (315, 19594), (316, 19600), (331, 19714), (336, 19768), (340, 19798), (347, 19840), (350, 19852), (360, 19897), (361, 19900), (363, 19909), (367, 19924), (376, 19969), (382, 19990), (385, 19999), (391, 20041), (413, 20128), (421, 20170), (435, 20245), (445, 20287), (458, 20347), (466, 20377), (481, 20455), (484, 20464), (491, 20494), (498, 20524), (519, 20620), (527, 20647), (528, 20653), (530, 20662), (536, 20674), (537, 20677), (542, 20695), (547, 20716), (557, 20746), (558, 20755), (569, 20812), (571, 20818), (577, 20833), (582, 20848), (589, 20872), (591, 20878), (599, 20905), (601, 20911), (604, 20923), (625, 21001), (627, 21010), (636, 21049), (637, 21052), (644, 21079), (652, 21106), (657, 21130), (670, 21187), (672, 21193), (673, 21202), (695, 21283), (710, 21343), (712, 21349), (713, 21352), (721, 21388), (723, 21403), (765, 21622), (778, 21709), (787, 21778), (805, 21880), (807, 21892), (810, 21913), (820, 21958), (825, 21976), (830, 21991), (835, 22021), (840, 22060), (887, 22276),

Gene: Avazak\_29 Start: 20512, Stop: 25614, Start Num: 17

Candidate Starts for Avazak\_29:

(Start: 17 @20512 has 129 MA's), (Start: 20 @20542 has 3 MA's), (42, 20680), (46, 20725), (47, 20731), (49, 20740), (50, 20755), (53, 20776), (58, 20797), (64, 20827), (67, 20857), (68, 20878), (75, 20980), (80, 21040), (84, 21115), (85, 21127), (88, 21151), (92, 21181), (95, 21196), (101, 21229), (106, 21271), (111, 21322), (118, 21376), (119, 21379), (129, 21478), (132, 21502), (137, 21538), (145, 21598), (157, 21703), (158, 21706), (169, 21775), (171, 21781), (172, 21787), (209, 21964), (220, 22015), (229, 22066), (241, 22120), (242, 22123), (269, 22255), (278, 22294), (293, 22375), (294, 22378), (309, 22453), (322, 22510), (334, 22594), (336, 22603), (348, 22678), (351, 22690), (353, 22705), (354, 22708), (359, 22729), (371, 22777), (376, 22804), (382, 22825), (385, 22834), (388, 22855), (389, 22867), (391, 22876), (392, 22885), (406, 22942), (413, 22963), (417, 22984), (421, 23005), (427, 23032), (430, 23041), (432, 23056), (433, 23065), (435, 23080), (437, 23092), (440, 23101), (448, 23134), (451, 23143), (469, 23227), (470, 23236), (473, 23251), (478, 23272), (489, 23314), (496, 23335), (499, 23350), (509, 23392), (511, 23407), (525, 23464), (528, 23476), (534, 23485), (538, 23497), (541, 23509), (542, 23515), (547, 23536), (551, 23548), (554, 23557), (557, 23566), (558, 23575), (559, 23590), (560, 23596), (563, 23608), (569, 23632), (573, 23650), (577, 23662), (582, 23683), (584, 23695), (598, 23743), (601, 23752), (608, 23776), (610, 23782), (611, 23785), (615, 23800), (616, 23809), (617, 23812), (622, 23830), (639, 23899), (650, 23938), (691, 24109), (705, 24160), (734, 24304), (745, 24373), (757, 24439), (765, 24490), (783, 24613), (789, 24676), (799, 24724), (800, 24730), (802, 24739), (811, 24787), (828, 24859), (839, 24919), (844, 24940), (845, 24943), (856, 24994), (858, 25003), (861, 25021), (869, 25042), (872, 25054), (885, 25147), (893, 25192), (901, 25267), (903, 25285), (907, 25306), (920, 25393), (937, 25504), (948, 25600),

Gene: BarbieDoll\_29 Start: 20909, Stop: 25573, Start Num: 16

Candidate Starts for BarbieDoll\_29:

(Start: 16 @20909 has 2 MA's), (Start: 17 @20930 has 129 MA's), (Start: 20 @20960 has 3 MA's), (28, 21014), (32, 21035), (37, 21071), (47, 21239), (57, 21299), (67, 21365), (68, 21386), (75, 21488), (76, 21506), (80, 21548), (84, 21623), (85, 21635), (92, 21689), (95, 21704), (101, 21737), (112, 21815), (114, 21830), (125, 21920), (131, 21989), (145, 22097), (151, 22151), (157, 22202), (158, 22205),

(169, 22274), (180, 22316), (189, 22376), (190, 22382), (193, 22391), (198, 22406), (199, 22415), (215, 22493), (220, 22514), (221, 22526), (224, 22547), (277, 22754), (282, 22778), (294, 22832), (312, 22901), (336, 23042), (347, 23114), (349, 23120), (358, 23165), (360, 23171), (361, 23174), (367, 23198), (371, 23216), (382, 23264), (385, 23273), (406, 23381), (413, 23402), (417, 23423), (427, 23471), (433, 23504), (435, 23519), (450, 23579), (473, 23696), (498, 23795), (499, 23798), (511, 23855), (514, 23870), (516, 23882), (519, 23891), (528, 23924), (530, 23933), (536, 23945), (557, 24017), (558, 24026), (566, 24074), (574, 24095), (576, 24101), (577, 24104), (595, 24164), (604, 24194), (607, 24203), (629, 24290), (630, 24293), (631, 24296), (635, 24314), (638, 24329), (643, 24344), (646, 24356), (654, 24383), (661, 24419), (662, 24422), (664, 24428), (667, 24440), (679, 24494), (687, 24530), (697, 24563), (702, 24581), (708, 24605), (709, 24608), (715, 24629), (730, 24710), (737, 24740), (740, 24752), (747, 24806), (750, 24818), (772, 24935), (778, 24980), (787, 25049), (810, 25184), (816, 25208), (827, 25253), (830, 25259), (837, 25298), (840, 25328), (845, 25346),

Gene: BenitoAntonio\_22 Start: 17286, Stop: 21764, Start Num: 17

Candidate Starts for BenitoAntonio\_22:

(Start: 16 @17265 has 2 MA's), (Start: 17 @17286 has 129 MA's), (Start: 20 @17316 has 3 MA's), (23, 17349), (28, 17370), (64, 17601), (67, 17631), (74, 17712), (75, 17754), (76, 17772), (80, 17814), (85, 17901), (92, 17955), (95, 17970), (101, 18003), (112, 18081), (114, 18096), (120, 18144), (127, 18201), (131, 18255), (132, 18267), (139, 18330), (145, 18363), (158, 18471), (168, 18537), (176, 18570), (179, 18579), (184, 18600), (243, 18882), (256, 18927), (257, 18936), (297, 19095), (303, 19128), (312, 19155), (336, 19284), (349, 19362), (358, 19407), (361, 19416), (364, 19428), (367, 19440), (373, 19467), (376, 19485), (382, 19506), (395, 19581), (399, 19602), (400, 19605), (403, 19614), (413, 19644), (421, 19686), (433, 19746), (434, 19752), (435, 19761), (443, 19794), (446, 19806), (447, 19809), (459, 19866), (461, 19872), (466, 19893), (470, 19923), (476, 19953), (481, 19971), (493, 20019), (499, 20043), (503, 20061), (506, 20070), (509, 20085), (512, 20106), (519, 20136), (528, 20169), (529, 20175), (530, 20178), (536, 20190), (542, 20211), (557, 20262), (558, 20271), (562, 20301), (564, 20307), (574, 20340), (577, 20349), (586, 20379), (589, 20388), (592, 20400), (604, 20439), (612, 20466), (614, 20472), (615, 20475), (625, 20517), (633, 20547), (641, 20583), (667, 20685), (682, 20748), (690, 20784), (691, 20787), (693, 20793), (697, 20808), (702, 20826), (708, 20850), (712, 20865), (713, 20868), (718, 20886), (723, 20919), (728, 20940), (740, 20997), (747, 21051), (749, 21060), (760, 21114), (776, 21141), (778, 21159), (785, 21207), (786, 21213), (794, 21285), (810, 21363), (814, 21378), (821, 21417), (830, 21441), (840, 21510), (845, 21531), (867, 21624), (890, 21753),

Gene: Benllo\_20 Start: 17570, Stop: 22048, Start Num: 17

Candidate Starts for Benllo\_20:

(Start: 16 @17549 has 2 MA's), (Start: 17 @17570 has 129 MA's), (Start: 20 @17600 has 3 MA's), (23, 17633), (28, 17654), (64, 17885), (67, 17915), (74, 17996), (75, 18038), (76, 18056), (80, 18098), (85, 18185), (92, 18239), (95, 18254), (101, 18287), (112, 18365), (114, 18380), (120, 18428), (122, 18443), (127, 18485), (135, 18581), (139, 18614), (145, 18647), (158, 18755), (168, 18821), (176, 18854), (179, 18863), (181, 18866), (184, 18884), (243, 19166), (253, 19190), (257, 19220), (297, 19379), (312, 19439), (336, 19568), (342, 19616), (349, 19646), (353, 19670), (356, 19682), (358, 19691), (361, 19700), (367, 19724), (376, 19769), (382, 19790), (395, 19865), (403, 19898), (413, 19928), (417, 19949), (421, 19970), (433, 20030), (434, 20036), (442, 20075), (447, 20093), (466, 20177), (470, 20207), (476, 20237), (481, 20255), (493, 20303), (499, 20327), (503, 20345), (506, 20354), (507, 20363), (509, 20369), (512, 20390), (519, 20420), (528, 20453), (529, 20459), (534, 20468), (542, 20495), (549, 20522), (558, 20555), (561, 20582), (563, 20588), (570, 20615), (577, 20633), (586, 20663), (589, 20672), (592, 20684), (594, 20690), (595, 20693), (599, 20705), (604, 20723), (612, 20750), (614, 20756), (631, 20825), (637, 20852), (641, 20867), (667, 20969), (690, 21068), (691, 21071), (693, 21077), (697, 21092), (702, 21110), (712, 21149), (713, 21152), (718, 21170), (723, 21203), (728, 21224), (740, 21281), (747, 21335), (749, 21344), (760, 21398), (776, 21425), (778, 21443), (785, 21491), (786, 21497), (794, 21569), (810, 21647), (817, 21683), (821,

21701), (830, 21725), (834, 21749), (840, 21794), (845, 21815), (890, 22037),

Gene: BetterYeti\_34 Start: 23289, Stop: 28400, Start Num: 17

Candidate Starts for BetterYeti\_34:

(Start: 17 @23289 has 129 MA's), (Start: 20 @23319 has 3 MA's), (25, 23364), (47, 23508), (58, 23574), (67, 23634), (68, 23655), (75, 23757), (83, 23883), (86, 23919), (92, 23958), (97, 23985), (101, 24006), (106, 24048), (117, 24168), (129, 24282), (131, 24294), (139, 24369), (145, 24402), (157, 24507), (158, 24510), (229, 24870), (232, 24888), (267, 25044), (286, 25146), (287, 25149), (293, 25176), (301, 25215), (308, 25242), (312, 25263), (317, 25287), (336, 25404), (345, 25467), (346, 25473), (351, 25491), (352, 25497), (358, 25527), (365, 25551), (376, 25605), (383, 25629), (387, 25653), (388, 25656), (391, 25677), (392, 25686), (402, 25731), (405, 25740), (417, 25785), (421, 25806), (424, 25815), (425, 25821), (428, 25836), (430, 25842), (432, 25857), (442, 25911), (443, 25914), (445, 25923), (448, 25935), (451, 25944), (453, 25956), (458, 25977), (460, 25983), (466, 26007), (470, 26037), (473, 26052), (489, 26115), (493, 26127), (495, 26133), (496, 26136), (498, 26148), (499, 26151), (511, 26208), (524, 26262), (525, 26265), (534, 26286), (538, 26298), (539, 26301), (551, 26349), (556, 26364), (557, 26367), (558, 26376), (559, 26391), (560, 26397), (566, 26424), (567, 26427), (569, 26433), (577, 26463), (582, 26484), (584, 26496), (586, 26505), (590, 26517), (598, 26544), (608, 26577), (610, 26583), (615, 26601), (622, 26631), (650, 26739), (671, 26829), (676, 26850), (705, 26961), (717, 27006), (728, 27063), (732, 27096), (757, 27240), (767, 27303), (777, 27369), (781, 27402), (783, 27414), (789, 27477), (793, 27498), (795, 27510), (800, 27531), (831, 27672), (847, 27759), (855, 27777), (861, 27807), (868, 27825), (869, 27828), (871, 27834), (872, 27840), (878, 27867), (893, 27978), (899, 28041), (901, 28053), (912, 28122), (917, 28155), (920, 28179), (938, 28296), (948, 28386),

Gene: Bilo\_19 Start: 14007, Stop: 19235, Start Num: 17

Candidate Starts for Bilo\_19:

(Start: 16 @13986 has 2 MA's), (Start: 17 @14007 has 129 MA's), (Start: 20 @14037 has 3 MA's), (43, 14190), (57, 14292), (58, 14298), (75, 14481), (81, 14562), (83, 14607), (86, 14643), (92, 14682), (99, 14715), (104, 14754), (106, 14772), (148, 15159), (171, 15309), (176, 15333), (189, 15405), (238, 15636), (254, 15684), (261, 15714), (264, 15732), (275, 15768), (336, 16017), (346, 16086), (361, 16149), (367, 16173), (380, 16230), (382, 16239), (389, 16281), (401, 16341), (403, 16347), (405, 16353), (414, 16377), (424, 16425), (449, 16548), (460, 16599), (469, 16644), (470, 16653), (476, 16683), (488, 16728), (495, 16749), (505, 16791), (506, 16794), (510, 16815), (511, 16824), (519, 16860), (528, 16893), (561, 17022), (563, 17028), (564, 17031), (577, 17073), (586, 17103), (600, 17148), (604, 17163), (614, 17196), (619, 17217), (621, 17226), (623, 17235), (629, 17259), (630, 17262), (637, 17292), (646, 17325), (657, 17370), (662, 17391), (672, 17433), (675, 17448), (692, 17514), (696, 17529), (710, 17583), (713, 17592), (714, 17595), (717, 17607), (718, 17610), (721, 17628), (747, 17775), (766, 17883), (769, 17898), (797, 18096), (843, 18330), (860, 18405), (898, 18642), (905, 18684), (906, 18687), (910, 18708), (915, 18756), (917, 18762), (933, 18870), (942, 18942), (950, 19044), (961, 19197),

Gene: Bing\_24 Start: 16028, Stop: 21496, Start Num: 2

Candidate Starts for Bing\_24:

(1, 16007), (Start: 2 @16028 has 31 MA's), (3, 16058), (6, 16133), (12, 16214), (13, 16217), (33, 16385), (57, 16571), (67, 16637), (75, 16760), (81, 16841), (83, 16886), (89, 16946), (92, 16961), (101, 17009), (106, 17051), (127, 17243), (132, 17309), (148, 17438), (160, 17519), (161, 17522), (171, 17588), (236, 17906), (240, 17924), (254, 17963), (264, 18011), (266, 18020), (275, 18047), (286, 18098), (293, 18131), (297, 18143), (299, 18161), (308, 18194), (311, 18200), (312, 18203), (336, 18293), (344, 18350), (346, 18362), (361, 18425), (379, 18503), (380, 18506), (382, 18515), (406, 18632), (414, 18653), (432, 18743), (449, 18824), (460, 18875), (469, 18920), (470, 18929), (487, 19001), (497, 19034), (503, 19061), (505, 19067), (508, 19082), (511, 19100), (519, 19136), (553, 19250), (557, 19262), (561, 19298), (563, 19304), (566, 19319), (577, 19349), (600, 19424), (604, 19439), (609, 19454), (612, 19466), (614, 19472), (617, 19487), (621, 19502), (627, 19526), (640,

19580), (641, 19583), (646, 19601), (652, 19622), (660, 19661), (665, 19676), (672, 19709), (692, 19790), (706, 19841), (710, 19859), (713, 19868), (721, 19904), (740, 19997), (762, 20135), (766, 20159), (767, 20162), (774, 20207), (797, 20372), (850, 20645), (902, 20948), (906, 20963), (910, 20984), (917, 21038), (925, 21089),

Gene: Biscute\_30 Start: 20578, Stop: 25209, Start Num: 17

Candidate Starts for Biscute\_30:

(Start: 16 @20557 has 2 MA's), (Start: 17 @20578 has 129 MA's), (Start: 20 @20608 has 3 MA's), (28, 20662), (32, 20683), (37, 20719), (47, 20887), (57, 20947), (67, 21013), (68, 21034), (75, 21136), (76, 21154), (80, 21196), (85, 21283), (92, 21337), (95, 21352), (101, 21385), (112, 21463), (114, 21478), (125, 21568), (131, 21637), (140, 21724), (145, 21745), (151, 21799), (157, 21850), (158, 21853), (169, 21922), (180, 21964), (189, 22024), (190, 22030), (193, 22039), (198, 22054), (199, 22063), (220, 22162), (221, 22174), (224, 22195), (277, 22402), (282, 22426), (294, 22480), (312, 22549), (334, 22678), (336, 22687), (349, 22765), (358, 22810), (360, 22816), (361, 22819), (367, 22843), (371, 22861), (382, 22909), (385, 22918), (389, 22951), (406, 23026), (413, 23047), (417, 23068), (421, 23089), (427, 23116), (433, 23149), (435, 23164), (450, 23224), (473, 23341), (498, 23440), (499, 23443), (511, 23500), (516, 23527), (519, 23536), (528, 23569), (530, 23578), (536, 23590), (542, 23611), (547, 23632), (549, 23638), (558, 23671), (562, 23701), (577, 23749), (586, 23779), (595, 23809), (604, 23839), (607, 23848), (629, 23935), (630, 23938), (631, 23941), (635, 23959), (638, 23974), (643, 23989), (654, 24028), (660, 24061), (662, 24067), (664, 24073), (667, 24085), (679, 24139), (687, 24175), (696, 24205), (697, 24208), (702, 24226), (708, 24250), (709, 24253), (730, 24355), (737, 24385), (740, 24397), (750, 24463), (772, 24580), (778, 24625), (810, 24829), (816, 24853), (827, 24898), (830, 24904), (837, 24943), (840, 24973), (845, 24991),

Gene: BluerMoon\_35 Start: 23509, Stop: 28623, Start Num: 17

Candidate Starts for BluerMoon\_35:

(Start: 17 @23509 has 129 MA's), (Start: 20 @23539 has 3 MA's), (25, 23584), (47, 23728), (57, 23788), (58, 23794), (67, 23854), (68, 23875), (75, 23977), (83, 24103), (86, 24139), (92, 24178), (101, 24226), (106, 24268), (112, 24340), (117, 24388), (131, 24514), (139, 24589), (140, 24601), (145, 24622), (157, 24727), (158, 24730), (203, 24952), (215, 25018), (232, 25108), (241, 25144), (255, 25195), (262, 25243), (265, 25255), (293, 25399), (301, 25438), (308, 25465), (336, 25627), (342, 25675), (346, 25696), (351, 25714), (362, 25762), (376, 25828), (388, 25879), (389, 25891), (392, 25909), (405, 25963), (417, 26008), (421, 26029), (424, 26038), (428, 26059), (432, 26080), (442, 26134), (443, 26137), (445, 26146), (451, 26167), (453, 26179), (458, 26200), (460, 26206), (464, 26224), (470, 26260), (476, 26290), (489, 26338), (493, 26350), (495, 26356), (496, 26359), (498, 26371), (499, 26374), (504, 26395), (511, 26431), (524, 26485), (525, 26488), (534, 26509), (538, 26521), (539, 26524), (551, 26572), (556, 26587), (557, 26590), (558, 26599), (560, 26620), (566, 26647), (567, 26650), (573, 26674), (577, 26686), (582, 26707), (584, 26719), (586, 26728), (590, 26740), (598, 26767), (608, 26800), (610, 26806), (615, 26824), (628, 26878), (632, 26893), (650, 26962), (676, 27073), (705, 27184), (717, 27229), (732, 27319), (754, 27442), (757, 27463), (767, 27526), (771, 27553), (781, 27625), (783, 27637), (784, 27646), (789, 27700), (793, 27721), (795, 27733), (800, 27754), (831, 27895), (847, 27982), (855, 28000), (861, 28030), (868, 28048), (869, 28051), (872, 28063), (878, 28090), (893, 28201), (901, 28276), (917, 28378), (921, 28405), (938, 28519), (948, 28609),

Gene: Boog\_22 Start: 17271, Stop: 21791, Start Num: 20

Candidate Starts for Boog\_22:

(Start: 16 @17220 has 2 MA's), (Start: 17 @17241 has 129 MA's), (Start: 20 @17271 has 3 MA's), (23, 17304), (47, 17460), (62, 17544), (64, 17556), (67, 17586), (74, 17667), (75, 17709), (76, 17727), (80, 17769), (82, 17799), (84, 17844), (85, 17856), (92, 17910), (95, 17925), (101, 17958), (108, 18021), (114, 18051), (117, 18084), (120, 18099), (126, 18147), (140, 18297), (145, 18318), (158, 18426), (161, 18435), (167, 18483), (205, 18660), (226, 18774), (237, 18825), (240, 18837), (258, 18918), (278, 19002), (281, 19020), (291, 19065), (301, 19110), (302, 19113), (303, 19119), (314, 19152),

(336, 19263), (346, 19332), (347, 19335), (356, 19377), (358, 19386), (361, 19395), (369, 19425), (376, 19464), (378, 19470), (382, 19485), (389, 19527), (413, 19623), (417, 19644), (422, 19668), (433, 19725), (435, 19740), (442, 19770), (445, 19782), (452, 19809), (455, 19824), (466, 19872), (470, 19902), (473, 19917), (481, 19950), (483, 19956), (493, 19995), (496, 20004), (498, 20016), (503, 20037), (516, 20103), (519, 20112), (528, 20145), (529, 20151), (530, 20154), (536, 20166), (537, 20169), (543, 20190), (548, 20211), (558, 20247), (566, 20295), (577, 20325), (604, 20415), (620, 20472), (631, 20517), (635, 20535), (642, 20562), (644, 20571), (646, 20577), (660, 20637), (664, 20649), (667, 20661), (679, 20715), (689, 20757), (691, 20763), (693, 20769), (703, 20805), (709, 20829), (710, 20835), (712, 20841), (713, 20844), (723, 20895), (726, 20907), (732, 20937), (734, 20946), (758, 21078), (772, 21156), (778, 21201), (782, 21234), (788, 21291), (806, 21381), (810, 21405), (816, 21429), (817, 21441), (820, 21450), (823, 21462), (827, 21474), (837, 21519), (841, 21549), (845, 21567), (852, 21606), (875, 21684),

Gene: Bouchard\_27 Start: 20253, Stop: 24839, Start Num: 17

Candidate Starts for Bouchard\_27:

(Start: 16 @20232 has 2 MA's), (Start: 17 @20253 has 129 MA's), (Start: 20 @20283 has 3 MA's), (28, 20337), (64, 20568), (67, 20598), (74, 20679), (75, 20721), (76, 20739), (80, 20781), (85, 20868), (92, 20922), (95, 20937), (96, 20943), (101, 20970), (112, 21048), (114, 21063), (117, 21096), (120, 21111), (121, 21120), (124, 21147), (126, 21159), (130, 21213), (140, 21309), (145, 21330), (158, 21438), (161, 21447), (168, 21504), (170, 21510), (198, 21639), (203, 21660), (205, 21672), (256, 21909), (278, 22005), (299, 22107), (301, 22113), (312, 22149), (336, 22293), (344, 22350), (353, 22395), (358, 22416), (361, 22425), (362, 22428), (367, 22449), (382, 22515), (384, 22521), (392, 22575), (406, 22632), (413, 22653), (416, 22671), (417, 22674), (421, 22695), (423, 22701), (428, 22725), (435, 22770), (437, 22782), (463, 22893), (466, 22902), (468, 22914), (470, 22932), (484, 22989), (493, 23025), (494, 23028), (496, 23034), (498, 23046), (499, 23049), (503, 23067), (506, 23076), (516, 23133), (530, 23184), (535, 23196), (543, 23220), (544, 23223), (557, 23268), (558, 23277), (574, 23346), (577, 23355), (589, 23394), (592, 23406), (604, 23445), (631, 23547), (636, 23571), (637, 23574), (646, 23607), (647, 23610), (648, 23613), (649, 23616), (661, 23670), (662, 23673), (668, 23694), (691, 23793), (700, 23823), (703, 23835), (706, 23847), (710, 23865), (713, 23874), (714, 23877), (743, 24033), (750, 24069), (778, 24231), (779, 24243), (786, 24285), (798, 24369), (810, 24435), (816, 24459), (830, 24510), (841, 24579), (842, 24582), (846, 24606), (884, 24789),

Gene: Bowling\_21 Start: 17384, Stop: 21862, Start Num: 17

Candidate Starts for Bowling\_21:

(Start: 16 @17363 has 2 MA's), (Start: 17 @17384 has 129 MA's), (Start: 20 @17414 has 3 MA's), (23, 17447), (28, 17468), (64, 17699), (67, 17729), (68, 17750), (74, 17810), (75, 17852), (76, 17870), (80, 17912), (85, 17999), (92, 18053), (95, 18068), (101, 18101), (114, 18194), (120, 18242), (122, 18257), (127, 18299), (131, 18353), (139, 18428), (145, 18461), (158, 18569), (168, 18635), (176, 18668), (179, 18677), (181, 18680), (184, 18698), (243, 18980), (253, 19004), (257, 19034), (297, 19193), (312, 19253), (336, 19382), (349, 19460), (355, 19490), (358, 19505), (361, 19514), (367, 19538), (373, 19565), (376, 19583), (382, 19604), (395, 19679), (399, 19700), (403, 19712), (413, 19742), (421, 19784), (433, 19844), (434, 19850), (442, 19889), (461, 19970), (466, 19991), (470, 20021), (476, 20051), (481, 20069), (493, 20117), (499, 20141), (503, 20159), (506, 20168), (507, 20177), (509, 20183), (512, 20204), (519, 20234), (528, 20267), (529, 20273), (530, 20276), (536, 20288), (542, 20309), (557, 20360), (558, 20369), (562, 20399), (564, 20405), (574, 20438), (577, 20447), (586, 20477), (589, 20486), (592, 20498), (599, 20519), (604, 20537), (612, 20564), (614, 20570), (615, 20573), (618, 20588), (625, 20615), (629, 20633), (633, 20645), (641, 20681), (667, 20783), (682, 20846), (690, 20882), (691, 20885), (693, 20891), (697, 20906), (702, 20924), (712, 20963), (713, 20966), (718, 20984), (723, 21017), (728, 21038), (740, 21095), (747, 21149), (749, 21158), (760, 21212), (776, 21239), (778, 21257), (785, 21305), (786, 21311), (794, 21383), (810, 21461), (814, 21476), (821, 21515), (830, 21539), (840, 21608), (845, 21629), (867, 21722), (890, 21851),

Gene: Breylor17\_27 Start: 20680, Stop: 25269, Start Num: 17

Candidate Starts for Breylor17\_27:

(Start: 16 @20659 has 2 MA's), (Start: 17 @20680 has 129 MA's), (Start: 20 @20710 has 3 MA's), (28, 20764), (32, 20785), (37, 20821), (47, 20899), (57, 20959), (62, 20983), (64, 20995), (67, 21025), (70, 21076), (74, 21106), (75, 21148), (76, 21166), (80, 21208), (82, 21238), (84, 21283), (85, 21295), (92, 21349), (95, 21364), (97, 21376), (101, 21397), (114, 21490), (117, 21523), (120, 21538), (126, 21586), (140, 21736), (145, 21757), (160, 21871), (161, 21874), (167, 21922), (189, 22036), (196, 22060), (199, 22075), (203, 22087), (235, 22255), (239, 22270), (240, 22276), (245, 22294), (261, 22366), (273, 22417), (278, 22432), (284, 22462), (299, 22534), (301, 22540), (311, 22573), (312, 22576), (319, 22603), (336, 22717), (344, 22774), (346, 22786), (358, 22840), (361, 22849), (362, 22852), (367, 22873), (376, 22918), (382, 22939), (389, 22981), (392, 22999), (406, 23056), (413, 23077), (417, 23098), (433, 23179), (435, 23194), (436, 23197), (443, 23227), (455, 23278), (470, 23356), (473, 23371), (474, 23374), (478, 23392), (479, 23398), (481, 23404), (484, 23413), (493, 23449), (496, 23458), (503, 23491), (514, 23545), (515, 23548), (519, 23566), (523, 23578), (530, 23608), (536, 23623), (540, 23632), (542, 23644), (547, 23665), (558, 23704), (569, 23761), (574, 23773), (577, 23782), (589, 23821), (592, 23833), (602, 23863), (604, 23872), (615, 23908), (624, 23947), (625, 23950), (631, 23974), (636, 23998), (646, 24034), (649, 24043), (655, 24064), (661, 24097), (662, 24100), (693, 24226), (694, 24229), (700, 24250), (708, 24283), (709, 24286), (710, 24292), (713, 24301), (719, 24328), (728, 24373), (741, 24439), (748, 24490), (750, 24496), (762, 24556), (766, 24580), (776, 24640), (778, 24658), (779, 24670), (786, 24712), (805, 24829), (806, 24838), (816, 24886), (823, 24919), (827, 24931), (830, 24937), (833, 24958), (834, 24961), (835, 24967), (841, 25006), (846, 25033), (884, 25219), (889, 25246),

Gene: BronxBay\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for BronxBay\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (238, 18827), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (689, 20756), (691, 20762), (693, 20768), (702, 20801), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605),

Gene: Brunswick\_26 Start: 20146, Stop: 24735, Start Num: 17

Candidate Starts for Brunswick\_26:

(Start: 16 @20125 has 2 MA's), (Start: 17 @20146 has 129 MA's), (Start: 20 @20176 has 3 MA's), (28, 20230), (32, 20251), (37, 20287), (47, 20365), (57, 20425), (62, 20449), (64, 20461), (67, 20491), (70, 20542), (74, 20572), (75, 20614), (76, 20632), (80, 20674), (82, 20704), (84, 20749), (85, 20761), (92, 20815), (95, 20830), (97, 20842), (101, 20863), (114, 20956), (117, 20989), (120, 21004), (126, 21052), (140, 21202), (145, 21223), (158, 21331), (160, 21337), (161, 21340), (167, 21388), (189, 21502), (196, 21526), (199, 21541), (203, 21553), (217, 21628), (224, 21673), (235, 21721), (239, 21736), (240, 21742), (245, 21760), (261, 21832), (270, 21874), (273, 21883), (284, 21928), (299,

22000), (301, 22006), (311, 22039), (312, 22042), (319, 22069), (336, 22183), (344, 22240), (346, 22252), (358, 22306), (361, 22315), (362, 22318), (367, 22339), (376, 22384), (382, 22405), (404, 22516), (406, 22522), (413, 22543), (416, 22561), (417, 22564), (421, 22585), (433, 22645), (435, 22660), (436, 22663), (442, 22690), (443, 22693), (450, 22720), (470, 22822), (473, 22837), (474, 22840), (478, 22858), (479, 22864), (480, 22867), (484, 22879), (493, 22915), (496, 22924), (503, 22957), (514, 23011), (515, 23014), (519, 23032), (523, 23044), (530, 23074), (536, 23089), (540, 23098), (542, 23110), (558, 23170), (567, 23221), (569, 23227), (574, 23239), (577, 23248), (589, 23287), (592, 23299), (596, 23311), (602, 23329), (604, 23338), (624, 23413), (625, 23416), (629, 23434), (646, 23500), (648, 23506), (649, 23509), (661, 23563), (662, 23566), (693, 23692), (694, 23695), (700, 23716), (708, 23749), (710, 23758), (728, 23839), (735, 23872), (741, 23905), (750, 23962), (762, 24022), (766, 24046), (778, 24124), (779, 24136), (798, 24262), (806, 24304), (816, 24352), (823, 24385), (827, 24397), (830, 24403), (833, 24424), (834, 24427), (835, 24433), (841, 24472), (846, 24499), (851, 24526), (884, 24685), (889, 24712),

Gene: Burley\_32 Start: 23250, Stop: 28361, Start Num: 17

Candidate Starts for Burley\_32:

(Start: 17 @23250 has 129 MA's), (Start: 20 @23280 has 3 MA's), (25, 23325), (32, 23355), (47, 23469), (58, 23535), (67, 23595), (68, 23616), (75, 23718), (83, 23844), (86, 23880), (92, 23919), (97, 23946), (101, 23967), (106, 24009), (115, 24108), (117, 24129), (131, 24255), (139, 24330), (140, 24342), (145, 24363), (157, 24468), (158, 24471), (229, 24831), (255, 24936), (267, 25005), (272, 25026), (286, 25107), (287, 25110), (293, 25137), (301, 25176), (308, 25203), (336, 25365), (342, 25413), (346, 25434), (351, 25452), (362, 25500), (365, 25512), (376, 25566), (388, 25617), (389, 25629), (391, 25638), (392, 25647), (405, 25701), (417, 25746), (420, 25761), (421, 25767), (424, 25776), (425, 25782), (429, 25800), (430, 25803), (431, 25809), (432, 25818), (442, 25872), (443, 25875), (445, 25884), (450, 25902), (451, 25905), (453, 25917), (458, 25938), (460, 25944), (461, 25947), (466, 25968), (470, 25998), (473, 26013), (481, 26046), (485, 26061), (489, 26076), (493, 26088), (495, 26094), (496, 26097), (498, 26109), (499, 26112), (511, 26169), (524, 26223), (525, 26226), (534, 26247), (538, 26259), (539, 26262), (551, 26310), (556, 26325), (557, 26328), (558, 26337), (560, 26358), (566, 26385), (567, 26388), (573, 26412), (577, 26424), (582, 26445), (584, 26457), (590, 26478), (598, 26505), (608, 26538), (610, 26544), (615, 26562), (622, 26592), (632, 26631), (676, 26811), (679, 26823), (697, 26892), (732, 27057), (754, 27180), (757, 27201), (777, 27330), (781, 27363), (783, 27375), (789, 27438), (793, 27459), (795, 27471), (799, 27486), (811, 27549), (831, 27633), (847, 27720), (855, 27738), (861, 27768), (868, 27786), (869, 27789), (871, 27795), (872, 27801), (878, 27828), (893, 27939), (901, 28014), (903, 28032), (917, 28116), (920, 28140), (938, 28257), (948, 28347),

Gene: Camille\_24 Start: 16246, Stop: 20454, Start Num: 17

Candidate Starts for Camille\_24:

(Start: 16 @16225 has 2 MA's), (Start: 17 @16246 has 129 MA's), (19, 16258), (Start: 20 @16279 has 3 MA's), (42, 16417), (44, 16438), (54, 16516), (58, 16534), (67, 16594), (75, 16717), (80, 16777), (88, 16888), (91, 16912), (92, 16918), (95, 16933), (101, 16966), (108, 17029), (113, 17056), (114, 17059), (116, 17080), (117, 17092), (122, 17122), (146, 17338), (150, 17374), (159, 17437), (162, 17446), (171, 17509), (183, 17563), (186, 17587), (205, 17668), (210, 17698), (227, 17788), (249, 17836), (280, 17917), (284, 17938), (308, 18043), (313, 18055), (325, 18085), (334, 18154), (336, 18163), (346, 18232), (347, 18235), (358, 18286), (361, 18295), (367, 18319), (369, 18325), (370, 18328), (372, 18340), (375, 18358), (376, 18364), (382, 18385), (386, 18406), (388, 18415), (389, 18427), (391, 18436), (399, 18481), (406, 18502), (415, 18532), (424, 18574), (426, 18586), (431, 18607), (433, 18625), (439, 18655), (449, 18694), (458, 18733), (465, 18760), (469, 18784), (496, 18850), (501, 18871), (542, 18901), (564, 18997), (574, 19030), (577, 19039), (580, 19054), (581, 19057), (592, 19096), (593, 19099), (594, 19102), (600, 19120), (604, 19135), (614, 19168), (624, 19210), (625, 19213), (635, 19255), (642, 19282), (646, 19297), (655, 19327), (663, 19366), (669, 19390), (671, 19402), (672, 19405), (681, 19441), (682, 19444), (690, 19480), (705, 19534), (712, 19561), (714, 19567), (727, 19633), (729, 19645), (730, 19651), (739, 19690), (741, 19702), (743, 19723),

(760, 19810), (778, 19855), (786, 19909), (793, 19975), (796, 19987), (800, 20005), (810, 20059), (813, 20074), (816, 20083), (820, 20104), (823, 20116), (825, 20122), (838, 20194), (854, 20263), (864, 20299), (870, 20314), (886, 20419), (889, 20434),

Gene: CapnMurica\_26 Start: 21235, Stop: 25824, Start Num: 17

Candidate Starts for CapnMurica\_26:

(Start: 16 @21214 has 2 MA's), (Start: 17 @21235 has 129 MA's), (Start: 20 @21265 has 3 MA's), (28, 21319), (32, 21340), (37, 21376), (57, 21514), (64, 21550), (67, 21580), (75, 21703), (76, 21721), (80, 21763), (87, 21871), (92, 21904), (95, 21919), (101, 21952), (112, 22030), (114, 22045), (116, 22066), (117, 22078), (121, 22102), (127, 22150), (135, 22246), (139, 22279), (145, 22312), (154, 22396), (158, 22420), (161, 22429), (203, 22642), (210, 22684), (217, 22717), (235, 22810), (239, 22825), (240, 22831), (245, 22849), (247, 22858), (256, 22891), (257, 22900), (273, 22972), (284, 23017), (299, 23089), (301, 23095), (311, 23128), (312, 23131), (319, 23158), (336, 23272), (344, 23329), (346, 23341), (358, 23395), (361, 23404), (362, 23407), (367, 23428), (376, 23473), (382, 23494), (404, 23605), (406, 23611), (413, 23632), (416, 23650), (417, 23653), (421, 23674), (433, 23734), (435, 23749), (436, 23752), (442, 23779), (443, 23782), (450, 23809), (468, 23893), (470, 23911), (473, 23926), (474, 23929), (478, 23947), (479, 23953), (480, 23956), (484, 23968), (485, 23974), (493, 24004), (496, 24013), (503, 24046), (514, 24100), (515, 24103), (519, 24121), (530, 24163), (536, 24178), (540, 24187), (542, 24199), (558, 24259), (569, 24316), (574, 24328), (577, 24337), (589, 24376), (592, 24388), (594, 24394), (598, 24406), (602, 24418), (604, 24427), (624, 24502), (625, 24505), (629, 24523), (646, 24589), (649, 24598), (661, 24652), (662, 24655), (693, 24781), (700, 24805), (708, 24838), (710, 24847), (715, 24862), (719, 24883), (728, 24928), (741, 24994), (750, 25051), (762, 25111), (775, 25189), (778, 25213), (779, 25225), (798, 25351), (806, 25393), (816, 25441), (823, 25474), (827, 25486), (830, 25492), (833, 25513), (834, 25516), (835, 25522), (841, 25561), (846, 25588), (884, 25774),

Gene: Captrips\_29 Start: 20541, Stop: 25643, Start Num: 17

Candidate Starts for Captrips\_29:

(Start: 17 @20541 has 129 MA's), (Start: 20 @20571 has 3 MA's), (42, 20709), (46, 20754), (47, 20760), (49, 20769), (50, 20784), (53, 20805), (58, 20826), (64, 20856), (67, 20886), (68, 20907), (75, 21009), (80, 21069), (84, 21144), (85, 21156), (88, 21180), (92, 21210), (95, 21225), (101, 21258), (106, 21300), (111, 21351), (118, 21405), (119, 21408), (129, 21507), (132, 21531), (145, 21627), (157, 21732), (158, 21735), (169, 21804), (171, 21810), (172, 21816), (209, 21993), (220, 22044), (229, 22095), (241, 22149), (242, 22152), (278, 22323), (293, 22404), (294, 22407), (309, 22482), (322, 22539), (334, 22623), (336, 22632), (345, 22695), (346, 22701), (348, 22707), (351, 22719), (353, 22734), (354, 22737), (359, 22758), (371, 22806), (376, 22833), (382, 22854), (385, 22863), (388, 22884), (389, 22896), (391, 22905), (392, 22914), (405, 22968), (406, 22971), (413, 22992), (421, 23034), (430, 23070), (432, 23085), (433, 23094), (435, 23109), (437, 23121), (440, 23130), (448, 23163), (451, 23172), (469, 23256), (470, 23265), (473, 23280), (474, 23283), (478, 23301), (489, 23343), (496, 23364), (499, 23379), (509, 23421), (511, 23436), (525, 23493), (528, 23505), (534, 23514), (538, 23526), (541, 23538), (542, 23544), (547, 23565), (551, 23577), (557, 23595), (558, 23604), (559, 23619), (560, 23625), (563, 23637), (573, 23679), (574, 23682), (577, 23691), (582, 23712), (584, 23724), (598, 23772), (601, 23781), (608, 23805), (610, 23811), (615, 23829), (616, 23838), (622, 23859), (639, 23928), (650, 23967), (691, 24138), (705, 24189), (734, 24333), (757, 24468), (765, 24519), (783, 24642), (789, 24705), (799, 24753), (800, 24759), (802, 24768), (811, 24816), (828, 24888), (839, 24948), (844, 24969), (845, 24972), (856, 25023), (858, 25032), (861, 25050), (869, 25071), (872, 25083), (885, 25176), (893, 25221), (901, 25296), (903, 25314), (907, 25335), (920, 25422), (937, 25533), (948, 25629),

Gene: Capybara\_29 Start: 20616, Stop: 25718, Start Num: 17

Candidate Starts for Capybara\_29:

(Start: 17 @20616 has 129 MA's), (Start: 20 @20646 has 3 MA's), (42, 20784), (46, 20829), (47, 20835), (49, 20844), (50, 20859), (53, 20880), (58, 20901), (64, 20931), (67, 20961), (68, 20982), (75,



21084), (80, 21144), (84, 21219), (85, 21231), (88, 21255), (92, 21285), (95, 21300), (101, 21333), (106, 21375), (111, 21426), (118, 21480), (119, 21483), (129, 21582), (132, 21606), (145, 21702), (157, 21807), (158, 21810), (169, 21879), (171, 21885), (172, 21891), (209, 22068), (220, 22119), (229, 22170), (241, 22224), (242, 22227), (269, 22359), (288, 22461), (293, 22479), (294, 22482), (309, 22557), (322, 22614), (334, 22698), (336, 22707), (351, 22794), (359, 22833), (371, 22881), (376, 22908), (382, 22929), (385, 22938), (388, 22959), (389, 22971), (391, 22980), (392, 22989), (397, 23016), (405, 23043), (406, 23046), (413, 23067), (421, 23109), (427, 23136), (430, 23145), (432, 23160), (433, 23169), (435, 23184), (437, 23196), (440, 23205), (443, 23217), (448, 23238), (451, 23247), (469, 23331), (470, 23340), (473, 23355), (474, 23358), (478, 23376), (481, 23388), (482, 23391), (489, 23418), (496, 23439), (499, 23454), (509, 23496), (511, 23511), (525, 23568), (528, 23580), (534, 23589), (538, 23601), (541, 23613), (542, 23619), (547, 23640), (551, 23652), (557, 23670), (558, 23679), (559, 23694), (560, 23700), (563, 23712), (573, 23754), (574, 23757), (577, 23766), (582, 23787), (584, 23799), (598, 23847), (601, 23856), (608, 23880), (610, 23886), (615, 23904), (616, 23913), (622, 23934), (639, 24003), (644, 24021), (645, 24024), (650, 24042), (680, 24168), (691, 24213), (705, 24264), (734, 24408), (757, 24543), (765, 24594), (777, 24672), (783, 24717), (789, 24780), (792, 24798), (799, 24828), (800, 24834), (811, 24891), (828, 24963), (839, 25023), (844, 25044), (845, 25047), (856, 25098), (858, 25107), (869, 25146), (872, 25158), (885, 25251), (893, 25296), (901, 25371), (907, 25410), (912, 25440), (920, 25497), (937, 25608), (948, 25704),

Gene: CastorTray\_28 Start: 20538, Stop: 25127, Start Num: 17

Candidate Starts for CastorTray\_28:

(Start: 16 @20517 has 2 MA's), (Start: 17 @20538 has 129 MA's), (Start: 20 @20568 has 3 MA's), (28, 20622), (32, 20643), (37, 20679), (47, 20757), (57, 20817), (62, 20841), (64, 20853), (67, 20883), (70, 20934), (74, 20964), (75, 21006), (76, 21024), (80, 21066), (82, 21096), (84, 21141), (85, 21153), (92, 21207), (95, 21222), (97, 21234), (101, 21255), (114, 21348), (117, 21381), (120, 21396), (126, 21444), (140, 21594), (145, 21615), (160, 21729), (161, 21732), (189, 21894), (196, 21918), (199, 21933), (203, 21945), (235, 22113), (239, 22128), (240, 22134), (245, 22152), (261, 22224), (273, 22275), (278, 22290), (284, 22320), (299, 22392), (301, 22398), (311, 22431), (312, 22434), (319, 22461), (336, 22575), (344, 22632), (346, 22644), (358, 22698), (361, 22707), (362, 22710), (367, 22731), (376, 22776), (382, 22797), (389, 22839), (392, 22857), (406, 22914), (413, 22935), (417, 22956), (433, 23037), (435, 23052), (436, 23055), (442, 23082), (443, 23085), (455, 23136), (470, 23214), (473, 23229), (474, 23232), (478, 23250), (479, 23256), (481, 23262), (484, 23271), (493, 23307), (494, 23310), (496, 23316), (497, 23322), (503, 23349), (514, 23403), (515, 23406), (519, 23424), (523, 23436), (530, 23466), (536, 23481), (540, 23490), (542, 23502), (547, 23523), (558, 23562), (569, 23619), (574, 23631), (577, 23640), (589, 23679), (592, 23691), (602, 23721), (604, 23730), (615, 23766), (624, 23805), (625, 23808), (629, 23826), (631, 23832), (646, 23892), (647, 23895), (649, 23901), (655, 23922), (661, 23955), (662, 23958), (693, 24084), (694, 24087), (700, 24108), (708, 24141), (709, 24144), (710, 24150), (713, 24159), (719, 24186), (725, 24219), (728, 24231), (741, 24297), (748, 24348), (750, 24354), (762, 24414), (766, 24438), (776, 24498), (778, 24516), (779, 24528), (786, 24570), (805, 24687), (806, 24696), (816, 24744), (823, 24777), (827, 24789), (830, 24795), (833, 24816), (834, 24819), (835, 24825), (841, 24864), (846, 24891), (884, 25077), (889, 25104),

Gene: Caterpillar\_24 Start: 19324, Stop: 23907, Start Num: 17

Candidate Starts for Caterpillar\_24:

(Start: 16 @19303 has 2 MA's), (Start: 17 @19324 has 129 MA's), (Start: 20 @19354 has 3 MA's), (28, 19408), (37, 19465), (44, 19513), (64, 19639), (67, 19669), (74, 19750), (75, 19792), (76, 19810), (80, 19852), (82, 19882), (84, 19927), (85, 19939), (92, 19993), (95, 20008), (96, 20014), (101, 20041), (108, 20104), (112, 20119), (114, 20134), (117, 20167), (120, 20182), (121, 20191), (126, 20230), (135, 20335), (145, 20401), (152, 20470), (158, 20509), (161, 20518), (169, 20578), (170, 20581), (196, 20704), (197, 20707), (205, 20743), (238, 20911), (240, 20920), (247, 20941), (256, 20974), (278, 21070), (289, 21124), (299, 21172), (301, 21178), (302, 21181), (312, 21214), (336, 21361),

(353, 21463), (358, 21484), (361, 21493), (362, 21496), (367, 21517), (382, 21583), (395, 21658), (398, 21673), (404, 21694), (406, 21700), (413, 21721), (417, 21742), (421, 21763), (433, 21823), (435, 21838), (436, 21841), (441, 21865), (446, 21883), (462, 21955), (470, 22000), (473, 22015), (474, 22018), (478, 22036), (479, 22042), (481, 22048), (493, 22093), (496, 22102), (499, 22117), (503, 22135), (508, 22156), (514, 22189), (515, 22192), (519, 22210), (536, 22267), (540, 22276), (542, 22288), (547, 22309), (549, 22315), (550, 22318), (557, 22339), (558, 22348), (567, 22399), (569, 22405), (574, 22417), (577, 22426), (587, 22459), (604, 22516), (623, 22588), (624, 22591), (625, 22594), (629, 22612), (631, 22618), (636, 22642), (646, 22678), (648, 22684), (652, 22699), (660, 22738), (672, 22786), (682, 22825), (700, 22894), (710, 22936), (713, 22945), (741, 23083), (742, 23092), (743, 23104), (749, 23137), (750, 23140), (772, 23257), (775, 23278), (779, 23314), (786, 23356), (794, 23428), (816, 23530), (827, 23575), (830, 23581), (841, 23650), (846, 23677), (884, 23857), (887, 23866),

Gene: Cheesy\_22 Start: 17385, Stop: 21863, Start Num: 17

Candidate Starts for Cheesy\_22:

(Start: 16 @17364 has 2 MA's), (Start: 17 @17385 has 129 MA's), (Start: 20 @17415 has 3 MA's), (23, 17448), (28, 17469), (64, 17700), (67, 17730), (74, 17811), (75, 17853), (76, 17871), (80, 17913), (85, 18000), (92, 18054), (95, 18069), (101, 18102), (112, 18180), (114, 18195), (120, 18243), (127, 18300), (131, 18354), (135, 18396), (139, 18429), (145, 18462), (158, 18570), (168, 18636), (176, 18669), (179, 18678), (181, 18681), (184, 18699), (243, 18981), (253, 19005), (257, 19035), (297, 19194), (303, 19227), (312, 19254), (336, 19383), (349, 19461), (358, 19506), (361, 19515), (364, 19527), (367, 19539), (373, 19566), (376, 19584), (382, 19605), (395, 19680), (399, 19701), (400, 19704), (403, 19713), (413, 19743), (417, 19764), (421, 19785), (433, 19845), (434, 19851), (442, 19890), (443, 19893), (447, 19908), (461, 19971), (466, 19992), (470, 20022), (476, 20052), (481, 20070), (493, 20118), (499, 20142), (503, 20160), (506, 20169), (507, 20178), (509, 20184), (512, 20205), (519, 20235), (528, 20268), (529, 20274), (530, 20277), (536, 20289), (542, 20310), (557, 20361), (558, 20370), (562, 20400), (564, 20406), (574, 20439), (577, 20448), (586, 20478), (589, 20487), (592, 20499), (604, 20538), (612, 20565), (614, 20571), (615, 20574), (618, 20589), (625, 20616), (633, 20646), (641, 20682), (667, 20784), (682, 20847), (690, 20883), (691, 20886), (697, 20907), (702, 20925), (712, 20964), (714, 20970), (718, 20985), (722, 21006), (723, 21018), (747, 21150), (749, 21159), (760, 21213), (776, 21240), (778, 21258), (785, 21306), (786, 21312), (794, 21384), (810, 21462), (817, 21498), (821, 21516), (830, 21540), (834, 21564), (840, 21609), (845, 21630), (890, 21852),

Gene: CherryBlossom\_23 Start: 16177, Stop: 21663, Start Num: 2

Candidate Starts for CherryBlossom\_23:

(1, 16156), (Start: 2 @16177 has 31 MA's), (3, 16207), (12, 16351), (40, 16561), (51, 16681), (58, 16720), (64, 16750), (66, 16774), (67, 16780), (68, 16801), (69, 16816), (75, 16903), (82, 16993), (83, 17029), (84, 17038), (86, 17065), (92, 17104), (93, 17113), (97, 17131), (101, 17152), (106, 17194), (107, 17203), (117, 17311), (128, 17416), (139, 17512), (148, 17578), (171, 17728), (187, 17812), (191, 17833), (203, 17875), (228, 18010), (262, 18142), (264, 18151), (275, 18187), (277, 18196), (286, 18238), (293, 18271), (333, 18424), (336, 18445), (345, 18508), (346, 18514), (348, 18520), (353, 18547), (358, 18568), (360, 18574), (361, 18577), (367, 18601), (376, 18646), (379, 18655), (380, 18658), (382, 18667), (395, 18742), (401, 18769), (406, 18784), (407, 18787), (414, 18805), (417, 18823), (421, 18844), (432, 18895), (445, 18961), (449, 18976), (468, 19063), (470, 19081), (475, 19108), (500, 19198), (501, 19201), (510, 19243), (511, 19252), (519, 19288), (524, 19306), (525, 19309), (542, 19363), (543, 19366), (557, 19414), (561, 19450), (563, 19456), (568, 19477), (577, 19501), (586, 19531), (604, 19591), (614, 19624), (615, 19627), (618, 19642), (627, 19678), (637, 19720), (640, 19732), (641, 19735), (655, 19783), (660, 19813), (665, 19828), (672, 19861), (675, 19876), (691, 19939), (712, 20017), (713, 20020), (721, 20056), (734, 20122), (748, 20209), (749, 20212), (766, 20311), (774, 20359), (775, 20365), (797, 20524), (850, 20797), (878, 20899), (895, 21022), (906, 21115), (910, 21136), (915, 21184), (917, 21190), (918, 21196), (925, 21241), (940, 21349), (942, 21370), (947, 21418), (953, 21505), (960, 21607), (961, 21616),

Gene: Chikenjars\_32 Start: 23502, Stop: 28613, Start Num: 17

Candidate Starts for Chikenjars\_32:

(Start: 17 @23502 has 129 MA's), (Start: 20 @23532 has 3 MA's), (25, 23577), (47, 23721), (58, 23787), (67, 23847), (68, 23868), (75, 23970), (82, 24060), (83, 24096), (86, 24132), (92, 24171), (101, 24219), (106, 24261), (112, 24333), (117, 24381), (131, 24507), (139, 24582), (145, 24615), (157, 24720), (158, 24723), (203, 24945), (215, 25011), (216, 25014), (229, 25083), (255, 25188), (267, 25257), (286, 25359), (287, 25362), (293, 25389), (301, 25428), (308, 25455), (336, 25617), (342, 25665), (346, 25686), (351, 25704), (362, 25752), (376, 25818), (384, 25845), (385, 25848), (387, 25866), (388, 25869), (391, 25890), (392, 25899), (402, 25944), (405, 25953), (417, 25998), (421, 26019), (424, 26028), (431, 26061), (432, 26070), (435, 26094), (442, 26124), (443, 26127), (445, 26136), (448, 26148), (451, 26157), (453, 26169), (458, 26190), (460, 26196), (470, 26250), (489, 26328), (493, 26340), (495, 26346), (496, 26349), (499, 26364), (504, 26385), (511, 26421), (524, 26475), (525, 26478), (528, 26490), (534, 26499), (538, 26511), (539, 26514), (542, 26529), (549, 26556), (551, 26562), (556, 26577), (557, 26580), (558, 26589), (559, 26604), (560, 26610), (564, 26625), (566, 26637), (567, 26640), (573, 26664), (577, 26676), (582, 26697), (584, 26709), (586, 26718), (590, 26730), (598, 26757), (605, 26781), (608, 26790), (610, 26796), (615, 26814), (632, 26883), (650, 26952), (686, 27108), (732, 27309), (757, 27453), (767, 27516), (771, 27543), (781, 27615), (783, 27627), (784, 27636), (789, 27690), (793, 27711), (795, 27723), (831, 27885), (847, 27972), (855, 27990), (861, 28020), (868, 28038), (869, 28041), (872, 28053), (878, 28080), (893, 28191), (901, 28266), (909, 28314), (917, 28368), (921, 28395), (938, 28509), (948, 28599),

Gene: Chlochlo\_27 Start: 20283, Stop: 24878, Start Num: 17

Candidate Starts for Chlochlo\_27:

(Start: 16 @20262 has 2 MA's), (Start: 17 @20283 has 129 MA's), (Start: 20 @20313 has 3 MA's), (28, 20367), (64, 20598), (67, 20628), (74, 20709), (75, 20751), (76, 20769), (80, 20811), (85, 20898), (92, 20952), (95, 20967), (96, 20973), (101, 21000), (112, 21078), (114, 21093), (117, 21126), (120, 21141), (121, 21150), (124, 21177), (126, 21189), (130, 21243), (140, 21339), (145, 21360), (161, 21477), (168, 21534), (170, 21540), (183, 21597), (198, 21669), (205, 21702), (207, 21705), (256, 21939), (277, 22032), (278, 22035), (281, 22053), (299, 22137), (301, 22143), (312, 22179), (336, 22326), (343, 22380), (344, 22383), (358, 22449), (361, 22458), (362, 22461), (367, 22482), (373, 22509), (382, 22548), (383, 22551), (406, 22665), (413, 22686), (416, 22704), (417, 22707), (435, 22803), (437, 22815), (466, 22935), (470, 22965), (473, 22980), (484, 23022), (490, 23043), (493, 23058), (496, 23067), (498, 23079), (503, 23100), (514, 23154), (519, 23175), (528, 23208), (529, 23214), (530, 23217), (537, 23235), (538, 23238), (542, 23256), (557, 23307), (558, 23316), (568, 23370), (577, 23394), (587, 23427), (604, 23484), (623, 23556), (624, 23559), (629, 23580), (635, 23604), (637, 23613), (646, 23646), (647, 23649), (649, 23655), (659, 23700), (660, 23706), (672, 23754), (700, 23862), (710, 23904), (713, 23913), (743, 24072), (747, 24096), (749, 24105), (758, 24147), (762, 24168), (765, 24183), (778, 24270), (779, 24282), (786, 24324), (798, 24408), (810, 24474), (816, 24498), (827, 24543), (830, 24549), (841, 24618), (842, 24621), (846, 24645), (884, 24828),

Gene: Circum\_22 Start: 17392, Stop: 21870, Start Num: 17

Candidate Starts for Circum\_22:

(Start: 16 @17371 has 2 MA's), (Start: 17 @17392 has 129 MA's), (Start: 20 @17422 has 3 MA's), (23, 17455), (28, 17476), (64, 17707), (67, 17737), (74, 17818), (75, 17860), (76, 17878), (80, 17920), (85, 18007), (92, 18061), (95, 18076), (101, 18109), (112, 18187), (114, 18202), (120, 18250), (127, 18307), (131, 18361), (135, 18403), (139, 18436), (145, 18469), (158, 18577), (168, 18643), (176, 18676), (179, 18685), (181, 18688), (184, 18706), (243, 18988), (253, 19012), (257, 19042), (297, 19201), (312, 19261), (336, 19390), (342, 19438), (353, 19492), (356, 19504), (358, 19513), (361, 19522), (367, 19546), (376, 19591), (382, 19612), (395, 19687), (403, 19720), (413, 19750), (421, 19792), (433, 19852), (434, 19858), (442, 19897), (447, 19915), (461, 19978), (466, 19999), (470, 20029), (476, 20059), (481, 20077), (493, 20125), (499, 20149), (503, 20167), (506, 20176), (507,

20185), (509, 20191), (512, 20212), (519, 20242), (528, 20275), (529, 20281), (530, 20284), (536, 20296), (542, 20317), (557, 20368), (558, 20377), (562, 20407), (564, 20413), (574, 20446), (577, 20455), (586, 20485), (589, 20494), (592, 20506), (604, 20545), (612, 20572), (614, 20578), (615, 20581), (618, 20596), (625, 20623), (629, 20641), (633, 20653), (641, 20689), (667, 20791), (690, 20890), (691, 20893), (693, 20899), (697, 20914), (702, 20932), (708, 20956), (712, 20971), (713, 20974), (718, 20992), (723, 21025), (728, 21046), (752, 21178), (760, 21220), (778, 21265), (779, 21277), (786, 21319), (794, 21391), (806, 21445), (810, 21469), (816, 21493), (817, 21505), (821, 21523), (834, 21571), (840, 21616), (845, 21637), (867, 21730), (890, 21859),

Gene: Citrus\_31 Start: 23506, Stop: 28617, Start Num: 17

Candidate Starts for Citrus\_31:

(Start: 17 @23506 has 129 MA's), (Start: 20 @23536 has 3 MA's), (25, 23581), (47, 23725), (58, 23791), (67, 23851), (68, 23872), (75, 23974), (82, 24064), (83, 24100), (86, 24136), (92, 24175), (101, 24223), (106, 24265), (117, 24385), (131, 24511), (139, 24586), (140, 24598), (145, 24619), (157, 24724), (158, 24727), (203, 24949), (215, 25015), (216, 25018), (229, 25087), (255, 25192), (267, 25261), (272, 25282), (286, 25363), (287, 25366), (293, 25393), (301, 25432), (308, 25459), (336, 25621), (342, 25669), (346, 25690), (351, 25708), (362, 25756), (376, 25822), (384, 25849), (385, 25852), (387, 25870), (388, 25873), (391, 25894), (392, 25903), (405, 25957), (417, 26002), (421, 26023), (424, 26032), (431, 26065), (432, 26074), (435, 26098), (442, 26128), (443, 26131), (445, 26140), (448, 26152), (451, 26161), (453, 26173), (458, 26194), (460, 26200), (470, 26254), (476, 26284), (489, 26332), (493, 26344), (495, 26350), (496, 26353), (499, 26368), (504, 26389), (511, 26425), (524, 26479), (528, 26494), (534, 26503), (538, 26515), (539, 26518), (542, 26533), (549, 26560), (551, 26566), (556, 26581), (557, 26584), (558, 26593), (559, 26608), (560, 26614), (564, 26629), (566, 26641), (567, 26644), (577, 26680), (582, 26701), (584, 26713), (586, 26722), (590, 26734), (598, 26761), (605, 26785), (608, 26794), (610, 26800), (615, 26818), (632, 26887), (650, 26956), (686, 27112), (732, 27313), (757, 27457), (767, 27520), (771, 27547), (781, 27619), (783, 27631), (784, 27640), (789, 27694), (793, 27715), (795, 27727), (831, 27889), (847, 27976), (855, 27994), (861, 28024), (868, 28042), (869, 28045), (872, 28057), (878, 28084), (893, 28195), (901, 28270), (909, 28318), (917, 28372), (921, 28399), (938, 28513), (948, 28603),

Gene: ClubPenguin\_22 Start: 15929, Stop: 21244, Start Num: 14

Candidate Starts for ClubPenguin\_22:

(12, 15908), (Start: 14 @15929 has 1 MA's), (15, 15959), (43, 16181), (45, 16202), (75, 16472), (82, 16562), (83, 16598), (92, 16673), (101, 16721), (103, 16730), (106, 16763), (148, 17150), (149, 17153), (160, 17231), (176, 17324), (187, 17384), (198, 17426), (259, 17696), (273, 17756), (287, 17813), (312, 17915), (336, 18023), (358, 18146), (361, 18155), (376, 18224), (379, 18233), (380, 18236), (391, 18296), (406, 18362), (410, 18374), (414, 18383), (417, 18401), (421, 18422), (438, 18512), (460, 18605), (469, 18650), (470, 18659), (476, 18689), (486, 18728), (487, 18731), (498, 18770), (505, 18797), (510, 18821), (511, 18830), (518, 18863), (519, 18866), (523, 18878), (528, 18899), (541, 18935), (545, 18950), (561, 19028), (566, 19049), (568, 19055), (574, 19070), (577, 19079), (604, 19169), (614, 19202), (626, 19253), (629, 19265), (640, 19310), (672, 19439), (682, 19478), (690, 19514), (696, 19535), (706, 19571), (710, 19589), (713, 19598), (721, 19634), (723, 19649), (724, 19655), (734, 19700), (758, 19844), (765, 19880), (766, 19889), (782, 20003), (794, 20096), (812, 20180), (871, 20447), (879, 20501), (892, 20582), (900, 20663), (906, 20696), (910, 20717), (916, 20768), (923, 20807), (925, 20822), (932, 20870), (933, 20879), (934, 20891), (942, 20951), (947, 20999), (949, 21023), (951, 21068),

Gene: Conley\_30 Start: 21600, Stop: 26687, Start Num: 17

Candidate Starts for Conley\_30:

(Start: 17 @21600 has 129 MA's), (Start: 20 @21630 has 3 MA's), (42, 21768), (50, 21843), (53, 21864), (58, 21885), (64, 21915), (67, 21945), (68, 21966), (75, 22068), (80, 22128), (84, 22203), (85, 22215), (88, 22239), (92, 22269), (95, 22284), (101, 22317), (102, 22323), (106, 22359), (111, 22410), (118, 22464), (119, 22467), (129, 22566), (145, 22686), (151, 22740), (154, 22770), (157, 22791),

(158, 22794), (169, 22863), (171, 22869), (209, 23052), (231, 23160), (232, 23172), (235, 23184), (241, 23208), (246, 23226), (293, 23463), (294, 23466), (301, 23502), (309, 23541), (312, 23550), (322, 23598), (334, 23682), (336, 23691), (345, 23754), (346, 23760), (348, 23766), (351, 23778), (354, 23796), (365, 23838), (371, 23865), (376, 23892), (382, 23913), (385, 23922), (388, 23943), (389, 23955), (390, 23961), (391, 23964), (392, 23973), (406, 24030), (413, 24051), (421, 24093), (427, 24120), (429, 24126), (432, 24144), (433, 24153), (435, 24168), (437, 24180), (440, 24189), (448, 24222), (451, 24231), (469, 24315), (470, 24324), (473, 24339), (478, 24360), (489, 24402), (493, 24414), (496, 24423), (499, 24438), (509, 24480), (511, 24495), (525, 24552), (528, 24564), (534, 24573), (538, 24585), (541, 24597), (542, 24603), (547, 24624), (551, 24636), (554, 24645), (557, 24654), (558, 24663), (559, 24678), (560, 24684), (563, 24696), (566, 24711), (569, 24720), (573, 24738), (582, 24771), (584, 24783), (598, 24831), (601, 24840), (608, 24864), (610, 24870), (615, 24888), (616, 24897), (617, 24900), (622, 24918), (639, 24987), (650, 25026), (674, 25131), (675, 25134), (676, 25137), (691, 25197), (717, 25293), (719, 25305), (728, 25350), (734, 25392), (757, 25527), (781, 25689), (789, 25764), (800, 25818), (805, 25839), (828, 25947), (839, 26007), (847, 26046), (855, 26064), (856, 26067), (861, 26094), (863, 26100), (869, 26115), (871, 26121), (872, 26127), (876, 26145), (877, 26148), (891, 26253), (893, 26265), (901, 26340), (903, 26358), (907, 26379), (910, 26391), (920, 26466), (929, 26526), (945, 26622), (948, 26673),

Gene: Correa\_21 Start: 16900, Stop: 21378, Start Num: 17

Candidate Starts for Correa\_21:

(Start: 16 @16879 has 2 MA's), (Start: 17 @16900 has 129 MA's), (Start: 20 @16930 has 3 MA's), (23, 16963), (28, 16984), (64, 17215), (67, 17245), (74, 17326), (75, 17368), (76, 17386), (80, 17428), (85, 17515), (92, 17569), (95, 17584), (101, 17617), (114, 17710), (120, 17758), (122, 17773), (127, 17815), (131, 17869), (139, 17944), (145, 17977), (158, 18085), (168, 18151), (176, 18184), (179, 18193), (181, 18196), (184, 18214), (243, 18496), (253, 18520), (257, 18550), (297, 18709), (312, 18769), (336, 18898), (349, 18976), (355, 19006), (358, 19021), (361, 19030), (367, 19054), (373, 19081), (376, 19099), (382, 19120), (395, 19195), (399, 19216), (403, 19228), (413, 19258), (421, 19300), (433, 19360), (434, 19366), (442, 19405), (446, 19420), (447, 19423), (459, 19480), (461, 19486), (466, 19507), (470, 19537), (476, 19567), (481, 19585), (493, 19633), (499, 19657), (503, 19675), (506, 19684), (509, 19699), (512, 19720), (519, 19750), (528, 19783), (529, 19789), (530, 19792), (536, 19804), (542, 19825), (557, 19876), (558, 19885), (562, 19915), (564, 19921), (574, 19954), (577, 19963), (586, 19993), (589, 20002), (592, 20014), (598, 20032), (604, 20053), (612, 20080), (614, 20086), (615, 20089), (618, 20104), (625, 20131), (633, 20161), (641, 20197), (667, 20299), (682, 20362), (690, 20398), (691, 20401), (697, 20422), (702, 20440), (712, 20479), (714, 20485), (718, 20500), (722, 20521), (723, 20533), (747, 20665), (760, 20728), (776, 20755), (778, 20773), (785, 20821), (786, 20827), (794, 20899), (810, 20977), (817, 21013), (821, 21031), (832, 21064), (834, 21079), (840, 21124), (890, 21367),

Gene: Count\_30 Start: 23420, Stop: 27673, Start Num: 17

Candidate Starts for Count\_30:

(Start: 16 @23399 has 2 MA's), (Start: 17 @23420 has 129 MA's), (Start: 20 @23453 has 3 MA's), (36, 23555), (54, 23690), (59, 23711), (67, 23768), (75, 23891), (80, 23951), (88, 24062), (91, 24086), (92, 24092), (95, 24107), (101, 24140), (102, 24146), (114, 24233), (116, 24254), (117, 24266), (120, 24281), (139, 24467), (146, 24512), (159, 24611), (162, 24620), (183, 24737), (186, 24761), (193, 24794), (248, 25007), (297, 25166), (299, 25184), (323, 25268), (329, 25310), (346, 25433), (347, 25436), (358, 25487), (361, 25496), (366, 25517), (379, 25574), (386, 25607), (388, 25616), (391, 25637), (392, 25646), (399, 25682), (406, 25703), (415, 25733), (421, 25766), (423, 25772), (426, 25787), (431, 25808), (433, 25826), (440, 25862), (443, 25874), (445, 25883), (448, 25895), (458, 25934), (462, 25949), (463, 25955), (468, 25976), (470, 25994), (481, 26042), (496, 26051), (498, 26063), (501, 26072), (542, 26114), (543, 26117), (557, 26165), (558, 26174), (561, 26201), (574, 26243), (577, 26252), (588, 26294), (594, 26315), (600, 26333), (602, 26339), (604, 26348), (614, 26381), (615, 26384), (641, 26492), (642, 26495), (646, 26510), (648, 26516), (663, 26579), (667, 26594), (672, 26618), (681, 26654), (682, 26657), (690, 26693), (697, 26717), (698, 26720), (704,

26744), (705, 26747), (723, 26828), (732, 26870), (752, 26981), (760, 27023), (778, 27068), (791, 27182), (795, 27200), (813, 27290), (827, 27344), (841, 27419), (886, 27632),

Gene: CricKo\_21 Start: 15072, Stop: 20549, Start Num: 2

Candidate Starts for CricKo\_21:

(Start: 2 @15072 has 31 MA's), (3, 15102), (7, 15183), (9, 15213), (10, 15216), (12, 15246), (75, 15798), (83, 15924), (90, 15987), (92, 15999), (100, 16041), (106, 16089), (113, 16173), (127, 16281), (145, 16443), (148, 16476), (157, 16548), (171, 16626), (203, 16773), (275, 17085), (277, 17094), (292, 17157), (336, 17331), (341, 17373), (346, 17400), (349, 17409), (361, 17463), (367, 17487), (380, 17544), (402, 17658), (414, 17691), (421, 17730), (431, 17772), (432, 17781), (437, 17817), (449, 17862), (460, 17913), (468, 17949), (470, 17967), (476, 17997), (486, 18036), (487, 18039), (498, 18078), (499, 18081), (506, 18108), (510, 18129), (511, 18138), (518, 18171), (519, 18174), (525, 18195), (545, 18258), (561, 18336), (563, 18342), (574, 18378), (575, 18381), (576, 18384), (577, 18387), (595, 18447), (598, 18456), (604, 18477), (613, 18507), (614, 18510), (629, 18573), (630, 18576), (631, 18579), (641, 18621), (646, 18639), (655, 18669), (665, 18714), (667, 18723), (672, 18747), (690, 18822), (692, 18828), (706, 18879), (713, 18906), (717, 18921), (719, 18933), (721, 18942), (725, 18966), (739, 19032), (748, 19095), (753, 19119), (766, 19197), (774, 19245), (779, 19287), (797, 19410), (820, 19527), (843, 19644), (861, 19725), (873, 19770), (882, 19815), (906, 20001), (910, 20022), (911, 20034), (917, 20076), (925, 20127), (932, 20175), (936, 20214), (944, 20265), (952, 20388), (958, 20427),

Gene: Crocheter\_32 Start: 23642, Stop: 28753, Start Num: 17

Candidate Starts for Crocheter\_32:

(Start: 17 @23642 has 129 MA's), (Start: 20 @23672 has 3 MA's), (25, 23717), (47, 23861), (57, 23921), (58, 23927), (67, 23987), (68, 24008), (75, 24110), (83, 24236), (86, 24272), (92, 24311), (97, 24338), (101, 24359), (106, 24401), (112, 24473), (117, 24521), (131, 24647), (139, 24722), (140, 24734), (145, 24755), (157, 24860), (158, 24863), (178, 24971), (229, 25223), (255, 25328), (267, 25397), (272, 25418), (286, 25499), (287, 25502), (293, 25529), (301, 25568), (308, 25595), (333, 25736), (336, 25757), (345, 25820), (346, 25826), (351, 25844), (352, 25850), (362, 25892), (365, 25904), (367, 25913), (376, 25958), (386, 26000), (388, 26009), (389, 26021), (391, 26030), (392, 26039), (417, 26138), (421, 26159), (424, 26168), (429, 26192), (430, 26195), (442, 26264), (443, 26267), (445, 26276), (450, 26294), (451, 26297), (453, 26309), (458, 26330), (460, 26336), (461, 26339), (466, 26360), (470, 26390), (473, 26405), (476, 26420), (489, 26468), (493, 26480), (495, 26486), (496, 26489), (498, 26501), (499, 26504), (511, 26561), (524, 26615), (534, 26639), (538, 26651), (539, 26654), (550, 26699), (551, 26702), (556, 26717), (557, 26720), (558, 26729), (559, 26744), (560, 26750), (561, 26756), (566, 26777), (567, 26780), (571, 26792), (574, 26807), (577, 26816), (582, 26837), (584, 26849), (590, 26870), (598, 26897), (608, 26930), (610, 26936), (615, 26954), (622, 26984), (632, 27023), (650, 27092), (676, 27203), (679, 27215), (697, 27284), (717, 27359), (732, 27449), (757, 27593), (767, 27656), (777, 27722), (781, 27755), (783, 27767), (789, 27830), (793, 27851), (795, 27863), (800, 27884), (811, 27941), (831, 28025), (847, 28112), (855, 28130), (861, 28160), (868, 28178), (869, 28181), (871, 28187), (872, 28193), (878, 28220), (893, 28331), (901, 28406), (912, 28475), (917, 28508), (920, 28532), (938, 28649), (948, 28739),

Gene: Daddyjeff\_25 Start: 18508, Stop: 23112, Start Num: 17

Candidate Starts for Daddyjeff\_25:

(Start: 17 @18508 has 129 MA's), (Start: 20 @18541 has 3 MA's), (33, 18616), (41, 18664), (43, 18688), (54, 18778), (58, 18796), (61, 18808), (67, 18853), (75, 18976), (80, 19036), (88, 19147), (92, 19177), (95, 19192), (101, 19225), (105, 19264), (113, 19315), (114, 19318), (116, 19339), (117, 19351), (127, 19423), (134, 19513), (144, 19582), (146, 19597), (148, 19618), (151, 19639), (174, 19780), (178, 19801), (183, 19822), (192, 19876), (220, 20014), (229, 20065), (239, 20110), (311, 20416), (318, 20434), (336, 20578), (340, 20608), (358, 20701), (360, 20707), (361, 20710), (364, 20722), (373, 20761), (390, 20848), (413, 20938), (417, 20959), (423, 20986), (431, 21022), (457, 21151), (472, 21223), (475, 21244), (480, 21262), (489, 21295), (493, 21313), (498, 21334), (499,

21337), (511, 21394), (513, 21406), (519, 21430), (521, 21436), (528, 21463), (545, 21520), (557, 21562), (558, 21571), (561, 21598), (562, 21601), (569, 21628), (574, 21640), (577, 21649), (580, 21658), (600, 21724), (604, 21739), (612, 21766), (652, 21922), (664, 21973), (672, 22009), (682, 22048), (687, 22075), (691, 22087), (696, 22105), (702, 22126), (709, 22153), (714, 22171), (723, 22219), (737, 22285), (759, 22405), (764, 22429), (765, 22438), (772, 22480), (778, 22525), (786, 22579), (794, 22651), (800, 22675), (810, 22729), (813, 22744), (816, 22753), (817, 22765), (820, 22774), (823, 22786), (826, 22795), (840, 22873), (842, 22876), (859, 22948), (888, 23101),

Gene: Damascus\_24 Start: 16928, Stop: 21136, Start Num: 17

Candidate Starts for Damascus\_24:

(Start: 16 @16907 has 2 MA's), (Start: 17 @16928 has 129 MA's), (Start: 20 @16961 has 3 MA's), (44, 17120), (54, 17198), (67, 17276), (75, 17399), (80, 17459), (88, 17570), (91, 17594), (92, 17600), (95, 17615), (101, 17648), (113, 17738), (114, 17741), (116, 17762), (117, 17774), (131, 17900), (146, 18020), (154, 18092), (158, 18116), (180, 18227), (193, 18302), (210, 18380), (228, 18473), (250, 18518), (277, 18587), (291, 18653), (297, 18674), (325, 18767), (334, 18836), (336, 18845), (346, 18914), (358, 18968), (361, 18977), (365, 18992), (367, 19001), (370, 19010), (375, 19040), (376, 19046), (382, 19067), (386, 19088), (389, 19109), (391, 19118), (392, 19127), (397, 19154), (399, 19163), (406, 19184), (407, 19187), (411, 19199), (433, 19307), (437, 19334), (443, 19355), (447, 19370), (454, 19397), (455, 19400), (458, 19415), (463, 19436), (468, 19457), (470, 19475), (496, 19532), (498, 19544), (499, 19547), (501, 19553), (542, 19583), (558, 19643), (562, 19673), (574, 19712), (577, 19721), (583, 19751), (592, 19778), (593, 19781), (594, 19784), (604, 19817), (614, 19850), (625, 19895), (635, 19937), (646, 19979), (647, 19982), (648, 19985), (663, 20048), (672, 20087), (681, 20123), (682, 20126), (690, 20162), (724, 20303), (752, 20450), (760, 20492), (778, 20537), (786, 20591), (798, 20675), (806, 20717), (807, 20720), (820, 20786), (823, 20798), (830, 20816), (838, 20876), (854, 20945), (864, 20981), (874, 21020), (889, 21116),

Gene: Dancer\_31 Start: 20241, Stop: 25343, Start Num: 17

Candidate Starts for Dancer\_31:

(Start: 17 @20241 has 129 MA's), (Start: 20 @20271 has 3 MA's), (42, 20409), (47, 20460), (49, 20469), (50, 20484), (53, 20505), (58, 20526), (64, 20556), (67, 20586), (68, 20607), (75, 20709), (80, 20769), (84, 20844), (85, 20856), (88, 20880), (92, 20910), (95, 20925), (101, 20958), (106, 21000), (111, 21051), (118, 21105), (119, 21108), (129, 21207), (132, 21231), (145, 21327), (154, 21411), (157, 21432), (158, 21435), (169, 21504), (171, 21510), (172, 21516), (209, 21693), (220, 21744), (229, 21795), (241, 21849), (242, 21852), (269, 21984), (278, 22023), (293, 22104), (294, 22107), (309, 22182), (322, 22239), (334, 22323), (336, 22332), (346, 22401), (348, 22407), (351, 22419), (353, 22434), (354, 22437), (359, 22458), (371, 22506), (376, 22533), (382, 22554), (385, 22563), (388, 22584), (389, 22596), (391, 22605), (392, 22614), (405, 22668), (406, 22671), (413, 22692), (421, 22734), (430, 22770), (432, 22785), (433, 22794), (435, 22809), (437, 22821), (440, 22830), (448, 22863), (451, 22872), (469, 22956), (470, 22965), (473, 22980), (478, 23001), (489, 23043), (496, 23064), (499, 23079), (501, 23085), (509, 23121), (511, 23136), (525, 23193), (528, 23205), (534, 23214), (538, 23226), (541, 23238), (542, 23244), (547, 23265), (551, 23277), (557, 23295), (558, 23304), (559, 23319), (560, 23325), (563, 23337), (573, 23379), (574, 23382), (577, 23391), (582, 23412), (584, 23424), (598, 23472), (601, 23481), (608, 23505), (610, 23511), (615, 23529), (616, 23538), (639, 23628), (644, 23646), (645, 23649), (650, 23667), (691, 23838), (705, 23889), (734, 24033), (745, 24102), (757, 24168), (765, 24219), (783, 24342), (789, 24405), (799, 24453), (800, 24459), (802, 24468), (811, 24516), (828, 24588), (839, 24648), (844, 24669), (845, 24672), (856, 24723), (858, 24732), (861, 24750), (869, 24771), (872, 24783), (885, 24876), (893, 24921), (901, 24996), (903, 25014), (907, 25035), (920, 25122), (937, 25233), (948, 25329),

Gene: Darby\_26 Start: 19984, Stop: 24573, Start Num: 17

Candidate Starts for Darby\_26:

(Start: 16 @19963 has 2 MA's), (Start: 17 @19984 has 129 MA's), (Start: 20 @20014 has 3 MA's), (28, 20068), (32, 20089), (37, 20125), (47, 20203), (57, 20263), (62, 20287), (64, 20299), (67, 20329), (70,

20380), (74, 20410), (75, 20452), (76, 20470), (80, 20512), (82, 20542), (84, 20587), (85, 20599), (92, 20653), (95, 20668), (97, 20680), (101, 20701), (114, 20794), (117, 20827), (120, 20842), (126, 20890), (140, 21040), (145, 21061), (147, 21082), (160, 21175), (161, 21178), (167, 21226), (189, 21340), (196, 21364), (203, 21391), (217, 21466), (235, 21559), (239, 21574), (240, 21580), (245, 21598), (261, 21670), (273, 21721), (278, 21736), (284, 21766), (299, 21838), (301, 21844), (305, 21862), (311, 21877), (312, 21880), (319, 21907), (336, 22021), (344, 22078), (346, 22090), (358, 22144), (361, 22153), (362, 22156), (367, 22177), (376, 22222), (382, 22243), (389, 22285), (392, 22303), (406, 22360), (413, 22381), (417, 22402), (433, 22483), (435, 22498), (436, 22501), (442, 22528), (443, 22531), (455, 22582), (470, 22660), (473, 22675), (474, 22678), (478, 22696), (479, 22702), (481, 22708), (484, 22717), (493, 22753), (496, 22762), (503, 22795), (514, 22849), (515, 22852), (519, 22870), (523, 22882), (530, 22912), (536, 22927), (540, 22936), (542, 22948), (547, 22969), (558, 23008), (569, 23065), (574, 23077), (577, 23086), (589, 23125), (592, 23137), (602, 23167), (604, 23176), (624, 23251), (629, 23272), (631, 23278), (646, 23338), (649, 23347), (661, 23401), (662, 23404), (693, 23530), (694, 23533), (700, 23554), (708, 23587), (709, 23590), (710, 23596), (713, 23605), (719, 23632), (728, 23677), (741, 23743), (748, 23794), (750, 23800), (762, 23860), (766, 23884), (776, 23944), (778, 23962), (779, 23974), (786, 24016), (805, 24133), (806, 24142), (816, 24190), (823, 24223), (827, 24235), (830, 24241), (833, 24262), (834, 24265), (835, 24271), (841, 24310), (846, 24337), (884, 24523), (889, 24550),

Gene: Demure\_31 Start: 22605, Stop: 27719, Start Num: 17

Candidate Starts for Demure\_31:

(Start: 17 @22605 has 129 MA's), (Start: 20 @22635 has 3 MA's), (25, 22680), (47, 22824), (53, 22869), (54, 22872), (57, 22884), (58, 22890), (67, 22950), (68, 22971), (75, 23073), (77, 23109), (83, 23199), (92, 23274), (97, 23301), (101, 23322), (104, 23346), (106, 23364), (117, 23484), (133, 23640), (139, 23685), (145, 23718), (157, 23823), (158, 23826), (168, 23892), (171, 23901), (199, 24036), (215, 24114), (232, 24204), (255, 24291), (262, 24339), (278, 24414), (293, 24495), (301, 24534), (308, 24561), (333, 24702), (336, 24723), (345, 24786), (346, 24792), (351, 24810), (352, 24816), (362, 24858), (365, 24870), (367, 24879), (376, 24924), (386, 24966), (388, 24975), (389, 24987), (391, 24996), (392, 25005), (405, 25059), (417, 25104), (421, 25125), (424, 25134), (429, 25158), (430, 25161), (431, 25167), (442, 25230), (443, 25233), (445, 25242), (448, 25254), (450, 25260), (451, 25263), (453, 25275), (458, 25296), (460, 25302), (461, 25305), (466, 25326), (470, 25356), (473, 25371), (476, 25386), (489, 25434), (493, 25446), (495, 25452), (496, 25455), (498, 25467), (499, 25470), (511, 25527), (524, 25581), (534, 25605), (538, 25617), (539, 25620), (550, 25665), (551, 25668), (556, 25683), (557, 25686), (558, 25695), (559, 25710), (560, 25716), (561, 25722), (566, 25743), (567, 25746), (571, 25758), (574, 25773), (577, 25782), (582, 25803), (584, 25815), (590, 25836), (598, 25863), (608, 25896), (610, 25902), (615, 25920), (622, 25950), (632, 25989), (650, 26058), (697, 26250), (717, 26325), (732, 26415), (757, 26559), (767, 26622), (777, 26688), (781, 26721), (783, 26733), (789, 26796), (793, 26817), (795, 26829), (800, 26850), (831, 26991), (847, 27078), (855, 27096), (861, 27126), (868, 27144), (869, 27147), (872, 27159), (878, 27186), (893, 27297), (901, 27372), (912, 27441), (917, 27474), (920, 27498), (938, 27615), (948, 27705),

Gene: DevitoJr\_26 Start: 20152, Stop: 24744, Start Num: 17

Candidate Starts for DevitoJr\_26:

(Start: 16 @20131 has 2 MA's), (Start: 17 @20152 has 129 MA's), (Start: 20 @20182 has 3 MA's), (28, 20236), (32, 20257), (37, 20293), (47, 20371), (57, 20431), (62, 20455), (64, 20467), (67, 20497), (70, 20548), (74, 20578), (75, 20620), (76, 20638), (80, 20680), (82, 20710), (84, 20755), (85, 20767), (92, 20821), (95, 20836), (97, 20848), (101, 20869), (114, 20962), (117, 20995), (120, 21010), (126, 21058), (145, 21229), (160, 21343), (161, 21346), (167, 21394), (189, 21508), (196, 21532), (199, 21547), (235, 21727), (239, 21742), (240, 21748), (245, 21766), (261, 21838), (278, 21904), (299, 22006), (301, 22012), (311, 22045), (312, 22048), (319, 22075), (336, 22192), (344, 22249), (346, 22261), (358, 22315), (361, 22324), (362, 22327), (367, 22348), (376, 22393), (382, 22414), (404, 22525), (406, 22531), (413, 22552), (416, 22570), (421, 22594), (433, 22654), (435, 22669), (436,



22672), (442, 22699), (443, 22702), (470, 22831), (473, 22846), (474, 22849), (478, 22867), (479, 22873), (480, 22876), (484, 22888), (493, 22924), (496, 22933), (503, 22966), (514, 23020), (515, 23023), (519, 23041), (523, 23053), (530, 23083), (536, 23098), (540, 23107), (542, 23119), (558, 23179), (569, 23236), (574, 23248), (577, 23257), (589, 23296), (592, 23308), (602, 23338), (604, 23347), (624, 23422), (625, 23425), (629, 23443), (646, 23509), (648, 23515), (649, 23518), (661, 23572), (662, 23575), (693, 23701), (694, 23704), (700, 23725), (708, 23758), (710, 23767), (728, 23848), (735, 23881), (741, 23914), (750, 23971), (762, 24031), (766, 24055), (778, 24133), (779, 24145), (798, 24271), (806, 24313), (816, 24361), (823, 24394), (827, 24406), (830, 24412), (833, 24433), (834, 24436), (835, 24442), (841, 24481), (846, 24508), (884, 24694), (889, 24721),

Gene: DizzyRudy\_24 Start: 16857, Stop: 21065, Start Num: 17

Candidate Starts for DizzyRudy\_24:

(Start: 16 @16836 has 2 MA's), (Start: 17 @16857 has 129 MA's), (Start: 20 @16890 has 3 MA's), (44, 17049), (67, 17205), (75, 17328), (80, 17388), (88, 17499), (91, 17523), (92, 17529), (95, 17544), (101, 17577), (113, 17667), (114, 17670), (116, 17691), (117, 17703), (131, 17829), (146, 17949), (154, 18021), (158, 18045), (180, 18156), (193, 18231), (210, 18309), (216, 18336), (228, 18402), (277, 18516), (291, 18582), (297, 18603), (325, 18696), (334, 18765), (336, 18774), (346, 18843), (358, 18897), (361, 18906), (365, 18921), (367, 18930), (370, 18939), (375, 18969), (376, 18975), (382, 18996), (386, 19017), (389, 19038), (391, 19047), (392, 19056), (397, 19083), (399, 19092), (406, 19113), (407, 19116), (411, 19128), (433, 19236), (437, 19263), (443, 19284), (455, 19329), (458, 19344), (463, 19365), (468, 19386), (470, 19404), (496, 19461), (498, 19473), (499, 19476), (501, 19482), (542, 19512), (558, 19572), (562, 19602), (574, 19641), (577, 19650), (583, 19680), (592, 19707), (593, 19710), (594, 19713), (604, 19746), (614, 19779), (623, 19818), (625, 19824), (635, 19866), (642, 19893), (646, 19908), (647, 19911), (648, 19914), (663, 19977), (666, 19986), (672, 20016), (681, 20052), (682, 20055), (690, 20091), (724, 20232), (752, 20379), (760, 20421), (778, 20466), (786, 20520), (798, 20604), (806, 20646), (807, 20649), (820, 20715), (823, 20727), (830, 20745), (838, 20805), (854, 20874), (864, 20910), (874, 20949), (889, 21045),

Gene: Djungelskog\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for Djungelskog\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (689, 20756), (691, 20762), (693, 20768), (702, 20801), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605),

Gene: DoctorPepper\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for DoctorPepper\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80,

17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (610, 20432), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (687, 20750), (689, 20756), (691, 20762), (693, 20768), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605), (875, 21683),

Gene: Doxi13\_19 Start: 13488, Stop: 18716, Start Num: 17

Candidate Starts for Doxi13\_19:

(Start: 16 @13467 has 2 MA's), (Start: 17 @13488 has 129 MA's), (Start: 20 @13518 has 3 MA's), (40, 13620), (43, 13671), (58, 13779), (75, 13962), (83, 14088), (86, 14124), (92, 14163), (106, 14253), (148, 14640), (171, 14790), (176, 14814), (189, 14886), (238, 15117), (261, 15195), (264, 15213), (265, 15216), (275, 15249), (298, 15357), (318, 15417), (336, 15498), (346, 15567), (358, 15621), (379, 15708), (380, 15711), (401, 15822), (414, 15858), (417, 15876), (428, 15927), (449, 16029), (452, 16041), (455, 16056), (469, 16125), (470, 16134), (476, 16164), (488, 16209), (495, 16230), (502, 16260), (505, 16272), (506, 16275), (510, 16296), (511, 16305), (519, 16341), (528, 16374), (553, 16455), (554, 16458), (561, 16503), (562, 16506), (563, 16509), (577, 16554), (586, 16584), (600, 16629), (604, 16644), (614, 16677), (619, 16698), (621, 16707), (623, 16716), (629, 16740), (630, 16743), (657, 16851), (668, 16893), (670, 16908), (672, 16914), (692, 16995), (706, 17046), (708, 17055), (710, 17064), (713, 17073), (714, 17076), (717, 17088), (718, 17091), (719, 17100), (721, 17109), (725, 17133), (740, 17202), (747, 17256), (766, 17364), (769, 17379), (775, 17418), (797, 17577), (843, 17811), (860, 17886), (871, 17919), (898, 18123), (905, 18165), (906, 18168), (910, 18189), (915, 18237), (917, 18243), (933, 18351), (942, 18423), (950, 18525), (961, 18678),

Gene: DrGrey\_23 Start: 16676, Stop: 22156, Start Num: 2

Candidate Starts for DrGrey\_23:

(1, 16655), (Start: 2 @16676 has 31 MA's), (3, 16706), (12, 16850), (15, 16901), (22, 16985), (40, 17060), (50, 17177), (51, 17180), (57, 17213), (64, 17249), (67, 17279), (75, 17402), (83, 17528), (86, 17564), (92, 17603), (94, 17615), (101, 17651), (106, 17693), (127, 17885), (132, 17951), (140, 18026), (145, 18047), (148, 18080), (156, 18143), (157, 18152), (171, 18230), (203, 18377), (227, 18509), (240, 18566), (262, 18644), (264, 18653), (266, 18662), (275, 18689), (291, 18764), (293, 18773), (310, 18839), (311, 18842), (326, 18881), (336, 18935), (346, 19004), (358, 19058), (367, 19091), (376, 19136), (379, 19145), (382, 19157), (395, 19232), (397, 19244), (409, 19283), (414, 19295), (421, 19334), (428, 19364), (431, 19376), (438, 19424), (449, 19466), (459, 19514), (470, 19571), (501, 19691), (510, 19733), (511, 19742), (519, 19778), (524, 19796), (525, 19799), (528, 19811), (542, 19853), (543, 19856), (557, 19904), (561, 19940), (563, 19946), (568, 19967), (577, 19991), (604, 20081), (614, 20114), (618, 20132), (621, 20144), (623, 20153), (637, 20210), (640, 20222), (641, 20225), (646, 20243), (660, 20303), (665, 20318), (672, 20351), (675, 20366), (694, 20438), (706, 20483), (710, 20501), (713, 20510), (721, 20546), (724, 20567), (725, 20570), (758, 20756), (762, 20777), (764, 20783), (766, 20801), (767, 20804), (769, 20816), (774, 20849), (775, 20855), (794, 21005), (797, 21014), (850, 21287), (878, 21389), (906, 21605), (910, 21626), (915, 21674), (917, 21680), (918, 21686), (925, 21731), (942, 21860), (947, 21908), (960, 22100), (961, 22109),

Gene: Duffington\_32 Start: 23487, Stop: 28601, Start Num: 17

Candidate Starts for Duffington\_32:

(Start: 17 @23487 has 129 MA's), (Start: 20 @23517 has 3 MA's), (25, 23562), (47, 23706), (58, 23772), (67, 23832), (68, 23853), (75, 23955), (83, 24081), (86, 24117), (92, 24156), (101, 24204), (106, 24246), (112, 24318), (117, 24366), (131, 24492), (139, 24567), (140, 24579), (145, 24600), (157, 24705), (158, 24708), (203, 24930), (215, 24996), (232, 25086), (241, 25122), (255, 25173), (262, 25221), (265, 25233), (293, 25377), (301, 25416), (308, 25443), (336, 25605), (342, 25653), (345, 25668), (346, 25674), (351, 25692), (362, 25740), (376, 25806), (388, 25857), (389, 25869), (392, 25887), (405, 25941), (417, 25986), (421, 26007), (424, 26016), (428, 26037), (432, 26058), (442, 26112), (443, 26115), (445, 26124), (451, 26145), (453, 26157), (458, 26178), (460, 26184), (464, 26202), (470, 26238), (476, 26268), (489, 26316), (493, 26328), (495, 26334), (496, 26337), (498, 26349), (499, 26352), (504, 26373), (511, 26409), (524, 26463), (525, 26466), (534, 26487), (538, 26499), (539, 26502), (551, 26550), (556, 26565), (557, 26568), (558, 26577), (560, 26598), (566, 26625), (567, 26628), (573, 26652), (577, 26664), (582, 26685), (584, 26697), (586, 26706), (590, 26718), (598, 26745), (608, 26778), (610, 26784), (615, 26802), (632, 26871), (650, 26940), (676, 27051), (705, 27162), (717, 27207), (732, 27297), (757, 27441), (767, 27504), (771, 27531), (781, 27603), (783, 27615), (784, 27624), (789, 27678), (793, 27699), (795, 27711), (831, 27873), (847, 27960), (855, 27978), (861, 28008), (868, 28026), (869, 28029), (872, 28041), (878, 28068), (893, 28179), (901, 28254), (909, 28302), (917, 28356), (921, 28383), (938, 28497), (948, 28587),

Gene: Dynamite\_21 Start: 17193, Stop: 21671, Start Num: 17

Candidate Starts for Dynamite\_21:

(Start: 16 @17172 has 2 MA's), (Start: 17 @17193 has 129 MA's), (Start: 20 @17223 has 3 MA's), (23, 17256), (28, 17277), (64, 17508), (67, 17538), (68, 17559), (74, 17619), (75, 17661), (76, 17679), (80, 17721), (85, 17808), (92, 17862), (95, 17877), (101, 17910), (114, 18003), (120, 18051), (122, 18066), (127, 18108), (131, 18162), (139, 18237), (145, 18270), (158, 18378), (168, 18444), (176, 18477), (179, 18486), (181, 18489), (184, 18507), (243, 18789), (253, 18813), (257, 18843), (297, 19002), (312, 19062), (336, 19191), (349, 19269), (355, 19299), (358, 19314), (361, 19323), (367, 19347), (373, 19374), (376, 19392), (382, 19413), (395, 19488), (399, 19509), (403, 19521), (413, 19551), (421, 19593), (433, 19653), (434, 19659), (442, 19698), (461, 19779), (466, 19800), (470, 19830), (476, 19860), (481, 19878), (493, 19926), (499, 19950), (503, 19968), (506, 19977), (507, 19986), (509, 19992), (512, 20013), (519, 20043), (528, 20076), (529, 20082), (530, 20085), (536, 20097), (542, 20118), (557, 20169), (558, 20178), (562, 20208), (564, 20214), (574, 20247), (577, 20256), (586, 20286), (589, 20295), (592, 20307), (599, 20328), (604, 20346), (612, 20373), (614, 20379), (615, 20382), (618, 20397), (625, 20424), (629, 20442), (633, 20454), (641, 20490), (667, 20592), (682, 20655), (690, 20691), (691, 20694), (693, 20700), (697, 20715), (702, 20733), (712, 20772), (713, 20775), (718, 20793), (723, 20826), (728, 20847), (740, 20904), (747, 20958), (749, 20967), (760, 21021), (776, 21048), (778, 21066), (785, 21114), (786, 21120), (794, 21192), (810, 21270), (814, 21285), (821, 21324), (830, 21348), (840, 21417), (845, 21438), (867, 21531), (890, 21660),

Gene: Eddiemania\_33 Start: 24148, Stop: 29262, Start Num: 17

Candidate Starts for Eddiemania\_33:

(Start: 17 @24148 has 129 MA's), (Start: 20 @24178 has 3 MA's), (25, 24223), (47, 24367), (58, 24433), (67, 24493), (68, 24514), (75, 24616), (83, 24742), (86, 24778), (92, 24817), (97, 24844), (101, 24865), (106, 24907), (117, 25027), (139, 25228), (140, 25240), (145, 25261), (154, 25345), (157, 25366), (158, 25369), (178, 25477), (199, 25579), (232, 25747), (241, 25783), (255, 25834), (262, 25882), (293, 26038), (301, 26077), (305, 26095), (308, 26104), (336, 26266), (345, 26329), (346, 26335), (351, 26353), (352, 26359), (362, 26401), (376, 26467), (388, 26518), (389, 26530), (392, 26548), (405, 26602), (417, 26647), (421, 26668), (424, 26677), (428, 26698), (431, 26710), (432, 26719), (435, 26743), (442, 26773), (443, 26776), (445, 26785), (450, 26803), (451, 26806), (453, 26818), (458, 26839), (460, 26845), (461, 26848), (464, 26863), (466, 26869), (470, 26899), (473, 26914), (476, 26929), (488, 26974), (489, 26977), (493, 26989), (495, 26995), (496, 26998), (498,

27010), (499, 27013), (503, 27031), (511, 27070), (524, 27124), (534, 27148), (538, 27160), (539, 27163), (551, 27211), (556, 27226), (557, 27229), (558, 27238), (559, 27253), (560, 27259), (566, 27286), (567, 27289), (571, 27301), (574, 27316), (577, 27325), (582, 27346), (584, 27358), (590, 27379), (598, 27406), (608, 27439), (610, 27445), (615, 27463), (622, 27493), (632, 27532), (679, 27724), (697, 27793), (732, 27958), (757, 28102), (767, 28165), (777, 28231), (781, 28264), (783, 28276), (789, 28339), (793, 28360), (795, 28372), (799, 28387), (811, 28450), (831, 28534), (847, 28621), (855, 28639), (861, 28669), (868, 28687), (871, 28696), (872, 28702), (878, 28729), (893, 28840), (901, 28915), (912, 28984), (917, 29017), (920, 29041), (938, 29158), (948, 29248),

Gene: Eevee\_26 Start: 20575, Stop: 25152, Start Num: 17

Candidate Starts for Eevee\_26:

(Start: 17 @20575 has 129 MA's), (Start: 20 @20608 has 3 MA's), (43, 20755), (54, 20845), (55, 20848), (75, 21043), (83, 21169), (92, 21244), (101, 21292), (106, 21334), (117, 21454), (130, 21571), (140, 21667), (171, 21871), (174, 21883), (188, 21964), (216, 22099), (234, 22192), (251, 22255), (260, 22294), (276, 22357), (280, 22372), (328, 22576), (336, 22627), (351, 22714), (357, 22744), (360, 22756), (361, 22759), (364, 22771), (367, 22783), (373, 22810), (383, 22852), (390, 22897), (410, 22978), (412, 22984), (417, 23008), (419, 23014), (432, 23080), (437, 23116), (444, 23140), (452, 23173), (457, 23200), (459, 23209), (463, 23227), (468, 23248), (473, 23281), (479, 23308), (480, 23311), (493, 23362), (501, 23392), (503, 23404), (519, 23479), (525, 23500), (527, 23506), (531, 23521), (557, 23605), (558, 23614), (561, 23641), (577, 23692), (588, 23728), (604, 23782), (625, 23860), (648, 23950), (656, 23980), (664, 24016), (672, 24052), (682, 24091), (696, 24148), (702, 24169), (708, 24193), (709, 24196), (712, 24208), (714, 24214), (732, 24304), (738, 24334), (739, 24337), (740, 24340), (748, 24400), (752, 24415), (763, 24469), (778, 24568), (793, 24688), (794, 24694), (815, 24796), (817, 24808), (820, 24817), (840, 24913), (842, 24916), (888, 25141),

Gene: Egad\_23 Start: 17271, Stop: 21791, Start Num: 20

Candidate Starts for Egad\_23:

(Start: 16 @17220 has 2 MA's), (Start: 17 @17241 has 129 MA's), (Start: 20 @17271 has 3 MA's), (23, 17304), (47, 17460), (62, 17544), (64, 17556), (67, 17586), (74, 17667), (75, 17709), (76, 17727), (80, 17769), (82, 17799), (84, 17844), (85, 17856), (92, 17910), (95, 17925), (101, 17958), (108, 18021), (114, 18051), (117, 18084), (120, 18099), (126, 18147), (140, 18297), (145, 18318), (158, 18426), (161, 18435), (167, 18483), (205, 18660), (226, 18774), (237, 18825), (240, 18837), (258, 18918), (278, 19002), (281, 19020), (291, 19065), (301, 19110), (302, 19113), (303, 19119), (314, 19152), (336, 19263), (346, 19332), (347, 19335), (356, 19377), (358, 19386), (361, 19395), (369, 19425), (376, 19464), (378, 19470), (382, 19485), (389, 19527), (413, 19623), (417, 19644), (418, 19647), (422, 19668), (433, 19725), (435, 19740), (442, 19770), (445, 19782), (452, 19809), (455, 19824), (466, 19872), (470, 19902), (473, 19917), (481, 19950), (483, 19956), (493, 19995), (496, 20004), (498, 20016), (503, 20037), (516, 20103), (519, 20112), (528, 20145), (529, 20151), (530, 20154), (536, 20166), (537, 20169), (543, 20190), (548, 20211), (558, 20247), (566, 20295), (577, 20325), (604, 20415), (620, 20472), (631, 20517), (635, 20535), (642, 20562), (644, 20571), (646, 20577), (660, 20637), (664, 20649), (667, 20661), (679, 20715), (687, 20751), (689, 20757), (691, 20763), (693, 20769), (703, 20805), (709, 20829), (710, 20835), (712, 20841), (713, 20844), (723, 20895), (726, 20907), (734, 20946), (758, 21078), (765, 21114), (772, 21156), (778, 21201), (788, 21291), (806, 21381), (810, 21405), (816, 21429), (817, 21441), (820, 21450), (823, 21462), (827, 21474), (837, 21519), (841, 21549), (845, 21567), (852, 21606),

Gene: ElephantMan\_26 Start: 20686, Stop: 25275, Start Num: 17

Candidate Starts for ElephantMan\_26:

(Start: 16 @20665 has 2 MA's), (Start: 17 @20686 has 129 MA's), (Start: 20 @20716 has 3 MA's), (28, 20770), (32, 20791), (37, 20827), (47, 20905), (57, 20965), (62, 20989), (64, 21001), (67, 21031), (74, 21112), (75, 21154), (76, 21172), (80, 21214), (82, 21244), (84, 21289), (85, 21301), (92, 21355), (95, 21370), (97, 21382), (101, 21403), (114, 21496), (117, 21529), (120, 21544), (126, 21592), (140, 21742), (145, 21763), (158, 21871), (160, 21877), (161, 21880), (167, 21928), (189, 22042), (196,

22066), (199, 22081), (203, 22093), (217, 22168), (224, 22213), (235, 22261), (239, 22276), (240, 22282), (245, 22300), (261, 22372), (270, 22414), (273, 22423), (284, 22468), (299, 22540), (301, 22546), (311, 22579), (312, 22582), (319, 22609), (336, 22723), (342, 22771), (344, 22780), (346, 22792), (358, 22846), (361, 22855), (362, 22858), (367, 22879), (376, 22924), (382, 22945), (404, 23056), (406, 23062), (413, 23083), (416, 23101), (417, 23104), (421, 23125), (433, 23185), (435, 23200), (436, 23203), (442, 23230), (443, 23233), (470, 23362), (473, 23377), (474, 23380), (478, 23398), (479, 23404), (484, 23419), (493, 23455), (496, 23464), (503, 23497), (514, 23551), (515, 23554), (519, 23572), (523, 23584), (530, 23614), (536, 23629), (540, 23638), (542, 23650), (558, 23710), (567, 23761), (569, 23767), (574, 23779), (577, 23788), (589, 23827), (592, 23839), (596, 23851), (602, 23869), (604, 23878), (624, 23953), (625, 23956), (629, 23974), (646, 24040), (648, 24046), (649, 24049), (661, 24103), (662, 24106), (693, 24232), (694, 24235), (700, 24256), (708, 24289), (710, 24298), (728, 24379), (735, 24412), (741, 24445), (750, 24502), (762, 24562), (766, 24586), (778, 24664), (779, 24676), (798, 24802), (806, 24844), (816, 24892), (823, 24925), (827, 24937), (830, 24943), (833, 24964), (834, 24967), (841, 25012), (846, 25039), (851, 25066), (852, 25069), (884, 25225), (889, 25252),

Gene: Elsa\_22 Start: 17670, Stop: 22148, Start Num: 17

Candidate Starts for Elsa\_22:

(Start: 16 @17649 has 2 MA's), (Start: 17 @17670 has 129 MA's), (Start: 20 @17700 has 3 MA's), (23, 17733), (28, 17754), (64, 17985), (67, 18015), (74, 18096), (75, 18138), (76, 18156), (80, 18198), (85, 18285), (92, 18339), (95, 18354), (101, 18387), (114, 18480), (120, 18528), (122, 18543), (127, 18585), (131, 18639), (139, 18714), (145, 18747), (158, 18855), (168, 18921), (176, 18954), (179, 18963), (181, 18966), (184, 18984), (243, 19266), (253, 19290), (257, 19320), (297, 19479), (312, 19539), (336, 19668), (342, 19716), (353, 19770), (356, 19782), (358, 19791), (361, 19800), (367, 19824), (376, 19869), (382, 19890), (395, 19965), (403, 19998), (413, 20028), (417, 20049), (421, 20070), (433, 20130), (434, 20136), (442, 20175), (443, 20178), (447, 20193), (461, 20256), (466, 20277), (470, 20307), (476, 20337), (481, 20355), (493, 20403), (499, 20427), (503, 20445), (506, 20454), (507, 20463), (509, 20469), (512, 20490), (519, 20520), (528, 20553), (529, 20559), (530, 20562), (536, 20574), (542, 20595), (557, 20646), (558, 20655), (562, 20685), (564, 20691), (574, 20724), (577, 20733), (586, 20763), (589, 20772), (592, 20784), (604, 20823), (612, 20850), (614, 20856), (615, 20859), (618, 20874), (625, 20901), (629, 20919), (633, 20931), (641, 20967), (667, 21069), (682, 21132), (690, 21168), (691, 21171), (693, 21177), (697, 21192), (702, 21210), (708, 21234), (712, 21249), (713, 21252), (718, 21270), (723, 21303), (728, 21324), (740, 21381), (747, 21435), (749, 21444), (760, 21498), (776, 21525), (778, 21543), (785, 21591), (786, 21597), (794, 21669), (810, 21747), (814, 21762), (821, 21801), (830, 21825), (840, 21894), (845, 21915), (867, 22008), (890, 22137),

Gene: Elver\_39 Start: 29219, Stop: 33769, Start Num: 17

Candidate Starts for Elver\_39:

(Start: 17 @29219 has 129 MA's), (Start: 20 @29249 has 3 MA's), (32, 29324), (37, 29360), (47, 29438), (75, 29687), (83, 29813), (88, 29858), (89, 29873), (92, 29888), (97, 29915), (101, 29936), (104, 29960), (106, 29978), (117, 30095), (123, 30140), (126, 30158), (138, 30281), (140, 30308), (143, 30320), (146, 30341), (176, 30536), (193, 30623), (195, 30629), (206, 30671), (214, 30722), (226, 30785), (248, 30860), (252, 30869), (285, 30989), (303, 31067), (307, 31076), (336, 31244), (349, 31322), (358, 31367), (361, 31376), (367, 31400), (376, 31445), (382, 31466), (399, 31562), (410, 31595), (417, 31625), (433, 31706), (435, 31721), (436, 31724), (455, 31805), (461, 31832), (470, 31883), (475, 31910), (481, 31931), (482, 31934), (493, 31976), (514, 32072), (519, 32093), (523, 32105), (528, 32126), (530, 32135), (536, 32147), (547, 32189), (557, 32219), (558, 32228), (566, 32276), (567, 32279), (574, 32297), (577, 32306), (592, 32357), (595, 32366), (604, 32396), (615, 32432), (621, 32459), (641, 32540), (642, 32543), (662, 32624), (666, 32636), (672, 32666), (675, 32681), (678, 32690), (682, 32705), (691, 32744), (702, 32783), (706, 32798), (708, 32807), (711, 32819), (714, 32828), (715, 32831), (723, 32876), (724, 32882), (736, 32939), (740, 32954), (743, 32984), (762, 33080), (772, 33137), (778, 33182), (787, 33251), (800, 33332), (805, 33353),

(810, 33386), (820, 33431), (822, 33440), (827, 33455), (830, 33461), (840, 33530), (845, 33548), (857, 33599),

Gene: EndAve\_32 Start: 23502, Stop: 28613, Start Num: 17

Candidate Starts for EndAve\_32:

(Start: 17 @23502 has 129 MA's), (Start: 20 @23532 has 3 MA's), (25, 23577), (47, 23721), (58, 23787), (67, 23847), (68, 23868), (75, 23970), (82, 24060), (83, 24096), (86, 24132), (92, 24171), (101, 24219), (106, 24261), (112, 24333), (117, 24381), (131, 24507), (139, 24582), (140, 24594), (145, 24615), (157, 24720), (158, 24723), (203, 24945), (215, 25011), (216, 25014), (229, 25083), (232, 25101), (255, 25188), (267, 25257), (286, 25359), (287, 25362), (293, 25389), (301, 25428), (308, 25455), (336, 25617), (342, 25665), (346, 25686), (351, 25704), (353, 25719), (362, 25752), (376, 25818), (387, 25866), (388, 25869), (391, 25890), (392, 25899), (405, 25953), (417, 25998), (421, 26019), (424, 26028), (431, 26061), (432, 26070), (435, 26094), (442, 26124), (443, 26127), (445, 26136), (448, 26148), (451, 26157), (453, 26169), (458, 26190), (460, 26196), (470, 26250), (476, 26280), (489, 26328), (493, 26340), (495, 26346), (496, 26349), (499, 26364), (504, 26385), (511, 26421), (524, 26475), (525, 26478), (528, 26490), (534, 26499), (538, 26511), (539, 26514), (542, 26529), (549, 26556), (551, 26562), (556, 26577), (557, 26580), (558, 26589), (559, 26604), (560, 26610), (564, 26625), (566, 26637), (567, 26640), (577, 26676), (582, 26697), (584, 26709), (586, 26718), (590, 26730), (598, 26757), (605, 26781), (608, 26790), (610, 26796), (615, 26814), (632, 26883), (650, 26952), (686, 27108), (732, 27309), (757, 27453), (767, 27516), (771, 27543), (781, 27615), (783, 27627), (784, 27636), (789, 27690), (793, 27711), (795, 27723), (831, 27885), (847, 27972), (855, 27990), (861, 28020), (868, 28038), (869, 28041), (872, 28053), (878, 28080), (893, 28191), (901, 28266), (909, 28314), (917, 28368), (921, 28395), (938, 28509), (948, 28599),

Gene: Esketit\_23 Start: 16160, Stop: 21646, Start Num: 2

Candidate Starts for Esketit\_23:

(1, 16139), (Start: 2 @16160 has 31 MA's), (3, 16190), (12, 16334), (40, 16544), (51, 16664), (58, 16703), (64, 16733), (66, 16757), (67, 16763), (68, 16784), (69, 16799), (75, 16886), (82, 16976), (83, 17012), (84, 17021), (86, 17048), (92, 17087), (93, 17096), (97, 17114), (101, 17135), (106, 17177), (107, 17186), (117, 17294), (128, 17399), (139, 17495), (148, 17561), (171, 17711), (187, 17795), (191, 17816), (203, 17858), (228, 17993), (240, 18047), (264, 18134), (275, 18170), (277, 18179), (286, 18221), (293, 18254), (299, 18284), (333, 18407), (336, 18428), (345, 18491), (346, 18497), (348, 18503), (353, 18530), (358, 18551), (360, 18557), (361, 18560), (367, 18584), (376, 18629), (379, 18638), (380, 18641), (382, 18650), (395, 18725), (401, 18752), (407, 18770), (414, 18788), (417, 18806), (421, 18827), (432, 18878), (445, 18944), (449, 18959), (468, 19046), (470, 19064), (475, 19091), (501, 19184), (510, 19226), (511, 19235), (519, 19271), (520, 19274), (524, 19289), (525, 19292), (528, 19304), (542, 19346), (543, 19349), (557, 19397), (561, 19433), (563, 19439), (568, 19460), (577, 19484), (586, 19514), (604, 19574), (614, 19607), (615, 19610), (618, 19625), (621, 19637), (627, 19661), (637, 19703), (640, 19715), (641, 19718), (655, 19766), (660, 19796), (665, 19811), (672, 19844), (675, 19859), (691, 19922), (710, 19994), (712, 20000), (713, 20003), (721, 20039), (734, 20105), (748, 20192), (749, 20195), (766, 20294), (774, 20342), (775, 20348), (797, 20507), (850, 20780), (860, 20816), (878, 20882), (895, 21005), (906, 21098), (910, 21119), (915, 21167), (917, 21173), (918, 21179), (925, 21224), (940, 21332), (942, 21353), (947, 21401), (953, 21488), (960, 21590), (961, 21599),

Gene: Fazel\_30 Start: 22536, Stop: 27638, Start Num: 17

Candidate Starts for Fazel\_30:

(Start: 17 @22536 has 129 MA's), (Start: 20 @22566 has 3 MA's), (25, 22611), (46, 22749), (47, 22755), (58, 22821), (64, 22851), (75, 23016), (80, 23076), (85, 23163), (88, 23187), (92, 23217), (95, 23232), (101, 23265), (111, 23358), (131, 23526), (145, 23634), (146, 23646), (152, 23703), (157, 23739), (158, 23742), (169, 23811), (171, 23817), (209, 24000), (210, 24006), (229, 24102), (232, 24120), (267, 24276), (291, 24402), (293, 24411), (336, 24642), (337, 24648), (346, 24711), (351, 24729), (356, 24756), (361, 24774), (376, 24843), (383, 24867), (385, 24873), (388, 24894), (390,

24912), (391, 24915), (405, 24978), (417, 25023), (421, 25044), (427, 25071), (433, 25104), (437, 25131), (442, 25149), (443, 25152), (445, 25161), (448, 25173), (450, 25179), (451, 25182), (453, 25194), (464, 25239), (473, 25290), (481, 25323), (486, 25344), (489, 25353), (493, 25365), (496, 25374), (499, 25389), (501, 25395), (502, 25401), (504, 25410), (507, 25425), (508, 25428), (510, 25437), (511, 25446), (519, 25482), (525, 25503), (534, 25524), (542, 25554), (546, 25569), (547, 25575), (555, 25599), (557, 25605), (558, 25614), (559, 25629), (560, 25635), (569, 25671), (573, 25689), (577, 25701), (582, 25722), (584, 25734), (590, 25755), (591, 25758), (598, 25782), (601, 25791), (608, 25815), (610, 25821), (615, 25839), (616, 25848), (617, 25851), (639, 25938), (648, 25968), (697, 26169), (717, 26244), (728, 26301), (732, 26334), (754, 26457), (781, 26640), (783, 26652), (784, 26661), (789, 26715), (799, 26763), (809, 26814), (818, 26865), (824, 26886), (836, 26934), (839, 26958), (847, 26997), (855, 27015), (868, 27063), (869, 27066), (872, 27078), (893, 27216), (901, 27291), (921, 27420), (927, 27468), (938, 27534), (945, 27573), (948, 27624),

Gene: FidgetOrca\_23 Start: 16166, Stop: 21652, Start Num: 2

Candidate Starts for FidgetOrca\_23:

(1, 16145), (Start: 2 @16166 has 31 MA's), (3, 16196), (12, 16340), (40, 16550), (51, 16670), (58, 16709), (64, 16739), (66, 16763), (67, 16769), (68, 16790), (69, 16805), (75, 16892), (82, 16982), (83, 17018), (84, 17027), (86, 17054), (92, 17093), (93, 17102), (97, 17120), (101, 17141), (106, 17183), (107, 17192), (117, 17300), (128, 17405), (139, 17501), (148, 17567), (171, 17717), (187, 17801), (191, 17822), (203, 17864), (228, 17999), (262, 18131), (264, 18140), (275, 18176), (277, 18185), (286, 18227), (293, 18260), (333, 18413), (336, 18434), (345, 18497), (346, 18503), (348, 18509), (353, 18536), (358, 18557), (360, 18563), (361, 18566), (367, 18590), (376, 18635), (379, 18644), (380, 18647), (382, 18656), (395, 18731), (401, 18758), (406, 18773), (407, 18776), (414, 18794), (417, 18812), (421, 18833), (432, 18884), (449, 18965), (468, 19052), (470, 19070), (475, 19097), (501, 19190), (510, 19232), (511, 19241), (519, 19277), (524, 19295), (525, 19298), (542, 19352), (557, 19403), (561, 19439), (563, 19445), (568, 19466), (577, 19490), (586, 19520), (604, 19580), (614, 19613), (615, 19616), (618, 19631), (627, 19667), (637, 19709), (640, 19721), (641, 19724), (655, 19772), (660, 19802), (665, 19817), (672, 19850), (675, 19865), (691, 19928), (712, 20006), (721, 20045), (734, 20111), (748, 20198), (749, 20201), (766, 20300), (774, 20348), (775, 20354), (797, 20513), (850, 20786), (878, 20888), (895, 21011), (906, 21104), (910, 21125), (915, 21173), (917, 21179), (918, 21185), (925, 21230), (940, 21338), (942, 21359), (947, 21407), (953, 21494), (960, 21596), (961, 21605),

Gene: Figliar\_32 Start: 23512, Stop: 28611, Start Num: 17

Candidate Starts for Figliar\_32:

(Start: 17 @23512 has 129 MA's), (Start: 20 @23542 has 3 MA's), (25, 23587), (46, 23725), (47, 23731), (56, 23785), (58, 23797), (61, 23809), (64, 23827), (75, 23992), (80, 24052), (85, 24139), (88, 24163), (92, 24193), (95, 24208), (101, 24241), (111, 24334), (131, 24502), (145, 24610), (146, 24622), (148, 24643), (152, 24679), (157, 24715), (158, 24718), (169, 24787), (171, 24793), (187, 24877), (203, 24940), (209, 24976), (216, 25009), (231, 25084), (232, 25096), (241, 25132), (255, 25183), (262, 25231), (265, 25243), (293, 25387), (301, 25426), (308, 25453), (336, 25615), (342, 25663), (346, 25684), (351, 25702), (362, 25750), (376, 25816), (388, 25867), (389, 25879), (392, 25897), (405, 25951), (417, 25996), (421, 26017), (424, 26026), (427, 26044), (428, 26047), (432, 26068), (442, 26122), (443, 26125), (445, 26134), (451, 26155), (453, 26167), (458, 26188), (460, 26194), (464, 26212), (470, 26248), (476, 26278), (489, 26326), (493, 26338), (495, 26344), (496, 26347), (498, 26359), (499, 26362), (504, 26383), (511, 26419), (524, 26473), (525, 26476), (534, 26497), (538, 26509), (539, 26512), (551, 26560), (556, 26575), (557, 26578), (558, 26587), (560, 26608), (566, 26635), (567, 26638), (573, 26662), (577, 26674), (582, 26695), (584, 26707), (586, 26716), (590, 26728), (598, 26755), (608, 26788), (610, 26794), (615, 26812), (628, 26866), (632, 26881), (650, 26950), (676, 27061), (705, 27172), (717, 27217), (732, 27307), (757, 27451), (767, 27514), (771, 27541), (781, 27613), (783, 27625), (784, 27634), (789, 27688), (793, 27709), (795, 27721), (831, 27883), (847, 27970), (855, 27988), (861, 28018), (868, 28036), (869, 28039), (872, 28051), (878, 28078), (893, 28189), (899, 28252), (901, 28264), (909, 28312), (917, 28366), (921,

28393), (938, 28507), (948, 28597),

Gene: FortCran\_29 Start: 20505, Stop: 25607, Start Num: 17

Candidate Starts for FortCran\_29:

(Start: 17 @20505 has 129 MA's), (Start: 20 @20535 has 3 MA's), (42, 20673), (46, 20718), (47, 20724), (49, 20733), (50, 20748), (53, 20769), (58, 20790), (64, 20820), (67, 20850), (68, 20871), (75, 20973), (80, 21033), (84, 21108), (85, 21120), (88, 21144), (92, 21174), (95, 21189), (101, 21222), (106, 21264), (111, 21315), (118, 21369), (119, 21372), (129, 21471), (132, 21495), (145, 21591), (157, 21696), (158, 21699), (169, 21768), (171, 21774), (172, 21780), (209, 21957), (220, 22008), (229, 22059), (241, 22113), (242, 22116), (293, 22368), (294, 22371), (309, 22446), (322, 22503), (334, 22587), (336, 22596), (348, 22671), (351, 22683), (353, 22698), (354, 22701), (359, 22722), (371, 22770), (376, 22797), (382, 22818), (385, 22827), (388, 22848), (389, 22860), (391, 22869), (392, 22878), (405, 22932), (406, 22935), (413, 22956), (421, 22998), (427, 23025), (430, 23034), (432, 23049), (433, 23058), (435, 23073), (437, 23085), (440, 23094), (448, 23127), (451, 23136), (469, 23220), (470, 23229), (473, 23244), (474, 23247), (478, 23265), (489, 23307), (496, 23328), (499, 23343), (501, 23349), (509, 23385), (511, 23400), (525, 23457), (528, 23469), (534, 23478), (538, 23490), (541, 23502), (542, 23508), (547, 23529), (551, 23541), (557, 23559), (558, 23568), (559, 23583), (560, 23589), (563, 23601), (573, 23643), (574, 23646), (577, 23655), (582, 23676), (584, 23688), (598, 23736), (601, 23745), (608, 23769), (610, 23775), (615, 23793), (616, 23802), (622, 23823), (639, 23892), (644, 23910), (650, 23931), (691, 24102), (705, 24153), (734, 24297), (745, 24366), (757, 24432), (765, 24483), (783, 24606), (789, 24669), (799, 24717), (800, 24723), (802, 24732), (811, 24780), (828, 24852), (839, 24912), (844, 24933), (845, 24936), (856, 24987), (858, 24996), (861, 25014), (869, 25035), (872, 25047), (885, 25140), (893, 25185), (901, 25260), (903, 25278), (907, 25299), (920, 25386), (937, 25497), (948, 25593),

Gene: FrodoSwaggins\_23 Start: 16676, Stop: 22156, Start Num: 2

Candidate Starts for FrodoSwaggins\_23:

(1, 16655), (Start: 2 @16676 has 31 MA's), (3, 16706), (12, 16850), (15, 16901), (22, 16985), (40, 17060), (50, 17177), (51, 17180), (57, 17213), (64, 17249), (67, 17279), (75, 17402), (83, 17528), (86, 17564), (92, 17603), (94, 17615), (101, 17651), (106, 17693), (127, 17885), (132, 17951), (140, 18026), (145, 18047), (148, 18080), (156, 18143), (157, 18152), (171, 18230), (203, 18377), (227, 18509), (240, 18566), (262, 18644), (264, 18653), (266, 18662), (275, 18689), (291, 18764), (293, 18773), (310, 18839), (311, 18842), (326, 18881), (336, 18935), (346, 19004), (358, 19058), (367, 19091), (376, 19136), (379, 19145), (382, 19157), (395, 19232), (409, 19283), (414, 19295), (421, 19334), (428, 19364), (431, 19376), (438, 19424), (449, 19466), (459, 19514), (470, 19571), (501, 19691), (510, 19733), (511, 19742), (519, 19778), (524, 19796), (525, 19799), (528, 19811), (542, 19853), (543, 19856), (557, 19904), (561, 19940), (563, 19946), (568, 19967), (577, 19991), (604, 20081), (614, 20114), (618, 20132), (621, 20144), (623, 20153), (637, 20210), (640, 20222), (641, 20225), (646, 20243), (660, 20303), (665, 20318), (672, 20351), (675, 20366), (694, 20438), (706, 20483), (710, 20501), (713, 20510), (721, 20546), (724, 20567), (725, 20570), (758, 20756), (762, 20777), (764, 20783), (766, 20801), (767, 20804), (769, 20816), (774, 20849), (775, 20855), (794, 21005), (797, 21014), (850, 21287), (878, 21389), (906, 21605), (910, 21626), (915, 21674), (917, 21680), (918, 21686), (925, 21731), (942, 21860), (947, 21908), (960, 22100), (961, 22109),

Gene: FromIndy\_22 Start: 15060, Stop: 20537, Start Num: 2

Candidate Starts for FromIndy\_22:

(Start: 2 @15060 has 31 MA's), (3, 15090), (5, 15144), (7, 15171), (9, 15201), (10, 15204), (12, 15234), (75, 15786), (83, 15912), (92, 15987), (100, 16029), (106, 16077), (113, 16161), (127, 16269), (145, 16431), (148, 16464), (157, 16536), (171, 16614), (203, 16761), (275, 17073), (277, 17082), (292, 17145), (308, 17208), (336, 17319), (341, 17361), (346, 17388), (349, 17397), (361, 17451), (367, 17475), (380, 17532), (382, 17541), (402, 17646), (405, 17655), (414, 17679), (431, 17760), (449, 17850), (460, 17901), (468, 17937), (470, 17955), (476, 17985), (486, 18024), (487, 18027), (498, 18066), (506, 18096), (510, 18117), (511, 18126), (518, 18159), (519, 18162), (525, 18183), (545,



18246), (561, 18324), (563, 18330), (574, 18366), (575, 18369), (576, 18372), (577, 18375), (592, 18426), (595, 18435), (598, 18444), (604, 18465), (613, 18495), (614, 18498), (629, 18561), (630, 18564), (631, 18567), (641, 18609), (646, 18627), (655, 18657), (665, 18702), (672, 18735), (690, 18810), (692, 18816), (701, 18846), (706, 18867), (713, 18894), (717, 18909), (721, 18930), (725, 18954), (739, 19020), (744, 19062), (748, 19083), (753, 19107), (766, 19185), (774, 19233), (797, 19398), (843, 19632), (861, 19713), (873, 19758), (882, 19803), (906, 19989), (910, 20010), (911, 20022), (917, 20064), (925, 20115), (932, 20163), (936, 20202), (944, 20253), (952, 20376), (958, 20415),

Gene: Gandionco\_41 Start: 29771, Stop: 34291, Start Num: 20

Candidate Starts for Gandionco\_41:

(Start: 17 @29741 has 129 MA's), (Start: 20 @29771 has 3 MA's), (32, 29846), (37, 29882), (47, 29960), (74, 30167), (75, 30209), (83, 30335), (88, 30380), (89, 30395), (92, 30410), (97, 30437), (101, 30458), (104, 30482), (106, 30500), (117, 30617), (123, 30662), (126, 30680), (138, 30803), (140, 30830), (143, 30842), (146, 30863), (176, 31058), (193, 31145), (195, 31151), (206, 31193), (214, 31244), (248, 31382), (252, 31391), (285, 31511), (303, 31589), (307, 31598), (336, 31766), (349, 31844), (358, 31889), (361, 31898), (367, 31922), (376, 31967), (377, 31970), (382, 31988), (399, 32084), (410, 32117), (417, 32147), (423, 32174), (433, 32228), (435, 32243), (436, 32246), (455, 32327), (461, 32354), (470, 32405), (475, 32432), (481, 32453), (482, 32456), (493, 32498), (514, 32594), (519, 32615), (523, 32627), (528, 32648), (530, 32657), (536, 32669), (547, 32711), (557, 32741), (558, 32750), (566, 32798), (567, 32801), (574, 32819), (577, 32828), (592, 32879), (595, 32888), (604, 32918), (615, 32954), (641, 33062), (642, 33065), (662, 33146), (666, 33158), (672, 33188), (675, 33203), (682, 33227), (691, 33266), (702, 33305), (706, 33320), (708, 33329), (711, 33341), (714, 33350), (715, 33353), (723, 33398), (724, 33404), (736, 33461), (740, 33476), (743, 33506), (762, 33602), (772, 33659), (778, 33704), (787, 33773), (800, 33854), (805, 33875), (810, 33908), (820, 33953), (822, 33962), (827, 33977), (830, 33983), (840, 34052), (845, 34070), (857, 34121),

Gene: GantcherGoblin\_25 Start: 19002, Stop: 23639, Start Num: 17

Candidate Starts for GantcherGoblin\_25:

(Start: 16 @18981 has 2 MA's), (Start: 17 @19002 has 129 MA's), (Start: 20 @19032 has 3 MA's), (28, 19086), (29, 19095), (58, 19365), (59, 19368), (67, 19425), (68, 19446), (74, 19506), (75, 19548), (80, 19608), (85, 19695), (89, 19734), (92, 19749), (95, 19764), (101, 19797), (105, 19836), (106, 19839), (112, 19875), (114, 19890), (120, 19938), (157, 20262), (161, 20274), (169, 20334), (180, 20376), (189, 20436), (190, 20442), (193, 20451), (198, 20466), (199, 20475), (220, 20574), (221, 20586), (222, 20595), (224, 20607), (294, 20892), (308, 20952), (312, 20961), (336, 21102), (342, 21150), (347, 21174), (349, 21180), (358, 21225), (361, 21234), (367, 21258), (371, 21276), (381, 21321), (382, 21324), (385, 21333), (395, 21399), (406, 21441), (410, 21453), (413, 21462), (417, 21483), (428, 21534), (433, 21564), (435, 21579), (445, 21621), (450, 21639), (460, 21687), (461, 21690), (471, 21747), (477, 21774), (498, 21855), (501, 21864), (511, 21915), (519, 21951), (528, 21984), (530, 21993), (536, 22005), (544, 22032), (549, 22053), (557, 22077), (558, 22086), (574, 22155), (575, 22158), (576, 22161), (577, 22164), (586, 22194), (592, 22215), (599, 22236), (604, 22254), (607, 22263), (612, 22281), (627, 22341), (635, 22374), (638, 22389), (640, 22395), (641, 22398), (654, 22443), (660, 22476), (661, 22479), (662, 22482), (667, 22500), (696, 22620), (697, 22623), (702, 22641), (711, 22677), (721, 22719), (725, 22743), (740, 22812), (747, 22866), (750, 22878), (772, 22995), (778, 23040), (785, 23088), (807, 23223), (810, 23244), (816, 23268), (830, 23319), (840, 23388), (845, 23406),

Gene: Giantsbane\_27 Start: 19149, Stop: 23738, Start Num: 17

Candidate Starts for Giantsbane\_27:

(Start: 16 @19128 has 2 MA's), (Start: 17 @19149 has 129 MA's), (Start: 20 @19179 has 3 MA's), (28, 19233), (37, 19290), (57, 19428), (64, 19464), (67, 19494), (74, 19575), (75, 19617), (76, 19635), (80, 19677), (85, 19764), (92, 19818), (95, 19833), (96, 19839), (101, 19866), (112, 19944), (114, 19959),

(117, 19992), (120, 20007), (121, 20016), (124, 20043), (126, 20055), (130, 20109), (145, 20226), (158, 20334), (161, 20343), (168, 20400), (170, 20406), (194, 20523), (198, 20535), (203, 20556), (205, 20568), (210, 20598), (224, 20676), (240, 20745), (256, 20805), (278, 20901), (289, 20955), (299, 21003), (301, 21009), (312, 21045), (336, 21189), (338, 21201), (344, 21246), (346, 21258), (358, 21312), (361, 21321), (362, 21324), (367, 21345), (382, 21411), (393, 21477), (395, 21486), (396, 21489), (397, 21498), (404, 21522), (406, 21528), (413, 21549), (416, 21567), (417, 21570), (421, 21591), (433, 21651), (435, 21666), (436, 21669), (441, 21693), (442, 21696), (443, 21699), (452, 21735), (470, 21828), (473, 21843), (474, 21846), (478, 21864), (479, 21870), (484, 21885), (493, 21921), (496, 21930), (503, 21963), (514, 22017), (515, 22020), (519, 22038), (536, 22095), (540, 22104), (542, 22116), (547, 22137), (549, 22143), (550, 22146), (558, 22176), (569, 22233), (574, 22245), (576, 22251), (577, 22254), (604, 22344), (615, 22380), (631, 22446), (636, 22470), (637, 22473), (646, 22506), (647, 22509), (648, 22512), (649, 22515), (661, 22569), (662, 22572), (691, 22692), (700, 22722), (703, 22734), (710, 22764), (713, 22773), (715, 22779), (734, 22875), (743, 22932), (750, 22968), (763, 23031), (778, 23130), (779, 23142), (794, 23256), (816, 23358), (827, 23403), (830, 23409), (834, 23433), (837, 23448), (841, 23478), (846, 23505), (851, 23532), (865, 23577),

Gene: Gill\_29 Start: 20616, Stop: 25730, Start Num: 17

Candidate Starts for Gill\_29:

(Start: 17 @20616 has 129 MA's), (Start: 20 @20646 has 3 MA's), (43, 20793), (46, 20829), (47, 20835), (53, 20880), (58, 20901), (64, 20931), (75, 21096), (80, 21156), (84, 21231), (88, 21267), (89, 21282), (92, 21297), (95, 21312), (101, 21345), (111, 21438), (118, 21492), (119, 21495), (145, 21714), (157, 21819), (158, 21822), (169, 21891), (171, 21897), (209, 22080), (220, 22131), (229, 22182), (241, 22236), (242, 22239), (269, 22371), (288, 22473), (293, 22491), (294, 22494), (309, 22569), (322, 22626), (334, 22710), (336, 22719), (351, 22806), (359, 22845), (371, 22893), (376, 22920), (382, 22941), (385, 22950), (388, 22971), (389, 22983), (391, 22992), (392, 23001), (397, 23028), (405, 23055), (406, 23058), (413, 23079), (421, 23121), (427, 23148), (430, 23157), (432, 23172), (433, 23181), (435, 23196), (437, 23208), (440, 23217), (443, 23229), (448, 23250), (451, 23259), (469, 23343), (470, 23352), (473, 23367), (474, 23370), (478, 23388), (481, 23400), (482, 23403), (489, 23430), (496, 23451), (499, 23466), (509, 23508), (511, 23523), (525, 23580), (528, 23592), (534, 23601), (538, 23613), (541, 23625), (542, 23631), (547, 23652), (551, 23664), (557, 23682), (558, 23691), (559, 23706), (560, 23712), (563, 23724), (573, 23766), (574, 23769), (577, 23778), (582, 23799), (584, 23811), (598, 23859), (601, 23868), (608, 23892), (610, 23898), (615, 23916), (616, 23925), (622, 23946), (639, 24015), (644, 24033), (645, 24036), (650, 24054), (680, 24180), (691, 24225), (705, 24276), (734, 24420), (757, 24555), (765, 24606), (777, 24684), (783, 24729), (789, 24792), (792, 24810), (799, 24840), (800, 24846), (811, 24903), (828, 24975), (839, 25035), (844, 25056), (845, 25059), (856, 25110), (858, 25119), (869, 25158), (872, 25170), (885, 25263), (893, 25308), (901, 25383), (907, 25422), (912, 25452), (920, 25509), (937, 25620), (948, 25716),

Gene: GirlPower\_22 Start: 17641, Stop: 23130, Start Num: 2

Candidate Starts for GirlPower\_22:

(1, 17620), (Start: 2 @17641 has 31 MA's), (3, 17671), (12, 17815), (32, 17983), (47, 18118), (58, 18184), (64, 18214), (67, 18244), (75, 18367), (81, 18448), (82, 18457), (83, 18493), (92, 18568), (97, 18595), (100, 18610), (101, 18616), (106, 18658), (109, 18709), (127, 18847), (148, 19042), (160, 19123), (171, 19192), (191, 19297), (204, 19342), (240, 19528), (264, 19615), (275, 19651), (277, 19660), (333, 19888), (336, 19909), (345, 19972), (346, 19978), (348, 19984), (358, 20032), (360, 20038), (361, 20041), (367, 20065), (376, 20110), (379, 20119), (380, 20122), (385, 20140), (405, 20245), (414, 20269), (429, 20341), (432, 20359), (449, 20440), (470, 20545), (501, 20665), (510, 20707), (511, 20716), (519, 20752), (525, 20773), (543, 20830), (557, 20878), (561, 20914), (568, 20941), (577, 20965), (586, 20995), (604, 21055), (614, 21088), (618, 21106), (623, 21127), (633, 21163), (637, 21184), (640, 21196), (641, 21199), (646, 21217), (648, 21223), (660, 21277), (665, 21292), (672, 21325), (675, 21340), (691, 21403), (712, 21481), (713, 21484), (721, 21520), (734,

21586), (738, 21607), (748, 21673), (751, 21685), (766, 21775), (774, 21823), (794, 21979), (797, 21988), (863, 22309), (882, 22393), (906, 22579), (910, 22600), (913, 22624), (915, 22648), (917, 22654), (918, 22660), (925, 22705), (940, 22813), (947, 22882), (953, 22969), (960, 23074), (961, 23083),

Gene: GoCrazy\_20 Start: 17193, Stop: 21671, Start Num: 17

Candidate Starts for GoCrazy\_20:

(Start: 16 @17172 has 2 MA's), (Start: 17 @17193 has 129 MA's), (Start: 20 @17223 has 3 MA's), (28, 17277), (37, 17334), (64, 17508), (67, 17538), (74, 17619), (75, 17661), (76, 17679), (80, 17721), (85, 17808), (92, 17862), (95, 17877), (101, 17910), (112, 17988), (114, 18003), (120, 18051), (127, 18108), (135, 18204), (139, 18237), (145, 18270), (158, 18378), (168, 18444), (176, 18477), (179, 18486), (181, 18489), (184, 18507), (243, 18789), (253, 18813), (257, 18843), (297, 19002), (312, 19062), (336, 19191), (342, 19239), (349, 19269), (353, 19293), (356, 19305), (358, 19314), (361, 19323), (367, 19347), (376, 19392), (382, 19413), (395, 19488), (399, 19509), (400, 19512), (403, 19521), (413, 19551), (421, 19593), (433, 19653), (434, 19659), (435, 19668), (443, 19701), (446, 19713), (447, 19716), (461, 19779), (466, 19800), (470, 19830), (476, 19860), (481, 19878), (493, 19926), (499, 19950), (503, 19968), (506, 19977), (512, 20013), (519, 20043), (528, 20076), (529, 20082), (530, 20085), (536, 20097), (542, 20118), (557, 20169), (558, 20178), (564, 20214), (574, 20247), (577, 20256), (586, 20286), (589, 20295), (592, 20307), (604, 20346), (612, 20373), (614, 20379), (615, 20382), (618, 20397), (625, 20424), (633, 20454), (641, 20490), (667, 20592), (682, 20655), (690, 20691), (697, 20715), (702, 20733), (712, 20772), (714, 20778), (718, 20793), (722, 20814), (723, 20826), (747, 20958), (760, 21021), (776, 21048), (778, 21066), (785, 21114), (786, 21120), (794, 21192), (810, 21270), (817, 21306), (821, 21324), (830, 21348), (834, 21372), (840, 21417), (845, 21438), (890, 21660),

Gene: GoblinVoyage\_19 Start: 13488, Stop: 18716, Start Num: 17

Candidate Starts for GoblinVoyage\_19:

(Start: 16 @13467 has 2 MA's), (Start: 17 @13488 has 129 MA's), (Start: 20 @13518 has 3 MA's), (40, 13620), (43, 13671), (58, 13779), (75, 13962), (83, 14088), (86, 14124), (92, 14163), (106, 14253), (148, 14640), (171, 14790), (176, 14814), (189, 14886), (238, 15117), (261, 15195), (264, 15213), (265, 15216), (275, 15249), (298, 15357), (318, 15417), (336, 15498), (346, 15567), (358, 15621), (379, 15708), (380, 15711), (401, 15822), (414, 15858), (417, 15876), (428, 15927), (449, 16029), (452, 16041), (455, 16056), (469, 16125), (470, 16134), (476, 16164), (488, 16209), (495, 16230), (502, 16260), (505, 16272), (506, 16275), (510, 16296), (511, 16305), (519, 16341), (528, 16374), (554, 16458), (561, 16503), (562, 16506), (563, 16509), (577, 16554), (586, 16584), (600, 16629), (604, 16644), (614, 16677), (619, 16698), (621, 16707), (623, 16716), (629, 16740), (630, 16743), (657, 16851), (668, 16893), (670, 16908), (672, 16914), (692, 16995), (706, 17046), (708, 17055), (709, 17058), (710, 17064), (713, 17073), (714, 17076), (717, 17088), (718, 17091), (719, 17100), (721, 17109), (725, 17133), (740, 17202), (747, 17256), (766, 17364), (769, 17379), (775, 17418), (797, 17577), (843, 17811), (860, 17886), (871, 17919), (898, 18123), (905, 18165), (906, 18168), (910, 18189), (915, 18237), (917, 18243), (933, 18351), (942, 18423), (950, 18525), (961, 18678),

Gene: Gordon\_26 Start: 21257, Stop: 25849, Start Num: 17

Candidate Starts for Gordon\_26:

(Start: 16 @21236 has 2 MA's), (Start: 17 @21257 has 129 MA's), (Start: 20 @21287 has 3 MA's), (28, 21341), (37, 21398), (47, 21476), (57, 21536), (64, 21572), (67, 21602), (75, 21725), (76, 21743), (80, 21785), (92, 21926), (95, 21941), (101, 21974), (112, 22052), (114, 22067), (116, 22088), (117, 22100), (121, 22124), (127, 22172), (135, 22268), (139, 22301), (145, 22334), (150, 22382), (158, 22442), (161, 22451), (167, 22499), (185, 22580), (189, 22613), (196, 22637), (199, 22652), (203, 22664), (235, 22832), (240, 22853), (245, 22871), (256, 22913), (261, 22943), (273, 22994), (278, 23009), (284, 23039), (299, 23111), (301, 23117), (311, 23150), (312, 23153), (336, 23297), (344, 23354), (346, 23366), (358, 23420), (361, 23429), (362, 23432), (367, 23453), (376, 23498), (382, 23519), (389, 23561), (392, 23579), (406, 23636), (413, 23657), (417, 23678), (421, 23699), (433,

23759), (435, 23774), (436, 23777), (442, 23804), (443, 23807), (455, 23858), (470, 23936), (473, 23951), (474, 23954), (478, 23972), (479, 23978), (480, 23981), (481, 23984), (484, 23993), (493, 24029), (496, 24038), (503, 24071), (514, 24125), (515, 24128), (519, 24146), (523, 24158), (530, 24188), (536, 24203), (540, 24212), (542, 24224), (547, 24245), (558, 24284), (569, 24341), (574, 24353), (577, 24362), (589, 24401), (592, 24413), (602, 24443), (604, 24452), (615, 24488), (624, 24527), (625, 24530), (629, 24548), (631, 24554), (646, 24614), (649, 24623), (661, 24677), (662, 24680), (693, 24806), (694, 24809), (700, 24830), (709, 24866), (710, 24872), (713, 24881), (719, 24908), (725, 24941), (728, 24953), (741, 25019), (750, 25076), (762, 25136), (766, 25160), (778, 25238), (779, 25250), (798, 25376), (805, 25409), (806, 25418), (816, 25466), (823, 25499), (827, 25511), (830, 25517), (833, 25538), (834, 25541), (835, 25547), (841, 25586), (846, 25613), (884, 25799), (889, 25826),

Gene: Gravy\_29 Start: 20616, Stop: 25730, Start Num: 17

Candidate Starts for Gravy\_29:

(Start: 17 @20616 has 129 MA's), (Start: 20 @20646 has 3 MA's), (43, 20793), (46, 20829), (47, 20835), (53, 20880), (58, 20901), (64, 20931), (75, 21096), (80, 21156), (84, 21231), (88, 21267), (89, 21282), (92, 21297), (95, 21312), (101, 21345), (111, 21438), (118, 21492), (119, 21495), (145, 21714), (157, 21819), (158, 21822), (169, 21891), (171, 21897), (209, 22080), (220, 22131), (229, 22182), (241, 22236), (242, 22239), (269, 22371), (288, 22473), (293, 22491), (294, 22494), (309, 22569), (322, 22626), (334, 22710), (336, 22719), (351, 22806), (359, 22845), (371, 22893), (376, 22920), (382, 22941), (385, 22950), (388, 22971), (389, 22983), (391, 22992), (392, 23001), (397, 23028), (405, 23055), (406, 23058), (413, 23079), (421, 23121), (427, 23148), (430, 23157), (432, 23172), (433, 23181), (435, 23196), (437, 23208), (440, 23217), (443, 23229), (448, 23250), (451, 23259), (469, 23343), (470, 23352), (473, 23367), (474, 23370), (478, 23388), (481, 23400), (482, 23403), (489, 23430), (496, 23451), (499, 23466), (509, 23508), (511, 23523), (525, 23580), (528, 23592), (534, 23601), (538, 23613), (541, 23625), (542, 23631), (547, 23652), (551, 23664), (557, 23682), (558, 23691), (559, 23706), (560, 23712), (563, 23724), (573, 23766), (574, 23769), (577, 23778), (582, 23799), (584, 23811), (598, 23859), (601, 23868), (608, 23892), (610, 23898), (615, 23916), (616, 23925), (622, 23946), (639, 24015), (644, 24033), (645, 24036), (650, 24054), (680, 24180), (691, 24225), (705, 24276), (734, 24420), (757, 24555), (765, 24606), (777, 24684), (783, 24729), (789, 24792), (792, 24810), (799, 24840), (800, 24846), (811, 24903), (828, 24975), (839, 25035), (844, 25056), (845, 25059), (856, 25110), (858, 25119), (869, 25158), (872, 25170), (885, 25263), (893, 25308), (901, 25383), (907, 25422), (912, 25452), (920, 25509), (937, 25620), (948, 25716),

Gene: Gusicorn\_35 Start: 23289, Stop: 28400, Start Num: 17

Candidate Starts for Gusicorn\_35:

(Start: 17 @23289 has 129 MA's), (Start: 20 @23319 has 3 MA's), (25, 23364), (47, 23508), (58, 23574), (67, 23634), (68, 23655), (75, 23757), (83, 23883), (86, 23919), (92, 23958), (97, 23985), (101, 24006), (106, 24048), (117, 24168), (129, 24282), (131, 24294), (139, 24369), (145, 24402), (157, 24507), (158, 24510), (229, 24870), (232, 24888), (267, 25044), (286, 25146), (287, 25149), (293, 25176), (301, 25215), (308, 25242), (312, 25263), (317, 25287), (336, 25404), (345, 25467), (346, 25473), (351, 25491), (352, 25497), (358, 25527), (365, 25551), (376, 25605), (383, 25629), (387, 25653), (388, 25656), (391, 25677), (392, 25686), (402, 25731), (405, 25740), (417, 25785), (421, 25806), (424, 25815), (425, 25821), (428, 25836), (430, 25842), (432, 25857), (442, 25911), (443, 25914), (445, 25923), (448, 25935), (451, 25944), (453, 25956), (458, 25977), (460, 25983), (466, 26007), (470, 26037), (473, 26052), (489, 26115), (493, 26127), (495, 26133), (496, 26136), (498, 26148), (499, 26151), (511, 26208), (524, 26262), (525, 26265), (534, 26286), (538, 26298), (539, 26301), (551, 26349), (556, 26364), (557, 26367), (558, 26376), (559, 26391), (560, 26397), (566, 26424), (567, 26427), (569, 26433), (577, 26463), (582, 26484), (584, 26496), (586, 26505), (590, 26517), (598, 26544), (608, 26577), (610, 26583), (615, 26601), (622, 26631), (650, 26739), (671, 26829), (676, 26850), (705, 26961), (717, 27006), (728, 27063), (732, 27096), (757, 27240), (767, 27303), (777, 27369), (781, 27402), (783, 27414), (789, 27477), (793, 27498), (795, 27510), (800,

27531), (831, 27672), (847, 27759), (855, 27777), (861, 27807), (868, 27825), (869, 27828), (871, 27834), (872, 27840), (878, 27867), (893, 27978), (899, 28041), (901, 28053), (912, 28122), (917, 28155), (920, 28179), (938, 28296), (948, 28386),

Gene: Hankly\_20 Start: 16415, Stop: 20893, Start Num: 17

Candidate Starts for Hankly\_20:

(Start: 16 @16394 has 2 MA's), (Start: 17 @16415 has 129 MA's), (Start: 20 @16445 has 3 MA's), (28, 16499), (37, 16556), (64, 16730), (67, 16760), (74, 16841), (75, 16883), (76, 16901), (80, 16943), (85, 17030), (89, 17069), (92, 17084), (95, 17099), (101, 17132), (112, 17210), (114, 17225), (120, 17273), (122, 17288), (127, 17330), (135, 17426), (139, 17459), (145, 17492), (158, 17600), (168, 17666), (176, 17699), (179, 17708), (181, 17711), (184, 17729), (243, 18011), (253, 18035), (257, 18065), (297, 18224), (312, 18284), (336, 18413), (342, 18461), (349, 18491), (353, 18515), (356, 18527), (358, 18536), (361, 18545), (367, 18569), (376, 18614), (382, 18635), (395, 18710), (403, 18743), (413, 18773), (417, 18794), (421, 18815), (433, 18875), (434, 18881), (442, 18920), (447, 18938), (466, 19022), (470, 19052), (476, 19082), (481, 19100), (493, 19148), (499, 19172), (503, 19190), (506, 19199), (507, 19208), (509, 19214), (512, 19235), (519, 19265), (528, 19298), (529, 19304), (534, 19313), (542, 19340), (549, 19367), (558, 19400), (561, 19427), (563, 19433), (570, 19460), (577, 19478), (586, 19508), (589, 19517), (592, 19529), (594, 19535), (595, 19538), (599, 19550), (604, 19568), (612, 19595), (614, 19601), (631, 19670), (637, 19697), (641, 19712), (667, 19814), (690, 19913), (691, 19916), (693, 19922), (697, 19937), (702, 19955), (712, 19994), (713, 19997), (718, 20015), (723, 20048), (728, 20069), (740, 20126), (747, 20180), (760, 20243), (776, 20270), (778, 20288), (785, 20336), (786, 20342), (794, 20414), (810, 20492), (814, 20507), (821, 20546), (830, 20570), (834, 20594), (840, 20639), (845, 20660), (890, 20882),

Gene: HazuAndZazu\_23 Start: 16677, Stop: 22163, Start Num: 2

Candidate Starts for HazuAndZazu\_23:

(1, 16656), (Start: 2 @16677 has 31 MA's), (3, 16707), (12, 16851), (40, 17061), (50, 17178), (51, 17181), (57, 17214), (64, 17250), (67, 17280), (75, 17403), (83, 17529), (92, 17604), (101, 17652), (106, 17694), (127, 17883), (148, 18078), (157, 18150), (171, 18228), (191, 18333), (203, 18375), (228, 18510), (262, 18642), (264, 18651), (275, 18687), (286, 18738), (293, 18771), (333, 18924), (336, 18945), (345, 19008), (346, 19014), (348, 19020), (353, 19047), (358, 19068), (361, 19077), (367, 19101), (376, 19146), (379, 19155), (380, 19158), (382, 19167), (395, 19242), (401, 19269), (406, 19284), (407, 19287), (414, 19305), (417, 19323), (421, 19344), (432, 19395), (445, 19461), (449, 19476), (468, 19563), (470, 19581), (475, 19608), (500, 19698), (501, 19701), (510, 19743), (511, 19752), (519, 19788), (524, 19806), (525, 19809), (542, 19863), (543, 19866), (557, 19914), (561, 19950), (568, 19977), (577, 20001), (586, 20031), (604, 20091), (614, 20124), (615, 20127), (618, 20142), (621, 20154), (627, 20178), (637, 20220), (640, 20232), (641, 20235), (655, 20283), (660, 20313), (665, 20328), (672, 20361), (675, 20376), (691, 20439), (712, 20517), (713, 20520), (721, 20556), (734, 20622), (748, 20709), (749, 20712), (766, 20811), (774, 20859), (775, 20865), (797, 21024), (850, 21297), (860, 21333), (878, 21399), (895, 21522), (906, 21615), (910, 21636), (915, 21684), (917, 21690), (918, 21696), (925, 21741), (940, 21849), (942, 21870), (947, 21918), (953, 22005), (960, 22107), (961, 22116),

Gene: Heisenberger\_21 Start: 17063, Stop: 21541, Start Num: 17

Candidate Starts for Heisenberger\_21:

(Start: 16 @17042 has 2 MA's), (Start: 17 @17063 has 129 MA's), (Start: 20 @17093 has 3 MA's), (23, 17126), (28, 17147), (64, 17378), (67, 17408), (74, 17489), (75, 17531), (76, 17549), (80, 17591), (85, 17678), (92, 17732), (95, 17747), (101, 17780), (112, 17858), (114, 17873), (120, 17921), (127, 17978), (131, 18032), (135, 18074), (136, 18077), (139, 18107), (145, 18140), (158, 18248), (168, 18314), (176, 18347), (179, 18356), (181, 18359), (184, 18377), (243, 18659), (253, 18683), (257, 18713), (297, 18872), (312, 18932), (336, 19061), (342, 19109), (349, 19139), (356, 19175), (358, 19184), (361, 19193), (367, 19217), (376, 19262), (382, 19283), (395, 19358), (403, 19391), (413, 19421), (417, 19442), (421, 19463), (433, 19523), (434, 19529), (442, 19568), (443, 19571), (447,

19586), (461, 19649), (466, 19670), (470, 19700), (476, 19730), (481, 19748), (493, 19796), (499, 19820), (503, 19838), (506, 19847), (507, 19856), (509, 19862), (512, 19883), (519, 19913), (528, 19946), (529, 19952), (530, 19955), (536, 19967), (542, 19988), (557, 20039), (558, 20048), (562, 20078), (564, 20084), (574, 20117), (577, 20126), (586, 20156), (589, 20165), (592, 20177), (604, 20216), (612, 20243), (614, 20249), (615, 20252), (618, 20267), (625, 20294), (629, 20312), (633, 20324), (641, 20360), (667, 20462), (682, 20525), (690, 20561), (691, 20564), (693, 20570), (697, 20585), (702, 20603), (708, 20627), (712, 20642), (713, 20645), (718, 20663), (723, 20696), (728, 20717), (740, 20774), (747, 20828), (749, 20837), (760, 20891), (776, 20918), (778, 20936), (785, 20984), (786, 20990), (794, 21062), (810, 21140), (814, 21155), (821, 21194), (830, 21218), (840, 21287), (845, 21308), (890, 21530),

Gene: HerbBucket\_22 Start: 17241, Stop: 21791, Start Num: 17

Candidate Starts for HerbBucket\_22:

(Start: 16 @17220 has 2 MA's), (Start: 17 @17241 has 129 MA's), (Start: 20 @17271 has 3 MA's), (23, 17304), (47, 17460), (62, 17544), (64, 17556), (67, 17586), (74, 17667), (75, 17709), (76, 17727), (80, 17769), (82, 17799), (84, 17844), (85, 17856), (92, 17910), (95, 17925), (101, 17958), (108, 18021), (114, 18051), (117, 18084), (120, 18099), (126, 18147), (140, 18297), (145, 18318), (158, 18426), (161, 18435), (167, 18483), (205, 18660), (226, 18774), (237, 18825), (240, 18837), (258, 18918), (278, 19002), (281, 19020), (291, 19065), (301, 19110), (302, 19113), (303, 19119), (314, 19152), (336, 19263), (346, 19332), (347, 19335), (356, 19377), (358, 19386), (361, 19395), (369, 19425), (376, 19464), (378, 19470), (382, 19485), (389, 19527), (413, 19623), (417, 19644), (418, 19647), (422, 19668), (433, 19725), (435, 19740), (442, 19770), (445, 19782), (452, 19809), (455, 19824), (466, 19872), (470, 19902), (473, 19917), (481, 19950), (483, 19956), (493, 19995), (496, 20004), (498, 20016), (503, 20037), (516, 20103), (519, 20112), (528, 20145), (529, 20151), (530, 20154), (536, 20166), (537, 20169), (543, 20190), (548, 20211), (558, 20247), (566, 20295), (577, 20325), (604, 20415), (610, 20433), (620, 20472), (631, 20517), (635, 20535), (642, 20562), (644, 20571), (646, 20577), (660, 20637), (667, 20661), (679, 20715), (687, 20751), (689, 20757), (691, 20763), (693, 20769), (703, 20805), (710, 20835), (712, 20841), (713, 20844), (723, 20895), (726, 20907), (734, 20946), (758, 21078), (765, 21114), (772, 21156), (778, 21201), (788, 21291), (806, 21381), (810, 21405), (816, 21429), (817, 21441), (820, 21450), (823, 21462), (827, 21474), (837, 21519), (841, 21549), (845, 21567), (852, 21606), (875, 21684),

Gene: Hortihabitatio\_33 Start: 22913, Stop: 28030, Start Num: 17

Candidate Starts for Hortihabitatio\_33:

(Start: 17 @22913 has 129 MA's), (Start: 20 @22943 has 3 MA's), (25, 22988), (47, 23132), (49, 23141), (57, 23192), (58, 23198), (65, 23237), (67, 23258), (68, 23279), (75, 23381), (83, 23507), (86, 23543), (92, 23582), (101, 23630), (106, 23672), (112, 23744), (117, 23792), (131, 23918), (135, 23960), (139, 23993), (145, 24026), (149, 24062), (154, 24110), (157, 24131), (158, 24134), (213, 24410), (229, 24494), (291, 24794), (293, 24803), (298, 24833), (312, 24890), (336, 25034), (337, 25040), (346, 25103), (351, 25121), (353, 25136), (361, 25166), (376, 25235), (383, 25259), (385, 25265), (386, 25277), (388, 25286), (389, 25298), (391, 25307), (399, 25352), (405, 25370), (417, 25415), (421, 25436), (427, 25463), (432, 25487), (433, 25496), (435, 25511), (440, 25532), (443, 25544), (445, 25553), (448, 25565), (451, 25574), (456, 25592), (458, 25607), (461, 25616), (466, 25637), (470, 25667), (486, 25736), (489, 25745), (493, 25757), (495, 25763), (496, 25766), (499, 25781), (502, 25793), (507, 25817), (509, 25823), (511, 25838), (516, 25865), (523, 25886), (525, 25895), (534, 25916), (542, 25946), (549, 25973), (550, 25976), (557, 25997), (560, 26027), (561, 26033), (566, 26054), (567, 26057), (569, 26063), (577, 26093), (582, 26114), (584, 26126), (590, 26147), (598, 26174), (601, 26183), (608, 26207), (610, 26213), (611, 26216), (615, 26231), (616, 26240), (617, 26243), (622, 26261), (631, 26297), (639, 26330), (642, 26339), (648, 26360), (650, 26369), (679, 26492), (683, 26504), (691, 26540), (697, 26561), (710, 26612), (732, 26726), (745, 26804), (754, 26849), (781, 27032), (783, 27044), (789, 27107), (790, 27119), (793, 27128), (795, 27140), (800, 27161), (809, 27206), (839, 27350), (847, 27389), (861, 27437), (868, 27455), (869, 27458), (872, 27470), (893, 27608), (899, 27671), (901, 27683), (903, 27701), (912, 27752), (921,

27812), (927, 27860), (945, 27965), (948, 28016),

Gene: Hoshi\_23 Start: 16160, Stop: 21646, Start Num: 2

Candidate Starts for Hoshi\_23:

(1, 16139), (Start: 2 @16160 has 31 MA's), (3, 16190), (12, 16334), (40, 16544), (51, 16664), (58, 16703), (64, 16733), (66, 16757), (67, 16763), (68, 16784), (69, 16799), (75, 16886), (82, 16976), (83, 17012), (84, 17021), (86, 17048), (92, 17087), (93, 17096), (97, 17114), (101, 17135), (106, 17177), (107, 17186), (117, 17294), (128, 17399), (139, 17495), (148, 17561), (171, 17711), (187, 17795), (191, 17816), (203, 17858), (228, 17993), (240, 18047), (264, 18134), (275, 18170), (277, 18179), (286, 18221), (293, 18254), (299, 18284), (333, 18407), (336, 18428), (345, 18491), (346, 18497), (348, 18503), (353, 18530), (358, 18551), (360, 18557), (361, 18560), (367, 18584), (376, 18629), (379, 18638), (380, 18641), (382, 18650), (395, 18725), (401, 18752), (407, 18770), (414, 18788), (417, 18806), (421, 18827), (432, 18878), (445, 18944), (449, 18959), (468, 19046), (470, 19064), (475, 19091), (501, 19184), (510, 19226), (511, 19235), (519, 19271), (520, 19274), (524, 19289), (525, 19292), (528, 19304), (542, 19346), (543, 19349), (557, 19397), (561, 19433), (563, 19439), (568, 19460), (577, 19484), (586, 19514), (604, 19574), (614, 19607), (615, 19610), (618, 19625), (621, 19637), (627, 19661), (637, 19703), (640, 19715), (641, 19718), (655, 19766), (660, 19796), (665, 19811), (672, 19844), (675, 19859), (691, 19922), (710, 19994), (712, 20000), (713, 20003), (721, 20039), (734, 20105), (748, 20192), (749, 20195), (766, 20294), (774, 20342), (775, 20348), (797, 20507), (850, 20780), (860, 20816), (878, 20882), (895, 21005), (906, 21098), (910, 21119), (915, 21167), (917, 21173), (918, 21179), (925, 21224), (940, 21332), (942, 21353), (947, 21401), (953, 21488), (960, 21590), (961, 21599),

Gene: HotFries\_18 Start: 13486, Stop: 18714, Start Num: 17

Candidate Starts for HotFries\_18:

(Start: 16 @13465 has 2 MA's), (Start: 17 @13486 has 129 MA's), (Start: 20 @13516 has 3 MA's), (40, 13618), (43, 13669), (58, 13777), (75, 13960), (83, 14086), (86, 14122), (92, 14161), (106, 14251), (148, 14638), (171, 14788), (176, 14812), (189, 14884), (238, 15115), (261, 15193), (264, 15211), (265, 15214), (275, 15247), (298, 15355), (318, 15415), (336, 15496), (346, 15565), (358, 15619), (364, 15640), (379, 15706), (380, 15709), (401, 15820), (414, 15856), (417, 15874), (428, 15925), (449, 16027), (452, 16039), (455, 16054), (469, 16123), (470, 16132), (476, 16162), (495, 16228), (502, 16258), (505, 16270), (506, 16273), (510, 16294), (511, 16303), (519, 16339), (528, 16372), (554, 16456), (561, 16501), (562, 16504), (563, 16507), (577, 16552), (586, 16582), (600, 16627), (604, 16642), (614, 16675), (619, 16696), (621, 16705), (623, 16714), (629, 16738), (630, 16741), (637, 16771), (640, 16783), (657, 16849), (662, 16870), (668, 16891), (670, 16906), (672, 16912), (706, 17044), (708, 17053), (710, 17062), (713, 17071), (714, 17074), (717, 17086), (718, 17089), (719, 17098), (721, 17107), (740, 17200), (747, 17254), (766, 17362), (769, 17377), (775, 17416), (797, 17575), (843, 17809), (860, 17884), (905, 18163), (906, 18166), (910, 18187), (915, 18235), (917, 18241), (933, 18349), (942, 18421), (946, 18460), (947, 18469), (950, 18523), (961, 18676),

Gene: Hydrus\_33 Start: 24017, Stop: 29128, Start Num: 17

Candidate Starts for Hydrus\_33:

(Start: 17 @24017 has 129 MA's), (Start: 20 @24047 has 3 MA's), (25, 24092), (47, 24236), (57, 24296), (58, 24302), (67, 24362), (68, 24383), (75, 24485), (83, 24611), (86, 24647), (92, 24686), (101, 24734), (106, 24776), (112, 24848), (117, 24896), (131, 25022), (139, 25097), (140, 25109), (145, 25130), (153, 25202), (157, 25235), (158, 25238), (178, 25346), (229, 25598), (255, 25703), (267, 25772), (272, 25793), (286, 25874), (287, 25877), (293, 25904), (301, 25943), (308, 25970), (333, 26111), (336, 26132), (345, 26195), (346, 26201), (351, 26219), (352, 26225), (362, 26267), (365, 26279), (367, 26288), (376, 26333), (386, 26375), (388, 26384), (389, 26396), (391, 26405), (392, 26414), (417, 26513), (421, 26534), (424, 26543), (429, 26567), (430, 26570), (442, 26639), (443, 26642), (445, 26651), (450, 26669), (451, 26672), (453, 26684), (458, 26705), (460, 26711), (461, 26714), (466, 26735), (470, 26765), (473, 26780), (476, 26795), (489, 26843), (493, 26855), (495, 26861), (496, 26864), (498, 26876), (499, 26879), (511, 26936), (524, 26990), (534, 27014), (538,

27026), (539, 27029), (550, 27074), (551, 27077), (556, 27092), (557, 27095), (558, 27104), (559, 27119), (560, 27125), (561, 27131), (566, 27152), (567, 27155), (571, 27167), (574, 27182), (577, 27191), (582, 27212), (584, 27224), (590, 27245), (598, 27272), (608, 27305), (610, 27311), (615, 27329), (622, 27359), (632, 27398), (650, 27467), (676, 27578), (679, 27590), (697, 27659), (717, 27734), (732, 27824), (757, 27968), (767, 28031), (777, 28097), (781, 28130), (783, 28142), (789, 28205), (793, 28226), (795, 28238), (800, 28259), (811, 28316), (831, 28400), (847, 28487), (855, 28505), (861, 28535), (868, 28553), (869, 28556), (871, 28562), (872, 28568), (878, 28595), (893, 28706), (901, 28781), (912, 28850), (917, 28883), (920, 28907), (938, 29024), (948, 29114),

Gene: IceWarrior\_23 Start: 16160, Stop: 21646, Start Num: 2

Candidate Starts for IceWarrior\_23:

(1, 16139), (Start: 2 @16160 has 31 MA's), (3, 16190), (12, 16334), (40, 16544), (50, 16661), (64, 16733), (67, 16763), (75, 16886), (83, 17012), (92, 17087), (101, 17135), (106, 17177), (127, 17366), (148, 17561), (157, 17633), (171, 17711), (187, 17795), (191, 17816), (203, 17858), (228, 17993), (240, 18047), (264, 18134), (275, 18170), (277, 18179), (286, 18221), (293, 18254), (299, 18284), (333, 18407), (336, 18428), (345, 18491), (346, 18497), (348, 18503), (353, 18530), (358, 18551), (360, 18557), (361, 18560), (367, 18584), (376, 18629), (379, 18638), (380, 18641), (382, 18650), (395, 18725), (401, 18752), (407, 18770), (414, 18788), (417, 18806), (421, 18827), (432, 18878), (445, 18944), (449, 18959), (468, 19046), (470, 19064), (475, 19091), (501, 19184), (510, 19226), (511, 19235), (519, 19271), (520, 19274), (524, 19289), (525, 19292), (528, 19304), (542, 19346), (543, 19349), (557, 19397), (561, 19433), (563, 19439), (568, 19460), (577, 19484), (586, 19514), (604, 19574), (614, 19607), (615, 19610), (618, 19625), (621, 19637), (627, 19661), (637, 19703), (640, 19715), (641, 19718), (655, 19766), (660, 19796), (665, 19811), (672, 19844), (675, 19859), (691, 19922), (710, 19994), (712, 20000), (713, 20003), (721, 20039), (734, 20105), (748, 20192), (749, 20195), (766, 20294), (774, 20342), (775, 20348), (797, 20507), (850, 20780), (860, 20816), (878, 20882), (895, 21005), (906, 21098), (910, 21119), (915, 21167), (917, 21173), (918, 21179), (925, 21224), (940, 21332), (942, 21353), (947, 21401), (953, 21488), (960, 21590), (961, 21599),

Gene: Indigenous\_23 Start: 16160, Stop: 21646, Start Num: 2

Candidate Starts for Indigenous\_23:

(1, 16139), (Start: 2 @16160 has 31 MA's), (3, 16190), (12, 16334), (40, 16544), (51, 16664), (58, 16703), (64, 16733), (66, 16757), (67, 16763), (68, 16784), (69, 16799), (75, 16886), (82, 16976), (83, 17012), (84, 17021), (86, 17048), (92, 17087), (93, 17096), (97, 17114), (101, 17135), (106, 17177), (107, 17186), (117, 17294), (128, 17399), (139, 17495), (148, 17561), (171, 17711), (187, 17795), (191, 17816), (203, 17858), (228, 17993), (262, 18125), (264, 18134), (275, 18170), (277, 18179), (286, 18221), (293, 18254), (333, 18407), (336, 18428), (345, 18491), (346, 18497), (348, 18503), (353, 18530), (358, 18551), (360, 18557), (361, 18560), (367, 18584), (376, 18629), (379, 18638), (380, 18641), (382, 18650), (395, 18725), (401, 18752), (407, 18770), (414, 18788), (417, 18806), (421, 18827), (432, 18878), (445, 18944), (449, 18959), (468, 19046), (470, 19064), (475, 19091), (501, 19184), (510, 19226), (511, 19235), (519, 19271), (520, 19274), (524, 19289), (525, 19292), (528, 19304), (542, 19346), (543, 19349), (557, 19397), (561, 19433), (563, 19439), (568, 19460), (577, 19484), (586, 19514), (604, 19574), (614, 19607), (615, 19610), (618, 19625), (621, 19637), (627, 19661), (637, 19703), (640, 19715), (641, 19718), (655, 19766), (660, 19796), (665, 19811), (672, 19844), (675, 19859), (691, 19922), (710, 19994), (712, 20000), (713, 20003), (721, 20039), (734, 20105), (748, 20192), (749, 20195), (766, 20294), (774, 20342), (775, 20348), (797, 20507), (850, 20780), (860, 20816), (878, 20882), (895, 21005), (906, 21098), (910, 21119), (915, 21167), (917, 21173), (918, 21179), (925, 21224), (940, 21332), (942, 21353), (947, 21401), (953, 21488), (960, 21590), (961, 21599),

Gene: Ingrid\_26 Start: 19877, Stop: 24463, Start Num: 17

Candidate Starts for Ingrid\_26:

(Start: 16 @19856 has 2 MA's), (Start: 17 @19877 has 129 MA's), (Start: 20 @19907 has 3 MA's), (28, 19961), (37, 20018), (44, 20066), (57, 20156), (64, 20192), (67, 20222), (75, 20345), (80, 20405), (84,



20480), (92, 20546), (95, 20561), (101, 20594), (112, 20672), (114, 20687), (116, 20708), (117, 20720), (123, 20765), (127, 20792), (130, 20837), (135, 20888), (139, 20921), (145, 20954), (161, 21071), (167, 21119), (168, 21128), (192, 21245), (196, 21257), (197, 21260), (239, 21467), (256, 21527), (278, 21623), (289, 21677), (299, 21725), (301, 21731), (312, 21767), (336, 21911), (344, 21968), (346, 21980), (358, 22034), (361, 22043), (362, 22046), (367, 22067), (368, 22070), (377, 22115), (382, 22133), (395, 22208), (396, 22211), (398, 22223), (406, 22250), (413, 22271), (416, 22289), (417, 22292), (421, 22313), (433, 22373), (435, 22388), (436, 22391), (441, 22415), (442, 22418), (443, 22421), (450, 22448), (455, 22472), (457, 22484), (470, 22550), (473, 22565), (474, 22568), (478, 22586), (479, 22592), (480, 22595), (481, 22598), (493, 22643), (494, 22646), (496, 22652), (498, 22664), (503, 22685), (514, 22739), (515, 22742), (522, 22769), (529, 22799), (536, 22817), (540, 22826), (542, 22838), (547, 22859), (557, 22889), (558, 22898), (566, 22946), (569, 22955), (571, 22961), (577, 22976), (579, 22982), (586, 23006), (589, 23015), (602, 23057), (604, 23066), (615, 23102), (625, 23144), (629, 23162), (631, 23168), (636, 23192), (646, 23228), (660, 23288), (672, 23336), (673, 23345), (682, 23375), (700, 23444), (710, 23486), (713, 23495), (742, 23642), (743, 23654), (750, 23690), (765, 23765), (772, 23807), (778, 23852), (779, 23864), (786, 23906), (810, 24056), (816, 24080), (827, 24125), (829, 24128), (830, 24131), (834, 24155), (837, 24170), (841, 24200), (846, 24227), (887, 24422), (889, 24440),

Gene: Inked\_28 Start: 20894, Stop: 25474, Start Num: 17

Candidate Starts for Inked\_28:

(Start: 16 @20873 has 2 MA's), (Start: 17 @20894 has 129 MA's), (Start: 20 @20924 has 3 MA's), (37, 21035), (57, 21173), (64, 21209), (67, 21239), (75, 21362), (76, 21380), (80, 21422), (92, 21563), (95, 21578), (101, 21611), (112, 21689), (114, 21704), (116, 21725), (117, 21737), (127, 21809), (139, 21938), (145, 21971), (158, 22079), (161, 22088), (174, 22166), (180, 22190), (200, 22292), (205, 22313), (217, 22376), (241, 22493), (256, 22544), (261, 22574), (278, 22640), (299, 22742), (301, 22748), (304, 22763), (305, 22766), (312, 22784), (336, 22928), (343, 22982), (344, 22985), (353, 23030), (361, 23060), (362, 23063), (367, 23084), (368, 23087), (382, 23150), (384, 23156), (393, 23216), (395, 23225), (398, 23240), (406, 23267), (408, 23273), (413, 23288), (417, 23309), (421, 23330), (433, 23390), (435, 23405), (436, 23408), (441, 23432), (442, 23435), (443, 23438), (455, 23489), (462, 23522), (470, 23567), (473, 23582), (474, 23585), (479, 23609), (481, 23615), (484, 23624), (493, 23660), (496, 23669), (503, 23702), (514, 23756), (515, 23759), (519, 23777), (530, 23819), (534, 23828), (536, 23834), (540, 23843), (542, 23855), (543, 23858), (546, 23870), (547, 23876), (549, 23882), (550, 23885), (558, 23915), (568, 23969), (569, 23972), (576, 23990), (577, 23993), (578, 23996), (586, 24023), (587, 24026), (604, 24083), (615, 24119), (623, 24155), (624, 24158), (625, 24161), (631, 24185), (632, 24188), (636, 24209), (647, 24248), (648, 24251), (660, 24305), (672, 24353), (673, 24362), (700, 24461), (710, 24503), (712, 24509), (713, 24512), (721, 24548), (741, 24650), (743, 24671), (750, 24707), (758, 24746), (772, 24824), (779, 24881), (816, 25097), (827, 25142), (841, 25217), (866, 25316), (884, 25424), (889, 25451),

Gene: Issa\_26 Start: 19961, Stop: 24553, Start Num: 17

Candidate Starts for Issa\_26:

(Start: 16 @19940 has 2 MA's), (Start: 17 @19961 has 129 MA's), (Start: 20 @19991 has 3 MA's), (28, 20045), (32, 20066), (37, 20102), (47, 20180), (57, 20240), (62, 20264), (64, 20276), (67, 20306), (70, 20357), (74, 20387), (75, 20429), (76, 20447), (80, 20489), (82, 20519), (84, 20564), (85, 20576), (92, 20630), (95, 20645), (97, 20657), (101, 20678), (114, 20771), (117, 20804), (120, 20819), (126, 20867), (145, 21038), (160, 21152), (161, 21155), (167, 21203), (189, 21317), (196, 21341), (199, 21356), (235, 21536), (239, 21551), (240, 21557), (245, 21575), (261, 21647), (278, 21713), (299, 21815), (301, 21821), (311, 21854), (312, 21857), (319, 21884), (336, 22001), (344, 22058), (346, 22070), (358, 22124), (361, 22133), (362, 22136), (367, 22157), (382, 22223), (404, 22334), (406, 22340), (413, 22361), (416, 22379), (421, 22403), (433, 22463), (435, 22478), (436, 22481), (442, 22508), (443, 22511), (470, 22640), (473, 22655), (474, 22658), (478, 22676), (479, 22682), (480, 22685), (484, 22697), (493, 22733), (496, 22742), (503, 22775), (514, 22829), (515, 22832), (519, 22850), (523, 22862), (530, 22892), (536, 22907), (540, 22916), (542, 22928), (558, 22988), (569,

23045), (574, 23057), (577, 23066), (589, 23105), (592, 23117), (602, 23147), (604, 23156), (624, 23231), (625, 23234), (629, 23252), (646, 23318), (648, 23324), (649, 23327), (661, 23381), (662, 23384), (693, 23510), (694, 23513), (700, 23534), (708, 23567), (710, 23576), (728, 23657), (735, 23690), (741, 23723), (750, 23780), (762, 23840), (766, 23864), (778, 23942), (779, 23954), (798, 24080), (806, 24122), (816, 24170), (823, 24203), (827, 24215), (830, 24221), (833, 24242), (834, 24245), (835, 24251), (841, 24290), (846, 24317), (884, 24503), (889, 24530),

Gene: JEGGS\_21 Start: 17117, Stop: 21595, Start Num: 17

Candidate Starts for JEGGS\_21:

(Start: 16 @17096 has 2 MA's), (Start: 17 @17117 has 129 MA's), (Start: 20 @17147 has 3 MA's), (23, 17180), (28, 17201), (47, 17336), (49, 17345), (54, 17384), (64, 17432), (67, 17462), (74, 17543), (75, 17585), (76, 17603), (80, 17645), (85, 17732), (92, 17786), (95, 17801), (101, 17834), (112, 17912), (114, 17927), (120, 17975), (127, 18032), (131, 18086), (135, 18128), (139, 18161), (145, 18194), (158, 18302), (168, 18368), (176, 18401), (179, 18410), (181, 18413), (184, 18431), (243, 18713), (253, 18737), (257, 18767), (297, 18926), (312, 18986), (336, 19115), (342, 19163), (349, 19193), (356, 19229), (358, 19238), (361, 19247), (367, 19271), (376, 19316), (382, 19337), (395, 19412), (403, 19445), (413, 19475), (417, 19496), (421, 19517), (433, 19577), (434, 19583), (442, 19622), (443, 19625), (447, 19640), (461, 19703), (466, 19724), (470, 19754), (476, 19784), (481, 19802), (493, 19850), (499, 19874), (503, 19892), (506, 19901), (507, 19910), (509, 19916), (512, 19937), (519, 19967), (528, 20000), (529, 20006), (530, 20009), (536, 20021), (542, 20042), (557, 20093), (558, 20102), (562, 20132), (564, 20138), (574, 20171), (577, 20180), (586, 20210), (589, 20219), (592, 20231), (604, 20270), (612, 20297), (614, 20303), (615, 20306), (618, 20321), (625, 20348), (629, 20366), (633, 20378), (641, 20414), (667, 20516), (682, 20579), (690, 20615), (691, 20618), (693, 20624), (697, 20639), (702, 20657), (708, 20681), (712, 20696), (713, 20699), (718, 20717), (723, 20750), (728, 20771), (740, 20828), (747, 20882), (749, 20891), (760, 20945), (776, 20972), (778, 20990), (785, 21038), (786, 21044), (794, 21116), (810, 21194), (814, 21209), (821, 21248), (830, 21272), (840, 21341), (845, 21362), (867, 21455), (890, 21584),

Gene: Jaylociraptor\_23 Start: 16160, Stop: 21646, Start Num: 2

Candidate Starts for Jaylociraptor\_23:

(1, 16139), (Start: 2 @16160 has 31 MA's), (3, 16190), (12, 16334), (40, 16544), (51, 16664), (58, 16703), (64, 16733), (66, 16757), (67, 16763), (68, 16784), (69, 16799), (75, 16886), (82, 16976), (83, 17012), (84, 17021), (86, 17048), (92, 17087), (93, 17096), (97, 17114), (101, 17135), (106, 17177), (107, 17186), (117, 17294), (128, 17399), (139, 17495), (148, 17561), (171, 17711), (187, 17795), (191, 17816), (203, 17858), (228, 17993), (262, 18125), (264, 18134), (275, 18170), (277, 18179), (286, 18221), (293, 18254), (333, 18407), (336, 18428), (345, 18491), (346, 18497), (348, 18503), (353, 18530), (358, 18551), (360, 18557), (361, 18560), (367, 18584), (376, 18629), (379, 18638), (380, 18641), (382, 18650), (395, 18725), (401, 18752), (407, 18770), (414, 18788), (417, 18806), (421, 18827), (432, 18878), (445, 18944), (449, 18959), (468, 19046), (470, 19064), (475, 19091), (501, 19184), (510, 19226), (511, 19235), (519, 19271), (520, 19274), (524, 19289), (525, 19292), (528, 19304), (542, 19346), (543, 19349), (557, 19397), (561, 19433), (563, 19439), (568, 19460), (577, 19484), (586, 19514), (604, 19574), (614, 19607), (615, 19610), (618, 19625), (621, 19637), (627, 19661), (637, 19703), (640, 19715), (641, 19718), (655, 19766), (660, 19796), (665, 19811), (672, 19844), (675, 19859), (691, 19922), (710, 19994), (712, 20000), (713, 20003), (721, 20039), (734, 20105), (748, 20192), (749, 20195), (766, 20294), (774, 20342), (775, 20348), (797, 20507), (850, 20780), (860, 20816), (878, 20882), (895, 21005), (906, 21098), (910, 21119), (915, 21167), (917, 21173), (918, 21179), (925, 21224), (940, 21332), (942, 21353), (947, 21401), (953, 21488), (960, 21590), (961, 21599),

Gene: Jazzy4900\_24 Start: 18500, Stop: 23560, Start Num: 4

Candidate Starts for Jazzy4900\_24:

(4, 18500), (5, 18530), (8, 18584), (11, 18605), (29, 18812), (31, 18821), (32, 18824), (47, 18941), (52, 18974), (58, 19007), (65, 19046), (68, 19088), (75, 19190), (77, 19226), (82, 19280), (83, 19316), (85,

19337), (92, 19391), (114, 19523), (115, 19535), (116, 19544), (121, 19580), (139, 19757), (145, 19790), (153, 19862), (157, 19895), (158, 19898), (173, 19982), (208, 20207), (212, 20243), (215, 20267), (218, 20279), (237, 20405), (271, 20573), (295, 20726), (296, 20729), (315, 20852), (316, 20858), (324, 20909), (331, 20972), (336, 21026), (340, 21056), (353, 21128), (361, 21158), (363, 21167), (367, 21182), (376, 21227), (382, 21248), (384, 21254), (391, 21299), (413, 21386), (421, 21428), (435, 21503), (452, 21572), (466, 21635), (470, 21665), (481, 21713), (484, 21722), (498, 21782), (519, 21878), (528, 21911), (530, 21920), (536, 21932), (537, 21935), (542, 21953), (547, 21974), (557, 22004), (558, 22013), (561, 22040), (569, 22070), (577, 22091), (591, 22136), (599, 22163), (604, 22181), (625, 22259), (636, 22307), (637, 22310), (647, 22346), (657, 22388), (665, 22418), (666, 22421), (670, 22445), (672, 22451), (673, 22460), (695, 22541), (708, 22592), (713, 22610), (720, 22643), (721, 22646), (734, 22712), (747, 22793), (772, 22922), (778, 22967), (788, 23057), (805, 23138), (806, 23147), (810, 23171), (820, 23216), (825, 23234), (830, 23249), (840, 23318), (871, 23429),

Gene: Jodelie19\_33 Start: 24936, Stop: 30050, Start Num: 17

Candidate Starts for Jodelie19\_33:

(Start: 17 @24936 has 129 MA's), (Start: 20 @24966 has 3 MA's), (25, 25011), (47, 25155), (58, 25221), (67, 25281), (68, 25302), (75, 25404), (83, 25530), (86, 25566), (92, 25605), (101, 25653), (106, 25695), (112, 25767), (117, 25815), (131, 25941), (139, 26016), (140, 26028), (145, 26049), (157, 26154), (158, 26157), (203, 26379), (215, 26445), (232, 26535), (241, 26571), (255, 26622), (262, 26670), (265, 26682), (293, 26826), (301, 26865), (308, 26892), (336, 27054), (342, 27102), (345, 27117), (346, 27123), (351, 27141), (362, 27189), (376, 27255), (388, 27306), (389, 27318), (392, 27336), (405, 27390), (417, 27435), (421, 27456), (424, 27465), (428, 27486), (432, 27507), (442, 27561), (443, 27564), (445, 27573), (451, 27594), (453, 27606), (458, 27627), (460, 27633), (464, 27651), (470, 27687), (476, 27717), (489, 27765), (493, 27777), (495, 27783), (496, 27786), (498, 27798), (499, 27801), (504, 27822), (511, 27858), (524, 27912), (525, 27915), (528, 27927), (534, 27936), (538, 27948), (539, 27951), (551, 27999), (556, 28014), (557, 28017), (558, 28026), (560, 28047), (566, 28074), (567, 28077), (573, 28101), (577, 28113), (582, 28134), (584, 28146), (586, 28155), (590, 28167), (598, 28194), (601, 28203), (608, 28227), (610, 28233), (615, 28251), (628, 28305), (632, 28320), (650, 28389), (676, 28500), (705, 28611), (717, 28656), (732, 28746), (754, 28869), (757, 28890), (767, 28953), (771, 28980), (781, 29052), (783, 29064), (784, 29073), (789, 29127), (793, 29148), (795, 29160), (831, 29322), (847, 29409), (855, 29427), (861, 29457), (868, 29475), (869, 29478), (872, 29490), (878, 29517), (893, 29628), (901, 29703), (909, 29751), (917, 29805), (921, 29832), (938, 29946), (948, 30036),

Gene: JoyLin\_26 Start: 20566, Stop: 25143, Start Num: 17

Candidate Starts for JoyLin\_26:

(Start: 17 @20566 has 129 MA's), (Start: 20 @20599 has 3 MA's), (43, 20746), (54, 20836), (55, 20839), (75, 21034), (83, 21160), (92, 21235), (101, 21283), (106, 21325), (117, 21445), (130, 21562), (140, 21658), (171, 21862), (174, 21874), (188, 21955), (216, 22090), (234, 22183), (251, 22246), (260, 22285), (276, 22348), (280, 22363), (328, 22567), (336, 22618), (351, 22705), (357, 22735), (360, 22747), (361, 22750), (364, 22762), (367, 22774), (373, 22801), (383, 22843), (390, 22888), (410, 22969), (412, 22975), (417, 22999), (419, 23005), (432, 23071), (437, 23107), (444, 23131), (452, 23164), (457, 23191), (459, 23200), (463, 23218), (468, 23239), (473, 23272), (479, 23299), (480, 23302), (493, 23353), (501, 23383), (503, 23395), (519, 23470), (525, 23491), (527, 23497), (531, 23512), (557, 23596), (558, 23605), (561, 23632), (577, 23683), (588, 23719), (604, 23773), (625, 23851), (648, 23941), (656, 23971), (664, 24007), (672, 24043), (682, 24082), (696, 24139), (702, 24160), (708, 24184), (709, 24187), (712, 24199), (714, 24205), (732, 24295), (738, 24325), (739, 24328), (740, 24331), (748, 24391), (752, 24406), (758, 24436), (763, 24460), (778, 24559), (793, 24679), (794, 24685), (815, 24787), (817, 24799), (820, 24808), (840, 24904), (842, 24907), (888, 25132),

Gene: JulesRay\_31 Start: 20535, Stop: 25637, Start Num: 17

Candidate Starts for JulesRay\_31:

(Start: 17 @20535 has 129 MA's), (Start: 20 @20565 has 3 MA's), (42, 20703), (47, 20754), (49, 20763), (50, 20778), (53, 20799), (58, 20820), (64, 20850), (67, 20880), (68, 20901), (75, 21003), (80, 21063), (84, 21138), (85, 21150), (88, 21174), (92, 21204), (95, 21219), (101, 21252), (106, 21294), (111, 21345), (118, 21399), (119, 21402), (129, 21501), (132, 21525), (145, 21621), (154, 21705), (157, 21726), (158, 21729), (169, 21798), (171, 21804), (172, 21810), (209, 21987), (220, 22038), (229, 22089), (241, 22143), (242, 22146), (269, 22278), (278, 22317), (293, 22398), (294, 22401), (309, 22476), (322, 22533), (334, 22617), (336, 22626), (346, 22695), (348, 22701), (351, 22713), (353, 22728), (354, 22731), (359, 22752), (371, 22800), (376, 22827), (382, 22848), (385, 22857), (388, 22878), (389, 22890), (391, 22899), (392, 22908), (405, 22962), (406, 22965), (413, 22986), (421, 23028), (430, 23064), (432, 23079), (433, 23088), (435, 23103), (437, 23115), (440, 23124), (448, 23157), (451, 23166), (469, 23250), (470, 23259), (473, 23274), (478, 23295), (489, 23337), (496, 23358), (499, 23373), (501, 23379), (509, 23415), (511, 23430), (525, 23487), (528, 23499), (534, 23508), (538, 23520), (541, 23532), (542, 23538), (547, 23559), (551, 23571), (557, 23589), (558, 23598), (559, 23613), (560, 23619), (563, 23631), (573, 23673), (574, 23676), (577, 23685), (582, 23706), (584, 23718), (598, 23766), (601, 23775), (608, 23799), (610, 23805), (615, 23823), (616, 23832), (639, 23922), (644, 23940), (645, 23943), (650, 23961), (691, 24132), (705, 24183), (734, 24327), (757, 24462), (765, 24513), (783, 24636), (789, 24699), (799, 24747), (800, 24753), (802, 24762), (811, 24810), (828, 24882), (839, 24942), (844, 24963), (845, 24966), (856, 25017), (858, 25026), (861, 25044), (869, 25065), (872, 25077), (885, 25170), (893, 25215), (901, 25290), (903, 25308), (907, 25329), (920, 25416), (937, 25527), (948, 25623),

Gene: Kardashian\_22 Start: 16096, Stop: 21585, Start Num: 2

Candidate Starts for Kardashian\_22:

(1, 16075), (Start: 2 @16096 has 31 MA's), (3, 16126), (12, 16270), (18, 16354), (22, 16405), (51, 16612), (64, 16681), (75, 16834), (77, 16870), (83, 16960), (92, 17035), (101, 17083), (106, 17125), (127, 17317), (132, 17383), (148, 17512), (160, 17593), (171, 17662), (188, 17755), (205, 17818), (209, 17845), (233, 17968), (264, 18085), (265, 18088), (267, 18097), (287, 18175), (293, 18205), (312, 18277), (321, 18292), (336, 18367), (345, 18430), (346, 18436), (349, 18445), (361, 18499), (379, 18577), (380, 18580), (401, 18691), (414, 18727), (417, 18745), (432, 18817), (438, 18856), (449, 18898), (460, 18949), (469, 18994), (486, 19072), (503, 19135), (505, 19141), (510, 19165), (511, 19174), (518, 19207), (519, 19210), (561, 19372), (562, 19375), (563, 19378), (566, 19393), (574, 19414), (577, 19423), (595, 19483), (600, 19498), (604, 19513), (614, 19546), (616, 19558), (619, 19567), (630, 19612), (633, 19621), (640, 19654), (641, 19657), (646, 19675), (672, 19783), (692, 19864), (694, 19870), (706, 19915), (713, 19942), (719, 19969), (721, 19978), (734, 20044), (748, 20131), (749, 20134), (755, 20167), (766, 20233), (774, 20281), (775, 20287), (779, 20323), (797, 20446), (843, 20680), (873, 20806), (887, 20893), (897, 20974), (899, 20995), (906, 21037), (910, 21058), (917, 21112), (925, 21163), (932, 21211), (939, 21265), (941, 21280), (956, 21454),

Gene: Kardesai\_20 Start: 16796, Stop: 21274, Start Num: 17

Candidate Starts for Kardesai\_20:

(Start: 16 @16775 has 2 MA's), (Start: 17 @16796 has 129 MA's), (Start: 20 @16826 has 3 MA's), (28, 16880), (37, 16937), (64, 17111), (67, 17141), (74, 17222), (75, 17264), (76, 17282), (80, 17324), (85, 17411), (89, 17450), (92, 17465), (95, 17480), (101, 17513), (112, 17591), (114, 17606), (120, 17654), (122, 17669), (127, 17711), (135, 17807), (139, 17840), (145, 17873), (158, 17981), (168, 18047), (176, 18080), (179, 18089), (181, 18092), (184, 18110), (243, 18392), (253, 18416), (257, 18446), (297, 18605), (312, 18665), (336, 18794), (342, 18842), (349, 18872), (353, 18896), (356, 18908), (358, 18917), (361, 18926), (367, 18950), (376, 18995), (382, 19016), (395, 19091), (403, 19124), (413, 19154), (417, 19175), (421, 19196), (433, 19256), (434, 19262), (442, 19301), (447, 19319), (466, 19403), (470, 19433), (476, 19463), (481, 19481), (493, 19529), (499, 19553), (503, 19571), (506, 19580), (507, 19589), (509, 19595), (512, 19616), (519, 19646), (528, 19679), (529, 19685), (534, 19694), (542, 19721), (549, 19748), (558, 19781), (561, 19808), (563, 19814), (570, 19841), (577, 19859), (586, 19889), (589, 19898), (592, 19910), (594, 19916), (595, 19919), (599, 19931),

(604, 19949), (612, 19976), (614, 19982), (631, 20051), (637, 20078), (641, 20093), (667, 20195), (690, 20294), (691, 20297), (693, 20303), (697, 20318), (702, 20336), (712, 20375), (713, 20378), (718, 20396), (723, 20429), (728, 20450), (740, 20507), (747, 20561), (760, 20624), (776, 20651), (778, 20669), (785, 20717), (786, 20723), (794, 20795), (810, 20873), (814, 20888), (821, 20927), (830, 20951), (834, 20975), (840, 21020), (845, 21041), (890, 21263),

Gene: KeaneyLin\_20 Start: 17193, Stop: 21671, Start Num: 17

Candidate Starts for KeaneyLin\_20:

(Start: 16 @17172 has 2 MA's), (Start: 17 @17193 has 129 MA's), (Start: 20 @17223 has 3 MA's), (28, 17277), (37, 17334), (64, 17508), (67, 17538), (74, 17619), (75, 17661), (76, 17679), (80, 17721), (85, 17808), (92, 17862), (95, 17877), (101, 17910), (112, 17988), (114, 18003), (120, 18051), (127, 18108), (135, 18204), (139, 18237), (145, 18270), (158, 18378), (168, 18444), (176, 18477), (179, 18486), (181, 18489), (184, 18507), (243, 18789), (253, 18813), (257, 18843), (297, 19002), (312, 19062), (336, 19191), (342, 19239), (349, 19269), (353, 19293), (356, 19305), (358, 19314), (361, 19323), (367, 19347), (376, 19392), (382, 19413), (395, 19488), (399, 19509), (400, 19512), (403, 19521), (413, 19551), (421, 19593), (433, 19653), (434, 19659), (435, 19668), (443, 19701), (446, 19713), (447, 19716), (461, 19779), (466, 19800), (470, 19830), (476, 19860), (481, 19878), (493, 19926), (499, 19950), (503, 19968), (506, 19977), (512, 20013), (519, 20043), (528, 20076), (529, 20082), (530, 20085), (536, 20097), (542, 20118), (557, 20169), (558, 20178), (564, 20214), (574, 20247), (577, 20256), (586, 20286), (589, 20295), (592, 20307), (604, 20346), (612, 20373), (614, 20379), (615, 20382), (618, 20397), (625, 20424), (633, 20454), (641, 20490), (667, 20592), (682, 20655), (690, 20691), (697, 20715), (702, 20733), (712, 20772), (714, 20778), (718, 20793), (722, 20814), (723, 20826), (747, 20958), (760, 21021), (776, 21048), (778, 21066), (785, 21114), (786, 21120), (794, 21192), (810, 21270), (817, 21306), (821, 21324), (830, 21348), (834, 21372), (840, 21417), (845, 21438), (890, 21660),

Gene: Kenosha\_32 Start: 24052, Stop: 29163, Start Num: 17

Candidate Starts for Kenosha\_32:

(Start: 17 @24052 has 129 MA's), (Start: 20 @24082 has 3 MA's), (25, 24127), (47, 24271), (57, 24331), (58, 24337), (67, 24397), (68, 24418), (75, 24520), (82, 24610), (83, 24646), (86, 24682), (92, 24721), (97, 24748), (101, 24769), (106, 24811), (112, 24883), (117, 24931), (131, 25057), (139, 25132), (140, 25144), (145, 25165), (157, 25270), (158, 25273), (178, 25381), (229, 25633), (255, 25738), (267, 25807), (272, 25828), (286, 25909), (287, 25912), (293, 25939), (301, 25978), (308, 26005), (333, 26146), (336, 26167), (345, 26230), (346, 26236), (351, 26254), (352, 26260), (362, 26302), (365, 26314), (367, 26323), (376, 26368), (388, 26419), (389, 26431), (391, 26440), (392, 26449), (417, 26548), (421, 26569), (424, 26578), (429, 26602), (430, 26605), (431, 26611), (442, 26674), (443, 26677), (445, 26686), (448, 26698), (450, 26704), (451, 26707), (453, 26719), (458, 26740), (460, 26746), (461, 26749), (466, 26770), (470, 26800), (473, 26815), (476, 26830), (489, 26878), (493, 26890), (495, 26896), (496, 26899), (498, 26911), (499, 26914), (511, 26971), (524, 27025), (525, 27028), (534, 27049), (538, 27061), (539, 27064), (550, 27109), (551, 27112), (556, 27127), (557, 27130), (558, 27139), (559, 27154), (560, 27160), (561, 27166), (566, 27187), (567, 27190), (571, 27202), (574, 27217), (577, 27226), (582, 27247), (584, 27259), (590, 27280), (598, 27307), (608, 27340), (610, 27346), (615, 27364), (622, 27394), (632, 27433), (679, 27625), (697, 27694), (717, 27769), (732, 27859), (757, 28003), (777, 28132), (781, 28165), (783, 28177), (784, 28186), (789, 28240), (793, 28261), (795, 28273), (799, 28288), (811, 28351), (831, 28435), (847, 28522), (855, 28540), (856, 28543), (861, 28570), (868, 28588), (869, 28591), (871, 28597), (872, 28603), (878, 28630), (893, 28741), (901, 28816), (912, 28885), (917, 28918), (920, 28942), (938, 29059), (948, 29149),

Gene: Kerry\_29 Start: 20616, Stop: 25730, Start Num: 17

Candidate Starts for Kerry\_29:

(Start: 17 @20616 has 129 MA's), (Start: 20 @20646 has 3 MA's), (43, 20793), (46, 20829), (47, 20835), (53, 20880), (58, 20901), (64, 20931), (75, 21096), (80, 21156), (84, 21231), (88, 21267), (89,

21282), (92, 21297), (95, 21312), (101, 21345), (111, 21438), (118, 21492), (119, 21495), (145, 21714), (157, 21819), (158, 21822), (169, 21891), (171, 21897), (209, 22080), (220, 22131), (229, 22182), (241, 22236), (242, 22239), (269, 22371), (288, 22473), (293, 22491), (294, 22494), (309, 22569), (322, 22626), (334, 22710), (336, 22719), (351, 22806), (359, 22845), (371, 22893), (376, 22920), (382, 22941), (385, 22950), (388, 22971), (389, 22983), (391, 22992), (392, 23001), (397, 23028), (405, 23055), (406, 23058), (413, 23079), (421, 23121), (427, 23148), (430, 23157), (432, 23172), (433, 23181), (435, 23196), (437, 23208), (440, 23217), (443, 23229), (448, 23250), (451, 23259), (469, 23343), (470, 23352), (473, 23367), (474, 23370), (478, 23388), (481, 23400), (482, 23403), (489, 23430), (496, 23451), (499, 23466), (509, 23508), (511, 23523), (525, 23580), (528, 23592), (534, 23601), (538, 23613), (541, 23625), (542, 23631), (547, 23652), (551, 23664), (557, 23682), (558, 23691), (559, 23706), (560, 23712), (563, 23724), (573, 23766), (574, 23769), (577, 23778), (582, 23799), (584, 23811), (598, 23859), (601, 23868), (608, 23892), (610, 23898), (615, 23916), (616, 23925), (622, 23946), (639, 24015), (644, 24033), (645, 24036), (650, 24054), (680, 24180), (691, 24225), (705, 24276), (734, 24420), (757, 24555), (765, 24606), (777, 24684), (783, 24729), (789, 24792), (792, 24810), (799, 24840), (800, 24846), (811, 24903), (828, 24975), (839, 25035), (844, 25056), (845, 25059), (856, 25110), (858, 25119), (869, 25158), (872, 25170), (885, 25263), (893, 25308), (901, 25383), (907, 25422), (912, 25452), (920, 25509), (937, 25620), (948, 25716),

Gene: KevinMinion\_26 Start: 20189, Stop: 24733, Start Num: 29

Candidate Starts for KevinMinion\_26:

(Start: 16 @20075 has 2 MA's), (Start: 17 @20096 has 129 MA's), (Start: 20 @20126 has 3 MA's), (28, 20180), (29, 20189), (58, 20459), (59, 20462), (67, 20519), (68, 20540), (74, 20600), (75, 20642), (80, 20702), (85, 20789), (89, 20828), (92, 20843), (95, 20858), (101, 20891), (105, 20930), (106, 20933), (112, 20969), (114, 20984), (120, 21032), (157, 21356), (161, 21368), (169, 21428), (180, 21470), (189, 21530), (190, 21536), (193, 21545), (198, 21560), (199, 21569), (220, 21668), (221, 21680), (222, 21689), (224, 21701), (294, 21986), (308, 22046), (312, 22055), (336, 22196), (342, 22244), (347, 22268), (349, 22274), (358, 22319), (361, 22328), (367, 22352), (371, 22370), (381, 22415), (382, 22418), (385, 22427), (395, 22493), (406, 22535), (410, 22547), (413, 22556), (417, 22577), (428, 22628), (433, 22658), (435, 22673), (445, 22715), (450, 22733), (460, 22781), (461, 22784), (471, 22841), (498, 22949), (501, 22958), (511, 23009), (519, 23045), (528, 23078), (530, 23087), (536, 23099), (542, 23120), (544, 23126), (549, 23147), (557, 23171), (558, 23180), (574, 23249), (575, 23252), (576, 23255), (577, 23258), (586, 23288), (592, 23309), (599, 23330), (604, 23348), (607, 23357), (612, 23375), (627, 23435), (635, 23468), (638, 23483), (640, 23489), (641, 23492), (654, 23537), (660, 23570), (662, 23576), (667, 23594), (696, 23714), (697, 23717), (702, 23735), (721, 23813), (725, 23837), (740, 23906), (747, 23960), (772, 24089), (778, 24134), (807, 24317), (810, 24338), (816, 24362), (830, 24413), (840, 24482), (845, 24500),

Gene: Kinny\_29 Start: 20843, Stop: 25486, Start Num: 17

Candidate Starts for Kinny\_29:

(Start: 16 @20822 has 2 MA's), (Start: 17 @20843 has 129 MA's), (Start: 20 @20873 has 3 MA's), (28, 20927), (32, 20948), (37, 20984), (47, 21152), (57, 21212), (67, 21278), (68, 21299), (75, 21401), (76, 21419), (80, 21461), (84, 21536), (85, 21548), (92, 21602), (95, 21617), (101, 21650), (112, 21728), (114, 21743), (125, 21833), (131, 21902), (145, 22010), (151, 22064), (157, 22115), (158, 22118), (169, 22187), (180, 22229), (189, 22289), (190, 22295), (193, 22304), (198, 22319), (199, 22328), (220, 22427), (221, 22439), (224, 22460), (277, 22667), (282, 22691), (294, 22745), (312, 22814), (336, 22955), (347, 23027), (349, 23033), (358, 23078), (360, 23084), (361, 23087), (367, 23111), (371, 23129), (382, 23177), (385, 23186), (406, 23294), (413, 23315), (417, 23336), (427, 23384), (433, 23417), (435, 23432), (440, 23453), (450, 23492), (473, 23609), (498, 23708), (499, 23711), (511, 23768), (516, 23795), (519, 23804), (528, 23837), (530, 23846), (536, 23858), (557, 23930), (558, 23939), (566, 23987), (574, 24008), (576, 24014), (577, 24017), (595, 24077), (604, 24107), (607, 24116), (629, 24203), (630, 24206), (631, 24209), (635, 24227), (643, 24257), (654, 24296), (660, 24329), (661, 24332), (662, 24335), (664, 24341), (667, 24353), (679, 24407), (687, 24443),

(697, 24476), (702, 24494), (708, 24518), (709, 24521), (730, 24623), (737, 24653), (740, 24665), (747, 24719), (750, 24731), (772, 24848), (778, 24893), (787, 24962), (810, 25097), (816, 25121), (827, 25166), (830, 25172), (837, 25211), (840, 25241),

Gene: Leathea\_26 Start: 18979, Stop: 23520, Start Num: 17

Candidate Starts for Leathea\_26:

(Start: 16 @18958 has 2 MA's), (Start: 17 @18979 has 129 MA's), (Start: 20 @19009 has 3 MA's), (28, 19063), (47, 19198), (62, 19282), (67, 19324), (74, 19405), (75, 19447), (80, 19507), (84, 19582), (89, 19633), (92, 19648), (95, 19663), (101, 19696), (104, 19720), (112, 19774), (114, 19789), (120, 19837), (131, 19948), (140, 20035), (145, 20056), (158, 20164), (169, 20233), (180, 20275), (189, 20335), (190, 20341), (193, 20350), (199, 20374), (220, 20473), (221, 20485), (224, 20506), (294, 20791), (312, 20860), (336, 20998), (338, 21010), (349, 21076), (353, 21100), (358, 21121), (360, 21127), (361, 21130), (367, 21154), (371, 21172), (382, 21220), (385, 21229), (389, 21262), (410, 21349), (413, 21358), (417, 21379), (433, 21460), (460, 21583), (461, 21586), (462, 21592), (465, 21604), (466, 21607), (498, 21751), (499, 21754), (511, 21811), (519, 21847), (528, 21880), (530, 21889), (536, 21901), (549, 21949), (557, 21973), (558, 21982), (566, 22030), (574, 22051), (577, 22060), (594, 22117), (595, 22120), (599, 22132), (604, 22150), (627, 22237), (629, 22246), (630, 22249), (631, 22252), (635, 22270), (654, 22339), (660, 22372), (661, 22375), (664, 22384), (667, 22396), (687, 22486), (697, 22519), (702, 22537), (704, 22546), (708, 22561), (709, 22564), (740, 22708), (747, 22762), (750, 22774), (758, 22813), (772, 22891), (778, 22936), (806, 23116), (810, 23140), (816, 23164), (827, 23209), (830, 23215), (837, 23254), (840, 23284), (860, 23362), (862, 23371), (880, 23452),

Gene: Lewando\_29 Start: 20912, Stop: 25555, Start Num: 17

Candidate Starts for Lewando\_29:

(Start: 16 @20891 has 2 MA's), (Start: 17 @20912 has 129 MA's), (Start: 20 @20942 has 3 MA's), (28, 20996), (32, 21017), (37, 21053), (47, 21221), (49, 21230), (57, 21281), (67, 21347), (68, 21368), (75, 21470), (76, 21488), (80, 21530), (84, 21605), (85, 21617), (92, 21671), (95, 21686), (101, 21719), (112, 21797), (114, 21812), (125, 21902), (131, 21971), (145, 22079), (151, 22133), (158, 22187), (169, 22256), (180, 22298), (189, 22358), (190, 22364), (193, 22373), (198, 22388), (199, 22397), (220, 22496), (221, 22508), (224, 22529), (277, 22736), (282, 22760), (294, 22814), (312, 22883), (336, 23024), (347, 23096), (349, 23102), (358, 23147), (360, 23153), (361, 23156), (367, 23180), (371, 23198), (381, 23243), (382, 23246), (384, 23252), (385, 23255), (389, 23288), (392, 23306), (406, 23363), (413, 23384), (417, 23405), (427, 23453), (433, 23486), (435, 23501), (450, 23561), (462, 23618), (473, 23678), (498, 23777), (499, 23780), (511, 23837), (516, 23864), (519, 23873), (528, 23906), (530, 23915), (536, 23927), (542, 23948), (557, 23999), (558, 24008), (566, 24056), (574, 24077), (576, 24083), (577, 24086), (595, 24146), (604, 24176), (607, 24185), (629, 24272), (630, 24275), (631, 24278), (635, 24296), (638, 24311), (643, 24326), (654, 24365), (660, 24398), (661, 24401), (662, 24404), (664, 24410), (667, 24422), (697, 24545), (702, 24563), (725, 24665), (740, 24734), (747, 24788), (772, 24917), (778, 24962), (787, 25031), (810, 25166), (816, 25190), (827, 25235), (830, 25241), (837, 25280), (840, 25310), (845, 25328),

Gene: LibertyBell\_21 Start: 14934, Stop: 20459, Start Num: 2

Candidate Starts for LibertyBell\_21:

(1, 14913), (Start: 2 @14934 has 31 MA's), (3, 14964), (4, 14988), (26, 15264), (33, 15306), (34, 15309), (38, 15339), (58, 15552), (75, 15735), (83, 15861), (86, 15897), (92, 15936), (99, 15969), (101, 15984), (106, 16026), (127, 16218), (128, 16251), (145, 16380), (171, 16563), (172, 16569), (188, 16656), (205, 16719), (232, 16866), (240, 16899), (261, 16968), (267, 16998), (275, 17022), (293, 17106), (297, 17118), (312, 17178), (327, 17214), (336, 17268), (346, 17337), (360, 17397), (361, 17400), (376, 17469), (380, 17481), (410, 17619), (414, 17628), (417, 17646), (449, 17799), (473, 17919), (478, 17940), (481, 17952), (486, 17973), (487, 17976), (498, 18015), (505, 18042), (508, 18057), (510, 18066), (511, 18075), (518, 18108), (519, 18111), (545, 18195), (561, 18273), (562, 18276), (563, 18279), (566, 18294), (571, 18309), (574, 18315), (575, 18318), (577, 18324), (595,

18384), (600, 18399), (604, 18414), (614, 18447), (618, 18465), (629, 18510), (630, 18513), (637, 18543), (640, 18555), (641, 18558), (646, 18576), (665, 18651), (672, 18684), (682, 18723), (690, 18759), (696, 18780), (707, 18822), (711, 18837), (714, 18846), (717, 18858), (719, 18870), (721, 18879), (723, 18894), (728, 18915), (766, 19134), (797, 19347), (843, 19581), (873, 19707), (894, 19836), (904, 19932), (906, 19938), (910, 19959), (925, 20064), (930, 20103), (933, 20121), (939, 20166), (945, 20211), (951, 20307),

Gene: LilHuddy\_27 Start: 20332, Stop: 24921, Start Num: 17

Candidate Starts for LilHuddy\_27:

(Start: 16 @20311 has 2 MA's), (Start: 17 @20332 has 129 MA's), (Start: 20 @20362 has 3 MA's), (28, 20416), (57, 20611), (62, 20635), (64, 20647), (67, 20677), (74, 20758), (75, 20800), (76, 20818), (80, 20860), (82, 20890), (84, 20935), (85, 20947), (92, 21001), (95, 21016), (96, 21022), (101, 21049), (108, 21112), (112, 21127), (114, 21142), (117, 21175), (120, 21190), (126, 21238), (135, 21343), (145, 21409), (152, 21478), (158, 21517), (161, 21526), (165, 21541), (168, 21583), (169, 21586), (182, 21637), (205, 21751), (216, 21808), (230, 21880), (238, 21919), (245, 21946), (256, 21988), (278, 22084), (299, 22186), (301, 22192), (312, 22228), (336, 22375), (338, 22387), (343, 22429), (344, 22432), (353, 22477), (358, 22498), (361, 22507), (362, 22510), (367, 22531), (382, 22597), (383, 22600), (406, 22714), (413, 22735), (416, 22753), (417, 22756), (435, 22852), (437, 22864), (466, 22984), (470, 23014), (484, 23071), (493, 23107), (496, 23116), (498, 23128), (503, 23149), (506, 23158), (517, 23218), (527, 23251), (529, 23263), (530, 23266), (535, 23278), (544, 23305), (547, 23320), (549, 23326), (550, 23329), (557, 23350), (558, 23359), (574, 23428), (577, 23437), (589, 23476), (604, 23527), (631, 23629), (636, 23653), (637, 23656), (646, 23689), (647, 23692), (648, 23695), (649, 23698), (661, 23752), (662, 23755), (668, 23776), (691, 23875), (700, 23905), (703, 23917), (706, 23929), (710, 23947), (713, 23956), (714, 23959), (743, 24115), (747, 24139), (749, 24148), (762, 24211), (765, 24226), (778, 24313), (779, 24325), (786, 24367), (798, 24451), (810, 24517), (816, 24541), (827, 24586), (829, 24589), (830, 24592), (841, 24661), (842, 24664), (846, 24688), (884, 24871),

Gene: Linda\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for Linda\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (687, 20750), (689, 20756), (691, 20762), (693, 20768), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605), (875, 21683),

Gene: Loretta\_26 Start: 19877, Stop: 24463, Start Num: 17

Candidate Starts for Loretta\_26:

(Start: 16 @19856 has 2 MA's), (Start: 17 @19877 has 129 MA's), (Start: 20 @19907 has 3 MA's), (28, 19961), (37, 20018), (44, 20066), (57, 20156), (64, 20192), (67, 20222), (75, 20345), (80, 20405), (84,



20480), (92, 20546), (95, 20561), (101, 20594), (112, 20672), (114, 20687), (116, 20708), (117, 20720), (123, 20765), (127, 20792), (130, 20837), (135, 20888), (139, 20921), (145, 20954), (161, 21071), (167, 21119), (168, 21128), (192, 21245), (196, 21257), (197, 21260), (239, 21467), (256, 21527), (278, 21623), (289, 21677), (299, 21725), (301, 21731), (312, 21767), (336, 21911), (344, 21968), (346, 21980), (358, 22034), (361, 22043), (362, 22046), (367, 22067), (368, 22070), (377, 22115), (382, 22133), (395, 22208), (396, 22211), (398, 22223), (406, 22250), (413, 22271), (416, 22289), (417, 22292), (421, 22313), (433, 22373), (435, 22388), (436, 22391), (441, 22415), (442, 22418), (443, 22421), (450, 22448), (455, 22472), (457, 22484), (470, 22550), (473, 22565), (474, 22568), (478, 22586), (479, 22592), (480, 22595), (481, 22598), (493, 22643), (494, 22646), (496, 22652), (498, 22664), (503, 22685), (514, 22739), (515, 22742), (522, 22769), (529, 22799), (536, 22817), (540, 22826), (542, 22838), (547, 22859), (557, 22889), (558, 22898), (566, 22946), (569, 22955), (571, 22961), (577, 22976), (579, 22982), (586, 23006), (589, 23015), (602, 23057), (604, 23066), (615, 23102), (625, 23144), (629, 23162), (631, 23168), (636, 23192), (646, 23228), (660, 23288), (672, 23336), (673, 23345), (682, 23375), (700, 23444), (710, 23486), (713, 23495), (742, 23642), (743, 23654), (750, 23690), (765, 23765), (772, 23807), (778, 23852), (779, 23864), (786, 23906), (810, 24056), (816, 24080), (827, 24125), (829, 24128), (830, 24131), (834, 24155), (837, 24170), (841, 24200), (846, 24227), (887, 24422), (889, 24440),

Gene: LucySwiss\_26 Start: 19986, Stop: 24578, Start Num: 17

Candidate Starts for LucySwiss\_26:

(Start: 16 @19965 has 2 MA's), (Start: 17 @19986 has 129 MA's), (Start: 20 @20016 has 3 MA's), (28, 20070), (32, 20091), (37, 20127), (47, 20205), (57, 20265), (62, 20289), (64, 20301), (67, 20331), (70, 20382), (74, 20412), (75, 20454), (76, 20472), (80, 20514), (82, 20544), (84, 20589), (85, 20601), (92, 20655), (95, 20670), (97, 20682), (101, 20703), (114, 20796), (117, 20829), (120, 20844), (126, 20892), (145, 21063), (160, 21177), (161, 21180), (167, 21228), (189, 21342), (196, 21366), (235, 21561), (239, 21576), (240, 21582), (245, 21600), (261, 21672), (278, 21738), (299, 21840), (301, 21846), (311, 21879), (312, 21882), (319, 21909), (336, 22026), (344, 22083), (346, 22095), (358, 22149), (361, 22158), (362, 22161), (367, 22182), (376, 22227), (382, 22248), (404, 22359), (406, 22365), (413, 22386), (416, 22404), (421, 22428), (433, 22488), (435, 22503), (436, 22506), (442, 22533), (443, 22536), (470, 22665), (473, 22680), (474, 22683), (478, 22701), (479, 22707), (480, 22710), (484, 22722), (493, 22758), (496, 22767), (503, 22800), (514, 22854), (515, 22857), (519, 22875), (523, 22887), (530, 22917), (536, 22932), (540, 22941), (542, 22953), (558, 23013), (569, 23070), (574, 23082), (577, 23091), (589, 23130), (592, 23142), (602, 23172), (604, 23181), (624, 23256), (625, 23259), (629, 23277), (646, 23343), (648, 23349), (649, 23352), (661, 23406), (662, 23409), (693, 23535), (694, 23538), (700, 23559), (708, 23592), (710, 23601), (728, 23682), (735, 23715), (741, 23748), (750, 23805), (762, 23865), (766, 23889), (778, 23967), (779, 23979), (798, 24105), (806, 24147), (816, 24195), (823, 24228), (827, 24240), (830, 24246), (833, 24267), (834, 24270), (835, 24276), (841, 24315), (846, 24342), (884, 24528), (889, 24555),

Gene: Madamato\_23 Start: 16133, Stop: 21622, Start Num: 2

Candidate Starts for Madamato\_23:

(1, 16112), (Start: 2 @16133 has 31 MA's), (3, 16163), (12, 16307), (21, 16433), (40, 16517), (47, 16610), (49, 16619), (58, 16676), (64, 16706), (67, 16736), (68, 16757), (75, 16859), (83, 16985), (92, 17060), (101, 17108), (106, 17150), (127, 17339), (148, 17534), (155, 17594), (156, 17597), (161, 17618), (171, 17684), (203, 17831), (228, 17966), (264, 18107), (275, 18143), (277, 18152), (286, 18194), (293, 18227), (297, 18239), (308, 18290), (333, 18383), (336, 18404), (346, 18473), (348, 18479), (358, 18527), (361, 18536), (367, 18560), (376, 18605), (379, 18614), (380, 18617), (382, 18626), (401, 18728), (406, 18743), (414, 18764), (421, 18803), (423, 18809), (449, 18935), (460, 18986), (470, 19040), (486, 19109), (487, 19112), (499, 19154), (505, 19178), (510, 19202), (511, 19211), (519, 19247), (525, 19268), (557, 19373), (561, 19409), (563, 19415), (577, 19460), (604, 19550), (609, 19565), (614, 19583), (621, 19613), (625, 19628), (627, 19637), (633, 19658), (637, 19679), (640, 19691), (646, 19712), (665, 19787), (672, 19820), (691, 19898), (706, 19952), (710, 19970), (713, 19979), (721, 20015), (724, 20036), (758, 20225), (766, 20270), (797, 20483), (850,

20756), (906, 21074), (910, 21095), (915, 21143), (917, 21149), (918, 21155), (925, 21200), (932, 21248), (940, 21308), (944, 21338), (947, 21377), (960, 21566), (961, 21575),

Gene: Madvan\_32 Start: 23284, Stop: 28395, Start Num: 17

Candidate Starts for Madvan\_32:

(Start: 17 @23284 has 129 MA's), (Start: 20 @23314 has 3 MA's), (25, 23359), (47, 23503), (57, 23563), (58, 23569), (67, 23629), (68, 23650), (75, 23752), (82, 23842), (83, 23878), (86, 23914), (92, 23953), (97, 23980), (101, 24001), (106, 24043), (117, 24163), (131, 24289), (139, 24364), (140, 24376), (145, 24397), (153, 24469), (157, 24502), (158, 24505), (178, 24613), (229, 24865), (255, 24970), (267, 25039), (286, 25141), (287, 25144), (293, 25171), (301, 25210), (308, 25237), (336, 25399), (342, 25447), (346, 25468), (351, 25486), (362, 25534), (365, 25546), (376, 25600), (388, 25651), (389, 25663), (391, 25672), (392, 25681), (405, 25735), (417, 25780), (420, 25795), (421, 25801), (424, 25810), (425, 25816), (429, 25834), (430, 25837), (431, 25843), (432, 25852), (442, 25906), (443, 25909), (445, 25918), (450, 25936), (451, 25939), (453, 25951), (458, 25972), (460, 25978), (461, 25981), (466, 26002), (470, 26032), (473, 26047), (481, 26080), (489, 26110), (493, 26122), (495, 26128), (496, 26131), (498, 26143), (499, 26146), (511, 26203), (524, 26257), (525, 26260), (534, 26281), (538, 26293), (539, 26296), (550, 26341), (551, 26344), (556, 26359), (557, 26362), (558, 26371), (559, 26386), (560, 26392), (561, 26398), (566, 26419), (567, 26422), (571, 26434), (574, 26449), (577, 26458), (582, 26479), (584, 26491), (590, 26512), (598, 26539), (608, 26572), (610, 26578), (615, 26596), (622, 26626), (632, 26665), (650, 26734), (697, 26926), (717, 27001), (732, 27091), (757, 27235), (767, 27298), (777, 27364), (781, 27397), (783, 27409), (789, 27472), (793, 27493), (795, 27505), (800, 27526), (811, 27583), (831, 27667), (847, 27754), (855, 27772), (861, 27802), (868, 27820), (869, 27823), (871, 27829), (872, 27835), (878, 27862), (893, 27973), (901, 28048), (912, 28117), (917, 28150), (920, 28174), (938, 28291), (948, 28381),

Gene: MajinBuu\_33 Start: 23507, Stop: 28621, Start Num: 17

Candidate Starts for MajinBuu\_33:

(Start: 17 @23507 has 129 MA's), (Start: 20 @23537 has 3 MA's), (25, 23582), (47, 23726), (58, 23792), (67, 23852), (68, 23873), (75, 23975), (83, 24101), (86, 24137), (92, 24176), (101, 24224), (106, 24266), (112, 24338), (117, 24386), (131, 24512), (139, 24587), (140, 24599), (145, 24620), (157, 24725), (158, 24728), (203, 24950), (215, 25016), (232, 25106), (241, 25142), (255, 25193), (262, 25241), (265, 25253), (293, 25397), (301, 25436), (308, 25463), (336, 25625), (342, 25673), (345, 25688), (346, 25694), (351, 25712), (362, 25760), (376, 25826), (388, 25877), (389, 25889), (392, 25907), (405, 25961), (417, 26006), (421, 26027), (424, 26036), (428, 26057), (432, 26078), (442, 26132), (443, 26135), (445, 26144), (451, 26165), (453, 26177), (458, 26198), (460, 26204), (464, 26222), (470, 26258), (476, 26288), (489, 26336), (493, 26348), (495, 26354), (496, 26357), (498, 26369), (499, 26372), (504, 26393), (511, 26429), (524, 26483), (525, 26486), (534, 26507), (538, 26519), (539, 26522), (551, 26570), (556, 26585), (557, 26588), (558, 26597), (560, 26618), (566, 26645), (567, 26648), (573, 26672), (577, 26684), (582, 26705), (584, 26717), (586, 26726), (590, 26738), (598, 26765), (601, 26774), (608, 26798), (610, 26804), (615, 26822), (628, 26876), (632, 26891), (650, 26960), (665, 27020), (676, 27071), (705, 27182), (717, 27227), (732, 27317), (754, 27440), (757, 27461), (767, 27524), (771, 27551), (781, 27623), (783, 27635), (784, 27644), (789, 27698), (793, 27719), (795, 27731), (831, 27893), (847, 27980), (855, 27998), (861, 28028), (868, 28046), (869, 28049), (872, 28061), (878, 28088), (893, 28199), (901, 28274), (909, 28322), (917, 28376), (921, 28403), (938, 28517), (948, 28607),

Gene: Makai\_26 Start: 20118, Stop: 24710, Start Num: 17

Candidate Starts for Makai\_26:

(Start: 16 @20097 has 2 MA's), (Start: 17 @20118 has 129 MA's), (Start: 20 @20148 has 3 MA's), (28, 20202), (37, 20259), (47, 20337), (57, 20397), (62, 20421), (67, 20463), (75, 20586), (76, 20604), (80, 20646), (84, 20721), (85, 20733), (89, 20772), (92, 20787), (95, 20802), (101, 20835), (112, 20913), (114, 20928), (123, 21006), (131, 21087), (145, 21195), (161, 21312), (163, 21318), (187, 21462), (188, 21471), (205, 21537), (256, 21774), (267, 21834), (277, 21867), (278, 21870), (299, 21972),

(301, 21978), (312, 22014), (336, 22158), (342, 22206), (343, 22212), (344, 22215), (353, 22260), (358, 22281), (361, 22290), (362, 22293), (367, 22314), (368, 22317), (382, 22380), (383, 22383), (406, 22497), (413, 22518), (416, 22536), (417, 22539), (428, 22590), (433, 22620), (435, 22635), (437, 22647), (463, 22758), (466, 22767), (470, 22797), (492, 22887), (493, 22890), (496, 22899), (498, 22911), (503, 22932), (507, 22950), (514, 22986), (519, 23007), (528, 23040), (545, 23097), (557, 23139), (558, 23148), (566, 23196), (574, 23217), (577, 23226), (586, 23256), (604, 23316), (615, 23352), (623, 23388), (635, 23436), (647, 23481), (649, 23487), (655, 23508), (660, 23538), (672, 23586), (682, 23625), (683, 23628), (710, 23736), (713, 23745), (720, 23778), (738, 23868), (745, 23916), (762, 24000), (778, 24102), (779, 24114), (786, 24156), (805, 24273), (806, 24282), (816, 24330), (827, 24375), (830, 24381), (841, 24450), (846, 24477), (884, 24660),

Gene: Maya\_23 Start: 16174, Stop: 21660, Start Num: 2

Candidate Starts for Maya\_23:

(1, 16153), (Start: 2 @16174 has 31 MA's), (3, 16204), (12, 16348), (40, 16558), (51, 16678), (58, 16717), (64, 16747), (66, 16771), (67, 16777), (68, 16798), (69, 16813), (75, 16900), (82, 16990), (83, 17026), (84, 17035), (86, 17062), (92, 17101), (93, 17110), (97, 17128), (101, 17149), (106, 17191), (107, 17200), (117, 17308), (128, 17413), (139, 17509), (148, 17575), (171, 17725), (187, 17809), (191, 17830), (203, 17872), (228, 18007), (262, 18139), (264, 18148), (275, 18184), (277, 18193), (286, 18235), (293, 18268), (299, 18298), (333, 18421), (336, 18442), (345, 18505), (346, 18511), (348, 18517), (353, 18544), (358, 18565), (360, 18571), (361, 18574), (367, 18598), (376, 18643), (379, 18652), (380, 18655), (382, 18664), (395, 18739), (401, 18766), (407, 18784), (414, 18802), (417, 18820), (421, 18841), (432, 18892), (445, 18958), (449, 18973), (468, 19060), (470, 19078), (475, 19105), (501, 19198), (510, 19240), (511, 19249), (519, 19285), (520, 19288), (524, 19303), (525, 19306), (528, 19318), (542, 19360), (543, 19363), (557, 19411), (561, 19447), (563, 19453), (568, 19474), (577, 19498), (586, 19528), (604, 19588), (614, 19621), (615, 19624), (618, 19639), (621, 19651), (627, 19675), (637, 19717), (640, 19729), (641, 19732), (655, 19780), (660, 19810), (665, 19825), (672, 19858), (675, 19873), (691, 19936), (710, 20008), (712, 20014), (713, 20017), (721, 20053), (734, 20119), (748, 20206), (749, 20209), (766, 20308), (774, 20356), (775, 20362), (797, 20521), (850, 20794), (860, 20830), (878, 20896), (895, 21019), (906, 21112), (910, 21133), (915, 21181), (917, 21187), (918, 21193), (925, 21238), (940, 21346), (942, 21367), (947, 21415), (953, 21502), (960, 21604), (961, 21613),

Gene: MediumFry\_24 Start: 19326, Stop: 23909, Start Num: 17

Candidate Starts for MediumFry\_24:

(Start: 16 @19305 has 2 MA's), (Start: 17 @19326 has 129 MA's), (Start: 20 @19356 has 3 MA's), (28, 19410), (37, 19467), (44, 19515), (64, 19641), (67, 19671), (74, 19752), (75, 19794), (76, 19812), (80, 19854), (82, 19884), (84, 19929), (85, 19941), (92, 19995), (95, 20010), (96, 20016), (101, 20043), (108, 20106), (112, 20121), (114, 20136), (117, 20169), (120, 20184), (121, 20193), (126, 20232), (135, 20337), (152, 20472), (158, 20511), (161, 20520), (164, 20529), (169, 20580), (170, 20583), (196, 20706), (197, 20709), (205, 20745), (240, 20922), (247, 20943), (256, 20976), (278, 21072), (289, 21126), (299, 21174), (301, 21180), (312, 21216), (336, 21363), (353, 21465), (358, 21486), (361, 21495), (362, 21498), (367, 21519), (368, 21522), (382, 21585), (395, 21660), (398, 21675), (404, 21696), (406, 21702), (413, 21723), (417, 21744), (421, 21765), (433, 21825), (435, 21840), (436, 21843), (441, 21867), (442, 21870), (470, 22002), (473, 22017), (474, 22020), (478, 22038), (479, 22044), (481, 22050), (493, 22095), (494, 22098), (496, 22104), (499, 22119), (503, 22137), (508, 22158), (514, 22191), (515, 22194), (519, 22212), (536, 22269), (540, 22278), (542, 22290), (547, 22311), (549, 22317), (550, 22320), (557, 22341), (558, 22350), (567, 22401), (569, 22407), (574, 22419), (577, 22428), (587, 22461), (604, 22518), (623, 22590), (624, 22593), (625, 22596), (629, 22614), (631, 22620), (636, 22644), (646, 22680), (648, 22686), (652, 22701), (660, 22740), (672, 22788), (682, 22827), (691, 22866), (700, 22896), (710, 22938), (713, 22947), (741, 23085), (742, 23094), (743, 23106), (750, 23142), (772, 23259), (775, 23280), (779, 23316), (786, 23358), (794, 23430), (816, 23532), (827, 23577), (830, 23583), (841, 23652), (846, 23679), (884, 23859), (887, 23868),

Gene: Meibysrarus\_23 Start: 16160, Stop: 21646, Start Num: 2

Candidate Starts for Meibysrarus\_23:

(1, 16139), (Start: 2 @16160 has 31 MA's), (3, 16190), (12, 16334), (40, 16544), (51, 16664), (58, 16703), (64, 16733), (66, 16757), (67, 16763), (68, 16784), (69, 16799), (75, 16886), (82, 16976), (83, 17012), (84, 17021), (86, 17048), (92, 17087), (93, 17096), (97, 17114), (101, 17135), (106, 17177), (107, 17186), (117, 17294), (128, 17399), (139, 17495), (148, 17561), (171, 17711), (187, 17795), (203, 17858), (228, 17993), (240, 18047), (264, 18134), (275, 18170), (277, 18179), (286, 18221), (293, 18254), (299, 18284), (333, 18407), (336, 18428), (345, 18491), (346, 18497), (348, 18503), (353, 18530), (358, 18551), (360, 18557), (361, 18560), (367, 18584), (376, 18629), (379, 18638), (380, 18641), (382, 18650), (395, 18725), (401, 18752), (407, 18770), (414, 18788), (417, 18806), (421, 18827), (432, 18878), (445, 18944), (449, 18959), (468, 19046), (470, 19064), (475, 19091), (501, 19184), (510, 19226), (511, 19235), (519, 19271), (520, 19274), (524, 19289), (525, 19292), (528, 19304), (542, 19346), (543, 19349), (557, 19397), (561, 19433), (563, 19439), (568, 19460), (577, 19484), (586, 19514), (604, 19574), (614, 19607), (615, 19610), (618, 19625), (621, 19637), (627, 19661), (637, 19703), (640, 19715), (641, 19718), (655, 19766), (660, 19796), (665, 19811), (672, 19844), (675, 19859), (691, 19922), (710, 19994), (712, 20000), (713, 20003), (721, 20039), (734, 20105), (748, 20192), (749, 20195), (766, 20294), (774, 20342), (775, 20348), (797, 20507), (850, 20780), (860, 20816), (878, 20882), (895, 21005), (906, 21098), (910, 21119), (915, 21167), (917, 21173), (918, 21179), (925, 21224), (940, 21332), (942, 21353), (947, 21401), (953, 21488), (960, 21590), (961, 21599),

Gene: Michelle\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for Michelle\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (238, 18827), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (384, 19490), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (689, 20756), (691, 20762), (693, 20768), (702, 20801), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605),

Gene: Miek\_21 Start: 15072, Stop: 20549, Start Num: 2

Candidate Starts for Miek\_21:

(Start: 2 @15072 has 31 MA's), (3, 15102), (7, 15183), (9, 15213), (10, 15216), (12, 15246), (75, 15798), (83, 15924), (90, 15987), (92, 15999), (100, 16041), (106, 16089), (113, 16173), (127, 16281), (145, 16443), (148, 16476), (157, 16548), (171, 16626), (203, 16773), (275, 17085), (277, 17094), (292, 17157), (336, 17331), (341, 17373), (346, 17400), (349, 17409), (361, 17463), (367, 17487), (380, 17544), (402, 17658), (414, 17691), (421, 17730), (431, 17772), (432, 17781), (437, 17817), (449, 17862), (460, 17913), (468, 17949), (470, 17967), (476, 17997), (486, 18036), (487, 18039), (498, 18078), (499, 18081), (506, 18108), (510, 18129), (511, 18138), (518, 18171), (519, 18174), (525, 18195), (545, 18258), (561, 18336), (563, 18342), (574, 18378), (575, 18381), (576, 18384),

(577, 18387), (595, 18447), (598, 18456), (604, 18477), (613, 18507), (614, 18510), (629, 18573), (630, 18576), (631, 18579), (641, 18621), (646, 18639), (655, 18669), (665, 18714), (667, 18723), (672, 18747), (690, 18822), (692, 18828), (706, 18879), (713, 18906), (717, 18921), (719, 18933), (721, 18942), (725, 18966), (739, 19032), (748, 19095), (753, 19119), (766, 19197), (774, 19245), (779, 19287), (797, 19410), (820, 19527), (843, 19644), (861, 19725), (873, 19770), (882, 19815), (906, 20001), (910, 20022), (911, 20034), (917, 20076), (925, 20127), (932, 20175), (936, 20214), (944, 20265), (952, 20388), (958, 20427),

Gene: MiniBagel\_26 Start: 21214, Stop: 25803, Start Num: 17

Candidate Starts for MiniBagel\_26:

(Start: 16 @21193 has 2 MA's), (Start: 17 @21214 has 129 MA's), (Start: 20 @21244 has 3 MA's), (28, 21298), (32, 21319), (37, 21355), (57, 21493), (64, 21529), (67, 21559), (75, 21682), (76, 21700), (80, 21742), (87, 21850), (92, 21883), (95, 21898), (101, 21931), (112, 22009), (114, 22024), (116, 22045), (117, 22057), (121, 22081), (127, 22129), (135, 22225), (139, 22258), (145, 22291), (154, 22375), (161, 22408), (203, 22621), (217, 22696), (235, 22789), (239, 22804), (240, 22810), (245, 22828), (247, 22837), (256, 22870), (257, 22879), (273, 22951), (284, 22996), (299, 23068), (301, 23074), (311, 23107), (312, 23110), (319, 23137), (336, 23251), (344, 23308), (346, 23320), (358, 23374), (361, 23383), (362, 23386), (367, 23407), (376, 23452), (382, 23473), (404, 23584), (406, 23590), (413, 23611), (416, 23629), (421, 23653), (433, 23713), (435, 23728), (436, 23731), (442, 23758), (443, 23761), (450, 23788), (468, 23872), (470, 23890), (473, 23905), (474, 23908), (478, 23926), (479, 23932), (480, 23935), (484, 23947), (485, 23953), (493, 23983), (496, 23992), (503, 24025), (514, 24079), (515, 24082), (519, 24100), (530, 24142), (536, 24157), (540, 24166), (542, 24178), (558, 24238), (569, 24295), (574, 24307), (577, 24316), (589, 24355), (592, 24367), (594, 24373), (598, 24385), (602, 24397), (604, 24406), (624, 24481), (625, 24484), (629, 24502), (646, 24568), (649, 24577), (661, 24631), (662, 24634), (700, 24784), (708, 24817), (710, 24826), (715, 24841), (719, 24862), (728, 24907), (735, 24940), (741, 24973), (750, 25030), (762, 25090), (775, 25168), (778, 25192), (779, 25204), (798, 25330), (806, 25372), (816, 25420), (823, 25453), (827, 25465), (830, 25471), (833, 25492), (834, 25495), (835, 25501), (841, 25540), (846, 25567), (884, 25753), (889, 25780),

Gene: Mooshroom\_21 Start: 16796, Stop: 21274, Start Num: 17

Candidate Starts for Mooshroom\_21:

(Start: 16 @16775 has 2 MA's), (Start: 17 @16796 has 129 MA's), (Start: 20 @16826 has 3 MA's), (28, 16880), (37, 16937), (64, 17111), (67, 17141), (74, 17222), (75, 17264), (76, 17282), (80, 17324), (85, 17411), (89, 17450), (92, 17465), (95, 17480), (101, 17513), (112, 17591), (114, 17606), (120, 17654), (122, 17669), (127, 17711), (135, 17807), (139, 17840), (145, 17873), (158, 17981), (168, 18047), (176, 18080), (179, 18089), (181, 18092), (184, 18110), (243, 18392), (253, 18416), (257, 18446), (297, 18605), (312, 18665), (336, 18794), (342, 18842), (349, 18872), (353, 18896), (356, 18908), (358, 18917), (361, 18926), (367, 18950), (376, 18995), (382, 19016), (395, 19091), (403, 19124), (413, 19154), (417, 19175), (421, 19196), (433, 19256), (434, 19262), (442, 19301), (447, 19319), (466, 19403), (470, 19433), (476, 19463), (481, 19481), (493, 19529), (499, 19553), (503, 19571), (506, 19580), (507, 19589), (509, 19595), (512, 19616), (519, 19646), (528, 19679), (529, 19685), (534, 19694), (542, 19721), (549, 19748), (558, 19781), (561, 19808), (563, 19814), (570, 19841), (577, 19859), (586, 19889), (589, 19898), (592, 19910), (594, 19916), (595, 19919), (599, 19931), (604, 19949), (612, 19976), (614, 19982), (631, 20051), (637, 20078), (641, 20093), (667, 20195), (690, 20294), (691, 20297), (693, 20303), (697, 20318), (702, 20336), (712, 20375), (713, 20378), (718, 20396), (723, 20429), (728, 20450), (740, 20507), (747, 20561), (760, 20624), (776, 20651), (778, 20669), (785, 20717), (786, 20723), (794, 20795), (810, 20873), (814, 20888), (821, 20927), (830, 20951), (834, 20975), (840, 21020), (845, 21041), (890, 21263),

Gene: Moozy\_19 Start: 13482, Stop: 18731, Start Num: 16

Candidate Starts for Moozy\_19:

(Start: 16 @13482 has 2 MA's), (Start: 17 @13503 has 129 MA's), (Start: 20 @13533 has 3 MA's), (40, 13635), (43, 13686), (58, 13794), (75, 13977), (83, 14103), (86, 14139), (92, 14178), (106, 14268), (148, 14655), (171, 14805), (176, 14829), (189, 14901), (238, 15132), (261, 15210), (264, 15228), (265, 15231), (275, 15264), (298, 15372), (318, 15432), (336, 15513), (346, 15582), (358, 15636), (379, 15723), (380, 15726), (382, 15735), (401, 15837), (414, 15873), (417, 15891), (428, 15942), (449, 16044), (452, 16056), (455, 16071), (469, 16140), (470, 16149), (476, 16179), (488, 16224), (495, 16245), (502, 16275), (505, 16287), (506, 16290), (510, 16311), (511, 16320), (519, 16356), (528, 16389), (554, 16473), (561, 16518), (562, 16521), (563, 16524), (577, 16569), (586, 16599), (600, 16644), (604, 16659), (614, 16692), (619, 16713), (621, 16722), (623, 16731), (629, 16755), (630, 16758), (633, 16767), (637, 16788), (640, 16800), (648, 16827), (657, 16866), (662, 16887), (670, 16923), (672, 16929), (706, 17061), (708, 17070), (710, 17079), (713, 17088), (714, 17091), (717, 17103), (718, 17106), (719, 17115), (721, 17124), (740, 17217), (747, 17271), (766, 17379), (769, 17394), (775, 17433), (797, 17592), (843, 17826), (860, 17901), (905, 18180), (906, 18183), (910, 18204), (915, 18252), (917, 18258), (933, 18366), (939, 18411), (942, 18438), (950, 18540), (961, 18693),

Gene: Mossy\_33 Start: 24706, Stop: 29808, Start Num: 17

Candidate Starts for Mossy\_33:

(Start: 17 @24706 has 129 MA's), (Start: 20 @24736 has 3 MA's), (25, 24781), (46, 24919), (47, 24925), (58, 24991), (64, 25021), (75, 25186), (80, 25246), (85, 25333), (88, 25357), (92, 25387), (95, 25402), (101, 25435), (111, 25528), (131, 25696), (145, 25804), (146, 25816), (152, 25873), (157, 25909), (158, 25912), (169, 25981), (171, 25987), (209, 26170), (210, 26176), (229, 26272), (232, 26290), (267, 26446), (291, 26572), (293, 26581), (333, 26791), (336, 26812), (337, 26818), (346, 26881), (351, 26899), (356, 26926), (361, 26944), (376, 27013), (383, 27037), (385, 27043), (388, 27064), (391, 27085), (405, 27148), (417, 27193), (421, 27214), (427, 27241), (429, 27247), (432, 27265), (433, 27274), (437, 27301), (442, 27319), (443, 27322), (445, 27331), (448, 27343), (450, 27349), (451, 27352), (453, 27364), (473, 27460), (481, 27493), (486, 27514), (488, 27520), (489, 27523), (493, 27535), (496, 27544), (499, 27559), (501, 27565), (502, 27571), (504, 27580), (507, 27595), (508, 27598), (511, 27616), (519, 27652), (525, 27673), (534, 27694), (542, 27724), (546, 27739), (547, 27745), (550, 27754), (552, 27760), (555, 27769), (557, 27775), (558, 27784), (559, 27799), (560, 27805), (565, 27829), (569, 27841), (577, 27871), (582, 27892), (584, 27904), (590, 27925), (591, 27928), (598, 27952), (601, 27961), (608, 27985), (610, 27991), (615, 28009), (616, 28018), (617, 28021), (631, 28075), (639, 28108), (676, 28258), (679, 28270), (683, 28282), (691, 28318), (697, 28339), (717, 28414), (745, 28582), (751, 28612), (756, 28645), (771, 28738), (781, 28810), (783, 28822), (784, 28831), (789, 28885), (799, 28933), (811, 28996), (821, 29047), (831, 29080), (847, 29167), (855, 29185), (861, 29215), (869, 29236), (871, 29242), (872, 29248), (878, 29275), (881, 29302), (893, 29386), (899, 29449), (901, 29461), (919, 29572), (921, 29590), (927, 29638), (948, 29794),

Gene: MrAaronian\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for MrAaronian\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294),

(577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (689, 20756), (691, 20762), (693, 20768), (702, 20801), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605),

Gene: Mudcat\_21 Start: 19094, Stop: 23572, Start Num: 17

Candidate Starts for Mudcat\_21:

(Start: 16 @19073 has 2 MA's), (Start: 17 @19094 has 129 MA's), (Start: 20 @19124 has 3 MA's), (23, 19157), (28, 19178), (64, 19409), (67, 19439), (74, 19520), (75, 19562), (76, 19580), (80, 19622), (85, 19709), (92, 19763), (95, 19778), (101, 19811), (112, 19889), (114, 19904), (120, 19952), (122, 19967), (127, 20009), (131, 20063), (135, 20105), (136, 20108), (139, 20138), (145, 20171), (158, 20279), (168, 20345), (176, 20378), (179, 20387), (181, 20390), (184, 20408), (243, 20690), (253, 20714), (257, 20744), (297, 20903), (303, 20936), (312, 20963), (336, 21092), (349, 21170), (358, 21215), (361, 21224), (364, 21236), (367, 21248), (373, 21275), (376, 21293), (382, 21314), (395, 21389), (399, 21410), (400, 21413), (403, 21422), (413, 21452), (417, 21473), (421, 21494), (433, 21554), (434, 21560), (442, 21599), (443, 21602), (447, 21617), (461, 21680), (466, 21701), (470, 21731), (476, 21761), (481, 21779), (493, 21827), (499, 21851), (503, 21869), (506, 21878), (507, 21887), (509, 21893), (512, 21914), (519, 21944), (528, 21977), (529, 21983), (530, 21986), (536, 21998), (542, 22019), (557, 22070), (558, 22079), (562, 22109), (564, 22115), (574, 22148), (577, 22157), (586, 22187), (589, 22196), (592, 22208), (604, 22247), (612, 22274), (614, 22280), (615, 22283), (618, 22298), (625, 22325), (629, 22343), (633, 22355), (641, 22391), (667, 22493), (682, 22556), (690, 22592), (691, 22595), (693, 22601), (697, 22616), (702, 22634), (708, 22658), (712, 22673), (713, 22676), (718, 22694), (723, 22727), (728, 22748), (740, 22805), (747, 22859), (749, 22868), (760, 22922), (776, 22949), (778, 22967), (785, 23015), (786, 23021), (794, 23093), (810, 23171), (814, 23186), (821, 23225), (830, 23249), (840, 23318), (845, 23339), (890, 23561),

Gene: Mysticmoon\_32 Start: 23315, Stop: 28429, Start Num: 17

Candidate Starts for Mysticmoon\_32:

(Start: 17 @23315 has 129 MA's), (Start: 20 @23345 has 3 MA's), (25, 23390), (47, 23534), (57, 23594), (58, 23600), (65, 23639), (67, 23660), (68, 23681), (75, 23783), (83, 23909), (86, 23945), (92, 23984), (97, 24011), (101, 24032), (106, 24074), (117, 24194), (139, 24395), (145, 24428), (148, 24461), (154, 24512), (157, 24533), (158, 24536), (171, 24611), (199, 24746), (213, 24812), (216, 24827), (229, 24896), (232, 24914), (240, 24947), (246, 24968), (248, 24977), (255, 25001), (267, 25070), (272, 25091), (278, 25124), (279, 25127), (291, 25196), (293, 25205), (312, 25292), (324, 25352), (332, 25403), (336, 25436), (337, 25442), (346, 25505), (351, 25523), (361, 25568), (376, 25637), (383, 25661), (385, 25667), (388, 25688), (392, 25718), (405, 25772), (406, 25775), (420, 25832), (421, 25838), (429, 25871), (432, 25889), (433, 25898), (435, 25913), (437, 25925), (442, 25943), (443, 25946), (445, 25955), (448, 25967), (450, 25973), (451, 25976), (458, 26009), (463, 26030), (470, 26069), (481, 26117), (485, 26132), (486, 26138), (489, 26147), (493, 26159), (496, 26168), (498, 26180), (499, 26183), (500, 26186), (501, 26189), (502, 26195), (504, 26204), (516, 26267), (523, 26288), (525, 26297), (534, 26318), (547, 26369), (555, 26393), (557, 26399), (559, 26423), (560, 26429), (566, 26456), (567, 26459), (577, 26495), (582, 26516), (584, 26528), (586, 26537), (590, 26549), (598, 26576), (601, 26585), (608, 26609), (610, 26615), (615, 26633), (622, 26663), (632, 26702), (639, 26732), (648, 26762), (679, 26894), (697, 26963), (732, 27128), (754, 27251), (781, 27434), (783, 27446), (784, 27455), (789, 27509), (799, 27557), (818, 27659), (824, 27680), (836, 27728), (847, 27791), (855, 27809), (868, 27857), (869, 27860), (872, 27872), (878, 27899), (893, 28010), (901, 28085), (917, 28187), (921, 28214), (922, 28217), (938, 28325), (945, 28364), (948, 28415),

Gene: Nadmeg\_33 Start: 24715, Stop: 29826, Start Num: 17

Candidate Starts for Nadmeg\_33:

(Start: 17 @24715 has 129 MA's), (Start: 20 @24745 has 3 MA's), (25, 24790), (47, 24934), (57, 24994), (58, 25000), (67, 25060), (68, 25081), (75, 25183), (82, 25273), (83, 25309), (86, 25345), (92, 25384), (97, 25411), (101, 25432), (106, 25474), (112, 25546), (117, 25594), (131, 25720), (139, 25795), (140, 25807), (145, 25828), (157, 25933), (158, 25936), (178, 26044), (229, 26296), (255, 26401), (267, 26470), (272, 26491), (286, 26572), (287, 26575), (293, 26602), (301, 26641), (308, 26668), (333, 26809), (336, 26830), (345, 26893), (346, 26899), (351, 26917), (352, 26923), (362, 26965), (367, 26986), (376, 27031), (388, 27082), (389, 27094), (391, 27103), (392, 27112), (417, 27211), (421, 27232), (424, 27241), (429, 27265), (430, 27268), (431, 27274), (442, 27337), (443, 27340), (445, 27349), (450, 27367), (451, 27370), (453, 27382), (458, 27403), (460, 27409), (461, 27412), (466, 27433), (470, 27463), (473, 27478), (476, 27493), (489, 27541), (493, 27553), (495, 27559), (496, 27562), (498, 27574), (499, 27577), (511, 27634), (524, 27688), (534, 27712), (538, 27724), (539, 27727), (550, 27772), (551, 27775), (556, 27790), (557, 27793), (558, 27802), (559, 27817), (560, 27823), (561, 27829), (566, 27850), (567, 27853), (571, 27865), (574, 27880), (577, 27889), (582, 27910), (584, 27922), (590, 27943), (598, 27970), (608, 28003), (610, 28009), (615, 28027), (622, 28057), (632, 28096), (697, 28357), (717, 28432), (732, 28522), (757, 28666), (767, 28729), (777, 28795), (781, 28828), (783, 28840), (789, 28903), (793, 28924), (795, 28936), (800, 28957), (811, 29014), (831, 29098), (847, 29185), (855, 29203), (861, 29233), (868, 29251), (869, 29254), (871, 29260), (872, 29266), (878, 29293), (893, 29404), (901, 29479), (912, 29548), (917, 29581), (920, 29605), (938, 29722), (948, 29812),

Gene: Namo\_23 Start: 16166, Stop: 21652, Start Num: 2

Candidate Starts for Namo\_23:

(1, 16145), (Start: 2 @16166 has 31 MA's), (3, 16196), (12, 16340), (40, 16550), (50, 16667), (64, 16739), (67, 16769), (75, 16892), (83, 17018), (92, 17093), (101, 17141), (106, 17183), (127, 17372), (148, 17567), (157, 17639), (171, 17717), (191, 17822), (203, 17864), (228, 17999), (240, 18053), (264, 18140), (275, 18176), (277, 18185), (286, 18227), (293, 18260), (299, 18290), (333, 18413), (336, 18434), (345, 18497), (346, 18503), (348, 18509), (353, 18536), (358, 18557), (360, 18563), (361, 18566), (367, 18590), (376, 18635), (379, 18644), (380, 18647), (382, 18656), (395, 18731), (401, 18758), (407, 18776), (414, 18794), (417, 18812), (421, 18833), (432, 18884), (445, 18950), (449, 18965), (468, 19052), (470, 19070), (475, 19097), (500, 19187), (501, 19190), (510, 19232), (511, 19241), (519, 19277), (524, 19295), (525, 19298), (542, 19352), (543, 19355), (557, 19403), (561, 19439), (563, 19445), (568, 19466), (577, 19490), (586, 19520), (604, 19580), (614, 19613), (615, 19616), (618, 19631), (627, 19667), (637, 19709), (640, 19721), (641, 19724), (655, 19772), (660, 19802), (665, 19817), (672, 19850), (675, 19865), (691, 19928), (712, 20006), (713, 20009), (721, 20045), (734, 20111), (748, 20198), (749, 20201), (766, 20300), (774, 20348), (775, 20354), (797, 20513), (850, 20786), (860, 20822), (878, 20888), (895, 21011), (899, 21062), (906, 21104), (910, 21125), (915, 21173), (917, 21179), (918, 21185), (925, 21230), (940, 21338), (942, 21359), (947, 21407), (953, 21494), (960, 21596), (961, 21605),

Gene: NapoleonB\_21 Start: 17193, Stop: 21671, Start Num: 17

Candidate Starts for NapoleonB\_21:

(Start: 16 @17172 has 2 MA's), (Start: 17 @17193 has 129 MA's), (Start: 20 @17223 has 3 MA's), (23, 17256), (28, 17277), (64, 17508), (67, 17538), (68, 17559), (74, 17619), (75, 17661), (76, 17679), (80, 17721), (85, 17808), (92, 17862), (95, 17877), (101, 17910), (114, 18003), (120, 18051), (122, 18066), (127, 18108), (131, 18162), (139, 18237), (145, 18270), (158, 18378), (168, 18444), (176, 18477), (179, 18486), (181, 18489), (184, 18507), (243, 18789), (253, 18813), (257, 18843), (297, 19002), (312, 19062), (336, 19191), (349, 19269), (355, 19299), (358, 19314), (361, 19323), (367, 19347), (373, 19374), (376, 19392), (382, 19413), (395, 19488), (399, 19509), (403, 19521), (413, 19551), (421, 19593), (433, 19653), (434, 19659), (442, 19698), (461, 19779), (466, 19800), (470, 19830), (476, 19860), (481, 19878), (493, 19926), (499, 19950), (503, 19968), (506, 19977), (507, 19986), (509, 19992), (512, 20013), (519, 20043), (528, 20076), (529, 20082), (530, 20085), (536, 20097), (542, 20118), (557, 20169), (558, 20178), (562, 20208), (564, 20214), (574, 20247), (577, 20256), (586, 20286), (589, 20295), (592, 20307), (599, 20328), (604, 20346), (612, 20373), (614, 20379),



(615, 20382), (618, 20397), (625, 20424), (629, 20442), (633, 20454), (641, 20490), (667, 20592), (682, 20655), (690, 20691), (691, 20694), (693, 20700), (697, 20715), (702, 20733), (712, 20772), (713, 20775), (718, 20793), (723, 20826), (728, 20847), (740, 20904), (747, 20958), (749, 20967), (760, 21021), (776, 21048), (778, 21066), (785, 21114), (786, 21120), (794, 21192), (810, 21270), (814, 21285), (821, 21324), (830, 21348), (840, 21417), (845, 21438), (867, 21531), (890, 21660),

Gene: Nason\_22 Start: 17670, Stop: 22148, Start Num: 17

Candidate Starts for Nason\_22:

(Start: 16 @17649 has 2 MA's), (Start: 17 @17670 has 129 MA's), (Start: 20 @17700 has 3 MA's), (23, 17733), (28, 17754), (64, 17985), (67, 18015), (74, 18096), (75, 18138), (76, 18156), (80, 18198), (85, 18285), (92, 18339), (95, 18354), (101, 18387), (114, 18480), (120, 18528), (122, 18543), (127, 18585), (131, 18639), (139, 18714), (145, 18747), (158, 18855), (168, 18921), (176, 18954), (179, 18963), (181, 18966), (184, 18984), (243, 19266), (253, 19290), (257, 19320), (297, 19479), (312, 19539), (336, 19668), (342, 19716), (353, 19770), (356, 19782), (358, 19791), (361, 19800), (367, 19824), (376, 19869), (382, 19890), (395, 19965), (403, 19998), (413, 20028), (417, 20049), (421, 20070), (433, 20130), (434, 20136), (442, 20175), (443, 20178), (447, 20193), (461, 20256), (466, 20277), (470, 20307), (476, 20337), (481, 20355), (493, 20403), (499, 20427), (503, 20445), (506, 20454), (507, 20463), (509, 20469), (512, 20490), (519, 20520), (528, 20553), (529, 20559), (530, 20562), (536, 20574), (542, 20595), (557, 20646), (558, 20655), (562, 20685), (564, 20691), (574, 20724), (577, 20733), (586, 20763), (589, 20772), (592, 20784), (604, 20823), (612, 20850), (614, 20856), (615, 20859), (618, 20874), (625, 20901), (629, 20919), (633, 20931), (641, 20967), (667, 21069), (682, 21132), (690, 21168), (691, 21171), (693, 21177), (697, 21192), (702, 21210), (708, 21234), (712, 21249), (713, 21252), (718, 21270), (723, 21303), (728, 21324), (740, 21381), (747, 21435), (749, 21444), (760, 21498), (776, 21525), (778, 21543), (785, 21591), (786, 21597), (794, 21669), (810, 21747), (814, 21762), (821, 21801), (830, 21825), (840, 21894), (845, 21915), (867, 22008), (890, 22137),

Gene: Natasha\_22 Start: 16630, Stop: 21195, Start Num: 16

Candidate Starts for Natasha\_22:

(Start: 16 @16630 has 2 MA's), (Start: 17 @16651 has 129 MA's), (Start: 20 @16681 has 3 MA's), (61, 16948), (64, 16966), (67, 16996), (74, 17077), (75, 17119), (76, 17137), (80, 17179), (82, 17209), (84, 17254), (85, 17266), (92, 17320), (95, 17335), (96, 17341), (101, 17368), (108, 17431), (112, 17446), (114, 17461), (117, 17494), (120, 17509), (121, 17518), (126, 17557), (131, 17620), (139, 17695), (146, 17740), (148, 17761), (152, 17797), (158, 17836), (160, 17842), (169, 17905), (171, 17911), (193, 18022), (264, 18343), (278, 18391), (286, 18430), (291, 18454), (298, 18490), (299, 18493), (301, 18499), (312, 18535), (333, 18649), (336, 18670), (343, 18724), (351, 18757), (360, 18799), (361, 18802), (367, 18826), (374, 18862), (376, 18871), (379, 18880), (382, 18892), (391, 18943), (399, 18988), (406, 19009), (413, 19030), (417, 19051), (422, 19075), (431, 19114), (433, 19132), (435, 19147), (440, 19168), (450, 19207), (455, 19231), (466, 19279), (470, 19309), (473, 19324), (481, 19357), (483, 19363), (493, 19402), (498, 19423), (503, 19444), (506, 19453), (524, 19537), (528, 19552), (530, 19561), (536, 19573), (542, 19594), (557, 19645), (558, 19654), (574, 19723), (577, 19732), (586, 19762), (587, 19765), (600, 19807), (604, 19822), (618, 19873), (623, 19894), (636, 19948), (646, 19984), (647, 19987), (660, 20044), (661, 20047), (668, 20071), (677, 20113), (685, 20152), (687, 20158), (693, 20176), (695, 20182), (716, 20263), (723, 20302), (728, 20323), (731, 20341), (740, 20380), (741, 20389), (758, 20485), (762, 20506), (772, 20563), (778, 20608), (779, 20620), (782, 20641), (788, 20698), (793, 20728), (814, 20827), (830, 20887), (835, 20917), (841, 20956), (845, 20974),

Gene: Navi1117\_27 Start: 19247, Stop: 23806, Start Num: 17

Candidate Starts for Navi1117\_27:

(Start: 16 @19226 has 2 MA's), (Start: 17 @19247 has 129 MA's), (Start: 20 @19277 has 3 MA's), (28, 19331), (32, 19352), (58, 19532), (59, 19535), (67, 19592), (68, 19613), (74, 19673), (75, 19715), (80, 19775), (84, 19850), (92, 19916), (95, 19931), (101, 19964), (105, 20003), (106, 20006), (112, 20042),

(114, 20057), (120, 20105), (151, 20378), (158, 20432), (161, 20441), (169, 20501), (180, 20543), (189, 20603), (190, 20609), (193, 20618), (198, 20633), (199, 20642), (220, 20741), (221, 20753), (222, 20762), (224, 20774), (294, 21059), (308, 21119), (312, 21128), (334, 21260), (336, 21269), (342, 21317), (343, 21323), (347, 21341), (349, 21347), (353, 21371), (358, 21392), (361, 21401), (367, 21425), (371, 21443), (379, 21479), (381, 21488), (382, 21491), (385, 21500), (402, 21596), (406, 21608), (410, 21620), (413, 21629), (417, 21650), (421, 21671), (427, 21698), (433, 21731), (457, 21842), (460, 21854), (461, 21857), (472, 21914), (498, 22022), (507, 22061), (511, 22082), (516, 22109), (519, 22118), (528, 22151), (530, 22160), (536, 22172), (542, 22193), (549, 22220), (557, 22244), (558, 22253), (574, 22322), (575, 22325), (576, 22328), (577, 22331), (586, 22361), (592, 22382), (599, 22403), (602, 22412), (604, 22421), (612, 22448), (635, 22541), (638, 22556), (641, 22565), (647, 22586), (654, 22610), (660, 22643), (661, 22646), (662, 22649), (667, 22667), (697, 22790), (702, 22808), (715, 22856), (724, 22907), (740, 22979), (750, 23045), (765, 23120), (772, 23162), (778, 23207), (785, 23255), (807, 23390), (810, 23411), (816, 23435), (830, 23486), (840, 23555), (845, 23573),

Gene: Nightmare\_27 Start: 20521, Stop: 25113, Start Num: 17

Candidate Starts for Nightmare\_27:

(Start: 16 @20500 has 2 MA's), (Start: 17 @20521 has 129 MA's), (Start: 20 @20551 has 3 MA's), (28, 20605), (32, 20626), (37, 20662), (47, 20740), (57, 20800), (62, 20824), (64, 20836), (67, 20866), (70, 20917), (74, 20947), (75, 20989), (76, 21007), (80, 21049), (82, 21079), (84, 21124), (85, 21136), (92, 21190), (95, 21205), (97, 21217), (101, 21238), (114, 21331), (117, 21364), (120, 21379), (126, 21427), (145, 21598), (160, 21712), (161, 21715), (167, 21763), (189, 21877), (196, 21901), (235, 22096), (239, 22111), (240, 22117), (245, 22135), (261, 22207), (278, 22273), (299, 22375), (301, 22381), (311, 22414), (312, 22417), (319, 22444), (336, 22561), (344, 22618), (346, 22630), (358, 22684), (361, 22693), (362, 22696), (367, 22717), (376, 22762), (382, 22783), (404, 22894), (406, 22900), (413, 22921), (416, 22939), (421, 22963), (433, 23023), (435, 23038), (436, 23041), (442, 23068), (443, 23071), (470, 23200), (473, 23215), (474, 23218), (478, 23236), (479, 23242), (480, 23245), (484, 23257), (493, 23293), (496, 23302), (503, 23335), (514, 23389), (515, 23392), (519, 23410), (523, 23422), (530, 23452), (536, 23467), (540, 23476), (542, 23488), (558, 23548), (569, 23605), (574, 23617), (577, 23626), (589, 23665), (592, 23677), (602, 23707), (604, 23716), (624, 23791), (625, 23794), (629, 23812), (646, 23878), (648, 23884), (649, 23887), (661, 23941), (662, 23944), (693, 24070), (694, 24073), (700, 24094), (708, 24127), (710, 24136), (728, 24217), (735, 24250), (741, 24283), (750, 24340), (762, 24400), (766, 24424), (778, 24502), (779, 24514), (798, 24640), (806, 24682), (816, 24730), (823, 24763), (827, 24775), (830, 24781), (833, 24802), (834, 24805), (835, 24811), (841, 24850), (846, 24877), (884, 25063), (889, 25090),

Gene: Niktson\_26 Start: 20686, Stop: 25275, Start Num: 17

Candidate Starts for Niktson\_26:

(Start: 16 @20665 has 2 MA's), (Start: 17 @20686 has 129 MA's), (Start: 20 @20716 has 3 MA's), (28, 20770), (32, 20791), (37, 20827), (47, 20905), (57, 20965), (62, 20989), (64, 21001), (67, 21031), (74, 21112), (75, 21154), (76, 21172), (80, 21214), (82, 21244), (84, 21289), (85, 21301), (92, 21355), (95, 21370), (97, 21382), (101, 21403), (114, 21496), (117, 21529), (120, 21544), (126, 21592), (140, 21742), (145, 21763), (158, 21871), (160, 21877), (161, 21880), (167, 21928), (189, 22042), (196, 22066), (199, 22081), (203, 22093), (217, 22168), (224, 22213), (235, 22261), (239, 22276), (240, 22282), (245, 22300), (261, 22372), (270, 22414), (273, 22423), (284, 22468), (299, 22540), (301, 22546), (311, 22579), (312, 22582), (319, 22609), (336, 22723), (342, 22771), (344, 22780), (346, 22792), (358, 22846), (361, 22855), (362, 22858), (367, 22879), (376, 22924), (382, 22945), (404, 23056), (406, 23062), (413, 23083), (416, 23101), (417, 23104), (421, 23125), (433, 23185), (435, 23200), (436, 23203), (442, 23230), (443, 23233), (470, 23362), (473, 23377), (474, 23380), (478, 23398), (479, 23404), (484, 23419), (493, 23455), (496, 23464), (503, 23497), (514, 23551), (515, 23554), (519, 23572), (523, 23584), (530, 23614), (536, 23629), (540, 23638), (542, 23650), (558, 23710), (567, 23761), (569, 23767), (574, 23779), (577, 23788), (589, 23827), (592, 23839), (596, 23851), (602, 23869), (604, 23878), (624, 23953), (625, 23956), (629, 23974), (646, 24040), (648,

24046), (649, 24049), (661, 24103), (662, 24106), (693, 24232), (694, 24235), (700, 24256), (708, 24289), (710, 24298), (728, 24379), (735, 24412), (741, 24445), (750, 24502), (762, 24562), (766, 24586), (778, 24664), (779, 24676), (798, 24802), (806, 24844), (816, 24892), (823, 24925), (827, 24937), (830, 24943), (833, 24964), (834, 24967), (841, 25012), (846, 25039), (851, 25066), (852, 25069), (884, 25225), (889, 25252),

Gene: Nithya\_32 Start: 23499, Stop: 28610, Start Num: 17

Candidate Starts for Nithya\_32:

(Start: 17 @23499 has 129 MA's), (Start: 20 @23529 has 3 MA's), (25, 23574), (47, 23718), (58, 23784), (67, 23844), (68, 23865), (75, 23967), (82, 24057), (83, 24093), (86, 24129), (92, 24168), (101, 24216), (106, 24258), (112, 24330), (117, 24378), (131, 24504), (139, 24579), (140, 24591), (145, 24612), (157, 24717), (158, 24720), (203, 24942), (215, 25008), (216, 25011), (229, 25080), (255, 25185), (267, 25254), (286, 25356), (287, 25359), (293, 25386), (301, 25425), (308, 25452), (336, 25614), (342, 25662), (346, 25683), (351, 25701), (362, 25749), (376, 25815), (384, 25842), (385, 25845), (387, 25863), (388, 25866), (391, 25887), (392, 25896), (405, 25950), (417, 25995), (421, 26016), (424, 26025), (431, 26058), (432, 26067), (435, 26091), (442, 26121), (443, 26124), (445, 26133), (448, 26145), (451, 26154), (453, 26166), (458, 26187), (460, 26193), (470, 26247), (489, 26325), (493, 26337), (495, 26343), (496, 26346), (499, 26361), (504, 26382), (511, 26418), (524, 26472), (525, 26475), (528, 26487), (534, 26496), (538, 26508), (539, 26511), (542, 26526), (549, 26553), (551, 26559), (556, 26574), (557, 26577), (558, 26586), (559, 26601), (560, 26607), (564, 26622), (566, 26634), (567, 26637), (577, 26673), (582, 26694), (584, 26706), (586, 26715), (590, 26727), (598, 26754), (605, 26778), (608, 26787), (610, 26793), (615, 26811), (632, 26880), (650, 26949), (686, 27105), (732, 27306), (757, 27450), (767, 27513), (771, 27540), (781, 27612), (783, 27624), (784, 27633), (789, 27687), (793, 27708), (795, 27720), (831, 27882), (847, 27969), (855, 27987), (861, 28017), (868, 28035), (869, 28038), (872, 28050), (878, 28077), (893, 28188), (901, 28263), (909, 28311), (917, 28365), (921, 28392), (938, 28506), (948, 28596),

Gene: Nivinsha\_26 Start: 20074, Stop: 24663, Start Num: 17

Candidate Starts for Nivinsha\_26:

(Start: 16 @20053 has 2 MA's), (Start: 17 @20074 has 129 MA's), (Start: 20 @20104 has 3 MA's), (28, 20158), (32, 20179), (37, 20215), (47, 20293), (57, 20353), (62, 20377), (64, 20389), (67, 20419), (70, 20470), (74, 20500), (75, 20542), (76, 20560), (80, 20602), (82, 20632), (84, 20677), (85, 20689), (92, 20743), (95, 20758), (97, 20770), (101, 20791), (114, 20884), (117, 20917), (120, 20932), (126, 20980), (145, 21151), (160, 21265), (161, 21268), (189, 21430), (196, 21454), (199, 21469), (203, 21481), (217, 21556), (235, 21649), (239, 21664), (240, 21670), (245, 21688), (261, 21760), (273, 21811), (278, 21826), (284, 21856), (299, 21928), (301, 21934), (311, 21967), (312, 21970), (319, 21997), (336, 22111), (344, 22168), (346, 22180), (358, 22234), (361, 22243), (362, 22246), (367, 22267), (376, 22312), (382, 22333), (389, 22375), (392, 22393), (406, 22450), (413, 22471), (417, 22492), (433, 22573), (435, 22588), (436, 22591), (442, 22618), (443, 22621), (455, 22672), (470, 22750), (473, 22765), (474, 22768), (478, 22786), (479, 22792), (481, 22798), (484, 22807), (493, 22843), (496, 22852), (503, 22885), (514, 22939), (515, 22942), (519, 22960), (523, 22972), (530, 23002), (536, 23017), (540, 23026), (542, 23038), (547, 23059), (558, 23098), (569, 23155), (574, 23167), (577, 23176), (589, 23215), (592, 23227), (602, 23257), (604, 23266), (615, 23302), (624, 23341), (625, 23344), (629, 23362), (631, 23368), (646, 23428), (649, 23437), (661, 23491), (662, 23494), (665, 23503), (693, 23620), (694, 23623), (700, 23644), (708, 23677), (709, 23680), (710, 23686), (713, 23695), (719, 23722), (728, 23767), (741, 23833), (748, 23884), (750, 23890), (762, 23950), (776, 24034), (778, 24052), (779, 24064), (805, 24223), (806, 24232), (816, 24280), (823, 24313), (827, 24325), (830, 24331), (833, 24352), (834, 24355), (835, 24361), (841, 24400), (846, 24427), (884, 24613), (889, 24640),

Gene: NoPickles\_29 Start: 20260, Stop: 25362, Start Num: 17

Candidate Starts for NoPickles\_29:

(Start: 17 @20260 has 129 MA's), (Start: 20 @20290 has 3 MA's), (42, 20428), (46, 20473), (47, 20479), (49, 20488), (50, 20503), (53, 20524), (58, 20545), (64, 20575), (67, 20605), (68, 20626), (75, 20728), (80, 20788), (84, 20863), (85, 20875), (88, 20899), (92, 20929), (95, 20944), (101, 20977), (106, 21019), (111, 21070), (118, 21124), (119, 21127), (129, 21226), (132, 21250), (145, 21346), (157, 21451), (158, 21454), (169, 21523), (171, 21529), (172, 21535), (209, 21712), (220, 21763), (229, 21814), (241, 21868), (242, 21871), (278, 22042), (293, 22123), (294, 22126), (309, 22201), (322, 22258), (334, 22342), (336, 22351), (345, 22414), (346, 22420), (348, 22426), (351, 22438), (353, 22453), (354, 22456), (359, 22477), (371, 22525), (376, 22552), (382, 22573), (385, 22582), (388, 22603), (389, 22615), (391, 22624), (392, 22633), (397, 22660), (405, 22687), (406, 22690), (413, 22711), (421, 22753), (427, 22780), (430, 22789), (432, 22804), (433, 22813), (435, 22828), (437, 22840), (440, 22849), (443, 22861), (448, 22882), (451, 22891), (469, 22975), (470, 22984), (473, 22999), (474, 23002), (478, 23020), (481, 23032), (482, 23035), (489, 23062), (496, 23083), (499, 23098), (509, 23140), (511, 23155), (525, 23212), (528, 23224), (534, 23233), (538, 23245), (541, 23257), (542, 23263), (547, 23284), (551, 23296), (557, 23314), (558, 23323), (559, 23338), (560, 23344), (563, 23356), (573, 23398), (574, 23401), (577, 23410), (582, 23431), (584, 23443), (598, 23491), (601, 23500), (608, 23524), (610, 23530), (615, 23548), (616, 23557), (622, 23578), (639, 23647), (644, 23665), (645, 23668), (650, 23686), (680, 23812), (691, 23857), (705, 23908), (734, 24052), (757, 24187), (765, 24238), (777, 24316), (783, 24361), (789, 24424), (792, 24442), (799, 24472), (800, 24478), (811, 24535), (828, 24607), (839, 24667), (844, 24688), (845, 24691), (856, 24742), (858, 24751), (869, 24790), (872, 24802), (885, 24895), (893, 24940), (901, 25015), (907, 25054), (912, 25084), (920, 25141), (937, 25252), (948, 25348),

Gene: Odesza\_29 Start: 20616, Stop: 25730, Start Num: 17

Candidate Starts for Odesza\_29:

(Start: 17 @20616 has 129 MA's), (Start: 20 @20646 has 3 MA's), (43, 20793), (46, 20829), (47, 20835), (53, 20880), (58, 20901), (64, 20931), (75, 21096), (80, 21156), (84, 21231), (88, 21267), (89, 21282), (92, 21297), (95, 21312), (101, 21345), (111, 21438), (118, 21492), (119, 21495), (145, 21714), (157, 21819), (158, 21822), (169, 21891), (171, 21897), (209, 22080), (220, 22131), (229, 22182), (241, 22236), (242, 22239), (269, 22371), (288, 22473), (293, 22491), (294, 22494), (309, 22569), (322, 22626), (334, 22710), (336, 22719), (351, 22806), (359, 22845), (371, 22893), (376, 22920), (382, 22941), (385, 22950), (388, 22971), (389, 22983), (391, 22992), (392, 23001), (397, 23028), (405, 23055), (406, 23058), (413, 23079), (421, 23121), (427, 23148), (430, 23157), (432, 23172), (433, 23181), (435, 23196), (437, 23208), (440, 23217), (443, 23229), (448, 23250), (451, 23259), (469, 23343), (470, 23352), (473, 23367), (474, 23370), (478, 23388), (481, 23400), (482, 23403), (489, 23430), (496, 23451), (499, 23466), (509, 23508), (511, 23523), (525, 23580), (528, 23592), (534, 23601), (538, 23613), (541, 23625), (542, 23631), (547, 23652), (551, 23664), (557, 23682), (558, 23691), (559, 23706), (560, 23712), (563, 23724), (573, 23766), (574, 23769), (577, 23778), (582, 23799), (584, 23811), (598, 23859), (601, 23868), (608, 23892), (610, 23898), (615, 23916), (616, 23925), (622, 23946), (639, 24015), (644, 24033), (645, 24036), (650, 24054), (680, 24180), (691, 24225), (705, 24276), (734, 24420), (757, 24555), (765, 24606), (777, 24684), (783, 24729), (789, 24792), (792, 24810), (799, 24840), (800, 24846), (811, 24903), (828, 24975), (839, 25035), (844, 25056), (845, 25059), (856, 25110), (858, 25119), (869, 25158), (872, 25170), (885, 25263), (893, 25308), (901, 25383), (907, 25422), (912, 25452), (920, 25509), (937, 25620), (948, 25716),

Gene: OhMyWard\_32 Start: 24046, Stop: 29148, Start Num: 17

Candidate Starts for OhMyWard\_32:

(Start: 17 @24046 has 129 MA's), (Start: 20 @24076 has 3 MA's), (25, 24121), (46, 24259), (47, 24265), (58, 24331), (64, 24361), (75, 24526), (80, 24586), (85, 24673), (88, 24697), (92, 24727), (95, 24742), (101, 24775), (111, 24868), (131, 25036), (145, 25144), (146, 25156), (152, 25213), (157, 25249), (158, 25252), (161, 25261), (169, 25321), (171, 25327), (209, 25510), (210, 25516), (229, 25612), (232, 25630), (267, 25786), (291, 25912), (293, 25921), (336, 26152), (337, 26158), (346, 26221), (351, 26239), (356, 26266), (361, 26284), (376, 26353), (383, 26377), (385, 26383), (388,

26404), (390, 26422), (391, 26425), (405, 26488), (417, 26533), (421, 26554), (427, 26581), (433, 26614), (437, 26641), (442, 26659), (443, 26662), (445, 26671), (450, 26689), (451, 26692), (453, 26704), (473, 26800), (481, 26833), (486, 26854), (489, 26863), (493, 26875), (496, 26884), (499, 26899), (501, 26905), (502, 26911), (504, 26920), (507, 26935), (508, 26938), (510, 26947), (511, 26956), (519, 26992), (525, 27013), (534, 27034), (542, 27064), (546, 27079), (547, 27085), (555, 27109), (557, 27115), (558, 27124), (559, 27139), (560, 27145), (569, 27181), (573, 27199), (577, 27211), (582, 27232), (584, 27244), (590, 27265), (591, 27268), (598, 27292), (601, 27301), (608, 27325), (610, 27331), (615, 27349), (616, 27358), (617, 27361), (639, 27448), (648, 27478), (679, 27610), (697, 27679), (732, 27844), (751, 27952), (756, 27985), (771, 28078), (781, 28150), (783, 28162), (784, 28171), (789, 28225), (799, 28273), (811, 28336), (821, 28387), (831, 28420), (847, 28507), (855, 28525), (861, 28555), (869, 28576), (871, 28582), (872, 28588), (878, 28615), (881, 28642), (893, 28726), (899, 28789), (901, 28801), (919, 28912), (921, 28930), (927, 28978), (948, 29134),

Gene: OlgasClover\_32 Start: 24235, Stop: 29334, Start Num: 17

Candidate Starts for OlgasClover\_32:

(Start: 17 @24235 has 129 MA's), (Start: 20 @24265 has 3 MA's), (25, 24310), (46, 24448), (47, 24454), (56, 24508), (58, 24520), (61, 24532), (64, 24550), (75, 24715), (80, 24775), (85, 24862), (88, 24886), (92, 24916), (95, 24931), (101, 24964), (111, 25057), (131, 25225), (145, 25333), (146, 25345), (152, 25402), (157, 25438), (158, 25441), (169, 25510), (171, 25516), (187, 25600), (203, 25663), (209, 25699), (216, 25732), (231, 25807), (232, 25819), (241, 25855), (255, 25906), (262, 25954), (265, 25966), (293, 26110), (301, 26149), (308, 26176), (336, 26338), (342, 26386), (346, 26407), (351, 26425), (362, 26473), (376, 26539), (388, 26590), (389, 26602), (392, 26620), (405, 26674), (417, 26719), (421, 26740), (424, 26749), (428, 26770), (431, 26782), (432, 26791), (442, 26845), (443, 26848), (445, 26857), (451, 26878), (453, 26890), (458, 26911), (460, 26917), (464, 26935), (470, 26971), (476, 27001), (489, 27049), (493, 27061), (495, 27067), (496, 27070), (498, 27082), (499, 27085), (504, 27106), (511, 27142), (524, 27196), (525, 27199), (534, 27220), (538, 27232), (539, 27235), (551, 27283), (556, 27298), (557, 27301), (558, 27310), (560, 27331), (566, 27358), (567, 27361), (573, 27385), (577, 27397), (582, 27418), (584, 27430), (586, 27439), (590, 27451), (598, 27478), (608, 27511), (610, 27517), (615, 27535), (617, 27547), (628, 27589), (632, 27604), (650, 27673), (676, 27784), (705, 27895), (717, 27940), (732, 28030), (757, 28174), (767, 28237), (771, 28264), (781, 28336), (783, 28348), (784, 28357), (789, 28411), (793, 28432), (795, 28444), (831, 28606), (847, 28693), (855, 28711), (861, 28741), (868, 28759), (869, 28762), (872, 28774), (878, 28801), (893, 28912), (901, 28987), (909, 29035), (917, 29089), (921, 29116), (938, 29230), (948, 29320),

Gene: OlympicHelado\_23 Start: 16166, Stop: 21652, Start Num: 2

Candidate Starts for OlympicHelado\_23:

(1, 16145), (Start: 2 @16166 has 31 MA's), (3, 16196), (12, 16340), (40, 16550), (50, 16667), (64, 16739), (67, 16769), (75, 16892), (83, 17018), (92, 17093), (101, 17141), (106, 17183), (127, 17372), (148, 17567), (157, 17639), (171, 17717), (187, 17801), (191, 17822), (203, 17864), (228, 17999), (240, 18053), (264, 18140), (275, 18176), (277, 18185), (286, 18227), (293, 18260), (299, 18290), (333, 18413), (336, 18434), (345, 18497), (346, 18503), (348, 18509), (353, 18536), (358, 18557), (360, 18563), (361, 18566), (367, 18590), (376, 18635), (379, 18644), (380, 18647), (395, 18731), (401, 18758), (406, 18773), (407, 18776), (414, 18794), (417, 18812), (421, 18833), (432, 18884), (445, 18950), (449, 18965), (468, 19052), (470, 19070), (475, 19097), (501, 19190), (510, 19232), (511, 19241), (519, 19277), (524, 19295), (525, 19298), (528, 19310), (542, 19352), (543, 19355), (557, 19403), (561, 19439), (563, 19445), (568, 19466), (577, 19490), (586, 19520), (604, 19580), (614, 19613), (615, 19616), (618, 19631), (627, 19667), (637, 19709), (640, 19721), (641, 19724), (655, 19772), (660, 19802), (665, 19817), (672, 19850), (675, 19865), (691, 19928), (711, 20003), (712, 20006), (713, 20009), (721, 20045), (734, 20111), (748, 20198), (749, 20201), (766, 20300), (774, 20348), (775, 20354), (794, 20504), (797, 20513), (850, 20786), (895, 21011), (906, 21104), (910, 21125), (913, 21149), (915, 21173), (917, 21179), (918, 21185), (925, 21230), (940, 21338),

(947, 21407), (953, 21494), (960, 21596), (961, 21605),

Gene: Paella\_40 Start: 29221, Stop: 33771, Start Num: 17

Candidate Starts for Paella\_40:

(Start: 17 @29221 has 129 MA's), (Start: 20 @29251 has 3 MA's), (32, 29326), (37, 29362), (47, 29440), (75, 29689), (83, 29815), (88, 29860), (89, 29875), (92, 29890), (97, 29917), (101, 29938), (104, 29962), (106, 29980), (117, 30097), (123, 30142), (126, 30160), (138, 30283), (140, 30310), (143, 30322), (146, 30343), (176, 30538), (193, 30625), (195, 30631), (206, 30673), (214, 30724), (226, 30787), (248, 30862), (252, 30871), (285, 30991), (303, 31069), (307, 31078), (336, 31246), (349, 31324), (358, 31369), (361, 31378), (367, 31402), (376, 31447), (382, 31468), (399, 31564), (410, 31597), (417, 31627), (433, 31708), (435, 31723), (436, 31726), (455, 31807), (461, 31834), (470, 31885), (475, 31912), (481, 31933), (482, 31936), (493, 31978), (514, 32074), (519, 32095), (523, 32107), (528, 32128), (530, 32137), (536, 32149), (547, 32191), (557, 32221), (558, 32230), (566, 32278), (567, 32281), (574, 32299), (577, 32308), (592, 32359), (595, 32368), (604, 32398), (615, 32434), (621, 32461), (641, 32542), (642, 32545), (662, 32626), (666, 32638), (672, 32668), (675, 32683), (678, 32692), (682, 32707), (691, 32746), (702, 32785), (706, 32800), (708, 32809), (711, 32821), (714, 32830), (715, 32833), (723, 32878), (724, 32884), (736, 32941), (740, 32956), (743, 32986), (762, 33082), (772, 33139), (778, 33184), (787, 33253), (800, 33334), (805, 33355), (810, 33388), (820, 33433), (822, 33442), (827, 33457), (830, 33463), (840, 33532), (845, 33550), (857, 33601),

Gene: Pepy6\_035 Start: 30017, Stop: 35869, Start Num: 17

Candidate Starts for Pepy6\_035:

(Start: 16 @29996 has 2 MA's), (Start: 17 @30017 has 129 MA's), (Start: 20 @30047 has 3 MA's), (25, 30092), (28, 30101), (32, 30122), (42, 30185), (47, 30236), (67, 30362), (68, 30383), (74, 30443), (75, 30485), (80, 30545), (88, 30656), (92, 30686), (95, 30701), (101, 30734), (106, 30776), (111, 30827), (118, 30881), (119, 30884), (122, 30899), (146, 31115), (153, 31175), (155, 31196), (161, 31220), (203, 31433), (209, 31469), (228, 31568), (283, 31826), (293, 31877), (301, 31916), (302, 31919), (311, 31961), (313, 31967), (320, 32012), (325, 32033), (333, 32087), (336, 32108), (356, 32222), (363, 32249), (367, 32264), (370, 32273), (374, 32300), (382, 32330), (383, 32333), (385, 32339), (390, 32378), (392, 32390), (402, 32435), (403, 32438), (417, 32489), (421, 32510), (424, 32519), (428, 32540), (433, 32570), (437, 32597), (440, 32606), (441, 32612), (451, 32648), (453, 32660), (463, 32702), (464, 32705), (467, 32717), (469, 32732), (475, 32768), (479, 32783), (489, 32819), (493, 32831), (500, 32858), (510, 32903), (511, 32912), (514, 32927), (523, 32960), (525, 32969), (527, 32975), (534, 32990), (543, 33023), (549, 33047), (554, 33062), (558, 33080), (564, 33116), (572, 33152), (574, 33158), (582, 33188), (584, 33200), (585, 33206), (590, 33221), (597, 33245), (601, 33257), (603, 33263), (605, 33272), (606, 33275), (622, 33335), (628, 33359), (648, 33434), (670, 33530), (733, 33806), (737, 33824), (738, 33830), (742, 33854), (751, 33908), (768, 34016), (773, 34043), (775, 34058), (780, 34112), (799, 34238), (810, 34298), (869, 34586), (908, 34850), (914, 34898), (929, 35000), (934, 35033), (946, 35132), (947, 35141), (954, 35246), (957, 35264), (959, 35300), (960, 35345), (964, 35627), (965, 35660), (966, 35855),

Gene: Perkunas\_31 Start: 21027, Stop: 26129, Start Num: 17

Candidate Starts for Perkunas\_31:

(Start: 17 @21027 has 129 MA's), (Start: 20 @21057 has 3 MA's), (42, 21195), (46, 21240), (53, 21291), (57, 21306), (58, 21312), (64, 21342), (67, 21372), (68, 21393), (75, 21495), (80, 21555), (88, 21666), (92, 21696), (95, 21711), (101, 21744), (106, 21786), (111, 21837), (118, 21891), (119, 21894), (129, 21993), (145, 22113), (157, 22218), (158, 22221), (169, 22290), (171, 22296), (199, 22431), (241, 22635), (242, 22638), (288, 22872), (293, 22890), (301, 22929), (308, 22956), (309, 22968), (312, 22977), (334, 23109), (336, 23118), (348, 23193), (351, 23205), (352, 23211), (371, 23292), (375, 23313), (376, 23319), (382, 23340), (385, 23349), (388, 23370), (389, 23382), (391, 23391), (392, 23400), (397, 23427), (405, 23454), (406, 23457), (413, 23478), (421, 23520), (429, 23553), (430, 23556), (432, 23571), (433, 23580), (437, 23607), (440, 23616), (443, 23628), (448,

23649), (451, 23658), (458, 23691), (469, 23742), (470, 23751), (473, 23766), (478, 23787), (482, 23802), (488, 23826), (489, 23829), (493, 23841), (495, 23847), (496, 23850), (509, 23907), (511, 23922), (525, 23979), (528, 23991), (534, 24000), (538, 24012), (541, 24024), (542, 24030), (550, 24060), (551, 24063), (554, 24072), (557, 24081), (558, 24090), (559, 24105), (560, 24111), (563, 24123), (573, 24165), (577, 24177), (582, 24198), (584, 24210), (601, 24267), (608, 24291), (610, 24297), (611, 24300), (615, 24315), (617, 24327), (622, 24345), (639, 24414), (645, 24435), (667, 24522), (691, 24624), (696, 24642), (723, 24756), (728, 24777), (734, 24819), (757, 24954), (783, 25128), (789, 25191), (792, 25209), (799, 25239), (800, 25245), (805, 25266), (828, 25374), (839, 25434), (844, 25455), (845, 25458), (856, 25509), (858, 25518), (861, 25536), (869, 25557), (872, 25569), (885, 25662), (893, 25707), (899, 25770), (901, 25782), (907, 25821), (912, 25851), (917, 25884), (920, 25908), (929, 25968), (948, 26115),

Gene: Petito\_31 Start: 21794, Stop: 26884, Start Num: 17

Candidate Starts for Petito\_31:

(Start: 17 @21794 has 129 MA's), (Start: 20 @21824 has 3 MA's), (42, 21962), (46, 22007), (47, 22013), (50, 22037), (53, 22058), (58, 22079), (64, 22109), (67, 22139), (68, 22160), (75, 22262), (80, 22322), (84, 22397), (85, 22409), (88, 22433), (92, 22463), (95, 22478), (101, 22511), (102, 22517), (106, 22553), (111, 22604), (118, 22658), (119, 22661), (129, 22760), (132, 22784), (145, 22880), (151, 22934), (154, 22964), (157, 22985), (158, 22988), (169, 23057), (171, 23063), (203, 23210), (209, 23246), (215, 23276), (229, 23348), (235, 23378), (241, 23402), (293, 23657), (309, 23735), (312, 23744), (322, 23792), (334, 23876), (336, 23885), (345, 23948), (351, 23972), (354, 23990), (359, 24011), (371, 24059), (376, 24086), (385, 24116), (388, 24137), (389, 24149), (391, 24158), (392, 24167), (405, 24221), (406, 24224), (413, 24245), (421, 24287), (427, 24314), (430, 24323), (432, 24338), (433, 24347), (435, 24362), (437, 24374), (440, 24383), (443, 24395), (448, 24416), (451, 24425), (464, 24482), (469, 24509), (470, 24518), (473, 24533), (474, 24536), (478, 24554), (489, 24596), (493, 24608), (496, 24617), (499, 24632), (509, 24674), (511, 24689), (525, 24746), (528, 24758), (534, 24767), (538, 24779), (541, 24791), (542, 24797), (547, 24818), (551, 24830), (554, 24839), (557, 24848), (558, 24857), (559, 24872), (560, 24878), (563, 24890), (569, 24914), (573, 24932), (577, 24944), (582, 24965), (584, 24977), (598, 25025), (601, 25034), (608, 25058), (610, 25064), (611, 25067), (615, 25082), (616, 25091), (617, 25094), (622, 25112), (639, 25181), (645, 25202), (665, 25280), (679, 25343), (684, 25364), (693, 25397), (719, 25499), (728, 25544), (734, 25586), (745, 25655), (757, 25721), (768, 25793), (781, 25883), (789, 25958), (800, 26012), (805, 26033), (811, 26069), (818, 26108), (821, 26120), (828, 26141), (845, 26225), (855, 26258), (861, 26288), (863, 26294), (869, 26309), (872, 26321), (891, 26447), (893, 26459), (901, 26534), (903, 26552), (907, 26573), (910, 26585), (920, 26660), (921, 26663), (948, 26870),

Gene: Phaby\_27 Start: 20255, Stop: 24850, Start Num: 17

Candidate Starts for Phaby\_27:

(Start: 16 @20234 has 2 MA's), (Start: 17 @20255 has 129 MA's), (Start: 20 @20285 has 3 MA's), (28, 20339), (64, 20570), (67, 20600), (74, 20681), (75, 20723), (76, 20741), (80, 20783), (85, 20870), (92, 20924), (95, 20939), (96, 20945), (101, 20972), (112, 21050), (114, 21065), (117, 21098), (120, 21113), (121, 21122), (124, 21149), (126, 21161), (130, 21215), (140, 21311), (145, 21332), (161, 21449), (168, 21506), (170, 21512), (183, 21569), (198, 21641), (205, 21674), (207, 21677), (256, 21911), (277, 22004), (278, 22007), (299, 22109), (301, 22115), (312, 22151), (336, 22298), (343, 22352), (344, 22355), (358, 22421), (361, 22430), (362, 22433), (367, 22454), (373, 22481), (382, 22520), (383, 22523), (406, 22637), (413, 22658), (416, 22676), (417, 22679), (435, 22775), (437, 22787), (466, 22907), (470, 22937), (473, 22952), (484, 22994), (490, 23015), (493, 23030), (496, 23039), (498, 23051), (503, 23072), (514, 23126), (519, 23147), (528, 23180), (529, 23186), (530, 23189), (537, 23207), (538, 23210), (542, 23228), (557, 23279), (558, 23288), (568, 23342), (577, 23366), (587, 23399), (594, 23423), (604, 23456), (623, 23528), (624, 23531), (629, 23552), (635, 23576), (637, 23585), (646, 23618), (647, 23621), (649, 23627), (659, 23672), (660, 23678), (672, 23726), (700, 23834), (710, 23876), (713, 23885), (743, 24044), (747, 24068), (749, 24077), (758, 24119), (762, 24140), (765, 24155), (778, 24242), (779, 24254), (786, 24296), (798, 24380), (810,

24446), (816, 24470), (827, 24515), (830, 24521), (841, 24590), (842, 24593), (846, 24617), (884, 24800),

Gene: Phaila\_25 Start: 18580, Stop: 23217, Start Num: 17

Candidate Starts for Phaila\_25:

(Start: 16 @18559 has 2 MA's), (Start: 17 @18580 has 129 MA's), (Start: 20 @18610 has 3 MA's), (28, 18664), (29, 18673), (58, 18943), (59, 18946), (67, 19003), (68, 19024), (74, 19084), (75, 19126), (80, 19186), (89, 19312), (92, 19327), (95, 19342), (101, 19375), (105, 19414), (106, 19417), (112, 19453), (114, 19468), (120, 19516), (151, 19789), (158, 19843), (161, 19852), (169, 19912), (180, 19954), (189, 20014), (190, 20020), (193, 20029), (198, 20044), (199, 20053), (220, 20152), (221, 20164), (222, 20173), (224, 20185), (294, 20470), (308, 20530), (312, 20539), (336, 20680), (342, 20728), (343, 20734), (349, 20758), (358, 20803), (361, 20812), (367, 20836), (371, 20854), (381, 20899), (382, 20902), (385, 20911), (395, 20977), (406, 21019), (410, 21031), (413, 21040), (417, 21061), (428, 21112), (433, 21142), (435, 21157), (445, 21199), (450, 21217), (460, 21265), (461, 21268), (471, 21325), (498, 21433), (501, 21442), (511, 21493), (514, 21508), (519, 21529), (528, 21562), (530, 21571), (536, 21583), (542, 21604), (544, 21610), (549, 21631), (557, 21655), (558, 21664), (574, 21733), (575, 21736), (576, 21739), (577, 21742), (586, 21772), (592, 21793), (599, 21814), (604, 21832), (607, 21841), (612, 21859), (627, 21919), (629, 21928), (635, 21952), (638, 21967), (640, 21973), (641, 21976), (654, 22021), (660, 22054), (661, 22057), (662, 22060), (667, 22078), (696, 22198), (697, 22201), (702, 22219), (721, 22297), (724, 22318), (740, 22390), (747, 22444), (750, 22456), (772, 22573), (778, 22618), (807, 22801), (810, 22822), (816, 22846), (830, 22897), (840, 22966), (845, 22984),

Gene: Phepper\_32 Start: 23282, Stop: 28393, Start Num: 17

Candidate Starts for Phepper\_32:

(Start: 17 @23282 has 129 MA's), (Start: 20 @23312 has 3 MA's), (25, 23357), (47, 23501), (58, 23567), (67, 23627), (68, 23648), (75, 23750), (83, 23876), (86, 23912), (92, 23951), (97, 23978), (101, 23999), (106, 24041), (117, 24161), (131, 24287), (139, 24362), (145, 24395), (157, 24500), (158, 24503), (229, 24863), (255, 24968), (267, 25037), (272, 25058), (286, 25139), (287, 25142), (293, 25169), (301, 25208), (308, 25235), (336, 25397), (342, 25445), (346, 25466), (351, 25484), (362, 25532), (365, 25544), (376, 25598), (388, 25649), (389, 25661), (391, 25670), (392, 25679), (405, 25733), (417, 25778), (420, 25793), (421, 25799), (424, 25808), (425, 25814), (429, 25832), (430, 25835), (431, 25841), (432, 25850), (442, 25904), (443, 25907), (445, 25916), (450, 25934), (451, 25937), (453, 25949), (458, 25970), (460, 25976), (461, 25979), (466, 26000), (470, 26030), (473, 26045), (481, 26078), (485, 26093), (489, 26108), (493, 26120), (495, 26126), (496, 26129), (498, 26141), (499, 26144), (511, 26201), (524, 26255), (525, 26258), (534, 26279), (538, 26291), (539, 26294), (551, 26342), (556, 26357), (557, 26360), (558, 26369), (560, 26390), (566, 26417), (567, 26420), (573, 26444), (577, 26456), (582, 26477), (584, 26489), (590, 26510), (598, 26537), (608, 26570), (610, 26576), (615, 26594), (622, 26624), (632, 26663), (676, 26843), (679, 26855), (697, 26924), (732, 27089), (754, 27212), (757, 27233), (777, 27362), (781, 27395), (783, 27407), (789, 27470), (793, 27491), (795, 27503), (799, 27518), (811, 27581), (831, 27665), (847, 27752), (855, 27770), (861, 27800), (868, 27818), (869, 27821), (871, 27827), (872, 27833), (878, 27860), (893, 27971), (901, 28046), (903, 28064), (917, 28148), (920, 28172), (938, 28289), (948, 28379),

Gene: Pherobrine\_31 Start: 23313, Stop: 28427, Start Num: 17

Candidate Starts for Pherobrine\_31:

(Start: 17 @23313 has 129 MA's), (Start: 20 @23343 has 3 MA's), (25, 23388), (47, 23532), (57, 23592), (58, 23598), (65, 23637), (67, 23658), (68, 23679), (75, 23781), (77, 23817), (83, 23907), (86, 23943), (92, 23982), (97, 24009), (101, 24030), (106, 24072), (117, 24192), (139, 24393), (145, 24426), (148, 24459), (154, 24510), (157, 24531), (158, 24534), (171, 24609), (199, 24744), (213, 24810), (216, 24825), (229, 24894), (232, 24912), (240, 24945), (246, 24966), (248, 24975), (255, 24999), (267, 25068), (272, 25089), (278, 25122), (279, 25125), (291, 25194), (293, 25203), (312, 25290), (324, 25350), (332, 25401), (336, 25434), (337, 25440), (346, 25503), (351, 25521), (361,



25566), (376, 25635), (383, 25659), (385, 25665), (388, 25686), (392, 25716), (405, 25770), (406, 25773), (420, 25830), (421, 25836), (429, 25869), (432, 25887), (433, 25896), (435, 25911), (437, 25923), (442, 25941), (443, 25944), (445, 25953), (448, 25965), (450, 25971), (451, 25974), (458, 26007), (463, 26028), (470, 26067), (481, 26115), (485, 26130), (486, 26136), (489, 26145), (493, 26157), (496, 26166), (498, 26178), (499, 26181), (500, 26184), (501, 26187), (502, 26193), (504, 26202), (516, 26265), (523, 26286), (525, 26295), (534, 26316), (547, 26367), (549, 26373), (550, 26376), (555, 26391), (557, 26397), (559, 26421), (560, 26427), (566, 26454), (567, 26457), (577, 26493), (582, 26514), (584, 26526), (586, 26535), (590, 26547), (598, 26574), (601, 26583), (608, 26607), (610, 26613), (615, 26631), (622, 26661), (632, 26700), (639, 26730), (648, 26760), (679, 26892), (697, 26961), (732, 27126), (751, 27234), (756, 27267), (771, 27360), (781, 27432), (783, 27444), (789, 27507), (799, 27555), (818, 27657), (824, 27678), (831, 27702), (836, 27726), (847, 27789), (855, 27807), (868, 27855), (869, 27858), (872, 27870), (878, 27897), (893, 28008), (901, 28083), (917, 28185), (921, 28212), (922, 28215), (938, 28323), (945, 28362), (948, 28413),

Gene: PherryCruz\_18 Start: 13488, Stop: 18716, Start Num: 17

Candidate Starts for PherryCruz\_18:

(Start: 16 @13467 has 2 MA's), (Start: 17 @13488 has 129 MA's), (Start: 20 @13518 has 3 MA's), (40, 13620), (43, 13671), (58, 13779), (75, 13962), (83, 14088), (86, 14124), (92, 14163), (106, 14253), (148, 14640), (171, 14790), (176, 14814), (189, 14886), (238, 15117), (261, 15195), (264, 15213), (265, 15216), (275, 15249), (298, 15357), (318, 15417), (336, 15498), (345, 15561), (346, 15567), (358, 15621), (364, 15642), (379, 15708), (380, 15711), (401, 15822), (414, 15858), (417, 15876), (428, 15927), (449, 16029), (452, 16041), (455, 16056), (469, 16125), (470, 16134), (476, 16164), (488, 16209), (495, 16230), (502, 16260), (505, 16272), (506, 16275), (510, 16296), (511, 16305), (519, 16341), (528, 16374), (553, 16455), (554, 16458), (561, 16503), (562, 16506), (563, 16509), (577, 16554), (586, 16584), (600, 16629), (604, 16644), (614, 16677), (619, 16698), (621, 16707), (623, 16716), (629, 16740), (630, 16743), (633, 16752), (637, 16773), (640, 16785), (648, 16812), (657, 16851), (662, 16872), (668, 16893), (670, 16908), (672, 16914), (706, 17046), (708, 17055), (710, 17064), (713, 17073), (714, 17076), (717, 17088), (718, 17091), (719, 17100), (721, 17109), (740, 17202), (747, 17256), (766, 17364), (769, 17379), (797, 17577), (843, 17811), (860, 17886), (905, 18165), (906, 18168), (910, 18189), (915, 18237), (917, 18243), (933, 18351), (942, 18423), (950, 18525), (961, 18678),

Gene: Pippin15\_25 Start: 18211, Stop: 22791, Start Num: 17

Candidate Starts for Pippin15\_25:

(Start: 17 @18211 has 129 MA's), (Start: 20 @18244 has 3 MA's), (43, 18391), (55, 18484), (75, 18679), (77, 18715), (83, 18805), (101, 18928), (106, 18970), (117, 19090), (150, 19372), (154, 19408), (161, 19441), (171, 19507), (201, 19654), (216, 19735), (234, 19828), (265, 19954), (280, 20008), (336, 20260), (360, 20389), (361, 20392), (364, 20404), (373, 20443), (386, 20503), (389, 20524), (403, 20590), (406, 20599), (417, 20641), (419, 20647), (421, 20662), (426, 20683), (446, 20782), (457, 20833), (463, 20860), (468, 20881), (470, 20899), (478, 20935), (483, 20953), (493, 20995), (499, 21019), (500, 21022), (503, 21037), (506, 21046), (519, 21115), (525, 21136), (528, 21148), (531, 21157), (536, 21169), (543, 21193), (557, 21241), (574, 21319), (577, 21328), (599, 21400), (602, 21409), (604, 21418), (623, 21490), (634, 21532), (640, 21559), (653, 21604), (663, 21649), (664, 21652), (672, 21688), (682, 21727), (688, 21757), (702, 21805), (714, 21850), (725, 21907), (743, 22006), (744, 22015), (749, 22039), (755, 22060), (772, 22159), (778, 22204), (808, 22390), (815, 22432), (817, 22444), (823, 22465), (827, 22477), (840, 22552), (842, 22555), (845, 22570), (873, 22681), (888, 22780),

Gene: Poco6\_036 Start: 32036, Stop: 37891, Start Num: 17

Candidate Starts for Poco6\_036:

(Start: 17 @32036 has 129 MA's), (Start: 20 @32066 has 3 MA's), (25, 32111), (28, 32120), (32, 32141), (42, 32204), (47, 32255), (50, 32279), (67, 32381), (68, 32402), (75, 32519), (80, 32579), (88, 32690), (92, 32720), (95, 32735), (101, 32768), (111, 32861), (119, 32909), (141, 33110), (146,

33140), (171, 33311), (189, 33407), (209, 33494), (283, 33851), (293, 33902), (301, 33941), (311, 33986), (320, 34037), (325, 34058), (333, 34112), (336, 34133), (344, 34190), (356, 34247), (363, 34274), (367, 34289), (370, 34298), (374, 34325), (382, 34355), (383, 34358), (385, 34364), (392, 34415), (403, 34463), (417, 34514), (421, 34535), (424, 34544), (428, 34565), (432, 34586), (441, 34637), (443, 34643), (448, 34664), (451, 34673), (453, 34685), (457, 34700), (463, 34727), (464, 34730), (469, 34757), (485, 34829), (489, 34844), (493, 34856), (500, 34883), (510, 34928), (511, 34937), (523, 34985), (525, 34994), (534, 35015), (543, 35048), (547, 35066), (549, 35072), (554, 35087), (555, 35090), (556, 35093), (558, 35105), (572, 35177), (574, 35183), (582, 35213), (584, 35225), (585, 35231), (588, 35240), (590, 35246), (597, 35270), (601, 35282), (603, 35288), (622, 35360), (628, 35384), (645, 35450), (648, 35459), (665, 35528), (670, 35555), (733, 35831), (737, 35849), (742, 35879), (746, 35912), (751, 35933), (768, 36041), (773, 36068), (780, 36137), (783, 36152), (853, 36542), (908, 36872), (914, 36920), (929, 37022), (947, 37163), (954, 37268), (959, 37322), (960, 37367), (962, 37433), (963, 37532), (964, 37649), (965, 37682), (966, 37877),

Gene: Popy\_23 Start: 16676, Stop: 22156, Start Num: 2

Candidate Starts for Popy\_23:

(1, 16655), (Start: 2 @16676 has 31 MA's), (3, 16706), (12, 16850), (15, 16901), (22, 16985), (40, 17060), (50, 17177), (51, 17180), (57, 17213), (64, 17249), (67, 17279), (75, 17402), (83, 17528), (86, 17564), (92, 17603), (94, 17615), (101, 17651), (106, 17693), (127, 17885), (132, 17951), (140, 18026), (145, 18047), (148, 18080), (156, 18143), (157, 18152), (171, 18230), (203, 18377), (227, 18509), (240, 18566), (262, 18644), (264, 18653), (266, 18662), (275, 18689), (291, 18764), (293, 18773), (310, 18839), (311, 18842), (326, 18881), (336, 18935), (346, 19004), (358, 19058), (367, 19091), (376, 19136), (379, 19145), (382, 19157), (395, 19232), (409, 19283), (414, 19295), (421, 19334), (428, 19364), (431, 19376), (438, 19424), (449, 19466), (459, 19514), (470, 19571), (501, 19691), (510, 19733), (511, 19742), (519, 19778), (524, 19796), (525, 19799), (528, 19811), (542, 19853), (543, 19856), (557, 19904), (561, 19940), (563, 19946), (568, 19967), (577, 19991), (604, 20081), (614, 20114), (618, 20132), (621, 20144), (623, 20153), (637, 20210), (640, 20222), (641, 20225), (646, 20243), (660, 20303), (665, 20318), (672, 20351), (675, 20366), (694, 20438), (706, 20483), (710, 20501), (713, 20510), (721, 20546), (724, 20567), (725, 20570), (758, 20756), (762, 20777), (764, 20783), (766, 20801), (767, 20804), (769, 20816), (774, 20849), (775, 20855), (794, 21005), (797, 21014), (850, 21287), (878, 21389), (906, 21605), (910, 21626), (915, 21674), (917, 21680), (918, 21686), (925, 21731), (942, 21860), (947, 21908), (960, 22100), (961, 22109),

Gene: Powelldog\_24 Start: 17004, Stop: 21530, Start Num: 17

Candidate Starts for Powelldog\_24:

(Start: 16 @16983 has 2 MA's), (Start: 17 @17004 has 129 MA's), (Start: 20 @17034 has 3 MA's), (27, 17085), (29, 17097), (37, 17145), (43, 17181), (48, 17229), (57, 17283), (58, 17289), (75, 17472), (76, 17490), (79, 17526), (80, 17532), (85, 17619), (87, 17640), (92, 17673), (95, 17688), (98, 17703), (101, 17721), (112, 17799), (114, 17814), (117, 17847), (120, 17862), (126, 17910), (129, 17961), (131, 17973), (140, 18060), (142, 18069), (143, 18072), (146, 18093), (151, 18135), (154, 18165), (158, 18189), (169, 18258), (176, 18288), (177, 18291), (184, 18318), (187, 18348), (199, 18399), (259, 18669), (270, 18720), (290, 18804), (294, 18819), (304, 18867), (319, 18915), (336, 18996), (344, 19053), (347, 19068), (350, 19080), (357, 19113), (358, 19119), (361, 19128), (367, 19152), (371, 19170), (376, 19197), (382, 19218), (385, 19227), (387, 19245), (391, 19269), (395, 19293), (413, 19356), (415, 19365), (433, 19458), (447, 19521), (450, 19533), (457, 19569), (470, 19635), (494, 19731), (498, 19749), (503, 19770), (508, 19791), (511, 19809), (514, 19824), (516, 19836), (519, 19845), (523, 19857), (528, 19878), (530, 19887), (536, 19899), (540, 19908), (545, 19929), (550, 19950), (557, 19971), (558, 19980), (563, 20013), (574, 20049), (576, 20055), (577, 20058), (586, 20088), (597, 20124), (598, 20127), (599, 20130), (604, 20148), (621, 20211), (625, 20226), (628, 20238), (631, 20250), (632, 20253), (636, 20274), (637, 20277), (640, 20289), (644, 20304), (646, 20310), (652, 20331), (664, 20382), (668, 20397), (670, 20412), (678, 20442), (690, 20493), (694, 20505), (696, 20514), (709, 20562), (718, 20595), (723, 20628), (724, 20634), (725, 20637), (734, 20679), (748, 20766), (763, 20835), (775, 20910), (778, 20934), (779, 20946), (794, 21060), (803,

21099), (823, 21195), (827, 21207), (830, 21213), (871, 21387), (883, 21459),

Gene: ProfFrink\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for ProfFrink\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (689, 20756), (691, 20762), (693, 20768), (702, 20801), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605),

Gene: Qui\_40 Start: 29221, Stop: 33771, Start Num: 17

Candidate Starts for Qui\_40:

(Start: 17 @29221 has 129 MA's), (Start: 20 @29251 has 3 MA's), (32, 29326), (37, 29362), (47, 29440), (75, 29689), (83, 29815), (88, 29860), (89, 29875), (92, 29890), (97, 29917), (101, 29938), (104, 29962), (106, 29980), (117, 30097), (123, 30142), (126, 30160), (138, 30283), (140, 30310), (143, 30322), (146, 30343), (176, 30538), (193, 30625), (195, 30631), (206, 30673), (214, 30724), (226, 30787), (248, 30862), (252, 30871), (285, 30991), (303, 31069), (307, 31078), (336, 31246), (349, 31324), (358, 31369), (361, 31378), (367, 31402), (376, 31447), (382, 31468), (399, 31564), (410, 31597), (417, 31627), (433, 31708), (435, 31723), (436, 31726), (455, 31807), (461, 31834), (470, 31885), (475, 31912), (481, 31933), (482, 31936), (493, 31978), (514, 32074), (519, 32095), (523, 32107), (528, 32128), (530, 32137), (536, 32149), (547, 32191), (557, 32221), (558, 32230), (566, 32278), (567, 32281), (574, 32299), (577, 32308), (592, 32359), (595, 32368), (604, 32398), (615, 32434), (621, 32461), (641, 32542), (642, 32545), (662, 32626), (666, 32638), (672, 32668), (675, 32683), (678, 32692), (682, 32707), (691, 32746), (702, 32785), (706, 32800), (708, 32809), (711, 32821), (714, 32830), (715, 32833), (723, 32878), (724, 32884), (736, 32941), (740, 32956), (743, 32986), (762, 33082), (772, 33139), (778, 33184), (787, 33253), (800, 33334), (805, 33355), (810, 33388), (820, 33433), (822, 33442), (827, 33457), (830, 33463), (840, 33532), (845, 33550), (857, 33601),

Gene: Rainydai\_21 Start: 15072, Stop: 20549, Start Num: 2

Candidate Starts for Rainydai\_21:

(Start: 2 @15072 has 31 MA's), (3, 15102), (7, 15183), (9, 15213), (10, 15216), (12, 15246), (75, 15798), (83, 15924), (90, 15987), (92, 15999), (100, 16041), (106, 16089), (113, 16173), (127, 16281), (145, 16443), (148, 16476), (157, 16548), (171, 16626), (203, 16773), (275, 17085), (277, 17094), (292, 17157), (336, 17331), (341, 17373), (346, 17400), (349, 17409), (361, 17463), (367, 17487), (380, 17544), (402, 17658), (414, 17691), (421, 17730), (431, 17772), (432, 17781), (437, 17817), (449, 17862), (460, 17913), (468, 17949), (470, 17967), (476, 17997), (486, 18036), (487, 18039), (498, 18078), (499, 18081), (506, 18108), (510, 18129), (511, 18138), (518, 18171), (519, 18174), (525, 18195), (545, 18258), (561, 18336), (563, 18342), (574, 18378), (575, 18381), (576, 18384), (577, 18387), (595, 18447), (598, 18456), (604, 18477), (613, 18507), (614, 18510), (629, 18573),

(630, 18576), (631, 18579), (641, 18621), (646, 18639), (655, 18669), (665, 18714), (667, 18723), (672, 18747), (690, 18822), (692, 18828), (706, 18879), (713, 18906), (717, 18921), (719, 18933), (721, 18942), (725, 18966), (739, 19032), (748, 19095), (753, 19119), (766, 19197), (774, 19245), (779, 19287), (797, 19410), (820, 19527), (843, 19644), (861, 19725), (873, 19770), (882, 19815), (906, 20001), (910, 20022), (911, 20034), (917, 20076), (925, 20127), (932, 20175), (936, 20214), (944, 20265), (952, 20388), (958, 20427),

Gene: Raunak\_23 Start: 17270, Stop: 21790, Start Num: 20

Candidate Starts for Raunak\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (205, 18659), (226, 18773), (237, 18824), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (349, 19340), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (664, 20648), (667, 20660), (679, 20714), (687, 20750), (691, 20762), (693, 20768), (703, 20804), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605), (875, 21683),

Gene: RavenPuff\_18 Start: 13488, Stop: 18716, Start Num: 17

Candidate Starts for RavenPuff\_18:

(Start: 16 @13467 has 2 MA's), (Start: 17 @13488 has 129 MA's), (Start: 20 @13518 has 3 MA's), (40, 13620), (43, 13671), (58, 13779), (75, 13962), (83, 14088), (86, 14124), (92, 14163), (106, 14253), (148, 14640), (171, 14790), (176, 14814), (189, 14886), (238, 15117), (261, 15195), (264, 15213), (265, 15216), (275, 15249), (298, 15357), (318, 15417), (336, 15498), (345, 15561), (346, 15567), (358, 15621), (364, 15642), (379, 15708), (380, 15711), (401, 15822), (414, 15858), (417, 15876), (428, 15927), (449, 16029), (452, 16041), (455, 16056), (469, 16125), (470, 16134), (476, 16164), (488, 16209), (495, 16230), (502, 16260), (505, 16272), (506, 16275), (510, 16296), (511, 16305), (519, 16341), (528, 16374), (553, 16455), (554, 16458), (561, 16503), (562, 16506), (563, 16509), (577, 16554), (586, 16584), (600, 16629), (604, 16644), (614, 16677), (619, 16698), (621, 16707), (623, 16716), (629, 16740), (630, 16743), (633, 16752), (637, 16773), (640, 16785), (648, 16812), (657, 16851), (662, 16872), (668, 16893), (670, 16908), (672, 16914), (706, 17046), (708, 17055), (710, 17064), (713, 17073), (714, 17076), (717, 17088), (718, 17091), (719, 17100), (721, 17109), (740, 17202), (747, 17256), (766, 17364), (769, 17379), (797, 17577), (843, 17811), (860, 17886), (905, 18165), (906, 18168), (910, 18189), (915, 18237), (917, 18243), (933, 18351), (942, 18423), (950, 18525), (961, 18678),

Gene: Regigigas\_22 Start: 15072, Stop: 20549, Start Num: 2

Candidate Starts for Regigigas\_22:

(Start: 2 @15072 has 31 MA's), (3, 15102), (7, 15183), (9, 15213), (10, 15216), (12, 15246), (75, 15798), (83, 15924), (90, 15987), (92, 15999), (100, 16041), (106, 16089), (113, 16173), (127, 16281), (145, 16443), (148, 16476), (157, 16548), (171, 16626), (203, 16773), (275, 17085), (277, 17094), (292, 17157), (336, 17331), (341, 17373), (346, 17400), (349, 17409), (361, 17463), (367, 17487), (380, 17544), (402, 17658), (414, 17691), (421, 17730), (431, 17772), (432, 17781), (437, 17817),

(449, 17862), (460, 17913), (468, 17949), (470, 17967), (476, 17997), (486, 18036), (487, 18039), (498, 18078), (499, 18081), (506, 18108), (510, 18129), (511, 18138), (518, 18171), (519, 18174), (525, 18195), (545, 18258), (561, 18336), (563, 18342), (574, 18378), (575, 18381), (576, 18384), (577, 18387), (595, 18447), (598, 18456), (604, 18477), (613, 18507), (614, 18510), (629, 18573), (630, 18576), (631, 18579), (641, 18621), (646, 18639), (655, 18669), (665, 18714), (667, 18723), (672, 18747), (690, 18822), (692, 18828), (706, 18879), (713, 18906), (717, 18921), (719, 18933), (721, 18942), (725, 18966), (739, 19032), (748, 19095), (753, 19119), (766, 19197), (774, 19245), (779, 19287), (797, 19410), (820, 19527), (843, 19644), (861, 19725), (873, 19770), (882, 19815), (906, 20001), (910, 20022), (911, 20034), (917, 20076), (925, 20127), (932, 20175), (936, 20214), (944, 20265), (952, 20388), (958, 20427),

Gene: Renaldo\_31 Start: 21026, Stop: 25564, Start Num: 32

Candidate Starts for Renaldo\_31:

(Start: 16 @20900 has 2 MA's), (Start: 17 @20921 has 129 MA's), (Start: 20 @20951 has 3 MA's), (28, 21005), (32, 21026), (37, 21062), (47, 21230), (57, 21290), (67, 21356), (68, 21377), (75, 21479), (76, 21497), (80, 21539), (84, 21614), (85, 21626), (92, 21680), (95, 21695), (101, 21728), (112, 21806), (114, 21821), (125, 21911), (131, 21980), (151, 22142), (158, 22196), (169, 22265), (180, 22307), (189, 22367), (190, 22373), (193, 22382), (198, 22397), (199, 22406), (220, 22505), (221, 22517), (224, 22538), (277, 22745), (282, 22769), (294, 22823), (312, 22892), (336, 23033), (347, 23105), (349, 23111), (358, 23156), (360, 23162), (361, 23165), (367, 23189), (371, 23207), (381, 23252), (382, 23255), (384, 23261), (385, 23264), (389, 23297), (392, 23315), (406, 23372), (413, 23393), (417, 23414), (427, 23462), (433, 23495), (435, 23510), (450, 23570), (498, 23786), (499, 23789), (511, 23846), (514, 23861), (516, 23873), (519, 23882), (528, 23915), (530, 23924), (536, 23936), (542, 23957), (557, 24008), (558, 24017), (566, 24065), (574, 24086), (576, 24092), (577, 24095), (595, 24155), (604, 24185), (607, 24194), (629, 24281), (630, 24284), (631, 24287), (635, 24305), (638, 24320), (643, 24335), (654, 24374), (660, 24407), (661, 24410), (662, 24413), (664, 24419), (667, 24431), (697, 24554), (702, 24572), (725, 24674), (740, 24743), (747, 24797), (772, 24926), (778, 24971), (787, 25040), (810, 25175), (816, 25199), (827, 25244), (830, 25250), (837, 25289), (840, 25319),

Gene: Rickmore\_31 Start: 21933, Stop: 27044, Start Num: 17

Candidate Starts for Rickmore\_31:

(Start: 17 @21933 has 129 MA's), (Start: 20 @21963 has 3 MA's), (25, 22008), (47, 22152), (57, 22212), (58, 22218), (67, 22278), (68, 22299), (75, 22401), (82, 22491), (83, 22527), (86, 22563), (92, 22602), (94, 22614), (101, 22650), (106, 22692), (112, 22764), (117, 22812), (131, 22938), (135, 22980), (139, 23013), (140, 23025), (145, 23046), (157, 23151), (158, 23154), (203, 23376), (213, 23430), (262, 23667), (264, 23676), (272, 23709), (274, 23721), (286, 23790), (287, 23793), (293, 23820), (308, 23886), (336, 24048), (342, 24096), (345, 24111), (346, 24117), (349, 24126), (351, 24135), (376, 24249), (388, 24300), (389, 24312), (391, 24321), (392, 24330), (397, 24357), (417, 24429), (421, 24450), (424, 24459), (430, 24486), (432, 24501), (433, 24510), (442, 24555), (443, 24558), (451, 24588), (453, 24600), (459, 24624), (463, 24642), (464, 24645), (469, 24672), (470, 24681), (474, 24699), (481, 24729), (489, 24759), (493, 24771), (495, 24777), (496, 24780), (499, 24795), (501, 24801), (511, 24852), (524, 24906), (528, 24921), (534, 24930), (538, 24942), (539, 24945), (541, 24954), (550, 24990), (551, 24993), (556, 25008), (557, 25011), (558, 25020), (560, 25041), (566, 25068), (567, 25071), (574, 25098), (577, 25107), (582, 25128), (584, 25140), (590, 25161), (598, 25188), (608, 25221), (610, 25227), (615, 25245), (617, 25257), (622, 25275), (645, 25365), (650, 25383), (651, 25386), (694, 25563), (703, 25596), (732, 25740), (734, 25749), (754, 25863), (757, 25884), (771, 25974), (781, 26046), (783, 26058), (784, 26067), (789, 26121), (793, 26142), (799, 26169), (800, 26175), (811, 26232), (819, 26274), (847, 26403), (855, 26421), (861, 26451), (869, 26472), (872, 26484), (893, 26622), (901, 26697), (917, 26799), (920, 26823), (921, 26826), (931, 26892), (938, 26940), (948, 27030),

Gene: Rima\_23 Start: 16166, Stop: 21652, Start Num: 2

Candidate Starts for Rima\_23:

(1, 16145), (Start: 2 @16166 has 31 MA's), (3, 16196), (12, 16340), (40, 16550), (50, 16667), (64, 16739), (67, 16769), (75, 16892), (83, 17018), (92, 17093), (101, 17141), (106, 17183), (127, 17372), (148, 17567), (157, 17639), (171, 17717), (191, 17822), (203, 17864), (228, 17999), (240, 18053), (264, 18140), (275, 18176), (277, 18185), (286, 18227), (293, 18260), (299, 18290), (333, 18413), (336, 18434), (345, 18497), (346, 18503), (348, 18509), (353, 18536), (358, 18557), (360, 18563), (361, 18566), (367, 18590), (376, 18635), (379, 18644), (380, 18647), (382, 18656), (395, 18731), (401, 18758), (407, 18776), (414, 18794), (417, 18812), (421, 18833), (432, 18884), (445, 18950), (449, 18965), (468, 19052), (470, 19070), (475, 19097), (500, 19187), (501, 19190), (510, 19232), (511, 19241), (519, 19277), (524, 19295), (525, 19298), (542, 19352), (543, 19355), (557, 19403), (561, 19439), (563, 19445), (568, 19466), (577, 19490), (586, 19520), (604, 19580), (614, 19613), (615, 19616), (618, 19631), (627, 19667), (637, 19709), (640, 19721), (641, 19724), (655, 19772), (660, 19802), (665, 19817), (672, 19850), (675, 19865), (691, 19928), (712, 20006), (713, 20009), (721, 20045), (734, 20111), (748, 20198), (749, 20201), (766, 20300), (774, 20348), (775, 20354), (797, 20513), (850, 20786), (860, 20822), (878, 20888), (895, 21011), (899, 21062), (906, 21104), (910, 21125), (915, 21173), (917, 21179), (918, 21185), (925, 21230), (940, 21338), (942, 21359), (947, 21407), (953, 21494), (960, 21596), (961, 21605),

Gene: Roney\_29 Start: 20616, Stop: 25730, Start Num: 17

Candidate Starts for Roney\_29:

(Start: 17 @20616 has 129 MA's), (Start: 20 @20646 has 3 MA's), (43, 20793), (46, 20829), (47, 20835), (53, 20880), (58, 20901), (64, 20931), (75, 21096), (80, 21156), (84, 21231), (88, 21267), (89, 21282), (92, 21297), (95, 21312), (101, 21345), (111, 21438), (118, 21492), (119, 21495), (145, 21714), (157, 21819), (158, 21822), (169, 21891), (171, 21897), (209, 22080), (220, 22131), (229, 22182), (241, 22236), (242, 22239), (269, 22371), (288, 22473), (293, 22491), (294, 22494), (309, 22569), (322, 22626), (334, 22710), (336, 22719), (351, 22806), (359, 22845), (371, 22893), (376, 22920), (382, 22941), (385, 22950), (388, 22971), (389, 22983), (391, 22992), (392, 23001), (397, 23028), (405, 23055), (406, 23058), (413, 23079), (421, 23121), (427, 23148), (430, 23157), (432, 23172), (433, 23181), (435, 23196), (437, 23208), (440, 23217), (443, 23229), (448, 23250), (451, 23259), (469, 23343), (470, 23352), (473, 23367), (474, 23370), (478, 23388), (481, 23400), (482, 23403), (489, 23430), (496, 23451), (499, 23466), (503, 23484), (509, 23508), (511, 23523), (525, 23580), (528, 23592), (534, 23601), (538, 23613), (541, 23625), (542, 23631), (547, 23652), (551, 23664), (557, 23682), (558, 23691), (559, 23706), (560, 23712), (563, 23724), (573, 23766), (574, 23769), (577, 23778), (582, 23799), (584, 23811), (598, 23859), (601, 23868), (608, 23892), (610, 23898), (615, 23916), (616, 23925), (622, 23946), (639, 24015), (644, 24033), (645, 24036), (650, 24054), (680, 24180), (691, 24225), (705, 24276), (734, 24420), (757, 24555), (765, 24606), (777, 24684), (783, 24729), (789, 24792), (792, 24810), (799, 24840), (800, 24846), (811, 24903), (828, 24975), (839, 25035), (844, 25056), (845, 25059), (856, 25110), (858, 25119), (869, 25158), (872, 25170), (885, 25263), (893, 25308), (901, 25383), (907, 25422), (912, 25452), (920, 25509), (937, 25620), (948, 25716),

Gene: RosaAsantewaa\_19 Start: 13292, Stop: 18511, Start Num: 17

Candidate Starts for RosaAsantewaa\_19:

(Start: 16 @13271 has 2 MA's), (Start: 17 @13292 has 129 MA's), (Start: 20 @13322 has 3 MA's), (35, 13397), (39, 13403), (49, 13526), (72, 13703), (75, 13766), (83, 13892), (92, 13967), (99, 14000), (101, 14015), (106, 14057), (127, 14249), (130, 14294), (140, 14390), (148, 14444), (171, 14594), (188, 14687), (205, 14750), (262, 15008), (293, 15137), (310, 15203), (312, 15209), (328, 15257), (336, 15308), (342, 15356), (346, 15377), (361, 15440), (367, 15464), (376, 15509), (379, 15518), (403, 15638), (406, 15647), (414, 15668), (421, 15707), (440, 15803), (446, 15827), (449, 15839), (460, 15890), (469, 15935), (487, 16016), (498, 16055), (499, 16058), (503, 16076), (505, 16082), (506, 16085), (510, 16106), (511, 16115), (517, 16145), (519, 16151), (523, 16163), (561, 16313), (563, 16319), (577, 16364), (604, 16454), (606, 16460), (614, 16487), (630, 16553), (646, 16616), (664, 16688), (672, 16724), (675, 16739), (687, 16790), (710, 16874), (713, 16883), (717, 16898), (721,

16919), (722, 16922), (724, 16940), (739, 17009), (766, 17174), (770, 17198), (797, 17387), (833, 17558), (843, 17621), (860, 17696), (882, 17792), (906, 17978), (910, 17999), (917, 18053), (924, 18095), (926, 18116), (928, 18137), (934, 18173), (935, 18182), (936, 18191), (942, 18233), (949, 18305), (955, 18392),

Gene: Runhaar\_32 Start: 23285, Stop: 28396, Start Num: 17

Candidate Starts for Runhaar\_32:

(Start: 17 @23285 has 129 MA's), (Start: 20 @23315 has 3 MA's), (25, 23360), (32, 23390), (47, 23504), (58, 23570), (67, 23630), (68, 23651), (75, 23753), (83, 23879), (86, 23915), (92, 23954), (97, 23981), (101, 24002), (106, 24044), (115, 24143), (117, 24164), (131, 24290), (139, 24365), (140, 24377), (145, 24398), (157, 24503), (158, 24506), (229, 24866), (255, 24971), (267, 25040), (272, 25061), (286, 25142), (287, 25145), (293, 25172), (301, 25211), (308, 25238), (336, 25400), (342, 25448), (346, 25469), (351, 25487), (362, 25535), (365, 25547), (376, 25601), (388, 25652), (389, 25664), (391, 25673), (392, 25682), (405, 25736), (417, 25781), (420, 25796), (421, 25802), (424, 25811), (425, 25817), (429, 25835), (430, 25838), (431, 25844), (432, 25853), (442, 25907), (443, 25910), (445, 25919), (450, 25937), (451, 25940), (453, 25952), (458, 25973), (460, 25979), (461, 25982), (466, 26003), (470, 26033), (473, 26048), (481, 26081), (485, 26096), (489, 26111), (493, 26123), (495, 26129), (496, 26132), (498, 26144), (499, 26147), (511, 26204), (524, 26258), (525, 26261), (534, 26282), (538, 26294), (539, 26297), (551, 26345), (556, 26360), (557, 26363), (558, 26372), (560, 26393), (566, 26420), (567, 26423), (573, 26447), (577, 26459), (582, 26480), (584, 26492), (590, 26513), (598, 26540), (608, 26573), (610, 26579), (615, 26597), (622, 26627), (632, 26666), (676, 26846), (679, 26858), (697, 26927), (732, 27092), (754, 27215), (757, 27236), (777, 27365), (781, 27398), (783, 27410), (789, 27473), (793, 27494), (795, 27506), (799, 27521), (811, 27584), (831, 27668), (847, 27755), (855, 27773), (861, 27803), (868, 27821), (869, 27824), (871, 27830), (872, 27836), (878, 27863), (893, 27974), (901, 28049), (903, 28067), (917, 28151), (920, 28175), (938, 28292), (948, 28382),

Gene: RustyBoy\_22 Start: 16633, Stop: 21177, Start Num: 17

Candidate Starts for RustyBoy\_22:

(Start: 16 @16612 has 2 MA's), (Start: 17 @16633 has 129 MA's), (Start: 20 @16663 has 3 MA's), (61, 16930), (64, 16948), (67, 16978), (74, 17059), (75, 17101), (76, 17119), (80, 17161), (82, 17191), (84, 17236), (85, 17248), (92, 17302), (95, 17317), (96, 17323), (101, 17350), (108, 17413), (112, 17428), (114, 17443), (117, 17476), (120, 17491), (121, 17500), (126, 17539), (131, 17602), (139, 17677), (146, 17722), (148, 17743), (152, 17779), (158, 17818), (160, 17824), (169, 17887), (171, 17893), (193, 18004), (259, 18298), (264, 18325), (278, 18373), (284, 18403), (286, 18412), (291, 18436), (298, 18472), (299, 18475), (301, 18481), (312, 18517), (333, 18631), (336, 18652), (343, 18706), (351, 18739), (360, 18781), (361, 18784), (367, 18808), (374, 18844), (376, 18853), (379, 18862), (382, 18874), (389, 18916), (391, 18925), (399, 18970), (406, 18991), (413, 19012), (417, 19033), (422, 19057), (431, 19096), (433, 19114), (435, 19129), (440, 19150), (450, 19189), (455, 19213), (466, 19261), (470, 19291), (473, 19306), (481, 19339), (483, 19345), (493, 19384), (498, 19405), (503, 19426), (506, 19435), (524, 19519), (528, 19534), (530, 19543), (536, 19555), (542, 19576), (557, 19627), (558, 19636), (574, 19705), (577, 19714), (586, 19744), (587, 19747), (600, 19789), (604, 19804), (618, 19855), (623, 19876), (636, 19930), (646, 19966), (647, 19969), (660, 20026), (661, 20029), (668, 20053), (677, 20095), (685, 20134), (687, 20140), (693, 20158), (695, 20164), (716, 20245), (723, 20284), (728, 20305), (731, 20323), (740, 20362), (741, 20371), (758, 20467), (762, 20488), (772, 20545), (778, 20590), (779, 20602), (782, 20623), (788, 20680), (793, 20710), (814, 20809), (830, 20869), (841, 20938), (845, 20956),

Gene: Salk\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for Salk\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020),

(114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (687, 20750), (689, 20756), (691, 20762), (693, 20768), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605), (875, 21683),

Gene: Scap1\_19 Start: 13425, Stop: 18671, Start Num: 16

Candidate Starts for Scap1\_19:

(Start: 16 @13425 has 2 MA's), (Start: 17 @13446 has 129 MA's), (Start: 20 @13476 has 3 MA's), (43, 13629), (53, 13716), (58, 13737), (62, 13755), (70, 13848), (75, 13920), (83, 14046), (86, 14082), (92, 14121), (94, 14133), (104, 14193), (106, 14211), (130, 14448), (148, 14598), (171, 14748), (176, 14772), (202, 14889), (238, 15075), (254, 15123), (264, 15171), (275, 15207), (277, 15216), (310, 15357), (312, 15363), (336, 15456), (346, 15525), (361, 15588), (365, 15603), (367, 15612), (368, 15615), (380, 15669), (389, 15720), (407, 15798), (414, 15816), (431, 15897), (449, 15987), (460, 16038), (469, 16083), (470, 16092), (476, 16122), (488, 16167), (495, 16188), (498, 16203), (505, 16230), (506, 16233), (510, 16254), (511, 16263), (519, 16299), (561, 16461), (563, 16467), (574, 16503), (577, 16512), (586, 16542), (592, 16563), (594, 16569), (598, 16581), (600, 16587), (604, 16602), (614, 16635), (619, 16656), (621, 16665), (623, 16674), (630, 16701), (637, 16731), (640, 16743), (641, 16746), (665, 16839), (672, 16872), (675, 16887), (708, 17013), (710, 17022), (713, 17031), (714, 17034), (717, 17046), (721, 17067), (722, 17070), (742, 17178), (764, 17304), (766, 17322), (797, 17535), (804, 17565), (820, 17652), (848, 17796), (871, 17877), (884, 17973), (906, 18126), (910, 18147), (921, 18231), (928, 18285), (932, 18300), (940, 18360), (942, 18381), (943, 18384), (946, 18420), (949, 18453), (961, 18633),

Gene: Schwartz33\_33 Start: 23640, Stop: 28727, Start Num: 17

Candidate Starts for Schwartz33\_33:

(Start: 17 @23640 has 129 MA's), (Start: 20 @23670 has 3 MA's), (43, 23817), (50, 23883), (53, 23904), (58, 23925), (64, 23955), (67, 23985), (68, 24006), (75, 24108), (80, 24168), (84, 24243), (88, 24279), (92, 24309), (95, 24324), (101, 24357), (111, 24450), (118, 24504), (119, 24507), (139, 24693), (145, 24726), (154, 24810), (157, 24831), (158, 24834), (169, 24903), (171, 24909), (172, 24915), (197, 25032), (199, 25044), (205, 25068), (215, 25122), (216, 25125), (225, 25179), (232, 25212), (293, 25503), (308, 25569), (320, 25635), (334, 25722), (335, 25728), (336, 25731), (345, 25794), (346, 25800), (351, 25818), (365, 25878), (376, 25932), (385, 25962), (389, 25995), (391, 26004), (392, 26013), (405, 26067), (407, 26073), (417, 26112), (421, 26133), (424, 26142), (429, 26166), (430, 26169), (431, 26175), (432, 26184), (435, 26208), (442, 26238), (443, 26241), (444, 26244), (451, 26271), (463, 26325), (470, 26364), (478, 26400), (489, 26442), (495, 26460), (496, 26463), (498, 26475), (499, 26478), (501, 26484), (504, 26499), (507, 26514), (511, 26535), (516, 26562), (525, 26592), (534, 26613), (547, 26664), (557, 26694), (558, 26703), (568, 26757), (577, 26790), (582, 26811), (584, 26823), (590, 26844), (598, 26871), (608, 26904), (610, 26910), (615, 26928), (616, 26937), (617, 26940), (639, 27027), (650, 27066), (651, 27069), (661, 27114), (679, 27189), (694, 27246), (699, 27264), (734, 27432), (738, 27453), (754, 27546), (768, 27639), (775, 27681), (781, 27729), (783, 27741), (789, 27804), (790, 27816), (795, 27837), (799, 27852), (800, 27858), (831, 27999), (849, 28095), (855, 28104), (868, 28152), (869, 28155), (872, 28167),



(893, 28305), (901, 28380), (920, 28506), (948, 28713),

Gene: ScienceWizSam\_28 Start: 20475, Stop: 25064, Start Num: 17

Candidate Starts for ScienceWizSam\_28:

(Start: 16 @20454 has 2 MA's), (Start: 17 @20475 has 129 MA's), (Start: 20 @20505 has 3 MA's), (28, 20559), (32, 20580), (37, 20616), (47, 20694), (57, 20754), (62, 20778), (64, 20790), (67, 20820), (70, 20871), (74, 20901), (75, 20943), (76, 20961), (80, 21003), (82, 21033), (84, 21078), (85, 21090), (92, 21144), (95, 21159), (97, 21171), (101, 21192), (114, 21285), (117, 21318), (120, 21333), (126, 21381), (131, 21444), (145, 21552), (160, 21666), (161, 21669), (167, 21717), (189, 21831), (196, 21855), (199, 21870), (203, 21882), (235, 22050), (239, 22065), (240, 22071), (245, 22089), (261, 22161), (273, 22212), (278, 22227), (284, 22257), (299, 22329), (301, 22335), (305, 22353), (311, 22368), (312, 22371), (319, 22398), (336, 22512), (344, 22569), (346, 22581), (358, 22635), (361, 22644), (362, 22647), (367, 22668), (376, 22713), (382, 22734), (389, 22776), (392, 22794), (406, 22851), (413, 22872), (417, 22893), (433, 22974), (435, 22989), (436, 22992), (442, 23019), (443, 23022), (455, 23073), (470, 23151), (473, 23166), (474, 23169), (478, 23187), (479, 23193), (481, 23199), (484, 23208), (493, 23244), (494, 23247), (496, 23253), (497, 23259), (503, 23286), (514, 23340), (515, 23343), (519, 23361), (523, 23373), (530, 23403), (536, 23418), (540, 23427), (542, 23439), (547, 23460), (558, 23499), (569, 23556), (574, 23568), (577, 23577), (589, 23616), (592, 23628), (602, 23658), (604, 23667), (624, 23742), (625, 23745), (629, 23763), (631, 23769), (646, 23829), (647, 23832), (649, 23838), (655, 23859), (661, 23892), (662, 23895), (693, 24021), (694, 24024), (700, 24045), (708, 24078), (709, 24081), (710, 24087), (713, 24096), (719, 24123), (728, 24168), (741, 24234), (748, 24285), (750, 24291), (762, 24351), (766, 24375), (776, 24435), (778, 24453), (779, 24465), (805, 24624), (806, 24633), (816, 24681), (823, 24714), (827, 24726), (830, 24732), (833, 24753), (834, 24756), (835, 24762), (841, 24801), (846, 24828), (884, 25014), (889, 25041),

Gene: Secretariat\_30 Start: 22365, Stop: 27458, Start Num: 17

Candidate Starts for Secretariat\_30:

(Start: 17 @22365 has 129 MA's), (Start: 20 @22395 has 3 MA's), (24, 22434), (43, 22542), (47, 22584), (60, 22659), (63, 22677), (67, 22710), (74, 22803), (75, 22845), (80, 22905), (88, 23016), (92, 23046), (95, 23061), (101, 23094), (104, 23118), (110, 23184), (111, 23187), (118, 23241), (119, 23244), (122, 23259), (154, 23547), (157, 23568), (169, 23640), (216, 23862), (225, 23916), (231, 23937), (232, 23949), (253, 24024), (263, 24087), (272, 24126), (274, 24138), (278, 24159), (288, 24222), (293, 24240), (294, 24243), (300, 24276), (324, 24384), (332, 24435), (333, 24447), (334, 24459), (336, 24468), (346, 24537), (348, 24543), (351, 24555), (356, 24582), (362, 24603), (376, 24669), (383, 24693), (385, 24699), (389, 24732), (391, 24741), (392, 24750), (405, 24804), (417, 24849), (421, 24870), (424, 24879), (430, 24906), (432, 24921), (435, 24945), (442, 24975), (443, 24978), (448, 24999), (450, 25005), (451, 25008), (458, 25041), (470, 25101), (486, 25170), (489, 25179), (493, 25191), (495, 25197), (496, 25200), (497, 25206), (504, 25236), (508, 25254), (510, 25263), (511, 25272), (516, 25299), (523, 25320), (525, 25329), (538, 25362), (550, 25410), (557, 25431), (558, 25440), (559, 25455), (560, 25461), (577, 25527), (582, 25548), (584, 25560), (590, 25581), (598, 25608), (601, 25617), (603, 25623), (604, 25629), (610, 25647), (615, 25665), (622, 25695), (644, 25782), (648, 25794), (654, 25815), (655, 25818), (658, 25836), (690, 25971), (693, 25980), (694, 25983), (745, 26238), (747, 26250), (754, 26283), (767, 26367), (781, 26466), (789, 26541), (790, 26553), (793, 26562), (800, 26595), (809, 26640), (847, 26823), (855, 26841), (860, 26865), (869, 26892), (871, 26898), (872, 26904), (893, 27042), (896, 27081), (901, 27117), (903, 27135), (920, 27237), (948, 27444),

Gene: SendItCS\_20 Start: 15072, Stop: 20549, Start Num: 2

Candidate Starts for SendItCS\_20:

(Start: 2 @15072 has 31 MA's), (3, 15102), (7, 15183), (9, 15213), (10, 15216), (12, 15246), (75, 15798), (83, 15924), (90, 15987), (92, 15999), (100, 16041), (106, 16089), (113, 16173), (127, 16281), (145, 16443), (148, 16476), (157, 16548), (171, 16626), (203, 16773), (275, 17085), (277, 17094),

(292, 17157), (336, 17331), (341, 17373), (346, 17400), (349, 17409), (361, 17463), (367, 17487), (380, 17544), (402, 17658), (414, 17691), (421, 17730), (431, 17772), (432, 17781), (437, 17817), (449, 17862), (460, 17913), (468, 17949), (470, 17967), (476, 17997), (486, 18036), (487, 18039), (498, 18078), (499, 18081), (506, 18108), (510, 18129), (511, 18138), (518, 18171), (519, 18174), (525, 18195), (545, 18258), (561, 18336), (563, 18342), (574, 18378), (575, 18381), (576, 18384), (577, 18387), (595, 18447), (598, 18456), (604, 18477), (613, 18507), (614, 18510), (629, 18573), (630, 18576), (631, 18579), (641, 18621), (646, 18639), (655, 18669), (665, 18714), (667, 18723), (672, 18747), (690, 18822), (692, 18828), (706, 18879), (713, 18906), (717, 18921), (719, 18933), (721, 18942), (725, 18966), (739, 19032), (748, 19095), (753, 19119), (766, 19197), (774, 19245), (779, 19287), (797, 19410), (820, 19527), (843, 19644), (861, 19725), (873, 19770), (882, 19815), (906, 20001), (910, 20022), (911, 20034), (917, 20076), (925, 20127), (932, 20175), (936, 20214), (944, 20265), (952, 20388), (958, 20427),

Gene: Serenabean\_25 Start: 18537, Stop: 23141, Start Num: 17

Candidate Starts for Serenabean\_25:

(Start: 17 @18537 has 129 MA's), (Start: 20 @18570 has 3 MA's), (33, 18645), (41, 18693), (43, 18717), (54, 18807), (58, 18825), (61, 18837), (67, 18882), (71, 18939), (75, 19005), (80, 19065), (88, 19176), (92, 19206), (95, 19221), (113, 19344), (114, 19347), (116, 19368), (120, 19395), (127, 19452), (130, 19497), (134, 19542), (144, 19611), (146, 19626), (148, 19647), (151, 19668), (174, 19809), (178, 19830), (183, 19851), (192, 19905), (220, 20043), (229, 20094), (239, 20139), (311, 20445), (318, 20463), (336, 20607), (340, 20637), (358, 20730), (360, 20736), (361, 20739), (364, 20751), (373, 20790), (378, 20814), (390, 20877), (413, 20967), (417, 20988), (423, 21015), (431, 21051), (457, 21180), (475, 21273), (480, 21291), (489, 21324), (493, 21342), (498, 21363), (500, 21369), (503, 21384), (511, 21423), (519, 21459), (521, 21465), (528, 21492), (545, 21549), (557, 21591), (558, 21600), (561, 21627), (562, 21630), (569, 21657), (574, 21669), (577, 21678), (580, 21687), (595, 21738), (596, 21741), (604, 21768), (612, 21795), (652, 21951), (664, 22002), (672, 22038), (682, 22077), (687, 22104), (691, 22116), (696, 22134), (702, 22155), (709, 22182), (714, 22200), (723, 22248), (737, 22314), (759, 22434), (764, 22458), (765, 22467), (766, 22476), (772, 22509), (778, 22554), (786, 22608), (810, 22758), (816, 22782), (817, 22794), (820, 22803), (826, 22824), (840, 22902), (842, 22905), (859, 22977), (888, 23130),

Gene: ShaggyRogers\_35 Start: 23288, Stop: 28399, Start Num: 17

Candidate Starts for ShaggyRogers\_35:

(Start: 17 @23288 has 129 MA's), (Start: 20 @23318 has 3 MA's), (25, 23363), (47, 23507), (57, 23567), (58, 23573), (67, 23633), (68, 23654), (75, 23756), (83, 23882), (86, 23918), (92, 23957), (97, 23984), (101, 24005), (106, 24047), (117, 24167), (129, 24281), (131, 24293), (139, 24368), (140, 24380), (145, 24401), (157, 24506), (158, 24509), (229, 24869), (232, 24887), (267, 25043), (286, 25145), (287, 25148), (293, 25175), (301, 25214), (308, 25241), (312, 25262), (336, 25403), (345, 25466), (346, 25472), (351, 25490), (352, 25496), (362, 25538), (365, 25550), (376, 25604), (383, 25628), (386, 25646), (388, 25655), (389, 25667), (391, 25676), (392, 25685), (402, 25730), (405, 25739), (417, 25784), (421, 25805), (424, 25814), (430, 25841), (432, 25856), (442, 25910), (443, 25913), (445, 25922), (448, 25934), (451, 25943), (453, 25955), (458, 25976), (460, 25982), (466, 26006), (470, 26036), (473, 26051), (489, 26114), (493, 26126), (495, 26132), (496, 26135), (498, 26147), (499, 26150), (511, 26207), (524, 26261), (525, 26264), (534, 26285), (538, 26297), (539, 26300), (551, 26348), (556, 26363), (557, 26366), (558, 26375), (559, 26390), (560, 26396), (566, 26423), (567, 26426), (577, 26462), (582, 26483), (584, 26495), (586, 26504), (590, 26516), (598, 26543), (608, 26576), (610, 26582), (615, 26600), (622, 26630), (650, 26738), (676, 26849), (705, 26960), (717, 27005), (728, 27062), (732, 27095), (757, 27239), (767, 27302), (777, 27368), (781, 27401), (783, 27413), (789, 27476), (793, 27497), (795, 27509), (800, 27530), (831, 27671), (847, 27758), (855, 27776), (861, 27806), (868, 27824), (869, 27827), (871, 27833), (872, 27839), (878, 27866), (893, 27977), (899, 28040), (901, 28052), (912, 28121), (917, 28154), (920, 28178), (938, 28295), (948, 28385),

Gene: SheRa\_19 Start: 13487, Stop: 18715, Start Num: 17

Candidate Starts for SheRa\_19:

(Start: 16 @13466 has 2 MA's), (Start: 17 @13487 has 129 MA's), (Start: 20 @13517 has 3 MA's), (40, 13619), (43, 13670), (58, 13778), (75, 13961), (83, 14087), (86, 14123), (92, 14162), (106, 14252), (148, 14639), (171, 14789), (176, 14813), (189, 14885), (238, 15116), (261, 15194), (264, 15212), (265, 15215), (275, 15248), (298, 15356), (318, 15416), (336, 15497), (346, 15566), (358, 15620), (364, 15641), (379, 15707), (380, 15710), (401, 15821), (414, 15857), (417, 15875), (428, 15926), (449, 16028), (452, 16040), (455, 16055), (469, 16124), (470, 16133), (476, 16163), (495, 16229), (502, 16259), (505, 16271), (506, 16274), (510, 16295), (511, 16304), (519, 16340), (520, 16343), (528, 16373), (554, 16457), (561, 16502), (562, 16505), (563, 16508), (577, 16553), (586, 16583), (600, 16628), (604, 16643), (614, 16676), (619, 16697), (621, 16706), (623, 16715), (629, 16739), (630, 16742), (637, 16772), (640, 16784), (657, 16850), (662, 16871), (668, 16892), (670, 16907), (672, 16913), (706, 17045), (708, 17054), (710, 17063), (713, 17072), (714, 17075), (717, 17087), (718, 17090), (719, 17099), (721, 17108), (740, 17201), (747, 17255), (766, 17363), (769, 17378), (775, 17417), (797, 17576), (843, 17810), (860, 17885), (905, 18164), (906, 18167), (910, 18188), (915, 18236), (917, 18242), (933, 18350), (942, 18422), (946, 18461), (947, 18470), (950, 18524), (961, 18677),

Gene: Shepard\_27 Start: 20329, Stop: 24918, Start Num: 17

Candidate Starts for Shepard\_27:

(Start: 16 @20308 has 2 MA's), (Start: 17 @20329 has 129 MA's), (Start: 20 @20359 has 3 MA's), (28, 20413), (57, 20608), (62, 20632), (64, 20644), (67, 20674), (74, 20755), (75, 20797), (76, 20815), (80, 20857), (82, 20887), (84, 20932), (85, 20944), (92, 20998), (95, 21013), (96, 21019), (101, 21046), (108, 21109), (112, 21124), (114, 21139), (117, 21172), (120, 21187), (126, 21235), (135, 21340), (145, 21406), (152, 21475), (158, 21514), (161, 21523), (165, 21538), (168, 21580), (169, 21583), (182, 21634), (205, 21748), (216, 21805), (230, 21877), (238, 21916), (245, 21943), (256, 21985), (278, 22081), (299, 22183), (301, 22189), (312, 22225), (336, 22372), (338, 22384), (343, 22426), (344, 22429), (353, 22474), (358, 22495), (361, 22504), (362, 22507), (367, 22528), (382, 22594), (383, 22597), (406, 22711), (413, 22732), (416, 22750), (417, 22753), (435, 22849), (437, 22861), (466, 22981), (470, 23011), (484, 23068), (493, 23104), (496, 23113), (498, 23125), (503, 23146), (506, 23155), (517, 23215), (527, 23248), (529, 23260), (530, 23263), (535, 23275), (544, 23302), (547, 23317), (549, 23323), (550, 23326), (557, 23347), (558, 23356), (574, 23425), (577, 23434), (589, 23473), (604, 23524), (620, 23581), (631, 23626), (636, 23650), (637, 23653), (646, 23686), (647, 23689), (648, 23692), (649, 23695), (661, 23749), (662, 23752), (668, 23773), (691, 23872), (700, 23902), (703, 23914), (706, 23926), (710, 23944), (713, 23953), (714, 23956), (743, 24112), (747, 24136), (749, 24145), (762, 24208), (765, 24223), (778, 24310), (779, 24322), (786, 24364), (798, 24448), (810, 24514), (816, 24538), (827, 24583), (829, 24586), (830, 24589), (841, 24658), (842, 24661), (846, 24685), (884, 24868),

Gene: Shiba\_23 Start: 17270, Stop: 21790, Start Num: 20

Candidate Starts for Shiba\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (238, 18827), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246),

(566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (689, 20756), (691, 20762), (693, 20768), (702, 20801), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605),

Gene: Sloopyjoe\_23 Start: 17241, Stop: 21791, Start Num: 17

Candidate Starts for Sloopyjoe\_23:

(Start: 16 @17220 has 2 MA's), (Start: 17 @17241 has 129 MA's), (Start: 20 @17271 has 3 MA's), (23, 17304), (47, 17460), (62, 17544), (64, 17556), (67, 17586), (74, 17667), (75, 17709), (76, 17727), (80, 17769), (82, 17799), (84, 17844), (85, 17856), (92, 17910), (95, 17925), (101, 17958), (108, 18021), (114, 18051), (117, 18084), (120, 18099), (126, 18147), (140, 18297), (145, 18318), (158, 18426), (161, 18435), (167, 18483), (195, 18618), (205, 18660), (226, 18774), (237, 18825), (240, 18837), (258, 18918), (278, 19002), (281, 19020), (291, 19065), (301, 19110), (302, 19113), (303, 19119), (314, 19152), (336, 19263), (346, 19332), (347, 19335), (356, 19377), (358, 19386), (361, 19395), (369, 19425), (376, 19464), (378, 19470), (382, 19485), (389, 19527), (413, 19623), (417, 19644), (418, 19647), (422, 19668), (433, 19725), (435, 19740), (442, 19770), (445, 19782), (452, 19809), (455, 19824), (466, 19872), (470, 19902), (473, 19917), (481, 19950), (483, 19956), (493, 19995), (496, 20004), (498, 20016), (503, 20037), (516, 20103), (519, 20112), (528, 20145), (529, 20151), (530, 20154), (536, 20166), (537, 20169), (543, 20190), (548, 20211), (558, 20247), (566, 20295), (577, 20325), (604, 20415), (620, 20472), (631, 20517), (635, 20535), (642, 20562), (644, 20571), (646, 20577), (660, 20637), (664, 20649), (667, 20661), (679, 20715), (689, 20757), (691, 20763), (693, 20769), (702, 20802), (703, 20805), (709, 20829), (710, 20835), (712, 20841), (713, 20844), (723, 20895), (726, 20907), (734, 20946), (758, 21078), (765, 21114), (772, 21156), (778, 21201), (788, 21291), (806, 21381), (810, 21405), (816, 21429), (817, 21441), (820, 21450), (823, 21462), (827, 21474), (837, 21519), (841, 21549), (845, 21567), (852, 21606), (875, 21684),

Gene: Soshi\_23 Start: 16685, Stop: 22165, Start Num: 2

Candidate Starts for Soshi\_23:

(1, 16664), (Start: 2 @16685 has 31 MA's), (3, 16715), (12, 16859), (22, 16994), (40, 17069), (50, 17186), (51, 17189), (57, 17222), (64, 17258), (67, 17288), (73, 17360), (75, 17411), (83, 17537), (86, 17573), (92, 17612), (94, 17624), (101, 17660), (106, 17702), (127, 17894), (132, 17960), (140, 18035), (145, 18056), (148, 18089), (156, 18152), (157, 18161), (171, 18239), (203, 18386), (227, 18518), (240, 18575), (262, 18653), (264, 18662), (266, 18671), (275, 18698), (291, 18773), (293, 18782), (310, 18848), (311, 18851), (326, 18890), (336, 18944), (346, 19013), (358, 19067), (367, 19100), (376, 19145), (379, 19154), (382, 19166), (395, 19241), (397, 19253), (409, 19292), (414, 19304), (421, 19343), (428, 19373), (438, 19433), (449, 19475), (459, 19523), (460, 19526), (470, 19580), (501, 19700), (510, 19742), (511, 19751), (519, 19787), (525, 19808), (528, 19820), (542, 19862), (543, 19865), (547, 19883), (557, 19913), (561, 19949), (563, 19955), (568, 19976), (577, 20000), (586, 20030), (604, 20090), (614, 20123), (618, 20141), (621, 20153), (623, 20162), (637, 20219), (640, 20231), (641, 20234), (646, 20252), (655, 20282), (660, 20312), (672, 20360), (675, 20375), (694, 20447), (706, 20492), (710, 20510), (713, 20519), (721, 20555), (724, 20576), (725, 20579), (758, 20765), (762, 20786), (764, 20792), (766, 20810), (769, 20825), (774, 20858), (775, 20864), (794, 21014), (797, 21023), (850, 21296), (852, 21305), (895, 21521), (906, 21614), (910, 21635), (915, 21683), (917, 21689), (918, 21695), (925, 21740), (947, 21917), (960, 22109), (961, 22118),

Gene: Spectropatronm\_23 Start: 16160, Stop: 21646, Start Num: 2

Candidate Starts for Spectropatronm\_23:

(1, 16139), (Start: 2 @16160 has 31 MA's), (3, 16190), (12, 16334), (40, 16544), (51, 16664), (58, 16703), (64, 16733), (66, 16757), (67, 16763), (68, 16784), (69, 16799), (75, 16886), (82, 16976), (83, 17012), (84, 17021), (86, 17048), (92, 17087), (93, 17096), (97, 17114), (101, 17135), (106, 17177),

(107, 17186), (117, 17294), (128, 17399), (139, 17495), (148, 17561), (171, 17711), (187, 17795), (191, 17816), (203, 17858), (228, 17993), (262, 18125), (264, 18134), (275, 18170), (277, 18179), (286, 18221), (293, 18254), (333, 18407), (336, 18428), (345, 18491), (346, 18497), (348, 18503), (353, 18530), (358, 18551), (360, 18557), (361, 18560), (367, 18584), (376, 18629), (379, 18638), (380, 18641), (382, 18650), (395, 18725), (401, 18752), (406, 18767), (407, 18770), (414, 18788), (417, 18806), (421, 18827), (432, 18878), (449, 18959), (468, 19046), (470, 19064), (475, 19091), (501, 19184), (510, 19226), (511, 19235), (519, 19271), (524, 19289), (525, 19292), (542, 19346), (557, 19397), (561, 19433), (563, 19439), (568, 19460), (577, 19484), (586, 19514), (604, 19574), (614, 19607), (615, 19610), (618, 19625), (627, 19661), (637, 19703), (640, 19715), (641, 19718), (655, 19766), (660, 19796), (665, 19811), (672, 19844), (675, 19859), (691, 19922), (712, 20000), (721, 20039), (734, 20105), (748, 20192), (749, 20195), (766, 20294), (774, 20342), (775, 20348), (797, 20507), (850, 20780), (860, 20816), (878, 20882), (895, 21005), (906, 21098), (910, 21119), (915, 21167), (917, 21173), (918, 21179), (925, 21224), (940, 21332), (942, 21353), (947, 21401), (953, 21488), (960, 21590), (961, 21599),

Gene: Sporto\_24 Start: 18451, Stop: 23001, Start Num: 17

Candidate Starts for Sporto\_24:

(Start: 16 @18430 has 2 MA's), (Start: 17 @18451 has 129 MA's), (Start: 20 @18481 has 3 MA's), (28, 18535), (43, 18628), (49, 18679), (51, 18697), (64, 18766), (67, 18796), (74, 18877), (75, 18919), (76, 18937), (80, 18979), (82, 19009), (84, 19054), (85, 19066), (92, 19120), (95, 19135), (96, 19141), (101, 19168), (108, 19231), (112, 19246), (114, 19261), (117, 19294), (120, 19309), (126, 19357), (131, 19420), (140, 19507), (142, 19516), (152, 19597), (153, 19600), (154, 19612), (158, 19636), (161, 19645), (166, 19687), (169, 19705), (193, 19822), (256, 20095), (278, 20191), (281, 20209), (291, 20254), (301, 20299), (312, 20335), (333, 20449), (336, 20470), (338, 20482), (339, 20497), (358, 20593), (361, 20602), (365, 20617), (367, 20626), (373, 20653), (377, 20674), (379, 20680), (382, 20692), (392, 20752), (395, 20767), (413, 20830), (417, 20851), (422, 20875), (433, 20932), (435, 20947), (436, 20950), (443, 20980), (445, 20989), (452, 21016), (455, 21031), (468, 21091), (470, 21109), (473, 21124), (481, 21157), (483, 21163), (493, 21202), (496, 21211), (498, 21223), (503, 21244), (508, 21265), (516, 21310), (519, 21319), (528, 21352), (529, 21358), (530, 21361), (536, 21373), (542, 21394), (545, 21403), (554, 21436), (558, 21454), (564, 21490), (566, 21502), (574, 21523), (577, 21532), (581, 21544), (592, 21583), (604, 21622), (615, 21658), (619, 21676), (631, 21724), (638, 21757), (642, 21769), (646, 21784), (660, 21844), (667, 21868), (678, 21916), (679, 21922), (685, 21952), (696, 21988), (709, 22036), (710, 22042), (712, 22048), (713, 22051), (723, 22102), (732, 22144), (740, 22180), (741, 22189), (743, 22210), (772, 22363), (778, 22408), (788, 22498), (800, 22558), (806, 22588), (816, 22636), (817, 22648), (827, 22681), (834, 22711), (852, 22816), (863, 22852), (890, 22990),

Gene: StarLord\_23 Start: 17241, Stop: 21791, Start Num: 17

Candidate Starts for StarLord\_23:

(Start: 16 @17220 has 2 MA's), (Start: 17 @17241 has 129 MA's), (Start: 20 @17271 has 3 MA's), (23, 17304), (47, 17460), (62, 17544), (64, 17556), (67, 17586), (74, 17667), (75, 17709), (76, 17727), (80, 17769), (82, 17799), (84, 17844), (85, 17856), (92, 17910), (95, 17925), (101, 17958), (108, 18021), (114, 18051), (117, 18084), (120, 18099), (126, 18147), (140, 18297), (145, 18318), (158, 18426), (161, 18435), (167, 18483), (195, 18618), (205, 18660), (226, 18774), (237, 18825), (240, 18837), (258, 18918), (278, 19002), (281, 19020), (291, 19065), (301, 19110), (302, 19113), (303, 19119), (314, 19152), (336, 19263), (346, 19332), (347, 19335), (356, 19377), (358, 19386), (361, 19395), (369, 19425), (376, 19464), (378, 19470), (382, 19485), (389, 19527), (413, 19623), (417, 19644), (418, 19647), (422, 19668), (433, 19725), (435, 19740), (442, 19770), (445, 19782), (452, 19809), (455, 19824), (466, 19872), (470, 19902), (473, 19917), (481, 19950), (483, 19956), (493, 19995), (496, 20004), (498, 20016), (503, 20037), (516, 20103), (519, 20112), (528, 20145), (529, 20151), (530, 20154), (536, 20166), (537, 20169), (543, 20190), (548, 20211), (558, 20247), (566, 20295), (577, 20325), (604, 20415), (620, 20472), (631, 20517), (635, 20535), (642, 20562), (644, 20571), (646, 20577), (660, 20637), (664, 20649), (667, 20661), (679, 20715), (689, 20757), (691, 20763),

(693, 20769), (702, 20802), (703, 20805), (709, 20829), (710, 20835), (712, 20841), (713, 20844), (723, 20895), (726, 20907), (734, 20946), (758, 21078), (765, 21114), (772, 21156), (778, 21201), (788, 21291), (806, 21381), (810, 21405), (816, 21429), (817, 21441), (820, 21450), (823, 21462), (827, 21474), (837, 21519), (841, 21549), (845, 21567), (852, 21606), (875, 21684),

Gene: Stayer\_23 Start: 17240, Stop: 21790, Start Num: 17

Candidate Starts for Stayer\_23:

(Start: 16 @17219 has 2 MA's), (Start: 17 @17240 has 129 MA's), (Start: 20 @17270 has 3 MA's), (23, 17303), (47, 17459), (62, 17543), (64, 17555), (67, 17585), (74, 17666), (75, 17708), (76, 17726), (80, 17768), (82, 17798), (84, 17843), (85, 17855), (92, 17909), (95, 17924), (101, 17957), (108, 18020), (114, 18050), (117, 18083), (120, 18098), (126, 18146), (140, 18296), (145, 18317), (158, 18425), (161, 18434), (167, 18482), (195, 18617), (205, 18659), (226, 18773), (237, 18824), (238, 18827), (240, 18836), (258, 18917), (278, 19001), (281, 19019), (291, 19064), (301, 19109), (302, 19112), (303, 19118), (314, 19151), (336, 19262), (346, 19331), (347, 19334), (356, 19376), (358, 19385), (361, 19394), (369, 19424), (376, 19463), (378, 19469), (382, 19484), (389, 19526), (413, 19622), (417, 19643), (418, 19646), (422, 19667), (433, 19724), (435, 19739), (442, 19769), (445, 19781), (452, 19808), (455, 19823), (466, 19871), (470, 19901), (473, 19916), (481, 19949), (483, 19955), (493, 19994), (496, 20003), (498, 20015), (503, 20036), (516, 20102), (519, 20111), (528, 20144), (529, 20150), (530, 20153), (536, 20165), (537, 20168), (543, 20189), (548, 20210), (558, 20246), (566, 20294), (577, 20324), (604, 20414), (620, 20471), (631, 20516), (635, 20534), (642, 20561), (644, 20570), (646, 20576), (660, 20636), (664, 20648), (667, 20660), (679, 20714), (689, 20756), (691, 20762), (693, 20768), (702, 20801), (703, 20804), (709, 20828), (710, 20834), (712, 20840), (713, 20843), (723, 20894), (726, 20906), (734, 20945), (758, 21077), (765, 21113), (772, 21155), (778, 21200), (788, 21290), (806, 21380), (810, 21404), (816, 21428), (817, 21440), (820, 21449), (823, 21461), (827, 21473), (837, 21518), (841, 21548), (845, 21566), (852, 21605),

Gene: Sunny4976\_23 Start: 18500, Stop: 23560, Start Num: 4

Candidate Starts for Sunny4976\_23:

(4, 18500), (5, 18530), (8, 18584), (11, 18605), (29, 18812), (31, 18821), (32, 18824), (47, 18941), (52, 18974), (58, 19007), (65, 19046), (68, 19088), (75, 19190), (77, 19226), (82, 19280), (83, 19316), (85, 19337), (92, 19391), (114, 19523), (115, 19535), (116, 19544), (121, 19580), (139, 19757), (145, 19790), (153, 19862), (157, 19895), (158, 19898), (173, 19982), (208, 20207), (212, 20243), (215, 20267), (218, 20279), (237, 20405), (271, 20573), (295, 20726), (296, 20729), (315, 20852), (316, 20858), (324, 20909), (331, 20972), (336, 21026), (340, 21056), (353, 21128), (361, 21158), (363, 21167), (367, 21182), (376, 21227), (382, 21248), (384, 21254), (391, 21299), (413, 21386), (421, 21428), (435, 21503), (452, 21572), (466, 21635), (470, 21665), (481, 21713), (484, 21722), (498, 21782), (519, 21878), (528, 21911), (530, 21920), (536, 21932), (537, 21935), (542, 21953), (547, 21974), (557, 22004), (558, 22013), (561, 22040), (569, 22070), (577, 22091), (591, 22136), (599, 22163), (604, 22181), (625, 22259), (636, 22307), (637, 22310), (647, 22346), (657, 22388), (665, 22418), (666, 22421), (670, 22445), (672, 22451), (673, 22460), (695, 22541), (708, 22592), (713, 22610), (720, 22643), (721, 22646), (734, 22712), (747, 22793), (772, 22922), (778, 22967), (788, 23057), (805, 23138), (806, 23147), (810, 23171), (820, 23216), (825, 23234), (830, 23249), (840, 23318), (871, 23429),

Gene: Sweetclover\_24 Start: 17996, Stop: 22579, Start Num: 17

Candidate Starts for Sweetclover\_24:

(Start: 17 @17996 has 129 MA's), (Start: 20 @18029 has 3 MA's), (43, 18176), (54, 18266), (61, 18296), (67, 18341), (75, 18464), (80, 18524), (88, 18635), (92, 18665), (95, 18680), (101, 18713), (112, 18791), (114, 18806), (116, 18827), (127, 18911), (134, 19001), (146, 19085), (148, 19106), (151, 19127), (183, 19310), (192, 19364), (201, 19403), (220, 19502), (240, 19604), (330, 19994), (336, 20048), (342, 20096), (343, 20102), (358, 20171), (361, 20180), (367, 20204), (369, 20210), (373, 20231), (382, 20270), (394, 20339), (401, 20372), (405, 20384), (413, 20408), (417, 20429), (420, 20444), (432, 20501), (435, 20525), (443, 20558), (444, 20561), (475, 20714), (478, 20723),

(480, 20732), (489, 20765), (493, 20783), (498, 20804), (511, 20864), (514, 20879), (519, 20900), (521, 20906), (528, 20933), (533, 20951), (546, 20996), (557, 21032), (558, 21041), (561, 21068), (562, 21071), (574, 21110), (577, 21119), (595, 21179), (599, 21191), (621, 21272), (640, 21350), (652, 21392), (664, 21443), (672, 21479), (677, 21500), (682, 21518), (685, 21539), (687, 21545), (696, 21575), (709, 21623), (714, 21641), (722, 21677), (723, 21689), (732, 21731), (750, 21833), (765, 21908), (766, 21917), (772, 21950), (794, 22121), (810, 22199), (816, 22223), (817, 22235), (820, 22244), (840, 22343), (842, 22346), (845, 22361), (850, 22391), (888, 22571),

Gene: Synopsis\_25 Start: 20138, Stop: 24727, Start Num: 17

Candidate Starts for Synopsis\_25:

(Start: 16 @20117 has 2 MA's), (Start: 17 @20138 has 129 MA's), (Start: 20 @20168 has 3 MA's), (28, 20222), (32, 20243), (37, 20279), (47, 20357), (57, 20417), (62, 20441), (64, 20453), (67, 20483), (70, 20534), (74, 20564), (75, 20606), (76, 20624), (80, 20666), (82, 20696), (84, 20741), (85, 20753), (92, 20807), (95, 20822), (97, 20834), (101, 20855), (114, 20948), (117, 20981), (120, 20996), (126, 21044), (140, 21194), (145, 21215), (160, 21329), (161, 21332), (167, 21380), (189, 21494), (196, 21518), (199, 21533), (203, 21545), (235, 21713), (239, 21728), (240, 21734), (245, 21752), (261, 21824), (273, 21875), (278, 21890), (284, 21920), (299, 21992), (301, 21998), (311, 22031), (312, 22034), (319, 22061), (336, 22175), (344, 22232), (346, 22244), (358, 22298), (361, 22307), (362, 22310), (367, 22331), (376, 22376), (382, 22397), (392, 22457), (406, 22514), (413, 22535), (417, 22556), (433, 22637), (435, 22652), (436, 22655), (442, 22682), (443, 22685), (455, 22736), (470, 22814), (473, 22829), (474, 22832), (478, 22850), (479, 22856), (481, 22862), (484, 22871), (493, 22907), (496, 22916), (503, 22949), (514, 23003), (515, 23006), (519, 23024), (523, 23036), (530, 23066), (536, 23081), (540, 23090), (542, 23102), (547, 23123), (558, 23162), (569, 23219), (574, 23231), (577, 23240), (589, 23279), (592, 23291), (602, 23321), (604, 23330), (615, 23366), (624, 23405), (625, 23408), (629, 23426), (631, 23432), (646, 23492), (649, 23501), (655, 23522), (661, 23555), (662, 23558), (665, 23567), (693, 23684), (694, 23687), (700, 23708), (708, 23741), (709, 23744), (710, 23750), (713, 23759), (719, 23786), (728, 23831), (741, 23897), (748, 23948), (750, 23954), (762, 24014), (766, 24038), (776, 24098), (778, 24116), (779, 24128), (805, 24287), (806, 24296), (816, 24344), (823, 24377), (827, 24389), (830, 24395), (833, 24416), (834, 24419), (835, 24425), (841, 24464), (846, 24491), (884, 24677), (889, 24704),

Gene: TaidaOne\_23 Start: 16808, Stop: 22294, Start Num: 2

Candidate Starts for TaidaOne\_23:

(1, 16787), (Start: 2 @16808 has 31 MA's), (3, 16838), (12, 16982), (40, 17192), (50, 17309), (64, 17381), (67, 17411), (75, 17534), (83, 17660), (92, 17735), (101, 17783), (106, 17825), (127, 18014), (148, 18209), (157, 18281), (171, 18359), (191, 18464), (203, 18506), (228, 18641), (262, 18773), (264, 18782), (275, 18818), (277, 18827), (286, 18869), (293, 18902), (299, 18932), (333, 19055), (336, 19076), (345, 19139), (346, 19145), (348, 19151), (353, 19178), (358, 19199), (360, 19205), (361, 19208), (367, 19232), (376, 19277), (379, 19286), (380, 19289), (395, 19373), (401, 19400), (406, 19415), (407, 19418), (414, 19436), (417, 19454), (421, 19475), (432, 19526), (445, 19592), (449, 19607), (468, 19694), (470, 19712), (475, 19739), (501, 19832), (510, 19874), (511, 19883), (519, 19919), (524, 19937), (525, 19940), (528, 19952), (542, 19994), (543, 19997), (557, 20045), (561, 20081), (563, 20087), (568, 20108), (577, 20132), (586, 20162), (604, 20222), (614, 20255), (615, 20258), (618, 20273), (621, 20285), (627, 20309), (637, 20351), (640, 20363), (641, 20366), (655, 20414), (660, 20444), (665, 20459), (672, 20492), (675, 20507), (691, 20570), (710, 20642), (712, 20648), (713, 20651), (721, 20687), (734, 20753), (748, 20840), (749, 20843), (766, 20942), (774, 20990), (775, 20996), (794, 21146), (797, 21155), (850, 21428), (895, 21653), (906, 21746), (910, 21767), (913, 21791), (915, 21815), (917, 21821), (918, 21827), (925, 21872), (940, 21980), (947, 22049), (953, 22136), (960, 22238), (961, 22247),

Gene: Talon44\_31 Start: 20700, Stop: 25802, Start Num: 17

Candidate Starts for Talon44\_31:

(Start: 17 @20700 has 129 MA's), (Start: 20 @20730 has 3 MA's), (42, 20868), (46, 20913), (53, 20964), (57, 20979), (58, 20985), (64, 21015), (67, 21045), (68, 21066), (75, 21168), (80, 21228), (88, 21339), (92, 21369), (95, 21384), (101, 21417), (106, 21459), (111, 21510), (118, 21564), (119, 21567), (129, 21666), (145, 21786), (157, 21891), (158, 21894), (169, 21963), (171, 21969), (199, 22104), (241, 22308), (242, 22311), (288, 22545), (293, 22563), (301, 22602), (308, 22629), (309, 22641), (312, 22650), (334, 22782), (336, 22791), (348, 22866), (351, 22878), (352, 22884), (371, 22965), (375, 22986), (376, 22992), (382, 23013), (385, 23022), (388, 23043), (389, 23055), (391, 23064), (392, 23073), (397, 23100), (405, 23127), (406, 23130), (413, 23151), (421, 23193), (429, 23226), (430, 23229), (432, 23244), (433, 23253), (437, 23280), (440, 23289), (443, 23301), (448, 23322), (451, 23331), (458, 23364), (469, 23415), (470, 23424), (473, 23439), (478, 23460), (482, 23475), (488, 23499), (489, 23502), (493, 23514), (495, 23520), (496, 23523), (509, 23580), (511, 23595), (525, 23652), (528, 23664), (534, 23673), (538, 23685), (541, 23697), (542, 23703), (550, 23733), (551, 23736), (554, 23745), (557, 23754), (558, 23763), (559, 23778), (560, 23784), (563, 23796), (573, 23838), (577, 23850), (582, 23871), (584, 23883), (601, 23940), (608, 23964), (610, 23970), (611, 23973), (615, 23988), (617, 24000), (622, 24018), (639, 24087), (645, 24108), (667, 24195), (691, 24297), (696, 24315), (723, 24429), (728, 24450), (734, 24492), (757, 24627), (783, 24801), (789, 24864), (792, 24882), (799, 24912), (800, 24918), (805, 24939), (828, 25047), (839, 25107), (844, 25128), (845, 25131), (856, 25182), (858, 25191), (861, 25209), (869, 25230), (872, 25242), (885, 25335), (893, 25380), (899, 25443), (901, 25455), (907, 25494), (912, 25524), (917, 25557), (920, 25581), (929, 25641), (948, 25788),

Gene: Tanis\_29 Start: 20466, Stop: 25580, Start Num: 17

Candidate Starts for Tanis\_29:

(Start: 17 @20466 has 129 MA's), (Start: 20 @20496 has 3 MA's), (43, 20643), (46, 20679), (47, 20685), (53, 20730), (58, 20751), (64, 20781), (75, 20946), (80, 21006), (84, 21081), (88, 21117), (89, 21132), (92, 21147), (95, 21162), (101, 21195), (111, 21288), (118, 21342), (119, 21345), (145, 21564), (157, 21669), (158, 21672), (169, 21741), (171, 21747), (209, 21930), (220, 21981), (229, 22032), (241, 22086), (242, 22089), (269, 22221), (288, 22323), (293, 22341), (294, 22344), (309, 22419), (322, 22476), (334, 22560), (336, 22569), (351, 22656), (359, 22695), (371, 22743), (376, 22770), (382, 22791), (385, 22800), (388, 22821), (389, 22833), (391, 22842), (392, 22851), (397, 22878), (405, 22905), (406, 22908), (413, 22929), (421, 22971), (427, 22998), (430, 23007), (432, 23022), (433, 23031), (435, 23046), (437, 23058), (440, 23067), (443, 23079), (448, 23100), (451, 23109), (469, 23193), (470, 23202), (473, 23217), (474, 23220), (478, 23238), (481, 23250), (482, 23253), (489, 23280), (496, 23301), (499, 23316), (509, 23358), (511, 23373), (525, 23430), (528, 23442), (534, 23451), (538, 23463), (541, 23475), (542, 23481), (547, 23502), (551, 23514), (557, 23532), (558, 23541), (559, 23556), (560, 23562), (563, 23574), (573, 23616), (574, 23619), (577, 23628), (582, 23649), (584, 23661), (598, 23709), (601, 23718), (608, 23742), (610, 23748), (615, 23766), (616, 23775), (622, 23796), (639, 23865), (644, 23883), (645, 23886), (650, 23904), (680, 24030), (691, 24075), (705, 24126), (734, 24270), (757, 24405), (765, 24456), (777, 24534), (783, 24579), (789, 24642), (792, 24660), (799, 24690), (800, 24696), (811, 24753), (828, 24825), (839, 24885), (844, 24906), (845, 24909), (856, 24960), (858, 24969), (869, 25008), (872, 25020), (885, 25113), (893, 25158), (901, 25233), (907, 25272), (912, 25302), (920, 25359), (937, 25470), (948, 25566),

Gene: Tatanka\_26 Start: 20622, Stop: 25211, Start Num: 17

Candidate Starts for Tatanka\_26:

(Start: 16 @20601 has 2 MA's), (Start: 17 @20622 has 129 MA's), (Start: 20 @20652 has 3 MA's), (28, 20706), (32, 20727), (37, 20763), (47, 20841), (57, 20901), (62, 20925), (64, 20937), (67, 20967), (70, 21018), (74, 21048), (75, 21090), (76, 21108), (80, 21150), (82, 21180), (84, 21225), (85, 21237), (92, 21291), (95, 21306), (97, 21318), (101, 21339), (114, 21432), (117, 21465), (120, 21480), (126, 21528), (140, 21678), (145, 21699), (160, 21813), (161, 21816), (167, 21864), (189, 21978), (196, 22002), (199, 22017), (203, 22029), (235, 22197), (239, 22212), (240, 22218), (245, 22236), (261, 22308), (273, 22359), (278, 22374), (284, 22404), (299, 22476), (301, 22482), (305, 22500), (311,



22515), (312, 22518), (319, 22545), (336, 22659), (344, 22716), (346, 22728), (358, 22782), (361, 22791), (362, 22794), (367, 22815), (376, 22860), (382, 22881), (406, 22998), (413, 23019), (417, 23040), (421, 23061), (433, 23121), (435, 23136), (436, 23139), (442, 23166), (443, 23169), (468, 23280), (470, 23298), (473, 23313), (474, 23316), (478, 23334), (479, 23340), (480, 23343), (484, 23355), (493, 23391), (496, 23400), (503, 23433), (514, 23487), (515, 23490), (519, 23508), (523, 23520), (530, 23550), (536, 23565), (540, 23574), (542, 23586), (558, 23646), (567, 23697), (569, 23703), (574, 23715), (577, 23724), (589, 23763), (592, 23775), (602, 23805), (604, 23814), (624, 23889), (625, 23892), (629, 23910), (646, 23976), (648, 23982), (649, 23985), (661, 24039), (662, 24042), (693, 24168), (694, 24171), (700, 24192), (708, 24225), (710, 24234), (728, 24315), (735, 24348), (741, 24381), (750, 24438), (762, 24498), (778, 24600), (779, 24612), (805, 24771), (806, 24780), (816, 24828), (823, 24861), (827, 24873), (830, 24879), (833, 24900), (834, 24903), (835, 24909), (841, 24948), (846, 24975), (884, 25161), (889, 25188),

Gene: Teacup\_26 Start: 19991, Stop: 24583, Start Num: 17

Candidate Starts for Teacup\_26:

(Start: 16 @19970 has 2 MA's), (Start: 17 @19991 has 129 MA's), (Start: 20 @20021 has 3 MA's), (28, 20075), (32, 20096), (37, 20132), (57, 20270), (64, 20306), (67, 20336), (75, 20459), (76, 20477), (80, 20519), (87, 20627), (92, 20660), (95, 20675), (101, 20708), (108, 20771), (112, 20786), (114, 20801), (116, 20822), (117, 20834), (127, 20906), (130, 20951), (135, 21002), (139, 21035), (145, 21068), (150, 21116), (161, 21185), (167, 21233), (189, 21347), (196, 21371), (203, 21398), (217, 21473), (235, 21566), (239, 21581), (240, 21587), (245, 21605), (256, 21647), (273, 21728), (284, 21773), (299, 21845), (301, 21851), (311, 21884), (312, 21887), (319, 21914), (336, 22031), (344, 22088), (346, 22100), (358, 22154), (361, 22163), (362, 22166), (367, 22187), (376, 22232), (382, 22253), (406, 22370), (413, 22391), (416, 22409), (417, 22412), (421, 22433), (433, 22493), (435, 22508), (436, 22511), (442, 22538), (443, 22541), (470, 22670), (473, 22685), (474, 22688), (478, 22706), (479, 22712), (480, 22715), (484, 22727), (493, 22763), (496, 22772), (503, 22805), (514, 22859), (515, 22862), (519, 22880), (523, 22892), (530, 22922), (536, 22937), (540, 22946), (542, 22958), (558, 23018), (567, 23069), (569, 23075), (574, 23087), (577, 23096), (589, 23135), (592, 23147), (594, 23153), (596, 23159), (602, 23177), (604, 23186), (624, 23261), (625, 23264), (629, 23282), (646, 23348), (648, 23354), (649, 23357), (660, 23408), (693, 23540), (694, 23543), (700, 23564), (708, 23597), (710, 23606), (728, 23687), (735, 23720), (741, 23753), (750, 23810), (762, 23870), (766, 23894), (778, 23972), (779, 23984), (798, 24110), (806, 24152), (816, 24200), (823, 24233), (827, 24245), (830, 24251), (833, 24272), (834, 24275), (835, 24281), (841, 24320), (846, 24347), (851, 24374), (884, 24533), (889, 24560),

Gene: TenaciousP\_33 Start: 24936, Stop: 30050, Start Num: 17

Candidate Starts for TenaciousP\_33:

(Start: 17 @24936 has 129 MA's), (Start: 20 @24966 has 3 MA's), (25, 25011), (47, 25155), (58, 25221), (67, 25281), (68, 25302), (75, 25404), (83, 25530), (86, 25566), (92, 25605), (101, 25653), (106, 25695), (112, 25767), (117, 25815), (131, 25941), (139, 26016), (140, 26028), (145, 26049), (157, 26154), (158, 26157), (203, 26379), (215, 26445), (232, 26535), (241, 26571), (255, 26622), (262, 26670), (265, 26682), (293, 26826), (301, 26865), (308, 26892), (336, 27054), (342, 27102), (345, 27117), (346, 27123), (351, 27141), (362, 27189), (376, 27255), (388, 27306), (389, 27318), (392, 27336), (405, 27390), (417, 27435), (421, 27456), (424, 27465), (428, 27486), (432, 27507), (442, 27561), (443, 27564), (445, 27573), (451, 27594), (453, 27606), (458, 27627), (460, 27633), (464, 27651), (470, 27687), (476, 27717), (489, 27765), (493, 27777), (495, 27783), (496, 27786), (498, 27798), (499, 27801), (504, 27822), (511, 27858), (524, 27912), (525, 27915), (528, 27927), (534, 27936), (538, 27948), (539, 27951), (551, 27999), (556, 28014), (557, 28017), (558, 28026), (560, 28047), (566, 28074), (567, 28077), (573, 28101), (577, 28113), (582, 28134), (584, 28146), (586, 28155), (590, 28167), (598, 28194), (601, 28203), (608, 28227), (610, 28233), (615, 28251), (628, 28305), (632, 28320), (650, 28389), (676, 28500), (705, 28611), (717, 28656), (732, 28746), (754, 28869), (757, 28890), (767, 28953), (771, 28980), (781, 29052), (783, 29064), (784, 29073), (789, 29127), (793, 29148), (795, 29160), (831, 29322), (847, 29409), (855, 29427), (861, 29457),

(868, 29475), (869, 29478), (872, 29490), (878, 29517), (893, 29628), (901, 29703), (909, 29751),  
(917, 29805), (921, 29832), (938, 29946), (948, 30036),

Gene: Tenney120\_27 Start: 19291, Stop: 23928, Start Num: 17

Candidate Starts for Tenney120\_27:

(Start: 16 @19270 has 2 MA's), (Start: 17 @19291 has 129 MA's), (Start: 20 @19321 has 3 MA's), (28, 19375), (29, 19384), (58, 19654), (59, 19657), (67, 19714), (68, 19735), (74, 19795), (75, 19837), (80, 19897), (85, 19984), (89, 20023), (92, 20038), (95, 20053), (101, 20086), (105, 20125), (106, 20128), (112, 20164), (114, 20179), (120, 20227), (157, 20551), (161, 20563), (169, 20623), (180, 20665), (189, 20725), (190, 20731), (193, 20740), (198, 20755), (199, 20764), (220, 20863), (221, 20875), (222, 20884), (224, 20896), (294, 21181), (308, 21241), (312, 21250), (336, 21391), (342, 21439), (347, 21463), (349, 21469), (358, 21514), (361, 21523), (367, 21547), (371, 21565), (381, 21610), (382, 21613), (385, 21622), (395, 21688), (406, 21730), (410, 21742), (413, 21751), (417, 21772), (428, 21823), (433, 21853), (435, 21868), (445, 21910), (450, 21928), (460, 21976), (461, 21979), (471, 22036), (477, 22063), (498, 22144), (501, 22153), (511, 22204), (519, 22240), (528, 22273), (530, 22282), (536, 22294), (544, 22321), (549, 22342), (557, 22366), (558, 22375), (574, 22444), (575, 22447), (576, 22450), (577, 22453), (586, 22483), (592, 22504), (599, 22525), (604, 22543), (607, 22552), (612, 22570), (627, 22630), (635, 22663), (638, 22678), (640, 22684), (641, 22687), (654, 22732), (660, 22765), (661, 22768), (662, 22771), (667, 22789), (696, 22909), (697, 22912), (702, 22930), (721, 23008), (724, 23029), (740, 23101), (747, 23155), (750, 23167), (772, 23284), (778, 23329), (785, 23377), (807, 23512), (810, 23533), (816, 23557), (830, 23608), (840, 23677), (845, 23695),

Gene: Tenno\_27 Start: 21223, Stop: 25812, Start Num: 17

Candidate Starts for Tenno\_27:

(Start: 16 @21202 has 2 MA's), (Start: 17 @21223 has 129 MA's), (Start: 20 @21253 has 3 MA's), (28, 21307), (32, 21328), (37, 21364), (57, 21502), (64, 21538), (67, 21568), (75, 21691), (76, 21709), (80, 21751), (87, 21859), (92, 21892), (95, 21907), (101, 21940), (112, 22018), (114, 22033), (116, 22054), (117, 22066), (121, 22090), (127, 22138), (135, 22234), (139, 22267), (145, 22300), (154, 22384), (158, 22408), (161, 22417), (195, 22600), (203, 22630), (217, 22705), (219, 22711), (235, 22798), (239, 22813), (240, 22819), (245, 22837), (247, 22846), (256, 22879), (257, 22888), (273, 22960), (284, 23005), (299, 23077), (301, 23083), (311, 23116), (312, 23119), (319, 23146), (336, 23260), (344, 23317), (346, 23329), (358, 23383), (361, 23392), (362, 23395), (367, 23416), (376, 23461), (382, 23482), (404, 23593), (406, 23599), (413, 23620), (416, 23638), (421, 23662), (433, 23722), (435, 23737), (436, 23740), (442, 23767), (443, 23770), (450, 23797), (468, 23881), (470, 23899), (473, 23914), (474, 23917), (478, 23935), (479, 23941), (480, 23944), (484, 23956), (485, 23962), (493, 23992), (496, 24001), (503, 24034), (514, 24088), (515, 24091), (519, 24109), (530, 24151), (536, 24166), (540, 24175), (542, 24187), (558, 24247), (569, 24304), (574, 24316), (577, 24325), (589, 24364), (592, 24376), (594, 24382), (598, 24394), (602, 24406), (604, 24415), (624, 24490), (625, 24493), (629, 24511), (646, 24577), (649, 24586), (661, 24640), (662, 24643), (693, 24769), (700, 24793), (708, 24826), (710, 24835), (715, 24850), (719, 24871), (728, 24916), (735, 24949), (741, 24982), (750, 25039), (762, 25099), (775, 25177), (778, 25201), (779, 25213), (798, 25339), (806, 25381), (816, 25429), (823, 25462), (827, 25474), (830, 25480), (833, 25501), (834, 25504), (835, 25510), (841, 25549), (846, 25576), (884, 25762), (889, 25789),

Gene: Thiqqums\_21 Start: 15072, Stop: 20549, Start Num: 2

Candidate Starts for Thiqqums\_21:

(Start: 2 @15072 has 31 MA's), (3, 15102), (7, 15183), (9, 15213), (10, 15216), (12, 15246), (75, 15798), (83, 15924), (90, 15987), (92, 15999), (100, 16041), (106, 16089), (113, 16173), (127, 16281), (145, 16443), (148, 16476), (157, 16548), (171, 16626), (203, 16773), (275, 17085), (277, 17094), (292, 17157), (336, 17331), (341, 17373), (346, 17400), (349, 17409), (361, 17463), (367, 17487), (380, 17544), (402, 17658), (414, 17691), (421, 17730), (431, 17772), (432, 17781), (437, 17817), (449, 17862), (460, 17913), (468, 17949), (470, 17967), (476, 17997), (486, 18036), (487, 18039),

(498, 18078), (499, 18081), (506, 18108), (510, 18129), (511, 18138), (518, 18171), (519, 18174), (525, 18195), (545, 18258), (561, 18336), (563, 18342), (574, 18378), (575, 18381), (576, 18384), (577, 18387), (595, 18447), (598, 18456), (604, 18477), (613, 18507), (614, 18510), (629, 18573), (630, 18576), (631, 18579), (641, 18621), (646, 18639), (655, 18669), (665, 18714), (667, 18723), (672, 18747), (690, 18822), (692, 18828), (706, 18879), (713, 18906), (717, 18921), (719, 18933), (721, 18942), (725, 18966), (739, 19032), (748, 19095), (753, 19119), (766, 19197), (774, 19245), (779, 19287), (797, 19410), (820, 19527), (843, 19644), (861, 19725), (873, 19770), (882, 19815), (906, 20001), (910, 20022), (911, 20034), (917, 20076), (925, 20127), (932, 20175), (936, 20214), (944, 20265), (952, 20388), (958, 20427),

Gene: TieDye\_22 Start: 15852, Stop: 21338, Start Num: 2

Candidate Starts for TieDye\_22:

(1, 15831), (Start: 2 @15852 has 31 MA's), (3, 15882), (12, 16026), (40, 16236), (51, 16356), (58, 16395), (64, 16425), (66, 16449), (67, 16455), (68, 16476), (69, 16491), (75, 16578), (78, 16620), (82, 16668), (83, 16704), (84, 16713), (86, 16740), (92, 16779), (93, 16788), (101, 16827), (103, 16836), (106, 16869), (107, 16878), (117, 16986), (128, 17091), (139, 17187), (148, 17253), (171, 17403), (187, 17487), (191, 17508), (203, 17550), (228, 17685), (240, 17739), (264, 17826), (275, 17862), (277, 17871), (286, 17913), (293, 17946), (299, 17976), (333, 18099), (336, 18120), (345, 18183), (346, 18189), (348, 18195), (353, 18222), (358, 18243), (360, 18249), (361, 18252), (367, 18276), (376, 18321), (379, 18330), (380, 18333), (395, 18417), (401, 18444), (406, 18459), (407, 18462), (414, 18480), (417, 18498), (421, 18519), (432, 18570), (445, 18636), (449, 18651), (468, 18738), (470, 18756), (475, 18783), (501, 18876), (510, 18918), (511, 18927), (519, 18963), (524, 18981), (525, 18984), (528, 18996), (542, 19038), (543, 19041), (557, 19089), (561, 19125), (563, 19131), (568, 19152), (577, 19176), (586, 19206), (604, 19266), (614, 19299), (615, 19302), (618, 19317), (621, 19329), (627, 19353), (637, 19395), (640, 19407), (641, 19410), (655, 19458), (660, 19488), (665, 19503), (672, 19536), (675, 19551), (691, 19614), (710, 19686), (712, 19692), (713, 19695), (721, 19731), (734, 19797), (748, 19884), (749, 19887), (766, 19986), (774, 20034), (775, 20040), (794, 20190), (797, 20199), (850, 20472), (895, 20697), (906, 20790), (910, 20811), (913, 20835), (915, 20859), (917, 20865), (918, 20871), (925, 20916), (940, 21024), (947, 21093), (953, 21180), (960, 21282), (961, 21291),

Gene: Tokki\_27 Start: 20280, Stop: 24866, Start Num: 17

Candidate Starts for Tokki\_27:

(Start: 16 @20259 has 2 MA's), (Start: 17 @20280 has 129 MA's), (Start: 20 @20310 has 3 MA's), (28, 20364), (64, 20595), (67, 20625), (74, 20706), (75, 20748), (76, 20766), (80, 20808), (85, 20895), (92, 20949), (95, 20964), (96, 20970), (101, 20997), (112, 21075), (114, 21090), (117, 21123), (120, 21138), (121, 21147), (124, 21174), (126, 21186), (130, 21240), (145, 21357), (160, 21471), (161, 21474), (168, 21531), (170, 21537), (198, 21666), (205, 21699), (256, 21936), (278, 22032), (299, 22134), (301, 22140), (312, 22176), (336, 22320), (343, 22374), (344, 22377), (358, 22443), (361, 22452), (362, 22455), (367, 22476), (382, 22542), (384, 22548), (392, 22602), (406, 22659), (413, 22680), (416, 22698), (417, 22701), (421, 22722), (423, 22728), (428, 22752), (435, 22797), (437, 22809), (463, 22920), (466, 22929), (468, 22941), (470, 22959), (484, 23016), (493, 23052), (494, 23055), (496, 23061), (498, 23073), (499, 23076), (503, 23094), (506, 23103), (516, 23160), (530, 23211), (535, 23223), (543, 23247), (544, 23250), (557, 23295), (558, 23304), (574, 23373), (577, 23382), (589, 23421), (592, 23433), (604, 23472), (631, 23574), (636, 23598), (637, 23601), (646, 23634), (647, 23637), (648, 23640), (649, 23643), (661, 23697), (662, 23700), (668, 23721), (691, 23820), (700, 23850), (703, 23862), (706, 23874), (710, 23892), (713, 23901), (714, 23904), (743, 24060), (747, 24084), (749, 24093), (762, 24156), (765, 24171), (778, 24258), (779, 24270), (786, 24312), (798, 24396), (810, 24462), (816, 24486), (827, 24531), (830, 24537), (841, 24606), (842, 24609), (846, 24633), (884, 24816),

Gene: TonyStarch\_23 Start: 16166, Stop: 21652, Start Num: 2

Candidate Starts for TonyStarch\_23:

(1, 16145), (Start: 2 @16166 has 31 MA's), (3, 16196), (12, 16340), (40, 16550), (50, 16667), (64, 16739), (67, 16769), (75, 16892), (83, 17018), (92, 17093), (101, 17141), (106, 17183), (127, 17372), (148, 17567), (157, 17639), (171, 17717), (187, 17801), (203, 17864), (228, 17999), (240, 18053), (264, 18140), (275, 18176), (277, 18185), (286, 18227), (293, 18260), (299, 18290), (333, 18413), (336, 18434), (345, 18497), (346, 18503), (348, 18509), (353, 18536), (358, 18557), (360, 18563), (361, 18566), (367, 18590), (376, 18635), (379, 18644), (380, 18647), (382, 18656), (395, 18731), (401, 18758), (407, 18776), (414, 18794), (417, 18812), (421, 18833), (432, 18884), (445, 18950), (449, 18965), (468, 19052), (470, 19070), (475, 19097), (501, 19190), (510, 19232), (511, 19241), (519, 19277), (520, 19280), (524, 19295), (525, 19298), (528, 19310), (542, 19352), (543, 19355), (557, 19403), (561, 19439), (563, 19445), (568, 19466), (577, 19490), (586, 19520), (604, 19580), (614, 19613), (615, 19616), (618, 19631), (621, 19643), (627, 19667), (637, 19709), (640, 19721), (641, 19724), (655, 19772), (660, 19802), (665, 19817), (672, 19850), (675, 19865), (691, 19928), (710, 20000), (712, 20006), (713, 20009), (721, 20045), (734, 20111), (748, 20198), (749, 20201), (766, 20300), (774, 20348), (775, 20354), (797, 20513), (850, 20786), (860, 20822), (878, 20888), (895, 21011), (906, 21104), (910, 21125), (915, 21173), (917, 21179), (918, 21185), (925, 21230), (940, 21338), (942, 21359), (947, 21407), (953, 21494), (960, 21596), (961, 21605),

Gene: Tribby\_22 Start: 17385, Stop: 21863, Start Num: 17

Candidate Starts for Tribby\_22:

(Start: 16 @17364 has 2 MA's), (Start: 17 @17385 has 129 MA's), (Start: 20 @17415 has 3 MA's), (23, 17448), (28, 17469), (64, 17700), (67, 17730), (74, 17811), (75, 17853), (76, 17871), (80, 17913), (85, 18000), (92, 18054), (95, 18069), (101, 18102), (112, 18180), (114, 18195), (120, 18243), (122, 18258), (127, 18300), (131, 18354), (139, 18429), (145, 18462), (158, 18570), (168, 18636), (176, 18669), (179, 18678), (181, 18681), (184, 18699), (243, 18981), (253, 19005), (257, 19035), (262, 19065), (297, 19194), (312, 19254), (336, 19383), (349, 19461), (356, 19497), (358, 19506), (361, 19515), (367, 19539), (373, 19566), (376, 19584), (382, 19605), (395, 19680), (403, 19713), (413, 19743), (421, 19785), (433, 19845), (434, 19851), (442, 19890), (443, 19893), (447, 19908), (461, 19971), (466, 19992), (470, 20022), (476, 20052), (481, 20070), (493, 20118), (499, 20142), (503, 20160), (506, 20169), (509, 20184), (512, 20205), (519, 20235), (528, 20268), (529, 20274), (530, 20277), (536, 20289), (542, 20310), (557, 20361), (558, 20370), (562, 20400), (564, 20406), (574, 20439), (577, 20448), (586, 20478), (592, 20499), (604, 20538), (612, 20565), (614, 20571), (615, 20574), (618, 20589), (625, 20616), (633, 20646), (641, 20682), (667, 20784), (677, 20829), (690, 20883), (691, 20886), (693, 20892), (702, 20925), (712, 20964), (714, 20970), (718, 20985), (723, 21018), (747, 21150), (760, 21213), (776, 21240), (778, 21258), (785, 21306), (786, 21312), (794, 21384), (810, 21462), (817, 21498), (821, 21516), (830, 21540), (834, 21564), (840, 21609), (845, 21630), (890, 21852),

Gene: TrixiePhattel\_27 Start: 19423, Stop: 23763, Start Num: 47

Candidate Starts for TrixiePhattel\_27:

(Start: 16 @19183 has 2 MA's), (Start: 17 @19204 has 129 MA's), (Start: 20 @19234 has 3 MA's), (28, 19288), (32, 19309), (45, 19402), (47, 19423), (58, 19489), (59, 19492), (67, 19549), (68, 19570), (74, 19630), (75, 19672), (80, 19732), (89, 19858), (92, 19873), (95, 19888), (101, 19921), (112, 19999), (114, 20014), (120, 20062), (135, 20215), (140, 20260), (145, 20281), (148, 20314), (158, 20389), (161, 20398), (166, 20440), (169, 20458), (180, 20500), (189, 20560), (190, 20566), (193, 20575), (198, 20590), (199, 20599), (220, 20698), (221, 20710), (222, 20719), (224, 20731), (294, 21016), (308, 21076), (312, 21085), (333, 21205), (336, 21226), (347, 21298), (349, 21304), (358, 21349), (361, 21358), (367, 21382), (371, 21400), (382, 21448), (385, 21457), (398, 21538), (406, 21565), (410, 21577), (413, 21586), (417, 21607), (433, 21688), (457, 21799), (460, 21811), (461, 21814), (477, 21898), (480, 21910), (498, 21979), (507, 22018), (511, 22039), (519, 22075), (528, 22108), (530, 22117), (536, 22129), (537, 22132), (557, 22201), (558, 22210), (562, 22240), (574, 22279), (577, 22288), (586, 22318), (592, 22339), (604, 22378), (627, 22465), (631, 22480), (635, 22498), (638, 22513), (641, 22522), (643, 22528), (654, 22567), (660, 22600), (661, 22603), (667, 22624), (668, 22627), (687, 22714), (696, 22744), (697, 22747), (702, 22765), (708, 22789), (714, 22810),

(724, 22864), (725, 22867), (740, 22936), (747, 22990), (772, 23119), (778, 23164), (806, 23344), (810, 23368), (816, 23392), (827, 23437), (830, 23443), (837, 23482), (840, 23512), (845, 23530), (877, 23650),

Gene: Truckee\_25 Start: 20163, Stop: 24755, Start Num: 17

Candidate Starts for Truckee\_25:

(Start: 16 @20142 has 2 MA's), (Start: 17 @20163 has 129 MA's), (Start: 20 @20193 has 3 MA's), (28, 20247), (37, 20304), (47, 20382), (57, 20442), (62, 20466), (67, 20508), (75, 20631), (76, 20649), (80, 20691), (84, 20766), (85, 20778), (89, 20817), (92, 20832), (95, 20847), (101, 20880), (112, 20958), (114, 20973), (123, 21051), (131, 21132), (145, 21240), (161, 21357), (163, 21363), (187, 21507), (188, 21516), (205, 21582), (256, 21819), (267, 21879), (277, 21912), (278, 21915), (299, 22017), (301, 22023), (312, 22059), (336, 22203), (342, 22251), (343, 22257), (344, 22260), (353, 22305), (358, 22326), (361, 22335), (362, 22338), (367, 22359), (368, 22362), (382, 22425), (383, 22428), (406, 22542), (413, 22563), (416, 22581), (417, 22584), (428, 22635), (433, 22665), (435, 22680), (437, 22692), (463, 22803), (466, 22812), (470, 22842), (492, 22932), (493, 22935), (496, 22944), (498, 22956), (503, 22977), (507, 22995), (514, 23031), (519, 23052), (528, 23085), (545, 23142), (557, 23184), (558, 23193), (566, 23241), (574, 23262), (577, 23271), (586, 23301), (604, 23361), (615, 23397), (623, 23433), (635, 23481), (647, 23526), (649, 23532), (655, 23553), (660, 23583), (672, 23631), (682, 23670), (683, 23673), (710, 23781), (713, 23790), (720, 23823), (738, 23913), (745, 23961), (762, 24045), (778, 24147), (779, 24159), (786, 24201), (805, 24318), (806, 24327), (816, 24375), (827, 24420), (830, 24426), (841, 24495), (846, 24522), (884, 24705),

Gene: Trufflozitus\_32 Start: 20534, Stop: 25636, Start Num: 17

Candidate Starts for Trufflozitus\_32:

(Start: 17 @20534 has 129 MA's), (Start: 20 @20564 has 3 MA's), (42, 20702), (46, 20747), (47, 20753), (49, 20762), (50, 20777), (53, 20798), (58, 20819), (64, 20849), (67, 20879), (68, 20900), (75, 21002), (80, 21062), (84, 21137), (85, 21149), (88, 21173), (92, 21203), (95, 21218), (101, 21251), (106, 21293), (111, 21344), (118, 21398), (119, 21401), (129, 21500), (132, 21524), (137, 21560), (145, 21620), (157, 21725), (158, 21728), (169, 21797), (171, 21803), (172, 21809), (209, 21986), (220, 22037), (229, 22088), (241, 22142), (242, 22145), (249, 22172), (269, 22277), (278, 22316), (293, 22397), (294, 22400), (309, 22475), (312, 22484), (322, 22532), (334, 22616), (336, 22625), (346, 22694), (348, 22700), (351, 22712), (353, 22727), (354, 22730), (359, 22751), (371, 22799), (376, 22826), (382, 22847), (385, 22856), (388, 22877), (389, 22889), (391, 22898), (392, 22907), (405, 22961), (406, 22964), (413, 22985), (421, 23027), (427, 23054), (430, 23063), (432, 23078), (433, 23087), (435, 23102), (437, 23114), (440, 23123), (443, 23135), (448, 23156), (451, 23165), (469, 23249), (470, 23258), (473, 23273), (478, 23294), (489, 23336), (496, 23357), (499, 23372), (509, 23414), (511, 23429), (525, 23486), (528, 23498), (534, 23507), (538, 23519), (541, 23531), (542, 23537), (547, 23558), (549, 23564), (551, 23570), (557, 23588), (558, 23597), (559, 23612), (560, 23618), (563, 23630), (573, 23672), (577, 23684), (582, 23705), (584, 23717), (598, 23765), (601, 23774), (608, 23798), (610, 23804), (611, 23807), (615, 23822), (616, 23831), (617, 23834), (622, 23852), (639, 23921), (650, 23960), (691, 24131), (705, 24182), (734, 24326), (745, 24395), (757, 24461), (765, 24512), (783, 24635), (789, 24698), (799, 24746), (800, 24752), (802, 24761), (811, 24809), (828, 24881), (839, 24941), (844, 24962), (845, 24965), (856, 25016), (858, 25025), (861, 25043), (869, 25064), (872, 25076), (885, 25169), (893, 25214), (901, 25289), (903, 25307), (907, 25328), (920, 25415), (937, 25526), (948, 25622),

Gene: Trustiboi\_27 Start: 20688, Stop: 25280, Start Num: 17

Candidate Starts for Trustiboi\_27:

(Start: 16 @20667 has 2 MA's), (Start: 17 @20688 has 129 MA's), (Start: 20 @20718 has 3 MA's), (28, 20772), (32, 20793), (37, 20829), (47, 20907), (57, 20967), (62, 20991), (64, 21003), (67, 21033), (70, 21084), (74, 21114), (75, 21156), (76, 21174), (80, 21216), (82, 21246), (84, 21291), (85, 21303), (92, 21357), (95, 21372), (97, 21384), (101, 21405), (114, 21498), (117, 21531), (120, 21546), (126, 21594), (140, 21744), (145, 21765), (160, 21879), (161, 21882), (189, 22044), (196, 22068), (199,

22083), (203, 22095), (235, 22263), (239, 22278), (240, 22284), (245, 22302), (261, 22374), (273, 22425), (278, 22440), (284, 22470), (299, 22542), (301, 22548), (311, 22581), (312, 22584), (336, 22728), (342, 22776), (344, 22785), (346, 22797), (358, 22851), (361, 22860), (362, 22863), (367, 22884), (376, 22929), (382, 22950), (389, 22992), (392, 23010), (406, 23067), (413, 23088), (417, 23109), (433, 23190), (435, 23205), (436, 23208), (442, 23235), (455, 23289), (470, 23367), (473, 23382), (474, 23385), (478, 23403), (479, 23409), (481, 23415), (484, 23424), (493, 23460), (496, 23469), (503, 23502), (514, 23556), (515, 23559), (519, 23577), (523, 23589), (530, 23619), (536, 23634), (540, 23643), (542, 23655), (547, 23676), (558, 23715), (569, 23772), (574, 23784), (577, 23793), (589, 23832), (592, 23844), (602, 23874), (604, 23883), (615, 23919), (624, 23958), (625, 23961), (629, 23979), (631, 23985), (646, 24045), (649, 24054), (661, 24108), (662, 24111), (665, 24120), (693, 24237), (694, 24240), (700, 24261), (708, 24294), (709, 24297), (710, 24303), (713, 24312), (719, 24339), (741, 24450), (748, 24501), (750, 24507), (762, 24567), (766, 24591), (776, 24651), (778, 24669), (779, 24681), (805, 24840), (806, 24849), (816, 24897), (823, 24930), (827, 24942), (830, 24948), (833, 24969), (834, 24972), (835, 24978), (841, 25017), (846, 25044), (884, 25230), (889, 25257),

Gene: Untouchable\_32 Start: 23641, Stop: 28752, Start Num: 17

Candidate Starts for Untouchable\_32:

(Start: 17 @23641 has 129 MA's), (Start: 20 @23671 has 3 MA's), (25, 23716), (47, 23860), (57, 23920), (58, 23926), (67, 23986), (68, 24007), (75, 24109), (83, 24235), (86, 24271), (92, 24310), (97, 24337), (101, 24358), (106, 24400), (112, 24472), (117, 24520), (131, 24646), (139, 24721), (140, 24733), (145, 24754), (157, 24859), (158, 24862), (178, 24970), (229, 25222), (255, 25327), (267, 25396), (272, 25417), (286, 25498), (287, 25501), (293, 25528), (301, 25567), (308, 25594), (333, 25735), (336, 25756), (345, 25819), (346, 25825), (351, 25843), (352, 25849), (362, 25891), (365, 25903), (367, 25912), (376, 25957), (386, 25999), (388, 26008), (389, 26020), (391, 26029), (392, 26038), (417, 26137), (421, 26158), (424, 26167), (429, 26191), (430, 26194), (442, 26263), (443, 26266), (445, 26275), (450, 26293), (451, 26296), (453, 26308), (458, 26329), (460, 26335), (461, 26338), (466, 26359), (470, 26389), (473, 26404), (476, 26419), (489, 26467), (493, 26479), (495, 26485), (496, 26488), (498, 26500), (499, 26503), (511, 26560), (524, 26614), (534, 26638), (538, 26650), (539, 26653), (550, 26698), (551, 26701), (556, 26716), (557, 26719), (558, 26728), (559, 26743), (560, 26749), (561, 26755), (566, 26776), (567, 26779), (571, 26791), (574, 26806), (577, 26815), (582, 26836), (584, 26848), (590, 26869), (598, 26896), (608, 26929), (610, 26935), (615, 26953), (622, 26983), (632, 27022), (650, 27091), (676, 27202), (679, 27214), (697, 27283), (717, 27358), (732, 27448), (757, 27592), (761, 27616), (777, 27721), (781, 27754), (783, 27766), (789, 27829), (793, 27850), (795, 27862), (800, 27883), (811, 27940), (831, 28024), (847, 28111), (855, 28129), (861, 28159), (868, 28177), (869, 28180), (871, 28186), (872, 28192), (878, 28219), (893, 28330), (901, 28405), (912, 28474), (917, 28507), (920, 28531), (938, 28648), (948, 28738),

Gene: Uzumaki\_26 Start: 19821, Stop: 24458, Start Num: 17

Candidate Starts for Uzumaki\_26:

(Start: 16 @19800 has 2 MA's), (Start: 17 @19821 has 129 MA's), (Start: 20 @19851 has 3 MA's), (28, 19905), (29, 19914), (58, 20184), (59, 20187), (67, 20244), (68, 20265), (74, 20325), (75, 20367), (80, 20427), (85, 20514), (89, 20553), (92, 20568), (95, 20583), (101, 20616), (105, 20655), (106, 20658), (112, 20694), (114, 20709), (120, 20757), (157, 21081), (161, 21093), (169, 21153), (175, 21174), (180, 21195), (189, 21255), (190, 21261), (193, 21270), (198, 21285), (199, 21294), (220, 21393), (221, 21405), (222, 21414), (224, 21426), (294, 21711), (308, 21771), (312, 21780), (336, 21921), (342, 21969), (343, 21975), (347, 21993), (349, 21999), (358, 22044), (361, 22053), (367, 22077), (371, 22095), (381, 22140), (382, 22143), (385, 22152), (395, 22218), (406, 22260), (413, 22281), (417, 22302), (428, 22353), (433, 22383), (435, 22398), (445, 22440), (450, 22458), (460, 22506), (461, 22509), (471, 22566), (498, 22674), (501, 22683), (511, 22734), (514, 22749), (519, 22770), (528, 22803), (530, 22812), (536, 22824), (542, 22845), (544, 22851), (549, 22872), (557, 22896), (558, 22905), (574, 22974), (575, 22977), (576, 22980), (577, 22983), (586, 23013), (592, 23034), (599, 23055), (604, 23073), (607, 23082), (612, 23100), (627, 23160), (635, 23193), (638, 23208),

(640, 23214), (641, 23217), (654, 23262), (661, 23298), (662, 23301), (664, 23307), (667, 23319), (668, 23322), (696, 23439), (697, 23442), (702, 23460), (711, 23496), (721, 23538), (725, 23562), (740, 23631), (747, 23685), (750, 23697), (772, 23814), (778, 23859), (785, 23907), (807, 24042), (810, 24063), (816, 24087), (830, 24138), (840, 24207), (841, 24210), (845, 24225),

Gene: Vardy\_32 Start: 23250, Stop: 28361, Start Num: 17

Candidate Starts for Vardy\_32:

(Start: 17 @23250 has 129 MA's), (Start: 20 @23280 has 3 MA's), (25, 23325), (47, 23469), (58, 23535), (67, 23595), (68, 23616), (75, 23718), (83, 23844), (86, 23880), (92, 23919), (97, 23946), (101, 23967), (106, 24009), (115, 24108), (117, 24129), (131, 24255), (139, 24330), (140, 24342), (145, 24363), (157, 24468), (158, 24471), (229, 24831), (255, 24936), (267, 25005), (272, 25026), (286, 25107), (287, 25110), (293, 25137), (301, 25176), (308, 25203), (336, 25365), (342, 25413), (346, 25434), (351, 25452), (362, 25500), (365, 25512), (376, 25566), (388, 25617), (389, 25629), (391, 25638), (392, 25647), (405, 25701), (417, 25746), (420, 25761), (421, 25767), (424, 25776), (425, 25782), (429, 25800), (430, 25803), (431, 25809), (432, 25818), (442, 25872), (443, 25875), (445, 25884), (450, 25902), (451, 25905), (453, 25917), (458, 25938), (460, 25944), (461, 25947), (466, 25968), (470, 25998), (473, 26013), (481, 26046), (485, 26061), (489, 26076), (493, 26088), (495, 26094), (496, 26097), (498, 26109), (499, 26112), (511, 26169), (524, 26223), (525, 26226), (534, 26247), (538, 26259), (539, 26262), (551, 26310), (556, 26325), (557, 26328), (558, 26337), (560, 26358), (566, 26385), (567, 26388), (573, 26412), (577, 26424), (582, 26445), (584, 26457), (590, 26478), (598, 26505), (608, 26538), (610, 26544), (615, 26562), (622, 26592), (632, 26631), (676, 26811), (679, 26823), (697, 26892), (732, 27057), (754, 27180), (757, 27201), (777, 27330), (781, 27363), (783, 27375), (789, 27438), (793, 27459), (795, 27471), (799, 27486), (811, 27549), (831, 27633), (847, 27720), (855, 27738), (861, 27768), (868, 27786), (869, 27789), (871, 27795), (872, 27801), (878, 27828), (893, 27939), (901, 28014), (903, 28032), (917, 28116), (920, 28140), (938, 28257), (948, 28347),

Gene: Xenomorph\_20 Start: 17403, Stop: 21881, Start Num: 17

Candidate Starts for Xenomorph\_20:

(Start: 16 @17382 has 2 MA's), (Start: 17 @17403 has 129 MA's), (Start: 20 @17433 has 3 MA's), (23, 17466), (28, 17487), (47, 17622), (49, 17631), (64, 17718), (67, 17748), (75, 17871), (76, 17889), (80, 17931), (85, 18018), (89, 18057), (92, 18072), (95, 18087), (101, 18120), (112, 18198), (114, 18213), (120, 18261), (122, 18276), (127, 18318), (129, 18360), (131, 18372), (135, 18414), (139, 18447), (145, 18480), (158, 18588), (168, 18654), (176, 18687), (179, 18696), (181, 18699), (184, 18717), (188, 18756), (243, 18999), (257, 19053), (297, 19212), (303, 19245), (312, 19272), (336, 19401), (349, 19479), (358, 19524), (360, 19530), (361, 19533), (364, 19545), (367, 19557), (373, 19584), (376, 19602), (382, 19623), (395, 19698), (399, 19719), (400, 19722), (403, 19731), (413, 19761), (421, 19803), (422, 19806), (433, 19863), (434, 19869), (435, 19878), (443, 19911), (446, 19923), (447, 19926), (459, 19983), (461, 19989), (466, 20010), (470, 20040), (476, 20070), (481, 20088), (493, 20136), (499, 20160), (503, 20178), (506, 20187), (509, 20202), (512, 20223), (519, 20253), (528, 20286), (529, 20292), (530, 20295), (536, 20307), (542, 20328), (557, 20379), (558, 20388), (562, 20418), (564, 20424), (574, 20457), (577, 20466), (586, 20496), (589, 20505), (592, 20517), (598, 20535), (604, 20556), (612, 20583), (614, 20589), (615, 20592), (618, 20607), (625, 20634), (633, 20664), (641, 20700), (667, 20802), (682, 20865), (690, 20901), (691, 20904), (697, 20925), (702, 20943), (712, 20982), (714, 20988), (718, 21003), (722, 21024), (723, 21036), (747, 21168), (760, 21231), (776, 21258), (778, 21276), (785, 21324), (786, 21330), (794, 21402), (810, 21480), (817, 21516), (821, 21534), (830, 21558), (834, 21582), (840, 21627), (845, 21648), (890, 21870),

Gene: Yotsuba\_26 Start: 20608, Stop: 25152, Start Num: 20

Candidate Starts for Yotsuba\_26:

(Start: 17 @20575 has 129 MA's), (Start: 20 @20608 has 3 MA's), (43, 20755), (54, 20845), (55, 20848), (75, 21043), (83, 21169), (92, 21244), (101, 21292), (106, 21334), (117, 21454), (130, 21571), (140, 21667), (171, 21871), (174, 21883), (188, 21964), (216, 22099), (234, 22192), (251, 22255),

(260, 22294), (276, 22357), (280, 22372), (328, 22576), (336, 22627), (351, 22714), (357, 22744), (360, 22756), (361, 22759), (364, 22771), (367, 22783), (373, 22810), (383, 22852), (390, 22897), (410, 22978), (412, 22984), (417, 23008), (419, 23014), (432, 23080), (437, 23116), (444, 23140), (452, 23173), (457, 23200), (459, 23209), (463, 23227), (468, 23248), (473, 23281), (479, 23308), (480, 23311), (493, 23362), (501, 23392), (503, 23404), (519, 23479), (525, 23500), (527, 23506), (531, 23521), (557, 23605), (558, 23614), (561, 23641), (577, 23692), (588, 23728), (604, 23782), (625, 23860), (648, 23950), (656, 23980), (664, 24016), (672, 24052), (682, 24091), (696, 24148), (702, 24169), (708, 24193), (709, 24196), (712, 24208), (714, 24214), (732, 24304), (738, 24334), (739, 24337), (740, 24340), (748, 24400), (752, 24415), (763, 24469), (778, 24568), (793, 24688), (794, 24694), (815, 24796), (817, 24808), (820, 24817), (840, 24913), (842, 24916), (888, 25141),

Gene: Zeina\_26 Start: 19202, Stop: 23839, Start Num: 17

Candidate Starts for Zeina\_26:

(Start: 16 @19181 has 2 MA's), (Start: 17 @19202 has 129 MA's), (Start: 20 @19232 has 3 MA's), (28, 19286), (29, 19295), (58, 19565), (59, 19568), (67, 19625), (68, 19646), (74, 19706), (75, 19748), (80, 19808), (84, 19883), (92, 19949), (95, 19964), (101, 19997), (105, 20036), (106, 20039), (112, 20075), (114, 20090), (120, 20138), (151, 20411), (158, 20465), (161, 20474), (169, 20534), (180, 20576), (189, 20636), (190, 20642), (193, 20651), (198, 20666), (199, 20675), (220, 20774), (221, 20786), (222, 20795), (224, 20807), (294, 21092), (308, 21152), (312, 21161), (336, 21302), (342, 21350), (347, 21374), (349, 21380), (358, 21425), (361, 21434), (367, 21458), (371, 21476), (381, 21521), (382, 21524), (385, 21533), (395, 21599), (406, 21641), (410, 21653), (413, 21662), (417, 21683), (428, 21734), (433, 21764), (435, 21779), (445, 21821), (450, 21839), (460, 21887), (461, 21890), (477, 21974), (498, 22055), (501, 22064), (511, 22115), (519, 22151), (528, 22184), (530, 22193), (536, 22205), (542, 22226), (544, 22232), (549, 22253), (557, 22277), (558, 22286), (561, 22313), (574, 22355), (575, 22358), (576, 22361), (577, 22364), (592, 22415), (599, 22436), (604, 22454), (612, 22481), (631, 22556), (635, 22574), (641, 22598), (654, 22643), (660, 22676), (661, 22679), (662, 22682), (667, 22700), (696, 22820), (697, 22823), (702, 22841), (721, 22919), (725, 22943), (740, 23012), (747, 23066), (765, 23153), (772, 23195), (778, 23240), (785, 23288), (807, 23423), (810, 23444), (816, 23468), (830, 23519), (840, 23588), (845, 23606),

Gene: Zeph\_33 Start: 23999, Stop: 29110, Start Num: 17

Candidate Starts for Zeph\_33:

(Start: 17 @23999 has 129 MA's), (Start: 20 @24029 has 3 MA's), (25, 24074), (47, 24218), (57, 24278), (58, 24284), (67, 24344), (68, 24365), (75, 24467), (83, 24593), (86, 24629), (92, 24668), (101, 24716), (106, 24758), (112, 24830), (117, 24878), (131, 25004), (139, 25079), (140, 25091), (145, 25112), (153, 25184), (157, 25217), (158, 25220), (178, 25328), (229, 25580), (255, 25685), (267, 25754), (272, 25775), (286, 25856), (287, 25859), (293, 25886), (301, 25925), (308, 25952), (333, 26093), (336, 26114), (345, 26177), (346, 26183), (351, 26201), (352, 26207), (362, 26249), (365, 26261), (367, 26270), (376, 26315), (386, 26357), (388, 26366), (389, 26378), (391, 26387), (392, 26396), (417, 26495), (421, 26516), (424, 26525), (429, 26549), (430, 26552), (442, 26621), (443, 26624), (445, 26633), (450, 26651), (451, 26654), (453, 26666), (458, 26687), (460, 26693), (461, 26696), (466, 26717), (470, 26747), (473, 26762), (476, 26777), (489, 26825), (493, 26837), (495, 26843), (496, 26846), (498, 26858), (499, 26861), (511, 26918), (524, 26972), (534, 26996), (538, 27008), (539, 27011), (550, 27056), (551, 27059), (556, 27074), (557, 27077), (558, 27086), (559, 27101), (560, 27107), (561, 27113), (566, 27134), (567, 27137), (571, 27149), (574, 27164), (577, 27173), (582, 27194), (584, 27206), (590, 27227), (598, 27254), (608, 27287), (610, 27293), (615, 27311), (622, 27341), (632, 27380), (650, 27449), (697, 27641), (717, 27716), (732, 27806), (757, 27950), (767, 28013), (777, 28079), (781, 28112), (783, 28124), (789, 28187), (793, 28208), (795, 28220), (800, 28241), (811, 28298), (831, 28382), (847, 28469), (855, 28487), (861, 28517), (868, 28535), (869, 28538), (871, 28544), (872, 28550), (878, 28577), (893, 28688), (901, 28763), (917, 28865), (920, 28889), (938, 29006), (948, 29096),

Gene: Zippen\_26 Start: 20476, Stop: 25059, Start Num: 17



Candidate Starts for Zippen\_26:

(Start: 16 @20455 has 2 MA's), (Start: 17 @20476 has 129 MA's), (Start: 20 @20506 has 3 MA's), (37, 20617), (44, 20665), (47, 20695), (57, 20755), (62, 20779), (64, 20791), (67, 20821), (75, 20944), (76, 20962), (80, 21004), (87, 21112), (92, 21145), (95, 21160), (101, 21193), (112, 21271), (114, 21286), (116, 21307), (117, 21319), (127, 21391), (139, 21520), (145, 21553), (158, 21661), (161, 21670), (180, 21772), (203, 21883), (205, 21895), (211, 21928), (217, 21958), (235, 22051), (244, 22084), (256, 22126), (278, 22222), (299, 22324), (301, 22330), (304, 22345), (312, 22366), (336, 22510), (341, 22552), (343, 22564), (344, 22567), (358, 22633), (361, 22642), (362, 22645), (367, 22666), (368, 22669), (382, 22732), (384, 22738), (395, 22807), (398, 22822), (406, 22849), (408, 22855), (413, 22870), (416, 22888), (417, 22891), (421, 22912), (433, 22972), (435, 22987), (436, 22990), (441, 23014), (442, 23017), (443, 23020), (470, 23149), (473, 23164), (474, 23167), (478, 23185), (479, 23191), (481, 23197), (484, 23206), (493, 23242), (494, 23245), (496, 23251), (503, 23284), (514, 23338), (515, 23341), (519, 23359), (530, 23401), (536, 23416), (540, 23425), (542, 23437), (543, 23440), (546, 23452), (547, 23458), (549, 23464), (550, 23467), (558, 23497), (568, 23551), (569, 23554), (576, 23572), (577, 23575), (578, 23578), (590, 23617), (604, 23665), (623, 23737), (624, 23740), (625, 23743), (631, 23767), (632, 23770), (636, 23791), (647, 23830), (648, 23833), (660, 23887), (672, 23935), (700, 24043), (710, 24085), (712, 24091), (713, 24094), (721, 24130), (741, 24232), (743, 24253), (750, 24289), (758, 24328), (762, 24349), (772, 24406), (779, 24463), (801, 24607), (810, 24655), (816, 24679), (823, 24712), (827, 24724), (830, 24730), (834, 24754), (841, 24799), (846, 24826), (884, 25009), (890, 25039),