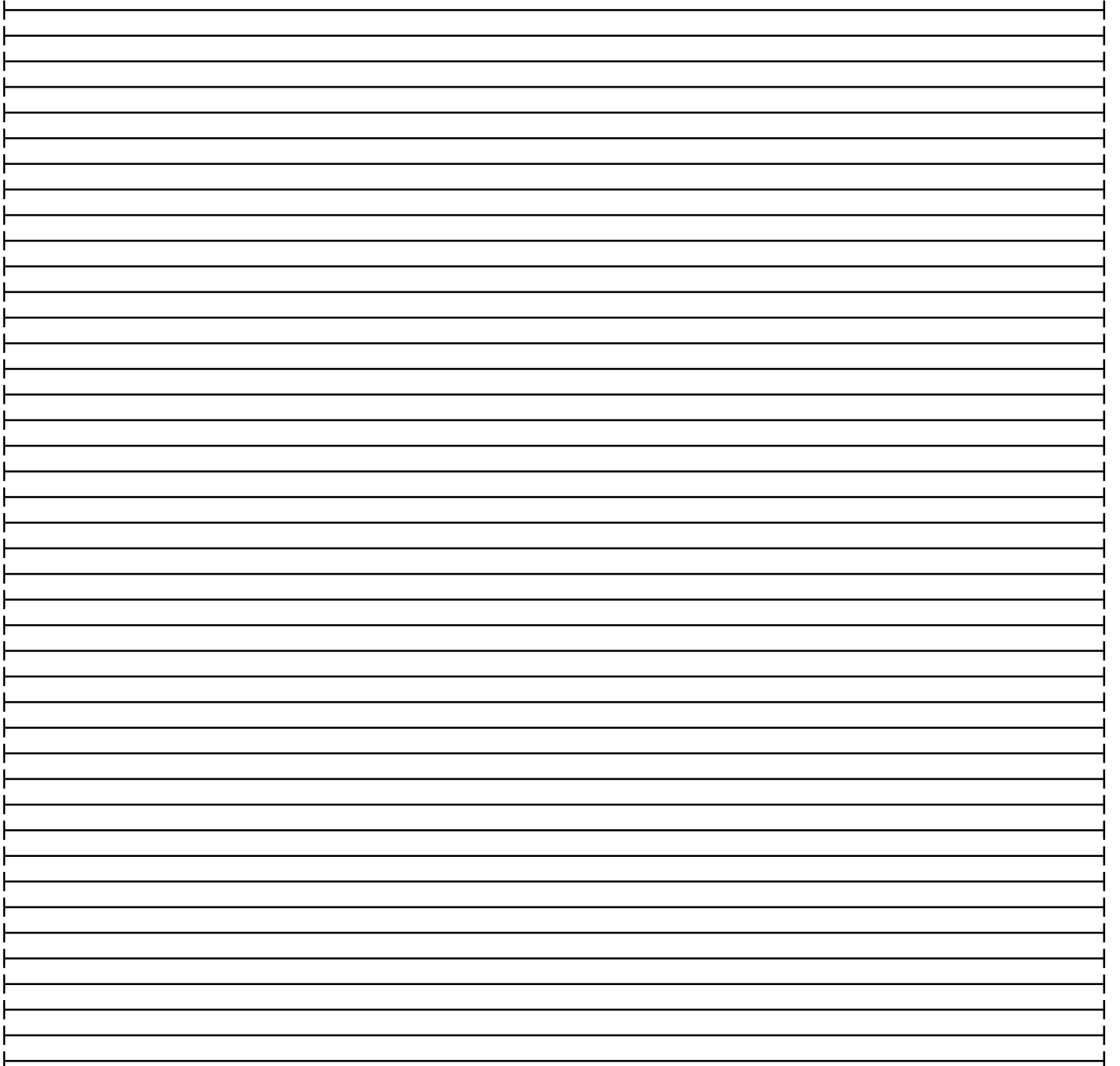
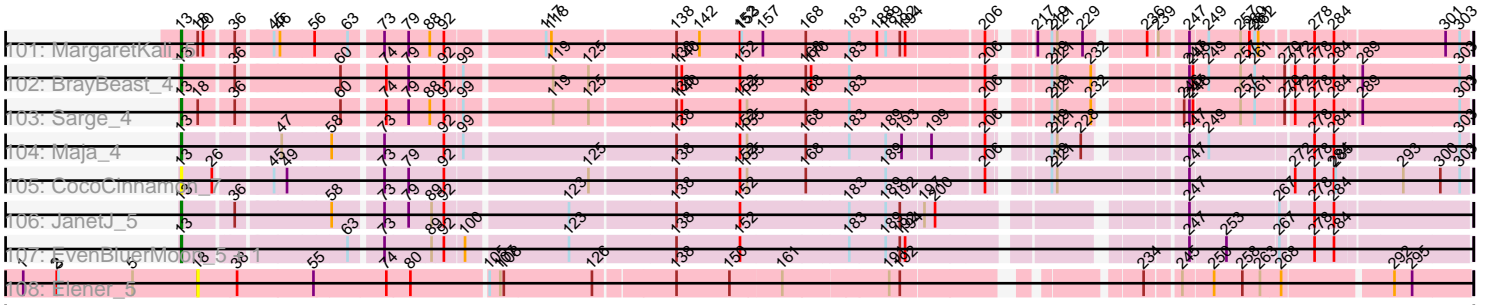




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51: Brynnie_5 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
52: Eesa_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
53: Orcanus_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
54: TaylorSipht_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
55: Amelia_6 + 5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
56: LittleTokyo_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
57: Kuleana_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
58: Coral_5 + 4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
59: HannahPhanta_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
60: Camara_4 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
61: Andrew_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
62: PniftyCoco_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
63: Leona_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
64: Renna12_6	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
65: PFR1_U3 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
66: FlameThrow_4 + 3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
67: Avocadoma_4 + 3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
68: Kieran_4 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
69: SanaSana_3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
70: BAjuniper_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
71: Stool_4 + 3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
72: Lynien_4 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
73: Vitas_3 + 6	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
74: Icarian_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
75: Teagster_3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
76: Johnathan_6	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
77: CimHanger_6	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
78: Omecat_4 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
79: Dismas_4 + 2	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
80: DidgeDoo_4 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
81: Bunga_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
82: WaitingDea_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
83: Shayna_3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
84: IndyLU_4 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
85: Jovita_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
86: Franklin22_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
87: Nicky22_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
88: AvGardian	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
89: Phiso_4 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
90: Armstrong	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
91: Slay_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
92: Aibedo_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
93: Lanqtemish_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
94: Eden_3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
95: Eula_4 + 1	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
96: Elva_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
97: Quenya_5	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
98: Gack_3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
99: Shoya_3	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226
100: Kumotta_4	73	86	99	51	58	74	88	110	123	131	138	148	158	168	183	198	200	220	226

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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 196297 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196297 has 201 members, 21 are drafts.

Phages represented in each track:

- Track 1 : Lakshmi\_6
- Track 2 : DreamTeam\_3, Gisselle\_3
- Track 3 : Misaeng\_6
- Track 4 : Fluke\_6, Beethoven\_6, Carpal\_6, Riverdale\_6, TattModd\_6, Vallejo\_6, Savage2526\_6
- Track 5 : Scuttle\_6, BrotherBLo\_6, Korra\_6, Kalizoi\_6, Immaculata\_6
- Track 6 : Suppi\_6, Canowicakte\_6
- Track 7 : Oxynfrius\_6
- Track 8 : Chridison\_3
- Track 9 : Maria1952\_3, KingBob\_3, Sergei\_3, Daiboju\_3, Temper16\_3, Herb\_3
- Track 10 : Bennie\_3, HeadNerd\_3, Huckleberry\_3
- Track 11 : Riovina\_3, OMalley\_3, Eunoia\_3, Aledel\_3
- Track 12 : DrRobert\_3
- Track 13 : Albanese\_6
- Track 14 : MrGloopy\_6, Cholula\_6, Potatoes\_6, RAP15\_6, MeganNoll\_6, Wawa\_6
- Track 15 : Urla\_3
- Track 16 : Lennox\_3
- Track 17 : Christian\_3
- Track 18 : Nancia\_3, Bodacious\_3, CristinaYang\_3, LilStuart\_3, Lasagna\_3
- Track 19 : Zorro\_6, Dino\_6, Glenn\_6
- Track 20 : Vulture\_3, HunterDalle\_3
- Track 21 : PartyCup\_6
- Track 22 : Makoto\_3
- Track 23 : Kittykat\_3
- Track 24 : Joann\_6
- Track 25 : Nubia\_6
- Track 26 : Litotes\_6
- Track 27 : Lucy\_3, PitaDog\_3, Pterodactyl\_3
- Track 28 : AustinPowers\_3
- Track 29 : Moki\_3
- Track 30 : PinkFriday\_3
- Track 31 : Pumancara\_3, Supakev\_3
- Track 32 : GreenHearts\_6
- Track 33 : WonderBoy\_3
- Track 34 : Huntingdon\_6, RcigaStruga\_6
- Track 35 : Greenhouse\_6
- Track 36 : Jumboset\_6

- Track 37 : MamaPearl\_3, EstebanJulior\_3
- Track 38 : CallieOMalley\_6, AppleCider\_6
- Track 39 : BigMack\_3
- Track 40 : ChewChew\_3
- Track 41 : OurGirlNessie\_3
- Track 42 : Rozby\_6
- Track 43 : Preamble\_3
- Track 44 : Wayne\_6
- Track 45 : Abidatro\_5
- Track 46 : Ruchi\_5
- Track 47 : Jamun\_5
- Track 48 : Chickaboom\_4
- Track 49 : Vulpecula\_5
- Track 50 : Galaxy\_5
- Track 51 : Brynnie\_5, Basilisk\_5
- Track 52 : Eesa\_5
- Track 53 : Orcanus\_5
- Track 54 : TaylorSipht\_5
- Track 55 : Amelia\_6, Jerole\_6, Cote\_6, Lunar\_6, Melons\_6, Bedetta\_6
- Track 56 : LittleTokyo\_5
- Track 57 : Kuleana\_5
- Track 58 : Coral\_5, Daob\_6, Kepler\_5, Polka\_5, Colusalem\_5
- Track 59 : HannahPhantana\_6
- Track 60 : Camara\_4, KHumphrey\_4
- Track 61 : Andrew\_5
- Track 62 : PhluffyCoco\_4, Juno112\_4, RedFox\_4
- Track 63 : Leona\_4
- Track 64 : Renna12\_5
- Track 65 : PFR1\_03, PFR2\_03
- Track 66 : FlameThrower\_4, Bachaco\_4, Celaena\_4, Katzastrophic\_4
- Track 67 : Avocadoman\_4, Doobus\_4, Finalfrontier\_5, Burritobowl\_4, Swervy\_4, TukTuk\_4, Albright\_4, BelmontSKP\_5, Abigail\_4, LimaBean\_4, Arroyo\_5, SarBear\_4, Cashington\_4, CroZenni\_4, AnnaLie\_5, DickRichards\_4
- Track 68 : Kieran\_4, Sharkboy\_4
- Track 69 : SanaSana\_5
- Track 70 : BAjuniper\_4
- Track 71 : Stoor\_4, BabyYoda\_4, DirtyBubble\_4, Stromboli\_4
- Track 72 : Lynlen\_4, Kenzers\_4, SansAfet\_4
- Track 73 : Vitas\_3, Clayda5\_3, Bernstein\_3, Brahms\_3, Rollins\_3, Coltrane\_3, Skylord\_3
- Track 74 : Icarian\_5
- Track 75 : Teagster\_3, SunnyD\_3
- Track 76 : Johnathan\_4
- Track 77 : CliffHanger\_5
- Track 78 : Olliecat\_4, Squiracle\_4
- Track 79 : Dismas\_4, ChiliPepper\_4, Rona\_4
- Track 80 : Didgeridoo\_5, BabyDaisy\_5
- Track 81 : Buldak\_4
- Track 82 : WalkingDead\_4
- Track 83 : Shayna\_3
- Track 84 : IndyLu\_4, Kate33\_4
- Track 85 : Jovita\_4
- Track 86 : Franklin22\_3

- Track 87 : Nicky22\_5
- Track 88 : AvGardian\_4
- Track 89 : Phisb\_4, BubbaBear\_4
- Track 90 : Armstrong\_3
- Track 91 : Slay\_4
- Track 92 : Albedo\_4
- Track 93 : Lahqtemish\_4
- Track 94 : Eden\_3
- Track 95 : Eula\_4, QMacho\_5
- Track 96 : Elva\_5
- Track 97 : Quenya\_5
- Track 98 : Gack\_3
- Track 99 : Shoya\_3
- Track 100 : Kumotta\_4
- Track 101 : MargaretKali\_5
- Track 102 : BrayBeast\_4
- Track 103 : Sarge\_4
- Track 104 : Maja\_4
- Track 105 : CocoCinnamon\_7
- Track 106 : JanetJ\_5
- Track 107 : EvenBluerMoon\_5, Aoka\_5
- Track 108 : Elener\_5

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

The start number called the most often in the published annotations is 12, it was called in 82 of the 180 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albanese\_6, Aledel\_3, AppleCider\_6, AustinPowers\_3, Beethoven\_6, Bennie\_3, BigMack\_3, Bodacious\_3, BrotherBLo\_6, CallieOMalley\_6, Canowicakte\_6, Carpal\_6, ChewChew\_3, Cholula\_6, Chridison\_3, Christian\_3, CristinaYang\_3, Daiboju\_3, Dino\_6, DrRobert\_3, DreamTeam\_3, EstebanJulior\_3, Eunoia\_3, Fluke\_6, Gisselle\_3, Glenn\_6, GreenHearts\_6, Greenhouse\_6, HeadNerd\_3, Herb\_3, Huckleberry\_3, HunterDalle\_3, Huntingdon\_6, Immaculata\_6, Joann\_6, Kalizoi\_6, KingBob\_3, Kittykat\_3, Korra\_6, Lakshmi\_6, Lasagna\_3, Lennox\_3, LilStuart\_3, Litotes\_6, Lucy\_3, Makoto\_3, MamaPearl\_3, Maria1952\_3, MeganNoll\_6, Misaeng\_6, Moki\_3, MrGloopy\_6, Nancia\_3, Nubia\_6, OMalley\_3, OurGirlNessie\_3, Oxynfrius\_6, PartyCup\_6, PinkFriday\_3, PitaDog\_3, Potatoes\_6, Preamble\_3, Pterodactyl\_3, Pumancara\_3, RAP15\_6, RcigaStruga\_6, Riovina\_3, Riverdale\_6, Rozby\_6, Savage2526\_6, Scuttle\_6, Sergei\_3, Supakev\_3, Suppi\_6, TattModd\_6, Temper16\_3, Urla\_3, Vallejo\_6, Vulture\_3, Wawa\_6, Wayne\_6, WonderBoy\_3, Zorro\_6,

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

- Jumboset\_6,

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

- Abidatro\_5, Abigail\_4, Albedo\_4, Albright\_4, Amelia\_6, Andrew\_5, AnnaLie\_5, Aoka\_5, Armstrong\_3, Arroyo\_5, AvGardian\_4, Avocadoman\_4, BAjuniper\_4,

BabyDaisy\_5, BabyYoda\_4, Bachaco\_4, Basilisk\_5, Bedetta\_6, BelmontSKP\_5, Bernstein\_3, Brahms\_3, BrayBeast\_4, Brynnie\_5, BubbaBear\_4, Buldak\_4, Burritobowl\_4, Camara\_4, Cashington\_4, Celaena\_4, Chickaboom\_4, ChiliPepper\_4, Clayda5\_3, CliffHanger\_5, CocoCinnamon\_7, Coltrane\_3, Colusalem\_5, Coral\_5, Cote\_6, CroZenni\_4, Daob\_6, DickRichards\_4, Didgeridoo\_5, DirtyBubble\_4, Dismas\_4, Doobus\_4, Eden\_3, Eesa\_5, Elener\_5, Elva\_5, Eula\_4, EvenBluerMoon\_5, Finalfrontier\_5, FlameThrower\_4, Franklin22\_3, Gack\_3, Galaxy\_5, HannahPhantana\_6, Icarian\_5, IndyLu\_4, Jamun\_5, JanetJ\_5, Jerole\_6, Johnathan\_4, Jovita\_4, Juno112\_4, KHumphrey\_4, Kate33\_4, Katzastrophic\_4, Kenzers\_4, Kepler\_5, Kieran\_4, Kuleana\_5, Kumotta\_4, Lahqtemish\_4, Leona\_4, LimaBean\_4, LittleTokyo\_5, Lunar\_6, Lynlen\_4, Maja\_4, MargaretKali\_5, Melons\_6, Nicky22\_5, Olliecat\_4, Orcanus\_5, PFR1\_03, PFR2\_03, Phisb\_4, PhluffyCoco\_4, Polka\_5, QMacho\_5, Quenya\_5, RedFox\_4, Renna12\_5, Rollins\_3, Rona\_4, Ruchi\_5, SanaSana\_5, SansAfet\_4, SarBear\_4, Sarge\_4, Sharkboy\_4, Shayna\_3, Shoya\_3, Skylord\_3, Slay\_4, Squircle\_4, Stoor\_4, Stromboli\_4, SunnyD\_3, Swervy\_4, TaylorSipht\_5, Teagster\_3, TukTuk\_4, Vitas\_3, Vulpecula\_5, WalkingDead\_4,

### Summary by start number:

#### Start 6:

- Found in 71 of 201 ( 35.3% ) of genes in pham
- Manual Annotations of this start: 61 of 180
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abigail\_4 (EB), Albedo\_4 (EB), Albright\_4 (EB), AnnaLie\_5 (EB), Armstrong\_3 (EB), Arroyo\_5 (EB), AvGardian\_4 (EB), Avocadoman\_4 (EB), BAjuniper\_4 (EB), BabyDaisy\_5 (EB), BabyYoda\_4 (EB), Bachaco\_4 (EB), BelmontSKP\_5 (EB), Bernstein\_3 (EB), Brahms\_3 (EB), BubbaBear\_4 (EB), Buldak\_4 (EB), Burritobowl\_4 (EB), Cashington\_4 (EB), Celaena\_4 (EB), ChiliPepper\_4 (EB), Clayda5\_3 (EB), CliffHanger\_5 (EB), Coltrane\_3 (EB), CroZenni\_4 (EB), DickRichards\_4 (EB), Didgeridoo\_5 (EB), DirtyBubble\_4 (EB), Dismas\_4 (EB), Doobus\_4 (EB), Eden\_3 (EB), Elva\_5 (EB), Eula\_4 (EB), Finalfrontier\_5 (EB), FlameThrower\_4 (EB), Franklin22\_3 (EB), Gack\_3 (EB), Icarian\_5 (EB), IndyLu\_4 (EB), Johnathan\_4 (EB), Jovita\_4 (EB), Kate33\_4 (EB), Katzastrophic\_4 (EB), Kenzers\_4 (EB), Kieran\_4 (EB), Lahqtemish\_4 (EB), LimaBean\_4 (EB), Lynlen\_4 (EB), Nicky22\_5 (EB), Olliecat\_4 (EB), Phisb\_4 (EB), QMacho\_5 (EB), Quenya\_5 (EB), Rollins\_3 (EB), Rona\_4 (EB), SanaSana\_5 (EB), SansAfet\_4 (EB), SarBear\_4 (EB), Sharkboy\_4 (EB), Shayna\_3 (EB), Skylord\_3 (EB), Slay\_4 (EB), Squircle\_4 (EB), Stoor\_4 (EB), Stromboli\_4 (EB), SunnyD\_3 (EB), Swervy\_4 (EB), Teagster\_3 (EB), TukTuk\_4 (EB), Vitas\_3 (EB), WalkingDead\_4 (EB),

#### Start 8:

- Found in 2 of 201 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PFR1\_03 (BX), PFR2\_03 (BX),

#### Start 9:

- Found in 2 of 201 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 180
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumotta\_4 (FB), Shoya\_3 (FB),

#### Start 12:

- Found in 84 of 201 ( 41.8% ) of genes in pham
- Manual Annotations of this start: 82 of 180
- Called 98.8% of time when present
- Phage (with cluster) where this start called: Albanese\_6 (AK), Aledel\_3 (AK), AppleCider\_6 (AK), AustinPowers\_3 (AK), Beethoven\_6 (AK), Bennie\_3 (AK), BigMack\_3 (AK), Bodacious\_3 (AK), BrotherBLo\_6 (AK), CallieOMalley\_6 (AK), Canowicakte\_6 (AK), Carpal\_6 (AK), ChewChew\_3 (AK), Cholula\_6 (AK), Chridison\_3 (AK), Christian\_3 (AK), CristinaYang\_3 (AK), Daiboju\_3 (AK), Dino\_6 (AK), DrRobert\_3 (AK), DreamTeam\_3 (AK), EstebanJulior\_3 (AK), Eunoia\_3 (AK), Fluke\_6 (AK), Gisselle\_3 (AK), Glenn\_6 (AK), GreenHearts\_6 (AK), Greenhouse\_6 (AK), HeadNerd\_3 (AK), Herb\_3 (AK), Huckleberry\_3 (AK), HunterDalle\_3 (AK), Huntingdon\_6 (AK), Immaculata\_6 (AK), Joann\_6 (AK), Kalizoi\_6 (AK), KingBob\_3 (AK), Kittykat\_3 (AK), Korra\_6 (AK), Lakshmi\_6 (AK), Lasagna\_3 (AK), Lennox\_3 (AK), LilStuart\_3 (AK), Litotes\_6 (AK), Lucy\_3 (AK), Makoto\_3 (AK), MamaPearl\_3 (AK), Maria1952\_3 (AK), MeganNoll\_6 (AK), Misaeng\_6 (AK), Moki\_3 (AK), MrGloopy\_6 (AK), Nancia\_3 (AK), Nubia\_6 (AK), OMalley\_3 (AK), OurGirlNessie\_3 (AK), Oxynfrius\_6 (AK), PartyCup\_6 (AK), PinkFriday\_3 (AK), PitaDog\_3 (AK), Potatoes\_6 (AK), Preamble\_3 (AK), Pterodactyl\_3 (AK), Pumancara\_3 (AK), RAP15\_6 (AK), RcigaStruga\_6 (AK), Riovina\_3 (AK), Riverdale\_6 (AK), Rozby\_6 (AK), Savage2526\_6 (AK), Scuttle\_6 (AK), Sergei\_3 (AK), Supakev\_3 (AK), Suppi\_6 (AK), TattModd\_6 (AK), Temper16\_3 (AK), Urla\_3 (AK), Vallejo\_6 (AK), Vulture\_3 (AK), Wawa\_6 (AK), Wayne\_6 (AK), WonderBoy\_3 (AK), Zorro\_6 (AK),

#### Start 13:

- Found in 43 of 201 ( 21.4% ) of genes in pham
- Manual Annotations of this start: 34 of 180
- Called 95.3% of time when present
- Phage (with cluster) where this start called: Abidatro\_5 (AS1), Amelia\_6 (AS2), Andrew\_5 (AS3), Aoka\_5 (FO), Basilisk\_5 (AS1), Bedetta\_6 (AS2), BrayBeast\_4 (FB), Brynnie\_5 (AS1), Camara\_4 (AS3), Chickaboom\_4 (AS1), CocoCinnamon\_7 (FO), Colusalem\_5 (AS2), Coral\_5 (AS2), Cote\_6 (AS2), Daob\_6 (AS2), Eesa\_5 (AS1), EvenBluerMoon\_5 (FO), Galaxy\_5 (AS1), HannahPhantana\_6 (AS2), Jamun\_5 (AS1), JanetJ\_5 (FO), Jerole\_6 (AS2), Juno112\_4 (AS3), KHumphrey\_4 (AS3), Kepler\_5 (AS2), Kuleana\_5 (AS2), Leona\_4 (AS3), LittleTokyo\_5 (AS2), Lunar\_6 (AS2), Maja\_4 (FO), MargaretKali\_5 (FB), Melons\_6 (AS2), Orcanus\_5 (AS1), PhluffyCoco\_4 (AS3), Polka\_5 (AS2), RedFox\_4 (AS3), Renna12\_5 (AS3), Ruchi\_5 (AS1), Sarge\_4 (FB), TaylorSipt\_5 (AS1), Vulpecula\_5 (AS1),

#### Start 18:

- Found in 70 of 201 ( 34.8% ) of genes in pham
- Manual Annotations of this start: 1 of 180
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Elener\_5 (singleton), Jumboset\_6 (AK),

#### Summary by clusters:

There are 9 clusters represented in this pham: AS3, AS2, AS1, AK, singleton, EB, FB, BX, FO,

Info for manual annotations of cluster AK:

- Start number 12 was manually annotated 82 times for cluster AK.



- Start number 18 was manually annotated 1 time for cluster AK.

Info for manual annotations of cluster AS1:

- Start number 13 was manually annotated 11 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 13 was manually annotated 11 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 13 was manually annotated 6 times for cluster AS3.

Info for manual annotations of cluster EB:

- Start number 6 was manually annotated 61 times for cluster EB.

Info for manual annotations of cluster FB:

- Start number 9 was manually annotated 2 times for cluster FB.
- Start number 13 was manually annotated 3 times for cluster FB.

Info for manual annotations of cluster FO:

- Start number 13 was manually annotated 3 times for cluster FO.

### ***Gene Information:***

Gene: Abidatro\_5 Start: 2692, Stop: 4635, Start Num: 13

Candidate Starts for Abidatro\_5:

(Start: 13 @2692 has 34 MA's), (45, 2824), (47, 2836), (60, 2929), (71, 2980), (93, 3085), (94, 3088), (110, 3175), (123, 3274), (138, 3454), (152, 3559), (154, 3568), (155, 3571), (165, 3649), (168, 3667), (169, 3670), (183, 3736), (189, 3796), (192, 3820), (198, 3862), (200, 3874), (220, 4018), (226, 4060), (241, 4153), (253, 4246), (257, 4270), (292, 4510), (301, 4594), (304, 4621),

Gene: Abigail\_4 Start: 2329, Stop: 4353, Start Num: 6

Candidate Starts for Abigail\_4:

(Start: 6 @2329 has 61 MA's), (11, 2362), (41, 2470), (42, 2479), (46, 2524), (47, 2527), (60, 2620), (80, 2719), (101, 2812), (111, 2887), (124, 2995), (126, 3022), (138, 3154), (139, 3160), (147, 3229), (152, 3259), (159, 3313), (166, 3352), (189, 3496), (200, 3574), (277, 4093), (288, 4156), (292, 4222),

Gene: Albanese\_6 Start: 4716, Stop: 6734, Start Num: 12

Candidate Starts for Albanese\_6:

(Start: 12 @4716 has 82 MA's), (28, 4782), (49, 4893), (73, 5037), (74, 5040), (79, 5076), (80, 5079), (91, 5130), (102, 5181), (104, 5190), (108, 5226), (119, 5310), (121, 5331), (127, 5379), (135, 5445), (138, 5511), (152, 5616), (153, 5619), (166, 5709), (171, 5736), (184, 5826), (185, 5829), (189, 5856), (222, 6111), (226, 6144), (240, 6240), (245, 6267), (275, 6468), (292, 6609), (293, 6624), (301, 6693),

Gene: Albedo\_4 Start: 2317, Stop: 4341, Start Num: 6

Candidate Starts for Albedo\_4:

(Start: 6 @2317 has 61 MA's), (11, 2350), (41, 2458), (42, 2467), (46, 2512), (47, 2515), (60, 2608), (80, 2707), (101, 2800), (111, 2875), (124, 2983), (126, 3010), (138, 3142), (139, 3148), (152, 3247), (159, 3301), (166, 3340), (189, 3484), (200, 3562), (234, 3844), (277, 4081), (288, 4144), (292, 4210),

Gene: Albright\_4 Start: 2329, Stop: 4353, Start Num: 6

Candidate Starts for Albright\_4:

(Start: 6 @2329 has 61 MA's), (11, 2362), (41, 2470), (42, 2479), (46, 2524), (47, 2527), (60, 2620), (80, 2719), (101, 2812), (111, 2887), (124, 2995), (126, 3022), (138, 3154), (139, 3160), (147, 3229), (152, 3259), (159, 3313), (166, 3352), (189, 3496), (200, 3574), (277, 4093), (288, 4156), (292, 4222),

Gene: Aledel\_3 Start: 2013, Stop: 4040, Start Num: 12

Candidate Starts for Aledel\_3:

(Start: 12 @2013 has 82 MA's), (Start: 18 @2043 has 1 MA's), (27, 2076), (28, 2079), (49, 2190), (67, 2307), (70, 2322), (75, 2346), (91, 2427), (102, 2478), (106, 2511), (108, 2523), (112, 2565), (115, 2586), (119, 2607), (121, 2628), (126, 2673), (127, 2676), (138, 2808), (147, 2883), (152, 2913), (170, 3030), (185, 3126), (189, 3153), (212, 3354), (213, 3357), (222, 3417), (245, 3573), (253, 3642), (275, 3774), (285, 3822), (292, 3915), (293, 3930), (301, 3999),

Gene: Amelia\_6 Start: 2875, Stop: 4818, Start Num: 13

Candidate Starts for Amelia\_6:

(Start: 13 @2875 has 34 MA's), (31, 2935), (45, 3007), (46, 3016), (47, 3019), (58, 3097), (70, 3160), (71, 3163), (88, 3244), (93, 3268), (110, 3358), (118, 3427), (123, 3457), (138, 3637), (140, 3646), (144, 3688), (152, 3742), (153, 3745), (155, 3754), (165, 3832), (168, 3850), (189, 3979), (192, 4003), (198, 4045), (200, 4057), (220, 4201), (226, 4243), (241, 4336), (249, 4399), (253, 4429), (257, 4453), (289, 4642), (292, 4693), (293, 4708), (299, 4762),

Gene: Andrew\_5 Start: 2705, Stop: 4642, Start Num: 13

Candidate Starts for Andrew\_5:

(Start: 13 @2705 has 34 MA's), (29, 2759), (45, 2834), (56, 2900), (60, 2939), (71, 2990), (81, 3044), (93, 3092), (99, 3116), (123, 3281), (138, 3461), (140, 3470), (152, 3566), (153, 3569), (155, 3578), (162, 3638), (165, 3656), (178, 3713), (189, 3803), (192, 3827), (194, 3836), (200, 3881), (226, 4067), (253, 4253), (257, 4277), (270, 4352), (282, 4412), (289, 4466), (292, 4517), (293, 4532),

Gene: AnnaLie\_5 Start: 2675, Stop: 4699, Start Num: 6

Candidate Starts for AnnaLie\_5:

(Start: 6 @2675 has 61 MA's), (11, 2708), (41, 2816), (42, 2825), (46, 2870), (47, 2873), (60, 2966), (80, 3065), (101, 3158), (111, 3233), (124, 3341), (126, 3368), (138, 3500), (139, 3506), (147, 3575), (152, 3605), (159, 3659), (166, 3698), (189, 3842), (200, 3920), (277, 4439), (288, 4502), (292, 4568),

Gene: Aoka\_5 Start: 3139, Stop: 5082, Start Num: 13

Candidate Starts for Aoka\_5:

(Start: 13 @3139 has 34 MA's), (63, 3385), (73, 3433), (89, 3508), (92, 3526), (100, 3556), (123, 3718), (138, 3889), (152, 3994), (183, 4171), (189, 4231), (192, 4255), (194, 4264), (247, 4648), (253, 4705), (267, 4789), (278, 4840), (284, 4873),

Gene: AppleCider\_6 Start: 4658, Stop: 6673, Start Num: 12

Candidate Starts for AppleCider\_6:

(Start: 12 @4658 has 82 MA's), (17, 4685), (20, 4697), (27, 4718), (49, 4832), (54, 4874), (56, 4877), (67, 4949), (71, 4967), (74, 4979), (76, 4994), (79, 5015), (90, 5063), (91, 5069), (93, 5078), (102, 5120), (103, 5126), (108, 5165), (109, 5174), (110, 5177), (117, 5237), (121, 5270), (126, 5315), (127, 5318), (138, 5450), (152, 5555), (164, 5639), (166, 5648), (174, 5684), (177, 5696), (185, 5768), (189, 5795), (222, 6050), (227, 6086), (251, 6257), (253, 6275), (292, 6548), (301, 6632),

Gene: Armstrong\_3 Start: 2170, Stop: 4221, Start Num: 6

Candidate Starts for Armstrong\_3:

(Start: 6 @2170 has 61 MA's), (26, 2254), (35, 2284), (41, 2311), (42, 2320), (47, 2368), (72, 2515), (77, 2545), (121, 2803), (124, 2821), (126, 2848), (128, 2854), (138, 2980), (152, 3085), (154, 3094), (157, 3124), (159, 3142), (189, 3325), (198, 3391), (200, 3403), (226, 3637), (241, 3733), (272, 3937),

(278, 3970), (279, 3976), (283, 3991), (287, 4012), (292, 4093), (298, 4159),

Gene: Arroyo\_5 Start: 2799, Stop: 4823, Start Num: 6

Candidate Starts for Arroyo\_5:

(Start: 6 @2799 has 61 MA's), (11, 2832), (41, 2940), (42, 2949), (46, 2994), (47, 2997), (60, 3090), (80, 3189), (101, 3282), (111, 3357), (124, 3465), (126, 3492), (138, 3624), (139, 3630), (147, 3699), (152, 3729), (159, 3783), (166, 3822), (189, 3966), (200, 4044), (277, 4563), (288, 4626), (292, 4692),

Gene: AustinPowers\_3 Start: 2013, Stop: 4040, Start Num: 12

Candidate Starts for AustinPowers\_3:

(Start: 12 @2013 has 82 MA's), (Start: 18 @2043 has 1 MA's), (27, 2076), (28, 2079), (49, 2190), (67, 2307), (70, 2322), (75, 2346), (91, 2427), (102, 2478), (108, 2523), (112, 2565), (115, 2586), (119, 2607), (121, 2628), (126, 2673), (127, 2676), (138, 2808), (147, 2883), (152, 2913), (170, 3030), (185, 3126), (189, 3153), (212, 3354), (213, 3357), (222, 3417), (226, 3450), (245, 3573), (253, 3642), (265, 3708), (275, 3774), (285, 3822), (292, 3915), (293, 3930), (301, 3999),

Gene: AvGardian\_4 Start: 2392, Stop: 4413, Start Num: 6

Candidate Starts for AvGardian\_4:

(Start: 6 @2392 has 61 MA's), (40, 2530), (42, 2542), (46, 2587), (60, 2683), (80, 2782), (101, 2875), (110, 2944), (124, 3055), (126, 3082), (138, 3214), (139, 3220), (152, 3319), (159, 3373), (176, 3454), (189, 3556), (191, 3562), (200, 3634), (287, 4201), (288, 4216), (292, 4282), (298, 4348), (301, 4366),

Gene: Avocadoman\_4 Start: 2387, Stop: 4411, Start Num: 6

Candidate Starts for Avocadoman\_4:

(Start: 6 @2387 has 61 MA's), (11, 2420), (41, 2528), (42, 2537), (46, 2582), (47, 2585), (60, 2678), (80, 2777), (101, 2870), (111, 2945), (124, 3053), (126, 3080), (138, 3212), (139, 3218), (147, 3287), (152, 3317), (159, 3371), (166, 3410), (189, 3554), (200, 3632), (277, 4151), (288, 4214), (292, 4280),

Gene: BAjuniper\_4 Start: 2389, Stop: 4404, Start Num: 6

Candidate Starts for BAjuniper\_4:

(Start: 6 @2389 has 61 MA's), (14, 2425), (42, 2530), (47, 2578), (58, 2656), (60, 2668), (67, 2701), (80, 2767), (115, 2971), (121, 3013), (124, 3031), (126, 3058), (138, 3190), (141, 3205), (152, 3295), (154, 3304), (157, 3334), (159, 3352), (164, 3382), (189, 3535), (193, 3562), (200, 3613), (201, 3640), (241, 3922), (249, 3985), (253, 4015), (267, 4093), (271, 4111), (278, 4153), (281, 4168), (287, 4195), (292, 4276), (298, 4342), (301, 4360),

Gene: BabyDaisy\_5 Start: 2584, Stop: 4605, Start Num: 6

Candidate Starts for BabyDaisy\_5:

(Start: 6 @2584 has 61 MA's), (42, 2734), (46, 2779), (47, 2782), (80, 2974), (101, 3067), (111, 3136), (124, 3244), (126, 3271), (138, 3403), (139, 3409), (152, 3508), (159, 3562), (166, 3601), (184, 3715), (189, 3745), (191, 3751), (200, 3823), (201, 3850), (204, 3898), (207, 3913), (225, 4033), (249, 4195), (287, 4393), (288, 4408), (292, 4474), (293, 4489), (297, 4522),

Gene: BabyYoda\_4 Start: 2594, Stop: 4609, Start Num: 6

Candidate Starts for BabyYoda\_4:

(Start: 6 @2594 has 61 MA's), (10, 2621), (11, 2624), (35, 2699), (42, 2735), (46, 2780), (47, 2783), (67, 2909), (80, 2975), (104, 3080), (111, 3140), (124, 3248), (126, 3275), (138, 3407), (139, 3413), (147, 3482), (152, 3512), (154, 3521), (159, 3569), (164, 3599), (189, 3752), (200, 3830), (264, 4289), (277, 4349), (288, 4412), (292, 4478),

Gene: Bachaco\_4 Start: 2515, Stop: 4530, Start Num: 6

Candidate Starts for Bachaco\_4:

(Start: 6 @2515 has 61 MA's), (10, 2542), (11, 2545), (22, 2587), (32, 2611), (41, 2647), (42, 2656), (46, 2701), (47, 2704), (49, 2713), (67, 2830), (78, 2890), (103, 2998), (116, 3103), (121, 3142), (124, 3160), (126, 3187), (128, 3193), (134, 3253), (138, 3319), (152, 3424), (153, 3427), (154, 3433), (157, 3463), (159, 3481), (181, 3595), (189, 3664), (194, 3697), (200, 3742), (225, 3961), (277, 4273), (287, 4321), (292, 4402), (297, 4450), (298, 4468),

Gene: Basilisk\_5 Start: 2958, Stop: 4898, Start Num: 13

Candidate Starts for Basilisk\_5:

(Start: 13 @2958 has 34 MA's), (35, 3030), (46, 3099), (47, 3102), (51, 3144), (58, 3180), (71, 3246), (74, 3258), (90, 3336), (93, 3351), (110, 3441), (123, 3540), (131, 3603), (138, 3720), (152, 3825), (154, 3834), (155, 3837), (162, 3897), (165, 3915), (168, 3933), (169, 3936), (183, 4002), (189, 4062), (192, 4086), (198, 4128), (200, 4140), (220, 4281), (226, 4323), (241, 4416), (253, 4509), (257, 4533), (289, 4722), (292, 4773), (293, 4788), (301, 4857), (304, 4884), (305, 4890),

Gene: Bedetta\_6 Start: 2875, Stop: 4818, Start Num: 13

Candidate Starts for Bedetta\_6:

(Start: 13 @2875 has 34 MA's), (31, 2935), (45, 3007), (46, 3016), (47, 3019), (58, 3097), (70, 3160), (71, 3163), (88, 3244), (93, 3268), (110, 3358), (118, 3427), (123, 3457), (138, 3637), (140, 3646), (144, 3688), (152, 3742), (153, 3745), (155, 3754), (165, 3832), (168, 3850), (189, 3979), (192, 4003), (198, 4045), (200, 4057), (220, 4201), (226, 4243), (241, 4336), (249, 4399), (253, 4429), (257, 4453), (289, 4642), (292, 4693), (293, 4708), (299, 4762),

Gene: Beethoven\_6 Start: 4660, Stop: 6669, Start Num: 12

Candidate Starts for Beethoven\_6:

(Start: 12 @4660 has 82 MA's), (Start: 18 @4690 has 1 MA's), (43, 4786), (46, 4816), (49, 4828), (56, 4873), (74, 4975), (75, 4984), (80, 5014), (90, 5059), (91, 5065), (102, 5116), (108, 5161), (109, 5170), (117, 5233), (121, 5266), (126, 5311), (127, 5314), (138, 5446), (141, 5461), (149, 5530), (152, 5551), (155, 5563), (163, 5632), (166, 5644), (180, 5719), (185, 5764), (189, 5791), (205, 5944), (221, 6043), (222, 6046), (230, 6091), (239, 6172), (245, 6202), (251, 6253), (275, 6403), (292, 6544), (301, 6628),

Gene: BelmontSKP\_5 Start: 2675, Stop: 4699, Start Num: 6

Candidate Starts for BelmontSKP\_5:

(Start: 6 @2675 has 61 MA's), (11, 2708), (41, 2816), (42, 2825), (46, 2870), (47, 2873), (60, 2966), (80, 3065), (101, 3158), (111, 3233), (124, 3341), (126, 3368), (138, 3500), (139, 3506), (147, 3575), (152, 3605), (159, 3659), (166, 3698), (189, 3842), (200, 3920), (277, 4439), (288, 4502), (292, 4568),

Gene: Bennie\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Bennie\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (74, 2334), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (106, 2508), (108, 2520), (109, 2529), (126, 2670), (138, 2805), (141, 2820), (143, 2850), (149, 2889), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: Bernstein\_3 Start: 2230, Stop: 4281, Start Num: 6

Candidate Starts for Bernstein\_3:

(Start: 6 @2230 has 61 MA's), (26, 2314), (35, 2344), (41, 2371), (42, 2380), (47, 2428), (72, 2575), (77, 2605), (78, 2611), (121, 2863), (124, 2881), (126, 2908), (128, 2914), (138, 3040), (152, 3145), (154, 3154), (157, 3184), (159, 3202), (189, 3385), (198, 3451), (200, 3463), (226, 3697), (241, 3793), (278, 4030), (279, 4036), (283, 4051), (287, 4072), (292, 4153), (298, 4219),

Gene: BigMack\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for BigMack\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (49, 2187), (56, 2232), (70, 2319), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (103, 2481), (106, 2508), (109, 2529), (117, 2592), (120, 2616), (126, 2670), (127, 2673), (138, 2805), (141, 2820), (152, 2910), (155, 2922), (166, 3003), (167, 3015), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (197, 3210), (200, 3228), (221, 3402), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: Bodacious\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Bodacious\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (40, 2118), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (79, 2370), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: Brahms\_3 Start: 2170, Stop: 4221, Start Num: 6

Candidate Starts for Brahms\_3:

(Start: 6 @2170 has 61 MA's), (26, 2254), (35, 2284), (41, 2311), (42, 2320), (47, 2368), (72, 2515), (77, 2545), (78, 2551), (121, 2803), (124, 2821), (126, 2848), (128, 2854), (138, 2980), (152, 3085), (154, 3094), (157, 3124), (159, 3142), (189, 3325), (198, 3391), (200, 3403), (226, 3637), (241, 3733), (278, 3970), (279, 3976), (283, 3991), (287, 4012), (292, 4093), (298, 4159),

Gene: BrayBeast\_4 Start: 2058, Stop: 3983, Start Num: 13

Candidate Starts for BrayBeast\_4:

(Start: 13 @2058 has 34 MA's), (36, 2133), (60, 2292), (74, 2355), (79, 2391), (92, 2448), (99, 2475), (119, 2613), (125, 2673), (138, 2811), (140, 2820), (152, 2916), (168, 3024), (170, 3033), (183, 3093), (206, 3303), (219, 3372), (221, 3381), (232, 3432), (247, 3549), (248, 3555), (249, 3576), (257, 3630), (261, 3654), (270, 3699), (272, 3708), (278, 3741), (284, 3774), (289, 3810), (303, 3969),

Gene: BrotherBLo\_6 Start: 4666, Stop: 6675, Start Num: 12

Candidate Starts for BrotherBLo\_6:

(Start: 12 @4666 has 82 MA's), (Start: 18 @4696 has 1 MA's), (43, 4792), (46, 4822), (49, 4834), (56, 4879), (74, 4981), (75, 4990), (80, 5020), (90, 5065), (91, 5071), (102, 5122), (108, 5167), (109, 5176), (117, 5239), (121, 5272), (126, 5317), (127, 5320), (138, 5452), (141, 5467), (149, 5536), (152, 5557), (155, 5569), (163, 5638), (166, 5650), (180, 5725), (185, 5770), (189, 5797), (205, 5950), (222, 6052), (230, 6097), (239, 6178), (245, 6208), (251, 6259), (275, 6409), (292, 6550), (301, 6634),

Gene: Brynnie\_5 Start: 2755, Stop: 4695, Start Num: 13

Candidate Starts for Brynnie\_5:

(Start: 13 @2755 has 34 MA's), (35, 2827), (46, 2896), (47, 2899), (51, 2941), (58, 2977), (71, 3043), (74, 3055), (90, 3133), (93, 3148), (110, 3238), (123, 3337), (131, 3400), (138, 3517), (152, 3622), (154, 3631), (155, 3634), (162, 3694), (165, 3712), (168, 3730), (169, 3733), (183, 3799), (189, 3859), (192, 3883), (198, 3925), (200, 3937), (220, 4078), (226, 4120), (241, 4213), (253, 4306), (257, 4330), (289, 4519), (292, 4570), (293, 4585), (301, 4654), (304, 4681), (305, 4687),

Gene: BubbaBear\_4 Start: 2317, Stop: 4341, Start Num: 6

Candidate Starts for BubbaBear\_4:

(Start: 6 @2317 has 61 MA's), (11, 2350), (41, 2458), (42, 2467), (46, 2512), (47, 2515), (60, 2608), (80, 2707), (101, 2800), (107, 2854), (111, 2875), (124, 2983), (126, 3010), (138, 3142), (139, 3148), (152, 3247), (159, 3301), (166, 3340), (189, 3484), (200, 3562), (277, 4081), (288, 4144), (292, 4210),

Gene: Buldak\_4 Start: 2587, Stop: 4644, Start Num: 6

Candidate Starts for Buldak\_4:

(Start: 6 @2587 has 61 MA's), (34, 2701), (39, 2713), (41, 2728), (42, 2737), (46, 2782), (67, 2908), (72, 2932), (77, 2962), (94, 3031), (103, 3076), (109, 3124), (110, 3127), (115, 3178), (120, 3211), (138, 3397), (152, 3502), (159, 3556), (162, 3574), (166, 3595), (185, 3712), (189, 3739), (196, 3796), (200, 3817), (226, 4054), (252, 4237), (277, 4387), (282, 4411), (288, 4450), (292, 4522), (294, 4543),

Gene: Burritobowl\_4 Start: 2327, Stop: 4351, Start Num: 6

Candidate Starts for Burritobowl\_4:

(Start: 6 @2327 has 61 MA's), (11, 2360), (41, 2468), (42, 2477), (46, 2522), (47, 2525), (60, 2618), (80, 2717), (101, 2810), (111, 2885), (124, 2993), (126, 3020), (138, 3152), (139, 3158), (147, 3227), (152, 3257), (159, 3311), (166, 3350), (189, 3494), (200, 3572), (277, 4091), (288, 4154), (292, 4220),

Gene: CallieOMalley\_6 Start: 4658, Stop: 6673, Start Num: 12

Candidate Starts for CallieOMalley\_6:

(Start: 12 @4658 has 82 MA's), (17, 4685), (20, 4697), (27, 4718), (49, 4832), (54, 4874), (56, 4877), (67, 4949), (71, 4967), (74, 4979), (76, 4994), (79, 5015), (90, 5063), (91, 5069), (93, 5078), (102, 5120), (103, 5126), (108, 5165), (109, 5174), (110, 5177), (117, 5237), (121, 5270), (126, 5315), (127, 5318), (138, 5450), (152, 5555), (164, 5639), (166, 5648), (174, 5684), (177, 5696), (185, 5768), (189, 5795), (222, 6050), (227, 6086), (251, 6257), (253, 6275), (292, 6548), (301, 6632),

Gene: Camara\_4 Start: 2336, Stop: 4255, Start Num: 13

Candidate Starts for Camara\_4:

(Start: 13 @2336 has 34 MA's), (29, 2390), (45, 2465), (47, 2477), (56, 2531), (71, 2621), (81, 2675), (93, 2723), (94, 2726), (110, 2810), (123, 2909), (133, 3020), (138, 3089), (140, 3098), (152, 3194), (153, 3197), (155, 3206), (165, 3284), (168, 3302), (178, 3341), (189, 3431), (192, 3455), (198, 3497), (200, 3509), (220, 3647), (226, 3689), (235, 3761), (253, 3875), (257, 3899), (270, 3965), (272, 3974), (279, 4013), (282, 4025), (289, 4079), (292, 4130), (293, 4145), (299, 4199),

Gene: Canowicakte\_6 Start: 4693, Stop: 6708, Start Num: 12

Candidate Starts for Canowicakte\_6:

(Start: 12 @4693 has 82 MA's), (17, 4720), (20, 4732), (27, 4753), (49, 4867), (54, 4909), (56, 4912), (67, 4984), (71, 5002), (74, 5014), (90, 5098), (91, 5104), (93, 5113), (102, 5155), (103, 5161), (108, 5200), (109, 5209), (110, 5212), (117, 5272), (121, 5305), (126, 5350), (127, 5353), (138, 5485), (152, 5590), (166, 5683), (174, 5719), (177, 5731), (185, 5803), (189, 5830), (194, 5863), (222, 6085), (226, 6118), (227, 6121), (253, 6310), (292, 6583), (301, 6667),

Gene: Carpal\_6 Start: 4666, Stop: 6675, Start Num: 12

Candidate Starts for Carpal\_6:

(Start: 12 @4666 has 82 MA's), (Start: 18 @4696 has 1 MA's), (43, 4792), (46, 4822), (49, 4834), (56, 4879), (74, 4981), (75, 4990), (80, 5020), (90, 5065), (91, 5071), (102, 5122), (108, 5167), (109, 5176), (117, 5239), (121, 5272), (126, 5317), (127, 5320), (138, 5452), (141, 5467), (149, 5536), (152, 5557), (155, 5569), (163, 5638), (166, 5650), (180, 5725), (185, 5770), (189, 5797), (205, 5950), (221, 6049), (222, 6052), (230, 6097), (239, 6178), (245, 6208), (251, 6259), (275, 6409), (292, 6550), (301, 6634),

Gene: Cashington\_4 Start: 2317, Stop: 4341, Start Num: 6

Candidate Starts for Cashington\_4:

(Start: 6 @2317 has 61 MA's), (11, 2350), (41, 2458), (42, 2467), (46, 2512), (47, 2515), (60, 2608), (80, 2707), (101, 2800), (111, 2875), (124, 2983), (126, 3010), (138, 3142), (139, 3148), (147, 3217), (152, 3247), (159, 3301), (166, 3340), (189, 3484), (200, 3562), (277, 4081), (288, 4144), (292, 4210),

Gene: Celaena\_4 Start: 2452, Stop: 4467, Start Num: 6

Candidate Starts for Celaena\_4:

(Start: 6 @2452 has 61 MA's), (10, 2479), (11, 2482), (22, 2524), (32, 2548), (41, 2584), (42, 2593), (46, 2638), (47, 2641), (49, 2650), (67, 2767), (78, 2827), (103, 2935), (116, 3040), (121, 3079), (124,

3097), (126, 3124), (128, 3130), (134, 3190), (138, 3256), (152, 3361), (153, 3364), (154, 3370), (157, 3400), (159, 3418), (181, 3532), (189, 3601), (194, 3634), (200, 3679), (225, 3898), (277, 4210), (287, 4258), (292, 4339), (297, 4387), (298, 4405),

Gene: ChewChew\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for ChewChew\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (40, 2118), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (79, 2370), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (222, 3405), (230, 3450), (239, 3531), (264, 3690), (275, 3762), (292, 3903), (301, 3987),

Gene: Chickaboom\_4 Start: 2389, Stop: 4344, Start Num: 13

Candidate Starts for Chickaboom\_4:

(Start: 13 @2389 has 34 MA's), (31, 2449), (45, 2521), (46, 2530), (47, 2533), (58, 2611), (66, 2665), (71, 2692), (74, 2704), (86, 2767), (87, 2770), (89, 2776), (93, 2797), (110, 2887), (123, 2986), (131, 3049), (138, 3166), (152, 3271), (154, 3280), (155, 3283), (162, 3343), (165, 3361), (168, 3379), (169, 3382), (183, 3448), (189, 3508), (192, 3532), (198, 3574), (200, 3586), (220, 3727), (226, 3769), (241, 3862), (253, 3955), (257, 3979), (289, 4168), (292, 4219), (293, 4234), (301, 4303), (304, 4330), (305, 4336),

Gene: ChiliPepper\_4 Start: 2572, Stop: 4596, Start Num: 6

Candidate Starts for ChiliPepper\_4:

(Start: 6 @2572 has 61 MA's), (10, 2599), (11, 2602), (19, 2635), (22, 2644), (35, 2677), (42, 2713), (46, 2758), (58, 2839), (67, 2887), (101, 3040), (104, 3058), (107, 3097), (116, 3169), (121, 3208), (124, 3226), (126, 3253), (138, 3385), (139, 3391), (152, 3490), (154, 3499), (159, 3547), (164, 3577), (172, 3619), (189, 3730), (194, 3763), (200, 3808), (225, 4027), (249, 4189), (259, 4255), (277, 4339), (280, 4354), (297, 4516), (298, 4534),

Gene: Cholula\_6 Start: 4711, Stop: 6720, Start Num: 12

Candidate Starts for Cholula\_6:

(Start: 12 @4711 has 82 MA's), (Start: 18 @4741 has 1 MA's), (43, 4837), (46, 4867), (49, 4879), (56, 4924), (74, 5026), (75, 5035), (80, 5065), (90, 5110), (91, 5116), (102, 5167), (108, 5212), (109, 5221), (117, 5284), (121, 5317), (126, 5362), (127, 5365), (138, 5497), (141, 5512), (149, 5581), (152, 5602), (155, 5614), (163, 5683), (166, 5695), (180, 5770), (185, 5815), (189, 5842), (221, 6094), (222, 6097), (230, 6142), (239, 6223), (245, 6253), (251, 6304), (275, 6454), (292, 6595), (301, 6679),

Gene: Chridison\_3 Start: 2013, Stop: 4040, Start Num: 12

Candidate Starts for Chridison\_3:

(Start: 12 @2013 has 82 MA's), (Start: 18 @2043 has 1 MA's), (27, 2076), (28, 2079), (49, 2190), (67, 2307), (70, 2322), (75, 2346), (91, 2427), (102, 2478), (108, 2523), (112, 2565), (115, 2586), (119, 2607), (121, 2628), (126, 2673), (127, 2676), (138, 2808), (147, 2883), (152, 2913), (170, 3030), (185, 3126), (189, 3153), (212, 3354), (213, 3357), (222, 3417), (226, 3450), (245, 3573), (253, 3642), (265, 3708), (285, 3822), (291, 3879), (292, 3915), (293, 3930), (301, 3999),

Gene: Christian\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Christian\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (103, 2481), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (171, 3030), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (221, 3402), (222, 3405), (230, 3450), (239, 3531), (255, 3636), (275, 3762), (292, 3903), (301, 3987),

Gene: Clayda5\_3 Start: 2170, Stop: 4221, Start Num: 6

Candidate Starts for Clayda5\_3:

(Start: 6 @2170 has 61 MA's), (26, 2254), (35, 2284), (41, 2311), (42, 2320), (47, 2368), (72, 2515), (77, 2545), (78, 2551), (121, 2803), (124, 2821), (126, 2848), (128, 2854), (138, 2980), (152, 3085), (154, 3094), (157, 3124), (159, 3142), (189, 3325), (198, 3391), (200, 3403), (226, 3637), (241, 3733), (278, 3970), (279, 3976), (283, 3991), (287, 4012), (292, 4093), (298, 4159),

Gene: CliffHanger\_5 Start: 2398, Stop: 4446, Start Num: 6

Candidate Starts for CliffHanger\_5:

(Start: 6 @2398 has 61 MA's), (34, 2512), (42, 2548), (46, 2593), (47, 2596), (59, 2683), (61, 2689), (67, 2719), (72, 2743), (77, 2773), (80, 2785), (101, 2872), (107, 2920), (111, 2941), (121, 3031), (124, 3049), (126, 3076), (128, 3082), (138, 3208), (152, 3313), (157, 3349), (159, 3367), (160, 3370), (162, 3385), (172, 3439), (189, 3550), (190, 3553), (193, 3577), (200, 3628), (215, 3793), (269, 4153), (288, 4261), (290, 4288), (292, 4324), (302, 4429),

Gene: CocoCinnamon\_7 Start: 3192, Stop: 5144, Start Num: 13

Candidate Starts for CocoCinnamon\_7:

(Start: 13 @3192 has 34 MA's), (26, 3243), (45, 3321), (49, 3342), (73, 3486), (79, 3525), (92, 3582), (125, 3807), (138, 3945), (152, 4050), (155, 4062), (168, 4158), (189, 4287), (206, 4437), (219, 4500), (221, 4509), (247, 4710), (272, 4869), (278, 4902), (284, 4935), (285, 4938), (293, 5037), (300, 5097), (303, 5130),

Gene: Coltrane\_3 Start: 2170, Stop: 4221, Start Num: 6

Candidate Starts for Coltrane\_3:

(Start: 6 @2170 has 61 MA's), (26, 2254), (35, 2284), (41, 2311), (42, 2320), (47, 2368), (72, 2515), (77, 2545), (78, 2551), (121, 2803), (124, 2821), (126, 2848), (128, 2854), (138, 2980), (152, 3085), (154, 3094), (157, 3124), (159, 3142), (189, 3325), (198, 3391), (200, 3403), (226, 3637), (241, 3733), (278, 3970), (279, 3976), (283, 3991), (287, 4012), (292, 4093), (298, 4159),

Gene: Colusalem\_5 Start: 2714, Stop: 4657, Start Num: 13

Candidate Starts for Colusalem\_5:

(Start: 13 @2714 has 34 MA's), (22, 2756), (35, 2786), (45, 2846), (46, 2855), (47, 2858), (49, 2867), (70, 2999), (71, 3002), (88, 3083), (93, 3107), (110, 3197), (123, 3296), (138, 3476), (140, 3485), (144, 3527), (152, 3581), (153, 3584), (155, 3593), (165, 3671), (168, 3689), (189, 3818), (192, 3842), (198, 3884), (200, 3896), (220, 4040), (226, 4082), (241, 4175), (249, 4238), (253, 4268), (257, 4292), (289, 4481), (292, 4532), (293, 4547), (299, 4601),

Gene: Coral\_5 Start: 2714, Stop: 4657, Start Num: 13

Candidate Starts for Coral\_5:

(Start: 13 @2714 has 34 MA's), (22, 2756), (35, 2786), (45, 2846), (46, 2855), (47, 2858), (49, 2867), (70, 2999), (71, 3002), (88, 3083), (93, 3107), (110, 3197), (123, 3296), (138, 3476), (140, 3485), (144, 3527), (152, 3581), (153, 3584), (155, 3593), (165, 3671), (168, 3689), (189, 3818), (192, 3842), (198, 3884), (200, 3896), (220, 4040), (226, 4082), (241, 4175), (249, 4238), (253, 4268), (257, 4292), (289, 4481), (292, 4532), (293, 4547), (299, 4601),

Gene: Cote\_6 Start: 2875, Stop: 4818, Start Num: 13

Candidate Starts for Cote\_6:

(Start: 13 @2875 has 34 MA's), (31, 2935), (45, 3007), (46, 3016), (47, 3019), (58, 3097), (70, 3160), (71, 3163), (88, 3244), (93, 3268), (110, 3358), (118, 3427), (123, 3457), (138, 3637), (140, 3646), (144, 3688), (152, 3742), (153, 3745), (155, 3754), (165, 3832), (168, 3850), (189, 3979), (192, 4003), (198, 4045), (200, 4057), (220, 4201), (226, 4243), (241, 4336), (249, 4399), (253, 4429), (257, 4453), (289, 4642), (292, 4693), (293, 4708), (299, 4762),



Gene: CristinaYang\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for CristinaYang\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (40, 2118), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (79, 2370), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: CroZenni\_4 Start: 2329, Stop: 4353, Start Num: 6

Candidate Starts for CroZenni\_4:

(Start: 6 @2329 has 61 MA's), (11, 2362), (41, 2470), (42, 2479), (46, 2524), (47, 2527), (60, 2620), (80, 2719), (101, 2812), (111, 2887), (124, 2995), (126, 3022), (138, 3154), (139, 3160), (147, 3229), (152, 3259), (159, 3313), (166, 3352), (189, 3496), (200, 3574), (277, 4093), (288, 4156), (292, 4222),

Gene: Daiboju\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for Daiboju\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (106, 2510), (108, 2522), (109, 2531), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (152, 2912), (170, 3029), (185, 3125), (189, 3152), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (285, 3821), (292, 3914), (293, 3929), (301, 3998),

Gene: Daob\_6 Start: 2878, Stop: 4821, Start Num: 13

Candidate Starts for Daob\_6:

(Start: 13 @2878 has 34 MA's), (22, 2920), (35, 2950), (45, 3010), (46, 3019), (47, 3022), (49, 3031), (70, 3163), (71, 3166), (88, 3247), (93, 3271), (110, 3361), (123, 3460), (138, 3640), (140, 3649), (144, 3691), (152, 3745), (153, 3748), (155, 3757), (165, 3835), (168, 3853), (189, 3982), (192, 4006), (198, 4048), (200, 4060), (220, 4204), (226, 4246), (241, 4339), (249, 4402), (253, 4432), (257, 4456), (289, 4645), (292, 4696), (293, 4711), (299, 4765),

Gene: DickRichards\_4 Start: 2794, Stop: 4818, Start Num: 6

Candidate Starts for DickRichards\_4:

(Start: 6 @2794 has 61 MA's), (11, 2827), (41, 2935), (42, 2944), (46, 2989), (47, 2992), (60, 3085), (80, 3184), (101, 3277), (111, 3352), (124, 3460), (126, 3487), (138, 3619), (139, 3625), (147, 3694), (152, 3724), (159, 3778), (166, 3817), (189, 3961), (200, 4039), (277, 4558), (288, 4621), (292, 4687),

Gene: Didgeridoo\_5 Start: 2584, Stop: 4605, Start Num: 6

Candidate Starts for Didgeridoo\_5:

(Start: 6 @2584 has 61 MA's), (42, 2734), (46, 2779), (47, 2782), (80, 2974), (101, 3067), (111, 3136), (124, 3244), (126, 3271), (138, 3403), (139, 3409), (152, 3508), (159, 3562), (166, 3601), (184, 3715), (189, 3745), (191, 3751), (200, 3823), (201, 3850), (204, 3898), (207, 3913), (225, 4033), (249, 4195), (287, 4393), (288, 4408), (292, 4474), (293, 4489), (297, 4522),

Gene: Dino\_6 Start: 4666, Stop: 6675, Start Num: 12

Candidate Starts for Dino\_6:

(Start: 12 @4666 has 82 MA's), (Start: 18 @4696 has 1 MA's), (43, 4792), (46, 4822), (49, 4834), (56, 4879), (74, 4981), (75, 4990), (80, 5020), (90, 5065), (91, 5071), (102, 5122), (108, 5167), (109, 5176), (117, 5239), (121, 5272), (126, 5317), (127, 5320), (138, 5452), (141, 5467), (149, 5536), (152, 5557), (155, 5569), (163, 5638), (166, 5650), (180, 5725), (185, 5770), (189, 5797), (222, 6052), (230, 6097), (239, 6178), (245, 6208), (251, 6259), (275, 6409), (292, 6550), (301, 6634),

Gene: DirtyBubble\_4 Start: 2593, Stop: 4608, Start Num: 6

Candidate Starts for DirtyBubble\_4:

(Start: 6 @2593 has 61 MA's), (10, 2620), (11, 2623), (35, 2698), (42, 2734), (46, 2779), (47, 2782), (67, 2908), (80, 2974), (104, 3079), (111, 3139), (124, 3247), (126, 3274), (138, 3406), (139, 3412), (147, 3481), (152, 3511), (154, 3520), (159, 3568), (164, 3598), (189, 3751), (200, 3829), (264, 4288), (277, 4348), (288, 4411), (292, 4477),

Gene: Dismas\_4 Start: 2572, Stop: 4596, Start Num: 6

Candidate Starts for Dismas\_4:

(Start: 6 @2572 has 61 MA's), (10, 2599), (11, 2602), (19, 2635), (22, 2644), (35, 2677), (42, 2713), (46, 2758), (58, 2839), (67, 2887), (101, 3040), (104, 3058), (107, 3097), (116, 3169), (121, 3208), (124, 3226), (126, 3253), (138, 3385), (139, 3391), (152, 3490), (154, 3499), (159, 3547), (164, 3577), (172, 3619), (189, 3730), (194, 3763), (200, 3808), (225, 4027), (249, 4189), (259, 4255), (277, 4339), (280, 4354), (297, 4516), (298, 4534),

Gene: Doobus\_4 Start: 2551, Stop: 4575, Start Num: 6

Candidate Starts for Doobus\_4:

(Start: 6 @2551 has 61 MA's), (11, 2584), (41, 2692), (42, 2701), (46, 2746), (47, 2749), (60, 2842), (80, 2941), (101, 3034), (111, 3109), (124, 3217), (126, 3244), (138, 3376), (139, 3382), (147, 3451), (152, 3481), (159, 3535), (166, 3574), (189, 3718), (200, 3796), (277, 4315), (288, 4378), (292, 4444),

Gene: DrRobert\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for DrRobert\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (194, 3183), (213, 3345), (221, 3402), (222, 3405), (230, 3450), (239, 3531), (255, 3636), (275, 3762), (292, 3903), (301, 3987),

Gene: DreamTeam\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for DreamTeam\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (81, 2376), (90, 2418), (91, 2424), (108, 2520), (109, 2529), (114, 2574), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (152, 2910), (153, 2913), (155, 2922), (166, 3003), (171, 3030), (174, 3039), (185, 3123), (189, 3150), (222, 3405), (230, 3450), (237, 3525), (239, 3531), (251, 3612), (264, 3690), (275, 3762), (292, 3903), (301, 3987),

Gene: Eden\_3 Start: 2234, Stop: 4282, Start Num: 6

Candidate Starts for Eden\_3:

(Start: 6 @2234 has 61 MA's), (16, 2288), (41, 2366), (58, 2501), (62, 2525), (80, 2615), (110, 2771), (121, 2864), (124, 2882), (126, 2909), (128, 2915), (138, 3041), (152, 3146), (154, 3155), (157, 3185), (159, 3203), (164, 3233), (184, 3356), (189, 3386), (193, 3413), (200, 3464), (238, 3785), (253, 3887), (281, 4046), (283, 4052), (285, 4067), (287, 4073), (292, 4154), (298, 4220),

Gene: Eesa\_5 Start: 2893, Stop: 4869, Start Num: 13

Candidate Starts for Eesa\_5:

(Start: 13 @2893 has 34 MA's), (47, 3037), (58, 3115), (66, 3169), (71, 3196), (74, 3208), (83, 3259), (86, 3271), (87, 3274), (89, 3280), (93, 3301), (110, 3391), (118, 3460), (123, 3490), (130, 3550), (138, 3670), (140, 3679), (152, 3775), (153, 3778), (155, 3787), (162, 3847), (165, 3865), (168, 3883), (183, 3952), (189, 4012), (192, 4036), (198, 4078), (200, 4090), (220, 4252), (226, 4294), (237, 4375), (241, 4387), (253, 4480), (256, 4501), (270, 4579), (274, 4594), (282, 4639), (292, 4744), (293, 4759), (302, 4849),

Gene: Elener\_5 Start: 3820, Stop: 5781, Start Num: 18

Candidate Starts for Elener\_5:

(1, 3523), (2, 3580), (3, 3583), (5, 3709), (Start: 18 @3820 has 1 MA's), (38, 3886), (55, 4015), (74, 4132), (80, 4171), (105, 4294), (107, 4312), (108, 4318), (126, 4465), (138, 4591), (150, 4681), (161, 4765), (191, 4939), (192, 4957), (234, 5278), (245, 5326), (250, 5374), (258, 5422), (263, 5452), (268, 5485), (292, 5656), (295, 5686),

Gene: Elva\_5 Start: 2650, Stop: 4677, Start Num: 6

Candidate Starts for Elva\_5:

(4, 2527), (Start: 6 @2650 has 61 MA's), (10, 2677), (11, 2680), (35, 2755), (42, 2791), (46, 2836), (47, 2839), (67, 2965), (80, 3031), (103, 3133), (104, 3136), (111, 3196), (116, 3247), (121, 3286), (124, 3304), (126, 3331), (138, 3463), (139, 3469), (152, 3568), (159, 3625), (184, 3778), (189, 3808), (191, 3814), (200, 3886), (264, 4357), (288, 4480), (292, 4546), (301, 4630),

Gene: EstebanJulior\_3 Start: 2010, Stop: 4019, Start Num: 12

Candidate Starts for EstebanJulior\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2166), (49, 2178), (56, 2223), (74, 2325), (79, 2361), (80, 2364), (91, 2415), (103, 2472), (108, 2511), (109, 2520), (117, 2583), (120, 2607), (121, 2616), (126, 2661), (127, 2664), (138, 2796), (141, 2811), (149, 2880), (152, 2901), (155, 2913), (163, 2982), (166, 2994), (183, 3081), (185, 3114), (189, 3141), (194, 3174), (222, 3396), (230, 3441), (239, 3522), (275, 3753), (280, 3774), (292, 3894), (301, 3978),

Gene: Eula\_4 Start: 2316, Stop: 4340, Start Num: 6

Candidate Starts for Eula\_4:

(Start: 6 @2316 has 61 MA's), (11, 2349), (41, 2457), (42, 2466), (46, 2511), (47, 2514), (60, 2607), (80, 2706), (101, 2799), (107, 2853), (111, 2874), (124, 2982), (126, 3009), (138, 3141), (139, 3147), (147, 3216), (152, 3246), (159, 3300), (166, 3339), (189, 3483), (200, 3561), (277, 4080), (287, 4128), (288, 4143), (292, 4209),

Gene: Eunoia\_3 Start: 2013, Stop: 4040, Start Num: 12

Candidate Starts for Eunoia\_3:

(Start: 12 @2013 has 82 MA's), (Start: 18 @2043 has 1 MA's), (27, 2076), (28, 2079), (49, 2190), (67, 2307), (70, 2322), (75, 2346), (91, 2427), (102, 2478), (106, 2511), (108, 2523), (112, 2565), (115, 2586), (119, 2607), (121, 2628), (126, 2673), (127, 2676), (138, 2808), (147, 2883), (152, 2913), (170, 3030), (185, 3126), (189, 3153), (212, 3354), (213, 3357), (222, 3417), (245, 3573), (253, 3642), (275, 3774), (285, 3822), (292, 3915), (293, 3930), (301, 3999),

Gene: EvenBluerMoon\_5 Start: 3137, Stop: 5080, Start Num: 13

Candidate Starts for EvenBluerMoon\_5:

(Start: 13 @3137 has 34 MA's), (63, 3383), (73, 3431), (89, 3506), (92, 3524), (100, 3554), (123, 3716), (138, 3887), (152, 3992), (183, 4169), (189, 4229), (192, 4253), (194, 4262), (247, 4646), (253, 4703), (267, 4787), (278, 4838), (284, 4871),

Gene: Finalfrontier\_5 Start: 2822, Stop: 4846, Start Num: 6

Candidate Starts for Finalfrontier\_5:

(Start: 6 @2822 has 61 MA's), (11, 2855), (41, 2963), (42, 2972), (46, 3017), (47, 3020), (60, 3113), (80, 3212), (101, 3305), (111, 3380), (124, 3488), (126, 3515), (138, 3647), (139, 3653), (147, 3722), (152, 3752), (159, 3806), (166, 3845), (189, 3989), (200, 4067), (277, 4586), (288, 4649), (292, 4715),

Gene: FlameThrower\_4 Start: 2448, Stop: 4463, Start Num: 6

Candidate Starts for FlameThrower\_4:

(Start: 6 @2448 has 61 MA's), (10, 2475), (11, 2478), (22, 2520), (32, 2544), (41, 2580), (42, 2589), (46, 2634), (47, 2637), (49, 2646), (67, 2763), (78, 2823), (103, 2931), (116, 3036), (121, 3075), (124, 3093), (126, 3120), (128, 3126), (134, 3186), (138, 3252), (152, 3357), (153, 3360), (154, 3366), (157,

3396), (159, 3414), (181, 3528), (189, 3597), (194, 3630), (200, 3675), (225, 3894), (277, 4206), (287, 4254), (292, 4335), (297, 4383), (298, 4401),

Gene: Fluke\_6 Start: 4707, Stop: 6716, Start Num: 12

Candidate Starts for Fluke\_6:

(Start: 12 @4707 has 82 MA's), (Start: 18 @4737 has 1 MA's), (43, 4833), (46, 4863), (49, 4875), (56, 4920), (74, 5022), (75, 5031), (80, 5061), (90, 5106), (91, 5112), (102, 5163), (108, 5208), (109, 5217), (117, 5280), (121, 5313), (126, 5358), (127, 5361), (138, 5493), (141, 5508), (149, 5577), (152, 5598), (155, 5610), (163, 5679), (166, 5691), (180, 5766), (185, 5811), (189, 5838), (205, 5991), (221, 6090), (222, 6093), (230, 6138), (239, 6219), (245, 6249), (251, 6300), (275, 6450), (292, 6591), (301, 6675),

Gene: Franklin22\_3 Start: 2242, Stop: 4278, Start Num: 6

Candidate Starts for Franklin22\_3:

(Start: 6 @2242 has 61 MA's), (16, 2296), (24, 2314), (41, 2374), (47, 2431), (51, 2473), (58, 2509), (62, 2533), (80, 2623), (101, 2710), (121, 2869), (124, 2887), (126, 2914), (128, 2920), (138, 3046), (152, 3151), (154, 3160), (157, 3190), (159, 3208), (184, 3361), (189, 3391), (200, 3469), (220, 3652), (253, 3883), (266, 3958), (270, 3976), (278, 4027), (279, 4033), (283, 4048), (287, 4069), (292, 4150), (298, 4216),

Gene: Gack\_3 Start: 2278, Stop: 4326, Start Num: 6

Candidate Starts for Gack\_3:

(Start: 6 @2278 has 61 MA's), (16, 2332), (41, 2410), (47, 2467), (51, 2509), (72, 2617), (77, 2647), (82, 2668), (101, 2749), (110, 2815), (115, 2866), (121, 2908), (124, 2926), (126, 2953), (128, 2959), (138, 3085), (152, 3190), (154, 3199), (157, 3229), (159, 3247), (164, 3277), (184, 3400), (189, 3430), (200, 3508), (211, 3625), (220, 3700), (253, 3931), (278, 4075), (279, 4081), (283, 4096), (287, 4117), (292, 4198),

Gene: Galaxy\_5 Start: 2701, Stop: 4644, Start Num: 13

Candidate Starts for Galaxy\_5:

(Start: 13 @2701 has 34 MA's), (45, 2833), (47, 2845), (58, 2923), (71, 2989), (94, 3097), (110, 3184), (123, 3283), (138, 3463), (140, 3472), (152, 3568), (154, 3577), (155, 3580), (165, 3658), (168, 3676), (169, 3679), (183, 3745), (189, 3805), (192, 3829), (198, 3871), (200, 3883), (220, 4027), (226, 4069), (241, 4162), (253, 4255), (257, 4279), (292, 4519), (293, 4534), (301, 4603), (304, 4630),

Gene: Gisselle\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Gisselle\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (81, 2376), (90, 2418), (91, 2424), (108, 2520), (109, 2529), (114, 2574), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (152, 2910), (153, 2913), (155, 2922), (166, 3003), (171, 3030), (174, 3039), (185, 3123), (189, 3150), (222, 3405), (230, 3450), (237, 3525), (239, 3531), (251, 3612), (264, 3690), (275, 3762), (292, 3903), (301, 3987),

Gene: Glenn\_6 Start: 4717, Stop: 6726, Start Num: 12

Candidate Starts for Glenn\_6:

(Start: 12 @4717 has 82 MA's), (Start: 18 @4747 has 1 MA's), (43, 4843), (46, 4873), (49, 4885), (56, 4930), (74, 5032), (75, 5041), (80, 5071), (90, 5116), (91, 5122), (102, 5173), (108, 5218), (109, 5227), (117, 5290), (121, 5323), (126, 5368), (127, 5371), (138, 5503), (141, 5518), (149, 5587), (152, 5608), (155, 5620), (163, 5689), (166, 5701), (180, 5776), (185, 5821), (189, 5848), (222, 6103), (230, 6148), (239, 6229), (245, 6259), (251, 6310), (275, 6460), (292, 6601), (301, 6685),

Gene: GreenHearts\_6 Start: 4716, Stop: 6734, Start Num: 12

Candidate Starts for GreenHearts\_6:

(Start: 12 @4716 has 82 MA's), (28, 4782), (30, 4785), (46, 4881), (49, 4893), (73, 5037), (74, 5040), (80, 5079), (91, 5130), (102, 5181), (104, 5190), (108, 5226), (119, 5310), (121, 5331), (127, 5379), (135, 5445), (138, 5511), (147, 5586), (152, 5616), (153, 5619), (166, 5709), (184, 5826), (185, 5829), (189, 5856), (222, 6111), (226, 6144), (240, 6240), (245, 6267), (275, 6468), (292, 6609), (293, 6624), (301, 6693),

Gene: Greenhouse\_6 Start: 4685, Stop: 6703, Start Num: 12

Candidate Starts for Greenhouse\_6:

(Start: 12 @4685 has 82 MA's), (28, 4751), (30, 4754), (46, 4850), (49, 4862), (73, 5006), (74, 5009), (79, 5045), (80, 5048), (91, 5099), (102, 5150), (104, 5159), (108, 5195), (119, 5279), (121, 5300), (127, 5348), (135, 5414), (138, 5480), (152, 5585), (153, 5588), (166, 5678), (184, 5795), (185, 5798), (189, 5825), (222, 6080), (226, 6113), (240, 6209), (245, 6236), (275, 6437), (292, 6578), (293, 6593), (301, 6662),

Gene: HannahPhantana\_6 Start: 2878, Stop: 4821, Start Num: 13

Candidate Starts for HannahPhantana\_6:

(Start: 13 @2878 has 34 MA's), (22, 2920), (35, 2950), (45, 3010), (47, 3022), (71, 3166), (74, 3178), (89, 3250), (110, 3361), (123, 3460), (138, 3640), (140, 3649), (144, 3691), (152, 3745), (153, 3748), (155, 3757), (165, 3835), (168, 3853), (183, 3922), (189, 3982), (192, 4006), (198, 4048), (200, 4060), (220, 4204), (226, 4246), (241, 4339), (249, 4402), (253, 4432), (257, 4456), (289, 4645), (292, 4696), (293, 4711), (299, 4765),

Gene: HeadNerd\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for HeadNerd\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (74, 2334), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (106, 2508), (108, 2520), (109, 2529), (126, 2670), (138, 2805), (141, 2820), (143, 2850), (149, 2889), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: Herb\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for Herb\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (106, 2510), (108, 2522), (109, 2531), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (152, 2912), (170, 3029), (185, 3125), (189, 3152), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (285, 3821), (292, 3914), (293, 3929), (301, 3998),

Gene: Huckleberry\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Huckleberry\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (74, 2334), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (106, 2508), (108, 2520), (109, 2529), (126, 2670), (138, 2805), (141, 2820), (143, 2850), (149, 2889), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: HunterDalle\_3 Start: 2013, Stop: 4040, Start Num: 12

Candidate Starts for HunterDalle\_3:

(Start: 12 @2013 has 82 MA's), (Start: 18 @2043 has 1 MA's), (27, 2076), (28, 2079), (49, 2190), (67, 2307), (70, 2322), (75, 2346), (91, 2427), (102, 2478), (106, 2511), (108, 2523), (112, 2565), (115, 2586), (119, 2607), (121, 2628), (126, 2673), (127, 2676), (138, 2808), (147, 2883), (152, 2913), (185, 3126), (189, 3153), (212, 3354), (213, 3357), (222, 3417), (245, 3573), (253, 3642), (275, 3774), (285, 3822), (292, 3915), (293, 3930), (301, 3999),

Gene: Huntingdon\_6 Start: 4664, Stop: 6682, Start Num: 12

Candidate Starts for Huntingdon\_6:

(Start: 12 @4664 has 82 MA's), (28, 4730), (49, 4841), (73, 4985), (74, 4988), (79, 5024), (80, 5027), (91, 5078), (102, 5129), (104, 5138), (108, 5174), (119, 5258), (121, 5279), (127, 5327), (135, 5393), (138, 5459), (152, 5564), (153, 5567), (166, 5657), (171, 5684), (184, 5774), (185, 5777), (189, 5804), (222, 6059), (226, 6092), (239, 6185), (240, 6188), (245, 6215), (275, 6416), (292, 6557), (293, 6572), (301, 6641),

Gene: Icarian\_5 Start: 2585, Stop: 4600, Start Num: 6

Candidate Starts for Icarian\_5:

(Start: 6 @2585 has 61 MA's), (10, 2612), (11, 2615), (35, 2690), (42, 2726), (46, 2771), (47, 2774), (67, 2900), (80, 2966), (104, 3071), (107, 3110), (111, 3131), (116, 3182), (124, 3239), (126, 3266), (138, 3398), (139, 3404), (141, 3413), (147, 3473), (152, 3503), (159, 3560), (164, 3590), (189, 3743), (200, 3821), (249, 4190), (288, 4403), (292, 4469),

Gene: Immaculata\_6 Start: 4711, Stop: 6720, Start Num: 12

Candidate Starts for Immaculata\_6:

(Start: 12 @4711 has 82 MA's), (Start: 18 @4741 has 1 MA's), (43, 4837), (46, 4867), (49, 4879), (56, 4924), (74, 5026), (75, 5035), (80, 5065), (90, 5110), (91, 5116), (102, 5167), (108, 5212), (109, 5221), (117, 5284), (121, 5317), (126, 5362), (127, 5365), (138, 5497), (141, 5512), (149, 5581), (152, 5602), (155, 5614), (163, 5683), (166, 5695), (180, 5770), (185, 5815), (189, 5842), (205, 5995), (222, 6097), (230, 6142), (239, 6223), (245, 6253), (251, 6304), (275, 6454), (292, 6595), (301, 6679),

Gene: IndyLu\_4 Start: 2408, Stop: 4429, Start Num: 6

Candidate Starts for IndyLu\_4:

(Start: 6 @2408 has 61 MA's), (42, 2558), (46, 2603), (47, 2606), (80, 2798), (101, 2891), (111, 2960), (124, 3068), (126, 3095), (138, 3227), (139, 3233), (152, 3332), (159, 3386), (166, 3425), (189, 3569), (191, 3575), (200, 3647), (201, 3674), (204, 3722), (207, 3737), (249, 4019), (287, 4217), (288, 4232), (292, 4298), (293, 4313), (297, 4346),

Gene: Jamun\_5 Start: 2958, Stop: 4916, Start Num: 13

Candidate Starts for Jamun\_5:

(Start: 13 @2958 has 34 MA's), (31, 3018), (46, 3099), (47, 3102), (58, 3180), (60, 3195), (62, 3204), (66, 3234), (71, 3261), (74, 3273), (86, 3336), (87, 3339), (89, 3345), (93, 3366), (110, 3456), (118, 3525), (123, 3555), (131, 3618), (138, 3735), (152, 3840), (154, 3849), (155, 3852), (162, 3912), (165, 3930), (168, 3948), (169, 3951), (183, 4017), (189, 4077), (192, 4101), (198, 4143), (200, 4155), (220, 4299), (226, 4341), (241, 4434), (253, 4527), (257, 4551), (289, 4740), (292, 4791), (293, 4806), (301, 4875), (302, 4896),

Gene: JanetJ\_5 Start: 2916, Stop: 4856, Start Num: 13

Candidate Starts for JanetJ\_5:

(Start: 13 @2916 has 34 MA's), (36, 2991), (58, 3135), (73, 3210), (79, 3249), (89, 3285), (92, 3303), (123, 3495), (138, 3666), (152, 3771), (183, 3948), (189, 4008), (192, 4032), (197, 4068), (200, 4086), (247, 4422), (267, 4563), (278, 4614), (284, 4647),

Gene: Jerole\_6 Start: 2875, Stop: 4818, Start Num: 13

Candidate Starts for Jerole\_6:

(Start: 13 @2875 has 34 MA's), (31, 2935), (45, 3007), (46, 3016), (47, 3019), (58, 3097), (70, 3160), (71, 3163), (88, 3244), (93, 3268), (110, 3358), (118, 3427), (123, 3457), (138, 3637), (140, 3646), (144, 3688), (152, 3742), (153, 3745), (155, 3754), (165, 3832), (168, 3850), (189, 3979), (192, 4003), (198, 4045), (200, 4057), (220, 4201), (226, 4243), (241, 4336), (249, 4399), (253, 4429), (257, 4453), (289, 4642), (292, 4693), (293, 4708), (299, 4762),

Gene: Joann\_6 Start: 4656, Stop: 6674, Start Num: 12

Candidate Starts for Joann\_6:

(Start: 12 @4656 has 82 MA's), (28, 4722), (30, 4725), (46, 4821), (49, 4833), (70, 4965), (73, 4977), (74, 4980), (80, 5019), (91, 5070), (102, 5121), (104, 5130), (108, 5166), (119, 5250), (121, 5271), (127, 5319), (135, 5385), (138, 5451), (152, 5556), (153, 5559), (166, 5649), (171, 5676), (184, 5766), (185, 5769), (189, 5796), (222, 6051), (226, 6084), (240, 6180), (245, 6207), (275, 6408), (292, 6549), (293, 6564), (301, 6633),

Gene: Johnathan\_4 Start: 2329, Stop: 4353, Start Num: 6

Candidate Starts for Johnathan\_4:

(Start: 6 @2329 has 61 MA's), (11, 2362), (41, 2470), (42, 2479), (46, 2524), (60, 2620), (80, 2719), (101, 2812), (111, 2887), (124, 2995), (126, 3022), (138, 3154), (139, 3160), (147, 3229), (152, 3259), (159, 3313), (166, 3352), (189, 3496), (200, 3574), (277, 4093), (288, 4156), (292, 4222),

Gene: Jovita\_4 Start: 2442, Stop: 4466, Start Num: 6

Candidate Starts for Jovita\_4:

(Start: 6 @2442 has 61 MA's), (11, 2475), (41, 2583), (42, 2592), (46, 2637), (47, 2640), (60, 2733), (80, 2832), (101, 2925), (111, 3000), (124, 3108), (126, 3135), (138, 3267), (139, 3273), (147, 3342), (152, 3372), (159, 3426), (189, 3609), (200, 3687), (277, 4206), (287, 4254), (288, 4269), (292, 4335),

Gene: Jumboset\_6 Start: 4690, Stop: 6669, Start Num: 18

Candidate Starts for Jumboset\_6:

(Start: 12 @4660 has 82 MA's), (Start: 18 @4690 has 1 MA's), (43, 4786), (46, 4816), (49, 4828), (56, 4873), (74, 4975), (75, 4984), (80, 5014), (90, 5059), (91, 5065), (102, 5116), (108, 5161), (109, 5170), (117, 5233), (121, 5266), (126, 5311), (127, 5314), (138, 5446), (141, 5461), (152, 5551), (155, 5563), (163, 5632), (166, 5644), (180, 5719), (185, 5764), (189, 5791), (221, 6043), (222, 6046), (230, 6091), (239, 6172), (245, 6202), (251, 6253), (275, 6403), (292, 6544), (301, 6628),

Gene: Juno112\_4 Start: 2335, Stop: 4254, Start Num: 13

Candidate Starts for Juno112\_4:

(Start: 13 @2335 has 34 MA's), (29, 2389), (45, 2464), (47, 2476), (56, 2530), (71, 2620), (81, 2674), (93, 2722), (94, 2725), (110, 2809), (123, 2908), (133, 3019), (138, 3088), (140, 3097), (152, 3193), (153, 3196), (155, 3205), (165, 3283), (168, 3301), (178, 3340), (189, 3430), (192, 3454), (198, 3496), (200, 3508), (220, 3646), (226, 3688), (235, 3760), (253, 3874), (257, 3898), (270, 3964), (272, 3973), (282, 4024), (289, 4078), (292, 4129), (293, 4144), (299, 4198),

Gene: KHumphrey\_4 Start: 2335, Stop: 4254, Start Num: 13

Candidate Starts for KHumphrey\_4:

(Start: 13 @2335 has 34 MA's), (29, 2389), (45, 2464), (47, 2476), (56, 2530), (71, 2620), (81, 2674), (93, 2722), (94, 2725), (110, 2809), (123, 2908), (133, 3019), (138, 3088), (140, 3097), (152, 3193), (153, 3196), (155, 3205), (165, 3283), (168, 3301), (178, 3340), (189, 3430), (192, 3454), (198, 3496), (200, 3508), (220, 3646), (226, 3688), (235, 3760), (253, 3874), (257, 3898), (270, 3964), (272, 3973), (279, 4012), (282, 4024), (289, 4078), (292, 4129), (293, 4144), (299, 4198),

Gene: Kalizoi\_6 Start: 4660, Stop: 6669, Start Num: 12

Candidate Starts for Kalizoi\_6:

(Start: 12 @4660 has 82 MA's), (Start: 18 @4690 has 1 MA's), (43, 4786), (46, 4816), (49, 4828), (56, 4873), (74, 4975), (75, 4984), (80, 5014), (90, 5059), (91, 5065), (102, 5116), (108, 5161), (109, 5170), (117, 5233), (121, 5266), (126, 5311), (127, 5314), (138, 5446), (141, 5461), (149, 5530), (152, 5551), (155, 5563), (163, 5632), (166, 5644), (180, 5719), (185, 5764), (189, 5791), (205, 5944), (222, 6046), (230, 6091), (239, 6172), (245, 6202), (251, 6253), (275, 6403), (292, 6544), (301, 6628),

Gene: Kate33\_4 Start: 2408, Stop: 4429, Start Num: 6

Candidate Starts for Kate33\_4:

(Start: 6 @2408 has 61 MA's), (42, 2558), (46, 2603), (47, 2606), (80, 2798), (101, 2891), (111, 2960), (124, 3068), (126, 3095), (138, 3227), (139, 3233), (152, 3332), (159, 3386), (166, 3425), (189, 3569), (191, 3575), (200, 3647), (201, 3674), (204, 3722), (207, 3737), (249, 4019), (287, 4217), (288, 4232), (292, 4298), (293, 4313), (297, 4346),

Gene: Katzastrophic\_4 Start: 2515, Stop: 4530, Start Num: 6

Candidate Starts for Katzastrophic\_4:

(Start: 6 @2515 has 61 MA's), (10, 2542), (11, 2545), (22, 2587), (32, 2611), (41, 2647), (42, 2656), (46, 2701), (47, 2704), (49, 2713), (67, 2830), (78, 2890), (103, 2998), (116, 3103), (121, 3142), (124, 3160), (126, 3187), (128, 3193), (134, 3253), (138, 3319), (152, 3424), (153, 3427), (154, 3433), (157, 3463), (159, 3481), (181, 3595), (189, 3664), (194, 3697), (200, 3742), (225, 3961), (277, 4273), (287, 4321), (292, 4402), (297, 4450), (298, 4468),

Gene: Kenzers\_4 Start: 2317, Stop: 4341, Start Num: 6

Candidate Starts for Kenzers\_4:

(Start: 6 @2317 has 61 MA's), (11, 2350), (41, 2458), (42, 2467), (46, 2512), (47, 2515), (60, 2608), (80, 2707), (101, 2800), (111, 2875), (124, 2983), (126, 3010), (138, 3142), (139, 3148), (152, 3247), (159, 3301), (166, 3340), (189, 3484), (200, 3562), (277, 4081), (288, 4144), (292, 4210),

Gene: Kepler\_5 Start: 2713, Stop: 4656, Start Num: 13

Candidate Starts for Kepler\_5:

(Start: 13 @2713 has 34 MA's), (22, 2755), (35, 2785), (45, 2845), (46, 2854), (47, 2857), (49, 2866), (70, 2998), (71, 3001), (88, 3082), (93, 3106), (110, 3196), (123, 3295), (138, 3475), (140, 3484), (144, 3526), (152, 3580), (153, 3583), (155, 3592), (165, 3670), (168, 3688), (189, 3817), (192, 3841), (198, 3883), (200, 3895), (220, 4039), (226, 4081), (241, 4174), (249, 4237), (253, 4267), (257, 4291), (289, 4480), (292, 4531), (293, 4546), (299, 4600),

Gene: Kieran\_4 Start: 2572, Stop: 4596, Start Num: 6

Candidate Starts for Kieran\_4:

(Start: 6 @2572 has 61 MA's), (10, 2599), (11, 2602), (19, 2635), (22, 2644), (35, 2677), (42, 2713), (46, 2758), (67, 2887), (101, 3040), (104, 3058), (107, 3097), (116, 3169), (121, 3208), (124, 3226), (126, 3253), (138, 3385), (139, 3391), (152, 3490), (154, 3499), (159, 3547), (164, 3577), (172, 3619), (189, 3730), (194, 3763), (200, 3808), (225, 4027), (249, 4189), (259, 4255), (277, 4339), (280, 4354), (297, 4516), (298, 4534),

Gene: KingBob\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for KingBob\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (106, 2510), (108, 2522), (109, 2531), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (152, 2912), (170, 3029), (185, 3125), (189, 3152), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (285, 3821), (292, 3914), (293, 3929), (301, 3998),

Gene: Kittykat\_3 Start: 2010, Stop: 4025, Start Num: 12

Candidate Starts for Kittykat\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (33, 2085), (45, 2163), (46, 2172), (49, 2184), (56, 2229), (74, 2331), (75, 2340), (91, 2421), (98, 2454), (103, 2478), (104, 2481), (106, 2505), (108, 2517), (109, 2526), (115, 2580), (121, 2622), (126, 2667), (127, 2670), (138, 2802), (141, 2817), (152, 2907), (155, 2919), (163, 2988), (166, 3000), (180, 3075), (185, 3120), (189, 3147), (222, 3402), (230, 3447), (237, 3522), (239, 3528), (251, 3609), (264, 3687), (275, 3759), (292, 3900), (301, 3984),



Gene: Korra\_6 Start: 4666, Stop: 6675, Start Num: 12

Candidate Starts for Korra\_6:

(Start: 12 @4666 has 82 MA's), (Start: 18 @4696 has 1 MA's), (43, 4792), (46, 4822), (49, 4834), (56, 4879), (74, 4981), (75, 4990), (80, 5020), (90, 5065), (91, 5071), (102, 5122), (108, 5167), (109, 5176), (117, 5239), (121, 5272), (126, 5317), (127, 5320), (138, 5452), (141, 5467), (149, 5536), (152, 5557), (155, 5569), (163, 5638), (166, 5650), (180, 5725), (185, 5770), (189, 5797), (205, 5950), (222, 6052), (230, 6097), (239, 6178), (245, 6208), (251, 6259), (275, 6409), (292, 6550), (301, 6634),

Gene: Kuleana\_5 Start: 2687, Stop: 4621, Start Num: 13

Candidate Starts for Kuleana\_5:

(Start: 13 @2687 has 34 MA's), (29, 2741), (47, 2828), (60, 2921), (74, 2984), (81, 3026), (96, 3083), (109, 3161), (123, 3263), (138, 3443), (144, 3494), (152, 3548), (153, 3551), (155, 3560), (162, 3620), (165, 3638), (168, 3656), (188, 3770), (189, 3785), (192, 3809), (200, 3863), (220, 4004), (226, 4046), (241, 4139), (253, 4232), (257, 4256), (270, 4331), (292, 4496), (293, 4511), (296, 4541),

Gene: Kumotta\_4 Start: 2487, Stop: 4460, Start Num: 9

Candidate Starts for Kumotta\_4:

(7, 2475), (Start: 9 @2487 has 2 MA's), (15, 2517), (25, 2550), (41, 2601), (43, 2625), (47, 2658), (56, 2712), (67, 2784), (74, 2814), (75, 2823), (76, 2829), (84, 2871), (88, 2886), (96, 2922), (97, 2925), (112, 3036), (115, 3057), (117, 3066), (122, 3102), (124, 3117), (125, 3138), (138, 3276), (151, 3369), (152, 3381), (159, 3435), (173, 3510), (185, 3594), (189, 3621), (192, 3645), (198, 3687), (209, 3783), (217, 3828), (219, 3852), (221, 3861), (226, 3897), (227, 3900), (231, 3912), (239, 3987), (247, 4029), (249, 4056), (257, 4110), (272, 4185), (278, 4218), (284, 4251), (303, 4446),

Gene: Lahqtemish\_4 Start: 2406, Stop: 4427, Start Num: 6

Candidate Starts for Lahqtemish\_4:

(Start: 6 @2406 has 61 MA's), (42, 2556), (46, 2601), (47, 2604), (60, 2697), (101, 2889), (111, 2958), (124, 3066), (126, 3093), (138, 3225), (139, 3231), (147, 3300), (152, 3330), (159, 3384), (166, 3423), (189, 3567), (200, 3645), (201, 3672), (225, 3855), (249, 4017), (287, 4215), (288, 4230), (292, 4296), (297, 4344),

Gene: Lakshmi\_6 Start: 4692, Stop: 6710, Start Num: 12

Candidate Starts for Lakshmi\_6:

(Start: 12 @4692 has 82 MA's), (28, 4758), (30, 4761), (49, 4869), (73, 5013), (74, 5016), (80, 5055), (91, 5106), (102, 5157), (104, 5166), (108, 5202), (119, 5286), (121, 5307), (127, 5355), (135, 5421), (138, 5487), (152, 5592), (153, 5595), (166, 5685), (171, 5712), (184, 5802), (185, 5805), (189, 5832), (222, 6087), (226, 6120), (240, 6216), (245, 6243), (275, 6444), (292, 6585), (293, 6600), (301, 6669),

Gene: Lasagna\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Lasagna\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (40, 2118), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (79, 2370), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: Lennox\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Lennox\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (79, 2370), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (221, 3402), (222, 3405), (230, 3450), (237, 3525), (239, 3531), (264, 3690), (275, 3762), (292, 3903), (301, 3987),

3987),

Gene: Leona\_4 Start: 2383, Stop: 4302, Start Num: 13

Candidate Starts for Leona\_4:

(Start: 13 @2383 has 34 MA's), (29, 2437), (45, 2512), (47, 2524), (56, 2578), (71, 2668), (81, 2722), (93, 2770), (94, 2773), (110, 2857), (123, 2956), (129, 3013), (133, 3067), (138, 3136), (140, 3145), (152, 3241), (153, 3244), (155, 3253), (165, 3331), (178, 3388), (189, 3478), (192, 3502), (198, 3544), (200, 3556), (220, 3694), (226, 3736), (235, 3808), (253, 3922), (257, 3946), (270, 4012), (272, 4021), (282, 4072), (289, 4126), (292, 4177), (293, 4192), (299, 4246),

Gene: LilStuart\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for LilStuart\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (40, 2118), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (79, 2370), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: LimaBean\_4 Start: 2329, Stop: 4353, Start Num: 6

Candidate Starts for LimaBean\_4:

(Start: 6 @2329 has 61 MA's), (11, 2362), (41, 2470), (42, 2479), (46, 2524), (47, 2527), (60, 2620), (80, 2719), (101, 2812), (111, 2887), (124, 2995), (126, 3022), (138, 3154), (139, 3160), (147, 3229), (152, 3259), (159, 3313), (166, 3352), (189, 3496), (200, 3574), (277, 4093), (288, 4156), (292, 4222),

Gene: Litotes\_6 Start: 4646, Stop: 6661, Start Num: 12

Candidate Starts for Litotes\_6:

(Start: 12 @4646 has 82 MA's), (17, 4673), (20, 4685), (27, 4706), (49, 4820), (54, 4862), (56, 4865), (67, 4937), (71, 4955), (74, 4967), (76, 4982), (79, 5003), (91, 5057), (93, 5066), (102, 5108), (103, 5114), (108, 5153), (109, 5162), (110, 5165), (117, 5225), (121, 5258), (126, 5303), (127, 5306), (138, 5438), (152, 5543), (166, 5636), (177, 5684), (185, 5756), (189, 5783), (222, 6038), (226, 6071), (251, 6245), (253, 6263), (292, 6536), (301, 6620),

Gene: LittleTokyo\_5 Start: 2662, Stop: 4599, Start Num: 13

Candidate Starts for LittleTokyo\_5:

(11, 2656), (Start: 13 @2662 has 34 MA's), (29, 2716), (35, 2731), (46, 2800), (47, 2803), (65, 2926), (85, 3019), (92, 3049), (109, 3139), (110, 3142), (118, 3211), (123, 3241), (138, 3421), (140, 3430), (152, 3526), (165, 3616), (178, 3673), (189, 3763), (192, 3787), (198, 3829), (200, 3841), (219, 3979), (221, 3988), (241, 4117), (242, 4129), (249, 4180), (253, 4210), (256, 4231), (282, 4369), (289, 4423), (292, 4474), (293, 4489), (296, 4519), (300, 4549),

Gene: Lucy\_3 Start: 2010, Stop: 4019, Start Num: 12

Candidate Starts for Lucy\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (43, 2136), (46, 2166), (49, 2178), (56, 2223), (74, 2325), (75, 2334), (76, 2340), (78, 2355), (80, 2364), (90, 2409), (91, 2415), (103, 2472), (104, 2475), (108, 2511), (109, 2520), (117, 2583), (121, 2616), (126, 2661), (127, 2664), (138, 2796), (141, 2811), (149, 2880), (152, 2901), (155, 2913), (166, 2994), (177, 3042), (180, 3069), (185, 3114), (189, 3141), (200, 3219), (213, 3336), (221, 3393), (222, 3396), (230, 3441), (239, 3522), (275, 3753), (292, 3894), (301, 3978),

Gene: Lunar\_6 Start: 2875, Stop: 4818, Start Num: 13

Candidate Starts for Lunar\_6:

(Start: 13 @2875 has 34 MA's), (31, 2935), (45, 3007), (46, 3016), (47, 3019), (58, 3097), (70, 3160), (71, 3163), (88, 3244), (93, 3268), (110, 3358), (118, 3427), (123, 3457), (138, 3637), (140, 3646),

(144, 3688), (152, 3742), (153, 3745), (155, 3754), (165, 3832), (168, 3850), (189, 3979), (192, 4003), (198, 4045), (200, 4057), (220, 4201), (226, 4243), (241, 4336), (249, 4399), (253, 4429), (257, 4453), (289, 4642), (292, 4693), (293, 4708), (299, 4762),

Gene: Lynlen\_4 Start: 2317, Stop: 4341, Start Num: 6

Candidate Starts for Lynlen\_4:

(Start: 6 @2317 has 61 MA's), (11, 2350), (41, 2458), (42, 2467), (46, 2512), (47, 2515), (60, 2608), (80, 2707), (101, 2800), (111, 2875), (124, 2983), (126, 3010), (138, 3142), (139, 3148), (152, 3247), (159, 3301), (166, 3340), (189, 3484), (200, 3562), (277, 4081), (288, 4144), (292, 4210),

Gene: Maja\_4 Start: 2483, Stop: 4399, Start Num: 13

Candidate Starts for Maja\_4:

(Start: 13 @2483 has 34 MA's), (47, 2624), (58, 2702), (73, 2777), (92, 2873), (99, 2900), (138, 3236), (152, 3341), (155, 3353), (168, 3449), (183, 3518), (189, 3578), (193, 3605), (199, 3650), (206, 3728), (219, 3791), (221, 3800), (228, 3836), (247, 3965), (249, 3992), (278, 4157), (284, 4190), (303, 4385),

Gene: Makoto\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Makoto\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (112, 2562), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (194, 3183), (213, 3345), (222, 3405), (230, 3450), (239, 3531), (264, 3690), (275, 3762), (292, 3903), (301, 3987),

Gene: MamaPearl\_3 Start: 2010, Stop: 4019, Start Num: 12

Candidate Starts for MamaPearl\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2166), (49, 2178), (56, 2223), (74, 2325), (79, 2361), (80, 2364), (91, 2415), (103, 2472), (108, 2511), (109, 2520), (117, 2583), (120, 2607), (121, 2616), (126, 2661), (127, 2664), (138, 2796), (141, 2811), (149, 2880), (152, 2901), (155, 2913), (163, 2982), (166, 2994), (183, 3081), (185, 3114), (189, 3141), (194, 3174), (222, 3396), (230, 3441), (239, 3522), (275, 3753), (280, 3774), (292, 3894), (301, 3978),

Gene: MargaretKali\_5 Start: 2564, Stop: 4480, Start Num: 13

Candidate Starts for MargaretKali\_5:

(Start: 13 @2564 has 34 MA's), (Start: 18 @2591 has 1 MA's), (20, 2600), (36, 2639), (45, 2693), (46, 2702), (56, 2759), (63, 2810), (73, 2858), (79, 2897), (88, 2933), (92, 2954), (117, 3107), (118, 3116), (138, 3317), (142, 3353), (152, 3422), (153, 3425), (157, 3458), (168, 3530), (183, 3599), (188, 3644), (189, 3659), (192, 3683), (194, 3692), (206, 3809), (217, 3848), (219, 3872), (221, 3881), (229, 3920), (236, 3995), (239, 4007), (247, 4049), (249, 4076), (257, 4130), (260, 4145), (261, 4154), (262, 4160), (278, 4238), (284, 4271), (301, 4442), (303, 4466),

Gene: Maria1952\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for Maria1952\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (106, 2510), (108, 2522), (109, 2531), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (152, 2912), (170, 3029), (185, 3125), (189, 3152), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (285, 3821), (292, 3914), (293, 3929), (301, 3998),

Gene: MeganNoll\_6 Start: 4717, Stop: 6726, Start Num: 12

Candidate Starts for MeganNoll\_6:

(Start: 12 @4717 has 82 MA's), (Start: 18 @4747 has 1 MA's), (43, 4843), (46, 4873), (49, 4885), (56, 4930), (74, 5032), (75, 5041), (80, 5071), (90, 5116), (91, 5122), (102, 5173), (108, 5218), (109, 5227),

(117, 5290), (121, 5323), (126, 5368), (127, 5371), (138, 5503), (141, 5518), (149, 5587), (152, 5608), (155, 5620), (163, 5689), (166, 5701), (180, 5776), (185, 5821), (189, 5848), (221, 6100), (222, 6103), (230, 6148), (239, 6229), (245, 6259), (251, 6310), (275, 6460), (292, 6601), (301, 6685),

Gene: Melons\_6 Start: 2875, Stop: 4818, Start Num: 13

Candidate Starts for Melons\_6:

(Start: 13 @2875 has 34 MA's), (31, 2935), (45, 3007), (46, 3016), (47, 3019), (58, 3097), (70, 3160), (71, 3163), (88, 3244), (93, 3268), (110, 3358), (118, 3427), (123, 3457), (138, 3637), (140, 3646), (144, 3688), (152, 3742), (153, 3745), (155, 3754), (165, 3832), (168, 3850), (189, 3979), (192, 4003), (198, 4045), (200, 4057), (220, 4201), (226, 4243), (241, 4336), (249, 4399), (253, 4429), (257, 4453), (289, 4642), (292, 4693), (293, 4708), (299, 4762),

Gene: Misaeng\_6 Start: 4729, Stop: 6747, Start Num: 12

Candidate Starts for Misaeng\_6:

(Start: 12 @4729 has 82 MA's), (28, 4795), (30, 4798), (49, 4906), (73, 5050), (74, 5053), (80, 5092), (91, 5143), (102, 5194), (104, 5203), (108, 5239), (119, 5323), (121, 5344), (127, 5392), (135, 5458), (138, 5524), (152, 5629), (153, 5632), (166, 5722), (171, 5749), (184, 5839), (185, 5842), (189, 5869), (222, 6124), (226, 6157), (239, 6250), (240, 6253), (245, 6280), (275, 6481), (292, 6622), (293, 6637), (301, 6706),

Gene: Moki\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Moki\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (40, 2118), (46, 2175), (49, 2187), (56, 2232), (79, 2370), (80, 2373), (91, 2424), (102, 2475), (104, 2484), (109, 2529), (117, 2592), (120, 2616), (126, 2670), (138, 2805), (141, 2820), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (221, 3402), (222, 3405), (230, 3450), (239, 3531), (264, 3690), (275, 3762), (292, 3903), (301, 3987),

Gene: MrGloopy\_6 Start: 4650, Stop: 6659, Start Num: 12

Candidate Starts for MrGloopy\_6:

(Start: 12 @4650 has 82 MA's), (Start: 18 @4680 has 1 MA's), (43, 4776), (46, 4806), (49, 4818), (56, 4863), (74, 4965), (75, 4974), (80, 5004), (90, 5049), (91, 5055), (102, 5106), (108, 5151), (109, 5160), (117, 5223), (121, 5256), (126, 5301), (127, 5304), (138, 5436), (141, 5451), (149, 5520), (152, 5541), (155, 5553), (163, 5622), (166, 5634), (180, 5709), (185, 5754), (189, 5781), (221, 6033), (222, 6036), (230, 6081), (239, 6162), (245, 6192), (251, 6243), (275, 6393), (292, 6534), (301, 6618),

Gene: Nancia\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Nancia\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (40, 2118), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (79, 2370), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (222, 3405), (230, 3450), (239, 3531), (275, 3762), (292, 3903), (301, 3987),

Gene: Nicky22\_5 Start: 2791, Stop: 4815, Start Num: 6

Candidate Starts for Nicky22\_5:

(Start: 6 @2791 has 61 MA's), (11, 2824), (41, 2932), (42, 2941), (46, 2986), (47, 2989), (60, 3082), (80, 3181), (101, 3274), (107, 3328), (111, 3349), (124, 3457), (126, 3484), (138, 3616), (139, 3622), (147, 3691), (152, 3721), (159, 3775), (166, 3814), (189, 3958), (200, 4036), (277, 4555), (288, 4618), (290, 4648), (292, 4684),

Gene: Nubia\_6 Start: 4652, Stop: 6670, Start Num: 12

Candidate Starts for Nubia\_6:

(Start: 12 @4652 has 82 MA's), (28, 4718), (30, 4721), (46, 4817), (49, 4829), (73, 4973), (74, 4976), (80, 5015), (91, 5066), (102, 5117), (104, 5126), (108, 5162), (119, 5246), (121, 5267), (127, 5315), (135, 5381), (138, 5447), (147, 5522), (152, 5552), (153, 5555), (166, 5645), (171, 5672), (184, 5762), (185, 5765), (189, 5792), (222, 6047), (226, 6080), (240, 6176), (245, 6203), (275, 6404), (292, 6545), (293, 6560), (301, 6629),

Gene: OMalley\_3 Start: 2013, Stop: 4040, Start Num: 12

Candidate Starts for OMalley\_3:

(Start: 12 @2013 has 82 MA's), (Start: 18 @2043 has 1 MA's), (27, 2076), (28, 2079), (49, 2190), (67, 2307), (70, 2322), (75, 2346), (91, 2427), (102, 2478), (106, 2511), (108, 2523), (112, 2565), (115, 2586), (119, 2607), (121, 2628), (126, 2673), (127, 2676), (138, 2808), (147, 2883), (152, 2913), (170, 3030), (185, 3126), (189, 3153), (212, 3354), (213, 3357), (222, 3417), (245, 3573), (253, 3642), (275, 3774), (285, 3822), (292, 3915), (293, 3930), (301, 3999),

Gene: Olliecat\_4 Start: 2543, Stop: 4600, Start Num: 6

Candidate Starts for Olliecat\_4:

(Start: 6 @2543 has 61 MA's), (34, 2657), (41, 2684), (42, 2693), (46, 2738), (49, 2750), (67, 2864), (72, 2888), (93, 2984), (94, 2987), (100, 3014), (103, 3032), (115, 3134), (120, 3167), (125, 3215), (138, 3353), (151, 3446), (152, 3458), (154, 3467), (159, 3512), (162, 3530), (174, 3587), (185, 3668), (188, 3680), (189, 3695), (200, 3773), (226, 4010), (230, 4022), (252, 4193), (266, 4280), (277, 4343), (282, 4367), (287, 4391), (288, 4406), (290, 4442), (292, 4478), (298, 4544),

Gene: Orcanus\_5 Start: 2686, Stop: 4656, Start Num: 13

Candidate Starts for Orcanus\_5:

(Start: 13 @2686 has 34 MA's), (47, 2830), (66, 2962), (71, 2989), (74, 3001), (83, 3052), (86, 3064), (87, 3067), (89, 3073), (93, 3094), (110, 3184), (123, 3283), (138, 3463), (140, 3472), (152, 3568), (153, 3571), (155, 3580), (162, 3640), (165, 3658), (168, 3676), (183, 3745), (189, 3805), (192, 3829), (198, 3871), (200, 3883), (214, 3997), (220, 4045), (226, 4087), (253, 4273), (264, 4333), (270, 4366), (282, 4426), (292, 4531), (299, 4600), (301, 4615), (302, 4636),

Gene: OurGirlNessie\_3 Start: 2010, Stop: 4019, Start Num: 12

Candidate Starts for OurGirlNessie\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (43, 2136), (46, 2166), (49, 2178), (56, 2223), (74, 2325), (75, 2334), (76, 2340), (78, 2355), (80, 2364), (90, 2409), (91, 2415), (103, 2472), (104, 2475), (109, 2520), (117, 2583), (121, 2616), (126, 2661), (127, 2664), (138, 2796), (141, 2811), (145, 2856), (149, 2880), (152, 2901), (155, 2913), (166, 2994), (177, 3042), (180, 3069), (185, 3114), (189, 3141), (200, 3219), (213, 3336), (221, 3393), (222, 3396), (230, 3441), (239, 3522), (275, 3753), (292, 3894), (301, 3978),

Gene: Oxynfrius\_6 Start: 4665, Stop: 6683, Start Num: 12

Candidate Starts for Oxynfrius\_6:

(Start: 12 @4665 has 82 MA's), (28, 4731), (30, 4734), (46, 4830), (49, 4842), (73, 4986), (74, 4989), (80, 5028), (91, 5079), (102, 5130), (104, 5139), (108, 5175), (119, 5259), (121, 5280), (127, 5328), (135, 5394), (138, 5460), (152, 5565), (153, 5568), (166, 5658), (171, 5685), (184, 5775), (185, 5778), (189, 5805), (222, 6060), (226, 6093), (240, 6189), (245, 6216), (275, 6417), (292, 6558), (293, 6573), (301, 6642),

Gene: PFR1\_03 Start: 2000, Stop: 4156, Start Num: 8

Candidate Starts for PFR1\_03:

(8, 2000), (Start: 13 @2027 has 34 MA's), (23, 2072), (44, 2165), (48, 2201), (50, 2210), (53, 2249), (57, 2255), (64, 2315), (68, 2339), (69, 2342), (88, 2435), (91, 2453), (93, 2462), (95, 2468), (101, 2498), (113, 2600), (114, 2609), (117, 2627), (127, 2708), (132, 2729), (136, 2810), (138, 2825), (147, 2900), (148, 2906), (151, 2918), (156, 2945), (158, 2972), (162, 3005), (164, 3017), (179, 3083), (180,

3098), (182, 3107), (186, 3152), (187, 3155), (193, 3197), (194, 3203), (195, 3224), (202, 3287), (208, 3347), (216, 3425), (219, 3452), (223, 3473), (224, 3488), (226, 3497), (230, 3509), (233, 3599), (243, 3653), (246, 3677), (254, 3752), (257, 3773), (264, 3809), (269, 3845), (271, 3857), (273, 3869), (276, 3890), (286, 3938), (292, 4034), (293, 4049), (294, 4055), (296, 4079),

Gene: PFR2\_03 Start: 2000, Stop: 4156, Start Num: 8

Candidate Starts for PFR2\_03:

(8, 2000), (Start: 13 @2027 has 34 MA's), (23, 2072), (44, 2165), (48, 2201), (50, 2210), (53, 2249), (57, 2255), (64, 2315), (68, 2339), (69, 2342), (88, 2435), (91, 2453), (93, 2462), (95, 2468), (101, 2498), (113, 2600), (114, 2609), (117, 2627), (127, 2708), (132, 2729), (136, 2810), (138, 2825), (147, 2900), (148, 2906), (151, 2918), (156, 2945), (158, 2972), (162, 3005), (164, 3017), (179, 3083), (180, 3098), (182, 3107), (186, 3152), (187, 3155), (193, 3197), (194, 3203), (195, 3224), (202, 3287), (208, 3347), (216, 3425), (219, 3452), (223, 3473), (224, 3488), (226, 3497), (230, 3509), (233, 3599), (243, 3653), (246, 3677), (254, 3752), (257, 3773), (264, 3809), (269, 3845), (271, 3857), (273, 3869), (276, 3890), (286, 3938), (292, 4034), (293, 4049), (294, 4055), (296, 4079),

Gene: PartyCup\_6 Start: 4693, Stop: 6708, Start Num: 12

Candidate Starts for PartyCup\_6:

(Start: 12 @4693 has 82 MA's), (17, 4720), (20, 4732), (27, 4753), (49, 4867), (54, 4909), (56, 4912), (67, 4984), (71, 5002), (74, 5014), (79, 5050), (90, 5098), (91, 5104), (93, 5113), (102, 5155), (103, 5161), (108, 5200), (109, 5209), (110, 5212), (117, 5272), (121, 5305), (126, 5350), (127, 5353), (138, 5485), (152, 5590), (166, 5683), (177, 5731), (185, 5803), (189, 5830), (222, 6085), (226, 6118), (227, 6121), (251, 6292), (253, 6310), (292, 6583), (301, 6667),

Gene: Phisb\_4 Start: 2317, Stop: 4341, Start Num: 6

Candidate Starts for Phisb\_4:

(Start: 6 @2317 has 61 MA's), (11, 2350), (41, 2458), (42, 2467), (46, 2512), (47, 2515), (60, 2608), (80, 2707), (101, 2800), (107, 2854), (111, 2875), (124, 2983), (126, 3010), (138, 3142), (139, 3148), (152, 3247), (159, 3301), (166, 3340), (189, 3484), (200, 3562), (277, 4081), (288, 4144), (292, 4210),

Gene: PhluffyCoco\_4 Start: 2335, Stop: 4254, Start Num: 13

Candidate Starts for PhluffyCoco\_4:

(Start: 13 @2335 has 34 MA's), (29, 2389), (45, 2464), (47, 2476), (56, 2530), (71, 2620), (81, 2674), (93, 2722), (94, 2725), (110, 2809), (123, 2908), (133, 3019), (138, 3088), (140, 3097), (152, 3193), (153, 3196), (155, 3205), (165, 3283), (168, 3301), (178, 3340), (189, 3430), (192, 3454), (198, 3496), (200, 3508), (220, 3646), (226, 3688), (235, 3760), (253, 3874), (257, 3898), (270, 3964), (272, 3973), (282, 4024), (289, 4078), (292, 4129), (293, 4144), (299, 4198),

Gene: PinkFriday\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for PinkFriday\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (43, 2147), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (102, 2477), (106, 2510), (108, 2522), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (147, 2882), (152, 2912), (170, 3029), (185, 3125), (194, 3185), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (230, 3461), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (280, 3794), (285, 3821), (292, 3914), (293, 3929), (301, 3998),

Gene: PitaDog\_3 Start: 2010, Stop: 4019, Start Num: 12

Candidate Starts for PitaDog\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (43, 2136), (46, 2166), (49, 2178), (56, 2223), (74, 2325), (75, 2334), (76, 2340), (78, 2355), (80, 2364), (90, 2409), (91, 2415), (103, 2472), (104, 2475), (108, 2511), (109, 2520), (117, 2583), (121, 2616), (126, 2661), (127, 2664), (138, 2796), (141, 2811), (149, 2880), (152, 2901), (155, 2913), (166, 2994), (177, 3042), (180, 3069), (185, 3114),

(189, 3141), (200, 3219), (213, 3336), (221, 3393), (222, 3396), (230, 3441), (239, 3522), (275, 3753), (292, 3894), (301, 3978),

Gene: Polka\_5 Start: 2714, Stop: 4657, Start Num: 13

Candidate Starts for Polka\_5:

(Start: 13 @2714 has 34 MA's), (22, 2756), (35, 2786), (45, 2846), (46, 2855), (47, 2858), (49, 2867), (70, 2999), (71, 3002), (88, 3083), (93, 3107), (110, 3197), (123, 3296), (138, 3476), (140, 3485), (144, 3527), (152, 3581), (153, 3584), (155, 3593), (165, 3671), (168, 3689), (189, 3818), (192, 3842), (198, 3884), (200, 3896), (220, 4040), (226, 4082), (241, 4175), (249, 4238), (253, 4268), (257, 4292), (289, 4481), (292, 4532), (293, 4547), (299, 4601),

Gene: Potatoes\_6 Start: 4711, Stop: 6720, Start Num: 12

Candidate Starts for Potatoes\_6:

(Start: 12 @4711 has 82 MA's), (Start: 18 @4741 has 1 MA's), (43, 4837), (46, 4867), (49, 4879), (56, 4924), (74, 5026), (75, 5035), (80, 5065), (90, 5110), (91, 5116), (102, 5167), (108, 5212), (109, 5221), (117, 5284), (121, 5317), (126, 5362), (127, 5365), (138, 5497), (141, 5512), (149, 5581), (152, 5602), (155, 5614), (163, 5683), (166, 5695), (180, 5770), (185, 5815), (189, 5842), (221, 6094), (222, 6097), (230, 6142), (239, 6223), (245, 6253), (251, 6304), (275, 6454), (292, 6595), (301, 6679),

Gene: Preamble\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for Preamble\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (90, 2418), (91, 2424), (108, 2520), (109, 2529), (114, 2574), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (152, 2910), (153, 2913), (155, 2922), (166, 3003), (171, 3030), (174, 3039), (185, 3123), (189, 3150), (222, 3405), (230, 3450), (237, 3525), (239, 3531), (251, 3612), (264, 3690), (275, 3762), (292, 3903), (301, 3987),

Gene: Pterodactyl\_3 Start: 2010, Stop: 4019, Start Num: 12

Candidate Starts for Pterodactyl\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (43, 2136), (46, 2166), (49, 2178), (56, 2223), (74, 2325), (75, 2334), (76, 2340), (78, 2355), (80, 2364), (90, 2409), (91, 2415), (103, 2472), (104, 2475), (108, 2511), (109, 2520), (117, 2583), (121, 2616), (126, 2661), (127, 2664), (138, 2796), (141, 2811), (149, 2880), (152, 2901), (155, 2913), (166, 2994), (177, 3042), (180, 3069), (185, 3114), (189, 3141), (200, 3219), (213, 3336), (221, 3393), (222, 3396), (230, 3441), (239, 3522), (275, 3753), (292, 3894), (301, 3978),

Gene: Pumancara\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for Pumancara\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (102, 2477), (106, 2510), (108, 2522), (109, 2531), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (147, 2882), (152, 2912), (170, 3029), (185, 3125), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (230, 3461), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (285, 3821), (291, 3878), (292, 3914), (293, 3929), (301, 3998),

Gene: QMacho\_5 Start: 2799, Stop: 4823, Start Num: 6

Candidate Starts for QMacho\_5:

(Start: 6 @2799 has 61 MA's), (11, 2832), (41, 2940), (42, 2949), (46, 2994), (47, 2997), (60, 3090), (80, 3189), (101, 3282), (107, 3336), (111, 3357), (124, 3465), (126, 3492), (138, 3624), (139, 3630), (147, 3699), (152, 3729), (159, 3783), (166, 3822), (189, 3966), (200, 4044), (277, 4563), (287, 4611), (288, 4626), (292, 4692),

Gene: Quenya\_5 Start: 2508, Stop: 4526, Start Num: 6

Candidate Starts for Quenya\_5:

(Start: 6 @2508 has 61 MA's), (10, 2535), (11, 2538), (19, 2571), (22, 2580), (32, 2604), (41, 2640), (42, 2649), (46, 2694), (47, 2697), (49, 2706), (67, 2823), (78, 2883), (103, 2994), (116, 3099), (121, 3138), (124, 3156), (126, 3183), (128, 3189), (134, 3249), (138, 3315), (152, 3420), (154, 3429), (157, 3459), (159, 3477), (171, 3543), (184, 3630), (189, 3660), (194, 3693), (200, 3738), (218, 3918), (277, 4269), (287, 4317), (292, 4398), (297, 4446), (298, 4464),

Gene: RAP15\_6 Start: 4717, Stop: 6726, Start Num: 12

Candidate Starts for RAP15\_6:

(Start: 12 @4717 has 82 MA's), (Start: 18 @4747 has 1 MA's), (43, 4843), (46, 4873), (49, 4885), (56, 4930), (74, 5032), (75, 5041), (80, 5071), (90, 5116), (91, 5122), (102, 5173), (108, 5218), (109, 5227), (117, 5290), (121, 5323), (126, 5368), (127, 5371), (138, 5503), (141, 5518), (149, 5587), (152, 5608), (155, 5620), (163, 5689), (166, 5701), (180, 5776), (185, 5821), (189, 5848), (221, 6100), (222, 6103), (230, 6148), (239, 6229), (245, 6259), (251, 6310), (275, 6460), (292, 6601), (301, 6685),

Gene: RcigaStruga\_6 Start: 4664, Stop: 6682, Start Num: 12

Candidate Starts for RcigaStruga\_6:

(Start: 12 @4664 has 82 MA's), (28, 4730), (49, 4841), (73, 4985), (74, 4988), (79, 5024), (80, 5027), (91, 5078), (102, 5129), (104, 5138), (108, 5174), (119, 5258), (121, 5279), (127, 5327), (135, 5393), (138, 5459), (152, 5564), (153, 5567), (166, 5657), (171, 5684), (184, 5774), (185, 5777), (189, 5804), (222, 6059), (226, 6092), (239, 6185), (240, 6188), (245, 6215), (275, 6416), (292, 6557), (293, 6572), (301, 6641),

Gene: RedFox\_4 Start: 2335, Stop: 4254, Start Num: 13

Candidate Starts for RedFox\_4:

(Start: 13 @2335 has 34 MA's), (29, 2389), (45, 2464), (47, 2476), (56, 2530), (71, 2620), (81, 2674), (93, 2722), (94, 2725), (110, 2809), (123, 2908), (133, 3019), (138, 3088), (140, 3097), (152, 3193), (153, 3196), (155, 3205), (165, 3283), (168, 3301), (178, 3340), (189, 3430), (192, 3454), (198, 3496), (200, 3508), (220, 3646), (226, 3688), (235, 3760), (253, 3874), (257, 3898), (270, 3964), (272, 3973), (282, 4024), (289, 4078), (292, 4129), (293, 4144), (299, 4198),

Gene: Renna12\_5 Start: 2548, Stop: 4458, Start Num: 13

Candidate Starts for Renna12\_5:

(Start: 13 @2548 has 34 MA's), (29, 2602), (45, 2677), (47, 2689), (56, 2743), (71, 2833), (81, 2887), (93, 2935), (109, 3019), (110, 3022), (123, 3121), (138, 3301), (140, 3310), (152, 3406), (153, 3409), (155, 3418), (165, 3496), (168, 3514), (178, 3553), (188, 3628), (189, 3643), (192, 3667), (198, 3709), (200, 3721), (203, 3763), (220, 3850), (226, 3892), (235, 3964), (253, 4078), (257, 4102), (261, 4126), (270, 4168), (272, 4177), (282, 4228), (289, 4282), (292, 4333), (293, 4348), (299, 4402),

Gene: Riovina\_3 Start: 2013, Stop: 4040, Start Num: 12

Candidate Starts for Riovina\_3:

(Start: 12 @2013 has 82 MA's), (Start: 18 @2043 has 1 MA's), (27, 2076), (28, 2079), (49, 2190), (67, 2307), (70, 2322), (75, 2346), (91, 2427), (102, 2478), (106, 2511), (108, 2523), (112, 2565), (115, 2586), (119, 2607), (121, 2628), (126, 2673), (127, 2676), (138, 2808), (147, 2883), (152, 2913), (170, 3030), (185, 3126), (189, 3153), (212, 3354), (213, 3357), (222, 3417), (245, 3573), (253, 3642), (275, 3774), (285, 3822), (292, 3915), (293, 3930), (301, 3999),

Gene: Riverdale\_6 Start: 4648, Stop: 6657, Start Num: 12

Candidate Starts for Riverdale\_6:

(Start: 12 @4648 has 82 MA's), (Start: 18 @4678 has 1 MA's), (43, 4774), (46, 4804), (49, 4816), (56, 4861), (74, 4963), (75, 4972), (80, 5002), (90, 5047), (91, 5053), (102, 5104), (108, 5149), (109, 5158), (117, 5221), (121, 5254), (126, 5299), (127, 5302), (138, 5434), (141, 5449), (149, 5518), (152, 5539), (155, 5551), (163, 5620), (166, 5632), (180, 5707), (185, 5752), (189, 5779), (205, 5932), (221, 6031),



(222, 6034), (230, 6079), (239, 6160), (245, 6190), (251, 6241), (275, 6391), (292, 6532), (301, 6616),

Gene: Rollins\_3 Start: 2230, Stop: 4281, Start Num: 6

Candidate Starts for Rollins\_3:

(Start: 6 @2230 has 61 MA's), (26, 2314), (35, 2344), (41, 2371), (42, 2380), (47, 2428), (72, 2575), (77, 2605), (78, 2611), (121, 2863), (124, 2881), (126, 2908), (128, 2914), (138, 3040), (152, 3145), (154, 3154), (157, 3184), (159, 3202), (189, 3385), (198, 3451), (200, 3463), (226, 3697), (241, 3793), (278, 4030), (279, 4036), (283, 4051), (287, 4072), (292, 4153), (298, 4219),

Gene: Rona\_4 Start: 2572, Stop: 4596, Start Num: 6

Candidate Starts for Rona\_4:

(Start: 6 @2572 has 61 MA's), (10, 2599), (11, 2602), (19, 2635), (22, 2644), (35, 2677), (42, 2713), (46, 2758), (58, 2839), (67, 2887), (101, 3040), (104, 3058), (107, 3097), (116, 3169), (121, 3208), (124, 3226), (126, 3253), (138, 3385), (139, 3391), (152, 3490), (154, 3499), (159, 3547), (164, 3577), (172, 3619), (189, 3730), (194, 3763), (200, 3808), (225, 4027), (249, 4189), (259, 4255), (277, 4339), (280, 4354), (297, 4516), (298, 4534),

Gene: Rozby\_6 Start: 4648, Stop: 6657, Start Num: 12

Candidate Starts for Rozby\_6:

(Start: 12 @4648 has 82 MA's), (Start: 18 @4678 has 1 MA's), (40, 4747), (43, 4774), (46, 4804), (49, 4816), (56, 4861), (74, 4963), (75, 4972), (80, 5002), (90, 5047), (91, 5053), (102, 5104), (108, 5149), (109, 5158), (117, 5221), (121, 5254), (126, 5299), (127, 5302), (138, 5434), (141, 5449), (149, 5518), (152, 5539), (155, 5551), (163, 5620), (166, 5632), (180, 5707), (185, 5752), (189, 5779), (221, 6031), (222, 6034), (230, 6079), (239, 6160), (245, 6190), (251, 6241), (275, 6391), (292, 6532), (301, 6616),

Gene: Ruchi\_5 Start: 2958, Stop: 4898, Start Num: 13

Candidate Starts for Ruchi\_5:

(Start: 13 @2958 has 34 MA's), (35, 3030), (46, 3099), (47, 3102), (60, 3195), (71, 3246), (74, 3258), (90, 3336), (93, 3351), (110, 3441), (123, 3540), (131, 3603), (138, 3720), (152, 3825), (154, 3834), (155, 3837), (162, 3897), (165, 3915), (168, 3933), (169, 3936), (183, 4002), (189, 4062), (192, 4086), (198, 4128), (200, 4140), (220, 4281), (226, 4323), (241, 4416), (253, 4509), (257, 4533), (289, 4722), (292, 4773), (293, 4788), (301, 4857), (304, 4884), (305, 4890),

Gene: SanaSana\_5 Start: 2596, Stop: 4611, Start Num: 6

Candidate Starts for SanaSana\_5:

(Start: 6 @2596 has 61 MA's), (10, 2623), (11, 2626), (35, 2701), (42, 2737), (46, 2782), (47, 2785), (58, 2863), (67, 2911), (80, 2977), (104, 3082), (116, 3193), (124, 3250), (126, 3277), (138, 3409), (139, 3415), (147, 3484), (152, 3514), (154, 3523), (159, 3571), (164, 3601), (189, 3754), (200, 3832), (277, 4351), (288, 4414), (292, 4480), (298, 4546), (301, 4564),

Gene: SansAfet\_4 Start: 2317, Stop: 4341, Start Num: 6

Candidate Starts for SansAfet\_4:

(Start: 6 @2317 has 61 MA's), (11, 2350), (41, 2458), (42, 2467), (46, 2512), (47, 2515), (60, 2608), (80, 2707), (101, 2800), (111, 2875), (124, 2983), (126, 3010), (138, 3142), (139, 3148), (152, 3247), (159, 3301), (166, 3340), (189, 3484), (200, 3562), (277, 4081), (288, 4144), (292, 4210),

Gene: SarBear\_4 Start: 2316, Stop: 4340, Start Num: 6

Candidate Starts for SarBear\_4:

(Start: 6 @2316 has 61 MA's), (11, 2349), (41, 2457), (42, 2466), (46, 2511), (47, 2514), (60, 2607), (80, 2706), (101, 2799), (111, 2874), (124, 2982), (126, 3009), (138, 3141), (139, 3147), (147, 3216), (152, 3246), (159, 3300), (166, 3339), (189, 3483), (200, 3561), (277, 4080), (288, 4143), (292, 4209),

Gene: Sarge\_4 Start: 2058, Stop: 3983, Start Num: 13

Candidate Starts for Sarge\_4:

(Start: 13 @2058 has 34 MA's), (Start: 18 @2085 has 1 MA's), (36, 2133), (60, 2292), (74, 2355), (79, 2391), (88, 2427), (92, 2448), (99, 2475), (119, 2613), (125, 2673), (138, 2811), (140, 2820), (152, 2916), (155, 2928), (168, 3024), (183, 3093), (206, 3303), (219, 3372), (221, 3381), (232, 3432), (246, 3540), (247, 3549), (248, 3555), (257, 3630), (261, 3654), (270, 3699), (272, 3708), (278, 3741), (284, 3774), (289, 3810), (303, 3969),

Gene: Savage2526\_6 Start: 4711, Stop: 6720, Start Num: 12

Candidate Starts for Savage2526\_6:

(Start: 12 @4711 has 82 MA's), (Start: 18 @4741 has 1 MA's), (43, 4837), (46, 4867), (49, 4879), (56, 4924), (74, 5026), (75, 5035), (80, 5065), (90, 5110), (91, 5116), (102, 5167), (108, 5212), (109, 5221), (117, 5284), (121, 5317), (126, 5362), (127, 5365), (138, 5497), (141, 5512), (149, 5581), (152, 5602), (155, 5614), (163, 5683), (166, 5695), (180, 5770), (185, 5815), (189, 5842), (205, 5995), (221, 6094), (222, 6097), (230, 6142), (239, 6223), (245, 6253), (251, 6304), (275, 6454), (292, 6595), (301, 6679),

Gene: Scuttle\_6 Start: 4717, Stop: 6726, Start Num: 12

Candidate Starts for Scuttle\_6:

(Start: 12 @4717 has 82 MA's), (Start: 18 @4747 has 1 MA's), (43, 4843), (46, 4873), (49, 4885), (56, 4930), (74, 5032), (75, 5041), (80, 5071), (90, 5116), (91, 5122), (102, 5173), (108, 5218), (109, 5227), (117, 5290), (121, 5323), (126, 5368), (127, 5371), (138, 5503), (141, 5518), (149, 5587), (152, 5608), (155, 5620), (163, 5689), (166, 5701), (180, 5776), (185, 5821), (189, 5848), (205, 6001), (222, 6103), (230, 6148), (239, 6229), (245, 6259), (251, 6310), (275, 6460), (292, 6601), (301, 6685),

Gene: Sergei\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for Sergei\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (106, 2510), (108, 2522), (109, 2531), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (152, 2912), (170, 3029), (185, 3125), (189, 3152), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (285, 3821), (292, 3914), (293, 3929), (301, 3998),

Gene: Sharkboy\_4 Start: 2571, Stop: 4595, Start Num: 6

Candidate Starts for Sharkboy\_4:

(Start: 6 @2571 has 61 MA's), (10, 2598), (11, 2601), (19, 2634), (22, 2643), (35, 2676), (42, 2712), (46, 2757), (67, 2886), (101, 3039), (104, 3057), (107, 3096), (116, 3168), (121, 3207), (124, 3225), (126, 3252), (138, 3384), (139, 3390), (152, 3489), (154, 3498), (159, 3546), (164, 3576), (172, 3618), (189, 3729), (194, 3762), (200, 3807), (225, 4026), (249, 4188), (259, 4254), (277, 4338), (280, 4353), (297, 4515), (298, 4533),

Gene: Shayna\_3 Start: 2294, Stop: 4342, Start Num: 6

Candidate Starts for Shayna\_3:

(Start: 6 @2294 has 61 MA's), (34, 2405), (42, 2444), (46, 2489), (52, 2540), (80, 2684), (97, 2756), (101, 2777), (105, 2810), (124, 2957), (126, 2984), (138, 3116), (139, 3122), (146, 3182), (151, 3209), (152, 3221), (153, 3224), (154, 3230), (159, 3275), (189, 3458), (193, 3485), (194, 3491), (200, 3536), (201, 3563), (234, 3824), (288, 4145), (292, 4217), (298, 4283), (302, 4322),

Gene: Shoya\_3 Start: 1803, Stop: 3764, Start Num: 9

Candidate Starts for Shoya\_3:

(Start: 9 @1803 has 2 MA's), (21, 1857), (37, 1902), (42, 1920), (43, 1935), (46, 1965), (56, 2022), (59, 2058), (63, 2073), (67, 2094), (71, 2112), (84, 2181), (88, 2196), (97, 2235), (112, 2349), (115, 2370), (127, 2460), (138, 2589), (151, 2682), (152, 2694), (157, 2730), (159, 2748), (163, 2775), (173, 2823), (175, 2829), (189, 2934), (192, 2958), (206, 3084), (209, 3096), (219, 3153), (221, 3162), (226, 3198), (236, 3276), (244, 3312), (247, 3330), (249, 3357), (257, 3411), (270, 3480), (278, 3522), (284, 3555),

(289, 3591), (303, 3750),

Gene: Skylord\_3 Start: 2170, Stop: 4221, Start Num: 6

Candidate Starts for Skylord\_3:

(Start: 6 @2170 has 61 MA's), (26, 2254), (35, 2284), (41, 2311), (42, 2320), (47, 2368), (72, 2515), (77, 2545), (78, 2551), (121, 2803), (124, 2821), (126, 2848), (128, 2854), (138, 2980), (152, 3085), (154, 3094), (157, 3124), (159, 3142), (189, 3325), (198, 3391), (200, 3403), (226, 3637), (241, 3733), (278, 3970), (279, 3976), (283, 3991), (287, 4012), (292, 4093), (298, 4159),

Gene: Slay\_4 Start: 2793, Stop: 4817, Start Num: 6

Candidate Starts for Slay\_4:

(Start: 6 @2793 has 61 MA's), (11, 2826), (41, 2934), (42, 2943), (46, 2988), (47, 2991), (60, 3084), (80, 3183), (101, 3276), (111, 3351), (124, 3459), (126, 3486), (138, 3618), (139, 3624), (147, 3693), (152, 3723), (159, 3777), (166, 3816), (189, 3960), (200, 4038), (277, 4557), (288, 4620),

Gene: Squircle\_4 Start: 2543, Stop: 4600, Start Num: 6

Candidate Starts for Squircle\_4:

(Start: 6 @2543 has 61 MA's), (34, 2657), (41, 2684), (42, 2693), (46, 2738), (49, 2750), (67, 2864), (72, 2888), (93, 2984), (94, 2987), (100, 3014), (103, 3032), (115, 3134), (120, 3167), (125, 3215), (138, 3353), (151, 3446), (152, 3458), (154, 3467), (159, 3512), (162, 3530), (174, 3587), (185, 3668), (188, 3680), (189, 3695), (200, 3773), (226, 4010), (230, 4022), (252, 4193), (266, 4280), (277, 4343), (282, 4367), (287, 4391), (288, 4406), (290, 4442), (292, 4478), (298, 4544),

Gene: Stoor\_4 Start: 2593, Stop: 4608, Start Num: 6

Candidate Starts for Stoor\_4:

(Start: 6 @2593 has 61 MA's), (10, 2620), (11, 2623), (35, 2698), (42, 2734), (46, 2779), (47, 2782), (67, 2908), (80, 2974), (104, 3079), (111, 3139), (124, 3247), (126, 3274), (138, 3406), (139, 3412), (147, 3481), (152, 3511), (154, 3520), (159, 3568), (164, 3598), (189, 3751), (200, 3829), (264, 4288), (277, 4348), (288, 4411), (292, 4477),

Gene: Stromboli\_4 Start: 2593, Stop: 4608, Start Num: 6

Candidate Starts for Stromboli\_4:

(Start: 6 @2593 has 61 MA's), (10, 2620), (11, 2623), (35, 2698), (42, 2734), (46, 2779), (47, 2782), (67, 2908), (80, 2974), (104, 3079), (111, 3139), (124, 3247), (126, 3274), (138, 3406), (139, 3412), (147, 3481), (152, 3511), (154, 3520), (159, 3568), (164, 3598), (189, 3751), (200, 3829), (264, 4288), (277, 4348), (288, 4411), (292, 4477),

Gene: SunnyD\_3 Start: 2294, Stop: 4342, Start Num: 6

Candidate Starts for SunnyD\_3:

(Start: 6 @2294 has 61 MA's), (42, 2444), (46, 2489), (52, 2540), (80, 2684), (97, 2756), (101, 2777), (105, 2810), (124, 2957), (126, 2984), (138, 3116), (139, 3122), (146, 3182), (151, 3209), (152, 3221), (153, 3224), (154, 3230), (159, 3275), (189, 3458), (193, 3485), (194, 3491), (200, 3536), (201, 3563), (234, 3824), (288, 4145), (292, 4217), (298, 4283), (302, 4322),

Gene: Supakev\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for Supakev\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (102, 2477), (106, 2510), (108, 2522), (109, 2531), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (147, 2882), (152, 2912), (170, 3029), (185, 3125), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (230, 3461), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (285, 3821), (291, 3878), (292, 3914), (293, 3929), (301, 3998),

Gene: Suppi\_6 Start: 4693, Stop: 6708, Start Num: 12

Candidate Starts for Suppi\_6:

(Start: 12 @4693 has 82 MA's), (17, 4720), (20, 4732), (27, 4753), (49, 4867), (54, 4909), (56, 4912), (67, 4984), (71, 5002), (74, 5014), (90, 5098), (91, 5104), (93, 5113), (102, 5155), (103, 5161), (108, 5200), (109, 5209), (110, 5212), (117, 5272), (121, 5305), (126, 5350), (127, 5353), (138, 5485), (152, 5590), (166, 5683), (174, 5719), (177, 5731), (185, 5803), (189, 5830), (194, 5863), (222, 6085), (226, 6118), (227, 6121), (253, 6310), (292, 6583), (301, 6667),

Gene: Swervy\_4 Start: 2316, Stop: 4340, Start Num: 6

Candidate Starts for Swervy\_4:

(Start: 6 @2316 has 61 MA's), (11, 2349), (41, 2457), (42, 2466), (46, 2511), (47, 2514), (60, 2607), (80, 2706), (101, 2799), (111, 2874), (124, 2982), (126, 3009), (138, 3141), (139, 3147), (147, 3216), (152, 3246), (159, 3300), (166, 3339), (189, 3483), (200, 3561), (277, 4080), (288, 4143), (292, 4209),

Gene: TattModd\_6 Start: 4711, Stop: 6720, Start Num: 12

Candidate Starts for TattModd\_6:

(Start: 12 @4711 has 82 MA's), (Start: 18 @4741 has 1 MA's), (43, 4837), (46, 4867), (49, 4879), (56, 4924), (74, 5026), (75, 5035), (80, 5065), (90, 5110), (91, 5116), (102, 5167), (108, 5212), (109, 5221), (117, 5284), (121, 5317), (126, 5362), (127, 5365), (138, 5497), (141, 5512), (149, 5581), (152, 5602), (155, 5614), (163, 5683), (166, 5695), (180, 5770), (185, 5815), (189, 5842), (205, 5995), (221, 6094), (222, 6097), (230, 6142), (239, 6223), (245, 6253), (251, 6304), (275, 6454), (292, 6595), (301, 6679),

Gene: TaylorSipt\_5 Start: 2710, Stop: 4677, Start Num: 13

Candidate Starts for TaylorSipt\_5:

(Start: 13 @2710 has 34 MA's), (31, 2770), (35, 2782), (46, 2851), (47, 2854), (49, 2863), (60, 2947), (71, 2998), (110, 3193), (113, 3226), (123, 3292), (138, 3472), (140, 3481), (152, 3577), (155, 3589), (162, 3649), (165, 3667), (168, 3685), (169, 3688), (183, 3754), (189, 3814), (192, 3838), (198, 3880), (200, 3892), (214, 4009), (220, 4057), (226, 4099), (237, 4180), (256, 4306), (270, 4384), (280, 4435), (292, 4549), (293, 4564), (302, 4654),

Gene: Teagster\_3 Start: 2297, Stop: 4345, Start Num: 6

Candidate Starts for Teagster\_3:

(Start: 6 @2297 has 61 MA's), (42, 2447), (46, 2492), (52, 2543), (80, 2687), (97, 2759), (101, 2780), (105, 2813), (124, 2960), (126, 2987), (138, 3119), (139, 3125), (146, 3185), (151, 3212), (152, 3224), (153, 3227), (154, 3233), (159, 3278), (189, 3461), (193, 3488), (194, 3494), (200, 3539), (201, 3566), (234, 3827), (288, 4148), (292, 4220), (298, 4286), (302, 4325),

Gene: Temper16\_3 Start: 2012, Stop: 4039, Start Num: 12

Candidate Starts for Temper16\_3:

(Start: 12 @2012 has 82 MA's), (Start: 18 @2042 has 1 MA's), (27, 2075), (28, 2078), (49, 2189), (56, 2234), (59, 2270), (67, 2306), (74, 2336), (75, 2345), (80, 2375), (91, 2426), (106, 2510), (108, 2522), (109, 2531), (119, 2606), (121, 2627), (126, 2672), (127, 2675), (138, 2807), (152, 2912), (170, 3029), (185, 3125), (189, 3152), (210, 3338), (212, 3353), (213, 3356), (222, 3416), (245, 3572), (253, 3641), (265, 3707), (275, 3773), (285, 3821), (292, 3914), (293, 3929), (301, 3998),

Gene: TukTuk\_4 Start: 2316, Stop: 4340, Start Num: 6

Candidate Starts for TukTuk\_4:

(Start: 6 @2316 has 61 MA's), (11, 2349), (41, 2457), (42, 2466), (46, 2511), (47, 2514), (60, 2607), (80, 2706), (101, 2799), (111, 2874), (124, 2982), (126, 3009), (138, 3141), (139, 3147), (147, 3216), (152, 3246), (159, 3300), (166, 3339), (189, 3483), (200, 3561), (277, 4080), (288, 4143), (292, 4209),

Gene: Urla\_3 Start: 2010, Stop: 4019, Start Num: 12

Candidate Starts for Urla\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2166), (49, 2178), (56, 2223), (70, 2310), (74, 2325), (75, 2334), (76, 2340), (80, 2364), (90, 2409), (91, 2415), (98, 2448), (102, 2466), (106, 2499), (108, 2511), (109, 2520), (117, 2583), (121, 2616), (126, 2661), (127, 2664), (138, 2796), (141, 2811), (149, 2880), (152, 2901), (155, 2913), (163, 2982), (170, 3018), (177, 3042), (180, 3069), (185, 3114), (189, 3141), (197, 3201), (221, 3393), (222, 3396), (230, 3441), (239, 3522), (275, 3753), (279, 3771), (292, 3894), (301, 3978),

Gene: Vallejo\_6 Start: 4648, Stop: 6657, Start Num: 12

Candidate Starts for Vallejo\_6:

(Start: 12 @4648 has 82 MA's), (Start: 18 @4678 has 1 MA's), (43, 4774), (46, 4804), (49, 4816), (56, 4861), (74, 4963), (75, 4972), (80, 5002), (90, 5047), (91, 5053), (102, 5104), (108, 5149), (109, 5158), (117, 5221), (121, 5254), (126, 5299), (127, 5302), (138, 5434), (141, 5449), (149, 5518), (152, 5539), (155, 5551), (163, 5620), (166, 5632), (180, 5707), (185, 5752), (189, 5779), (205, 5932), (221, 6031), (222, 6034), (230, 6079), (239, 6160), (245, 6190), (251, 6241), (275, 6391), (292, 6532), (301, 6616),

Gene: Vitas\_3 Start: 2170, Stop: 4221, Start Num: 6

Candidate Starts for Vitas\_3:

(Start: 6 @2170 has 61 MA's), (26, 2254), (35, 2284), (41, 2311), (42, 2320), (47, 2368), (72, 2515), (77, 2545), (78, 2551), (121, 2803), (124, 2821), (126, 2848), (128, 2854), (138, 2980), (152, 3085), (154, 3094), (157, 3124), (159, 3142), (189, 3325), (198, 3391), (200, 3403), (226, 3637), (241, 3733), (278, 3970), (279, 3976), (283, 3991), (287, 4012), (292, 4093), (298, 4159),

Gene: Vulpecula\_5 Start: 3027, Stop: 4982, Start Num: 13

Candidate Starts for Vulpecula\_5:

(Start: 13 @3027 has 34 MA's), (35, 3099), (46, 3168), (47, 3171), (51, 3213), (58, 3249), (60, 3264), (71, 3330), (83, 3393), (86, 3405), (87, 3408), (89, 3414), (93, 3435), (110, 3525), (123, 3624), (131, 3687), (138, 3804), (152, 3909), (154, 3918), (155, 3921), (162, 3981), (165, 3999), (168, 4017), (169, 4020), (183, 4086), (189, 4146), (192, 4170), (198, 4212), (200, 4224), (220, 4365), (226, 4407), (241, 4500), (253, 4593), (257, 4617), (289, 4806), (292, 4857), (293, 4872), (301, 4941), (302, 4962),

Gene: Vulture\_3 Start: 2013, Stop: 4040, Start Num: 12

Candidate Starts for Vulture\_3:

(Start: 12 @2013 has 82 MA's), (Start: 18 @2043 has 1 MA's), (27, 2076), (28, 2079), (49, 2190), (67, 2307), (70, 2322), (75, 2346), (91, 2427), (102, 2478), (106, 2511), (108, 2523), (112, 2565), (115, 2586), (119, 2607), (121, 2628), (126, 2673), (127, 2676), (138, 2808), (147, 2883), (152, 2913), (185, 3126), (189, 3153), (212, 3354), (213, 3357), (222, 3417), (245, 3573), (253, 3642), (275, 3774), (285, 3822), (292, 3915), (293, 3930), (301, 3999),

Gene: WalkingDead\_4 Start: 2583, Stop: 4598, Start Num: 6

Candidate Starts for WalkingDead\_4:

(4, 2460), (Start: 6 @2583 has 61 MA's), (10, 2610), (11, 2613), (35, 2688), (42, 2724), (46, 2769), (47, 2772), (58, 2850), (67, 2898), (80, 2964), (104, 3069), (116, 3180), (124, 3237), (126, 3264), (138, 3396), (139, 3402), (147, 3471), (152, 3501), (154, 3510), (159, 3558), (164, 3588), (189, 3741), (200, 3819), (277, 4338), (288, 4401), (292, 4467), (297, 4515), (298, 4533),

Gene: Wawa\_6 Start: 4687, Stop: 6696, Start Num: 12

Candidate Starts for Wawa\_6:

(Start: 12 @4687 has 82 MA's), (Start: 18 @4717 has 1 MA's), (43, 4813), (46, 4843), (49, 4855), (56, 4900), (74, 5002), (75, 5011), (80, 5041), (90, 5086), (91, 5092), (102, 5143), (108, 5188), (109, 5197), (117, 5260), (121, 5293), (126, 5338), (127, 5341), (138, 5473), (141, 5488), (149, 5557), (152, 5578), (155, 5590), (163, 5659), (166, 5671), (180, 5746), (185, 5791), (189, 5818), (221, 6070), (222, 6073), (230, 6118), (239, 6199), (245, 6229), (251, 6280), (275, 6430), (292, 6571), (301, 6655),

Gene: Wayne\_6 Start: 4739, Stop: 6754, Start Num: 12

Candidate Starts for Wayne\_6:

(Start: 12 @4739 has 82 MA's), (17, 4766), (20, 4778), (27, 4799), (46, 4901), (49, 4913), (54, 4955), (56, 4958), (67, 5030), (71, 5048), (74, 5060), (90, 5144), (91, 5150), (93, 5159), (102, 5201), (103, 5207), (108, 5246), (109, 5255), (110, 5258), (117, 5318), (121, 5351), (126, 5396), (127, 5399), (138, 5531), (152, 5636), (166, 5729), (174, 5765), (177, 5777), (185, 5849), (189, 5876), (194, 5909), (222, 6131), (226, 6164), (227, 6167), (253, 6356), (292, 6629), (301, 6713),

Gene: WonderBoy\_3 Start: 2010, Stop: 4028, Start Num: 12

Candidate Starts for WonderBoy\_3:

(Start: 12 @2010 has 82 MA's), (Start: 18 @2040 has 1 MA's), (46, 2175), (49, 2187), (56, 2232), (70, 2319), (80, 2373), (90, 2418), (91, 2424), (102, 2475), (108, 2520), (109, 2529), (117, 2592), (121, 2625), (126, 2670), (127, 2673), (137, 2793), (138, 2805), (141, 2820), (143, 2850), (152, 2910), (155, 2922), (166, 3003), (174, 3039), (183, 3090), (185, 3123), (189, 3150), (213, 3345), (222, 3405), (230, 3450), (239, 3531), (264, 3690), (275, 3762), (292, 3903), (301, 3987),

Gene: Zorro\_6 Start: 4666, Stop: 6675, Start Num: 12

Candidate Starts for Zorro\_6:

(Start: 12 @4666 has 82 MA's), (Start: 18 @4696 has 1 MA's), (43, 4792), (46, 4822), (49, 4834), (56, 4879), (74, 4981), (75, 4990), (80, 5020), (90, 5065), (91, 5071), (102, 5122), (108, 5167), (109, 5176), (117, 5239), (121, 5272), (126, 5317), (127, 5320), (138, 5452), (141, 5467), (149, 5536), (152, 5557), (155, 5569), (163, 5638), (166, 5650), (180, 5725), (185, 5770), (189, 5797), (222, 6052), (230, 6097), (239, 6178), (245, 6208), (251, 6259), (275, 6409), (292, 6550), (301, 6634),