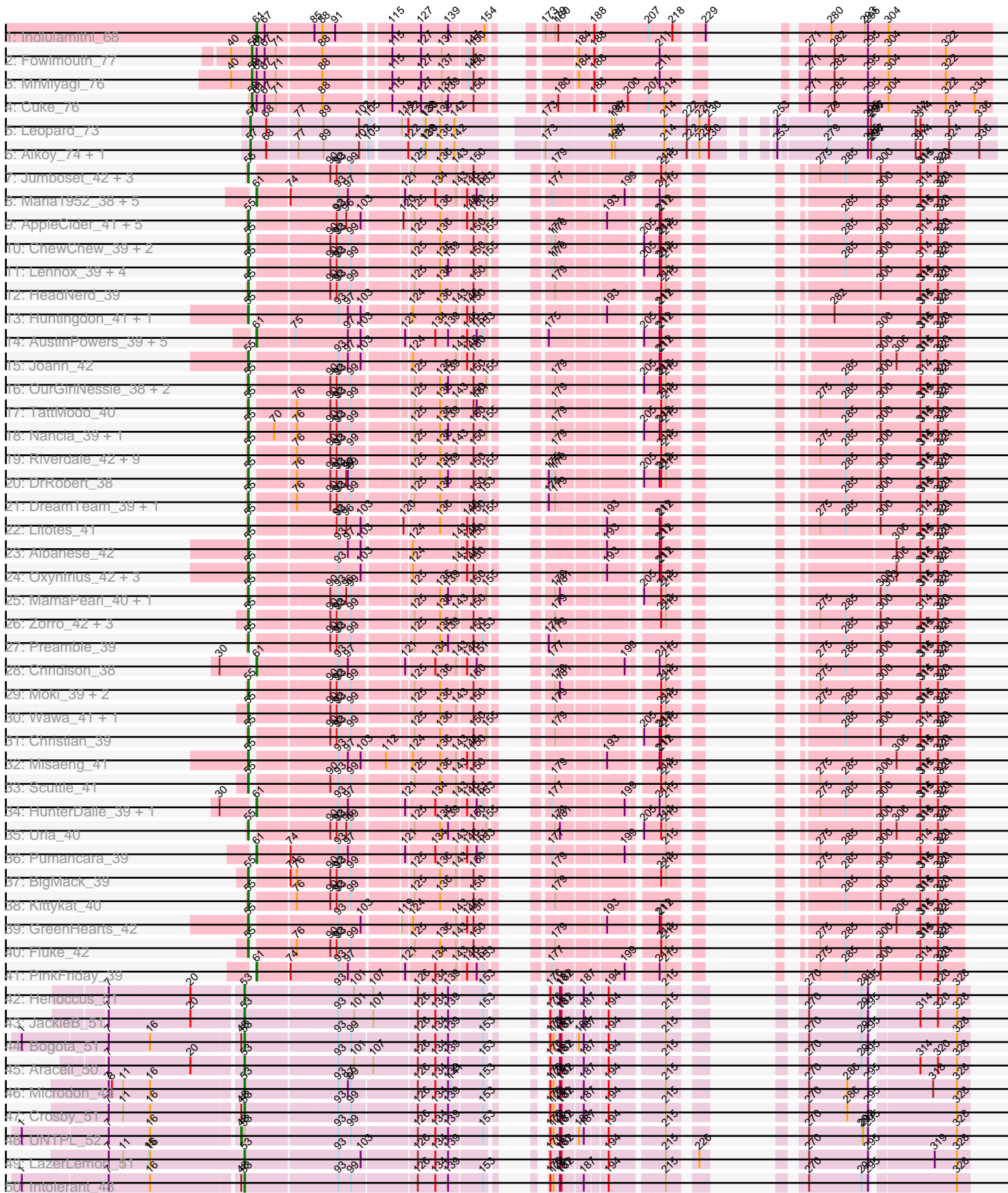
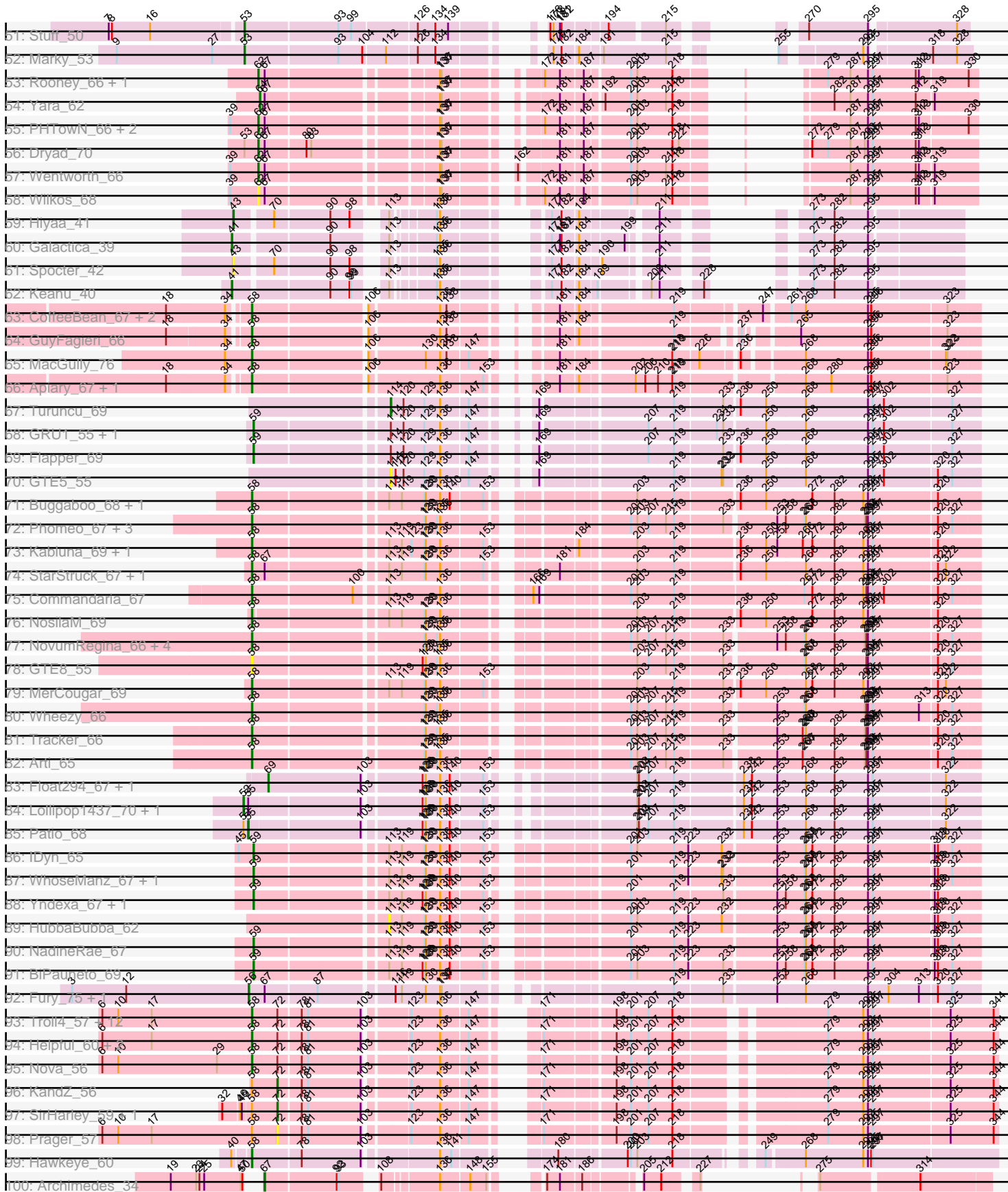


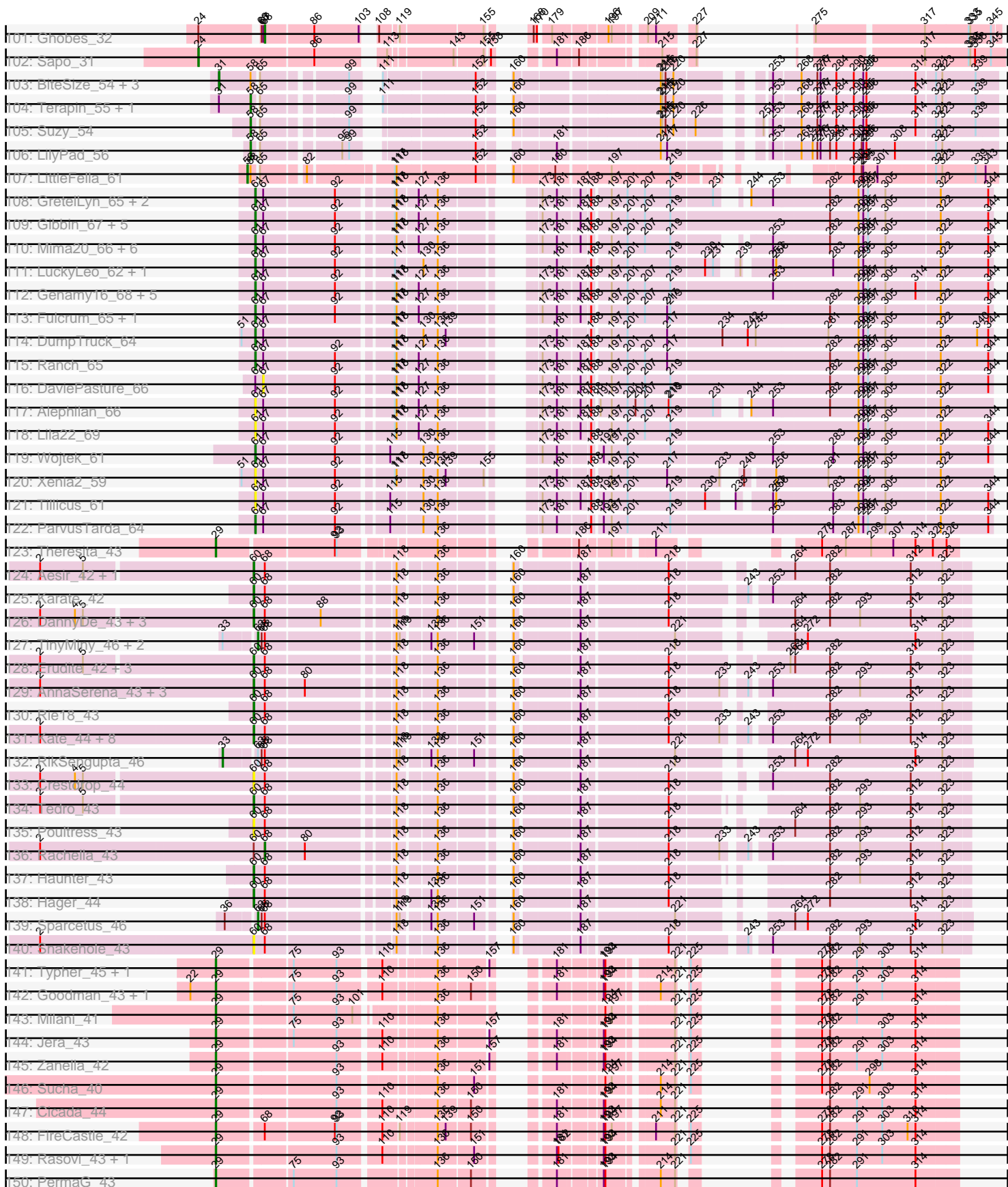
Pham 171144



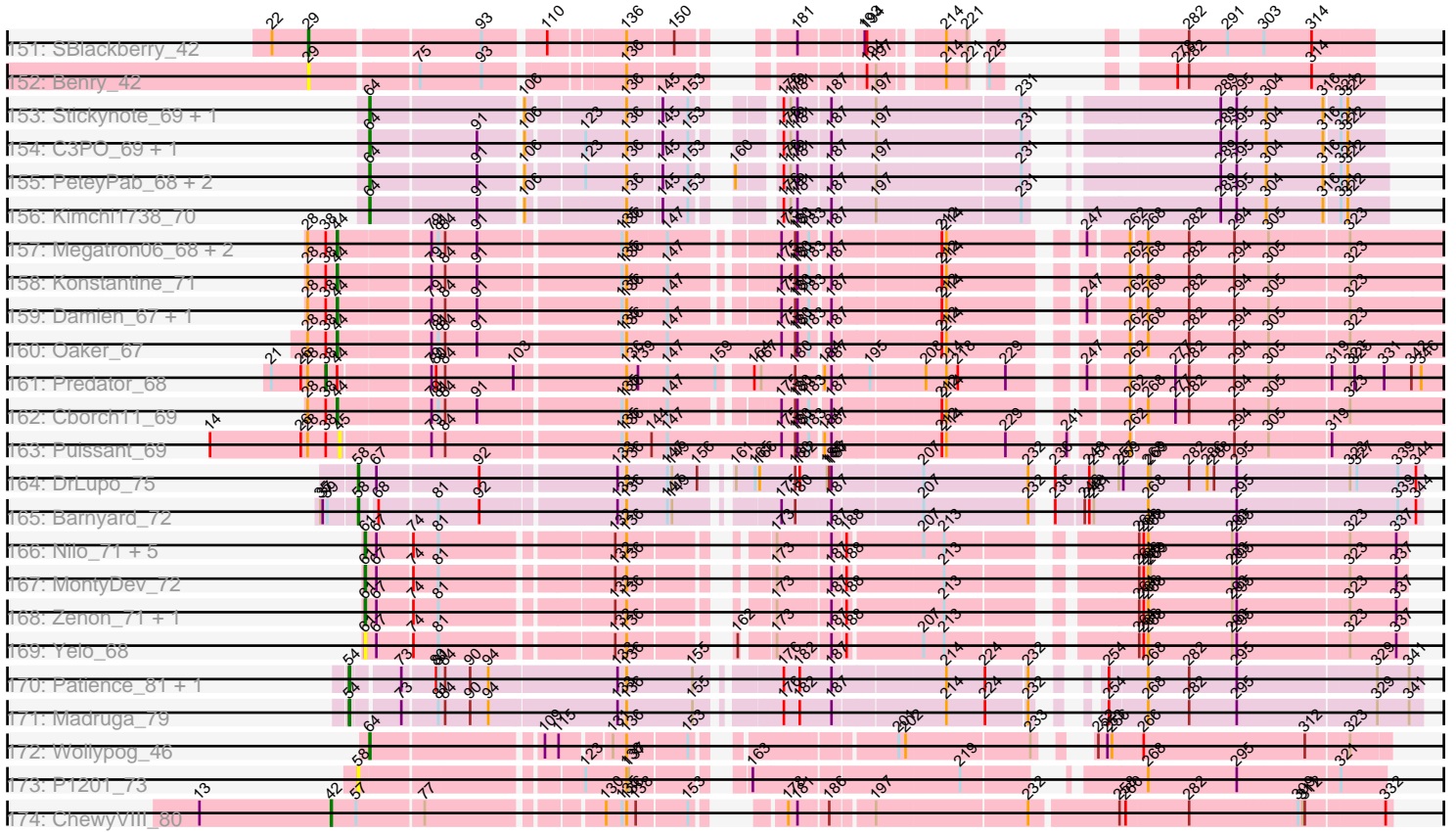
Pham 171144



Pham 171144



Pham 171144



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 171144 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171144 has 322 members, 32 are drafts.

Phages represented in each track:

- Track 1 : Indlulamithi\_68
- Track 2 : Fowlmouth\_77
- Track 3 : MrMiyagi\_76
- Track 4 : Cuke\_76
- Track 5 : Leopard\_73
- Track 6 : Aikoy\_74, Onyinye\_74
- Track 7 : Jumboset\_42, MrGloopy\_42, Glenn\_42, Savage2526\_42
- Track 8 : Maria1952\_38, Daiboju\_39, Herb\_39, Temper16\_39, KingBob\_39, Sergei\_39
- Track 9 : AppleCider\_41, CallieOMalley\_41, Suppi\_41, Wayne\_41, PartyCup\_44, Canowicakte\_41
- Track 10 : ChewChew\_39, LilStuart\_39, CristinaYang\_39
- Track 11 : Lennox\_39, PitaDog\_39, WonderBoy\_38, Lucy\_39, Makoto\_39
- Track 12 : HeadNerd\_39
- Track 13 : Huntingdon\_41, RcigaStruga\_41
- Track 14 : AustinPowers\_39, Supakev\_39, Eunoia\_39, Aledel\_39, OMalley\_39, Riovina\_39
- Track 15 : Joann\_42
- Track 16 : OurGirlNessie\_38, Pterodactyl\_39, Lasagna\_38
- Track 17 : TattModd\_40
- Track 18 : Nancia\_39, Bodacious\_39
- Track 19 : Riverdale\_42, Beethoven\_41, Vallejo\_42, Immaculata\_41, Potatoes\_41, Kalizoi\_42, Carpal\_41, Cholula\_41, BrotherBLo\_41, Rozby\_41
- Track 20 : DrRobert\_38
- Track 21 : DreamTeam\_39, Gisselle\_39
- Track 22 : Litotes\_41
- Track 23 : Albanese\_42
- Track 24 : Oxynfrius\_42, Lakshmi\_42, Nubia\_42, Greenhouse\_43
- Track 25 : MamaPearl\_40, EstebanJulior\_40
- Track 26 : Zorro\_42, Dino\_42, MeganNoll\_41, RAP15\_42
- Track 27 : Preamble\_39
- Track 28 : Chridison\_38
- Track 29 : Moki\_39, Bennie\_39, Huckleberry\_39
- Track 30 : Wawa\_41, Korra\_41
- Track 31 : Christian\_39
- Track 32 : Misaeng\_41
- Track 33 : Scuttle\_41

- Track 34 : HunterDalle\_39, Vulture\_39
- Track 35 : Urla\_40
- Track 36 : Pumancara\_39
- Track 37 : BigMack\_39
- Track 38 : Kittykat\_40
- Track 39 : GreenHearts\_42
- Track 40 : Fluke\_42
- Track 41 : PinkFriday\_39
- Track 42 : Henoccus\_51
- Track 43 : JackieB\_51
- Track 44 : Bogota\_51
- Track 45 : Araceli\_50
- Track 46 : Microdon\_49
- Track 47 : Crosby\_51
- Track 48 : UNTPL\_52
- Track 49 : LazerLemon\_51
- Track 50 : Intolerant\_48
- Track 51 : Stuff\_50
- Track 52 : Marky\_53
- Track 53 : Rooney\_66, Gibson\_66
- Track 54 : Yara\_62
- Track 55 : PHTowN\_66, ShakeNBake\_66, Lizz\_66
- Track 56 : Dryad\_70
- Track 57 : Wentworth\_66
- Track 58 : Wilkos\_68
- Track 59 : Hiyaa\_41
- Track 60 : Galactica\_39
- Track 61 : Spocter\_42
- Track 62 : Keanu\_40
- Track 63 : CoffeeBean\_67, Maselop\_67, Braxoaddie\_67
- Track 64 : GuyFagieri\_66
- Track 65 : MacGully\_76
- Track 66 : Apiary\_67, Polyuyuki\_67
- Track 67 : Turuncu\_69
- Track 68 : GRU1\_55, Dalilpop\_70
- Track 69 : Flapper\_69
- Track 70 : GTE5\_55
- Track 71 : Buggaboo\_68, SuperSulley\_68
- Track 72 : Phomeo\_67, Foxboro\_67, Jifall16\_66, KidneyBean\_67
- Track 73 : Kabluna\_69, Bonum\_70
- Track 74 : StarStruck\_67, Outis\_67
- Track 75 : Commandaria\_67
- Track 76 : NosilaM\_69
- Track 77 : NovumRegina\_66, Emianna\_66, NatB6\_66, Kurt\_66, GrootJr\_68
- Track 78 : GTE8\_55
- Track 79 : MerCougar\_69
- Track 80 : Wheezy\_66
- Track 81 : Tracker\_66
- Track 82 : Arti\_65
- Track 83 : Float294\_67, Skysand\_68
- Track 84 : Lollipop1437\_70, Ennea\_73
- Track 85 : Patio\_68
- Track 86 : IDyn\_65

- Track 87 : WhoseManz\_67, Marietta\_68
- Track 88 : Yndexa\_67, Sukkupi\_67
- Track 89 : HubbaBubba\_62
- Track 90 : NadineRae\_67
- Track 91 : BiPauneto\_69
- Track 92 : Fury\_75, Pleakley\_75
- Track 93 : Troll4\_57, BigMama\_55, WaldoWhy\_59, Chill\_59, Erk16\_56, Butterscotch\_56, PBI1\_54, Visconti\_58, Giuseppe\_58, Mopey\_58, Adjutor\_56, Thoth\_57, Delton\_58
- Track 94 : Helpful\_60, Penelope2018\_57, PLOT\_57
- Track 95 : Nova\_56
- Track 96 : KandZ\_56
- Track 97 : SirHarley\_59, Gumball\_57
- Track 98 : Prager\_57
- Track 99 : Hawkeye\_60
- Track 100 : Archimedes\_34
- Track 101 : Ghobes\_32
- Track 102 : Sapo\_31
- Track 103 : BiteSize\_54, Sienna\_54, Beyoncage\_54, Madi\_54
- Track 104 : Terapin\_55, Djokovic\_54
- Track 105 : Suzy\_54
- Track 106 : LilyPad\_56
- Track 107 : LittleFella\_61
- Track 108 : GretelLyn\_65, Yikes\_67, Sadboi\_66
- Track 109 : Gibbin\_67, Patos\_69, BirthdayBoy\_67, NorManre\_69, Lambo\_63, OtterstedtS21\_65
- Track 110 : Mima20\_66, DoobyDoo\_63, Erutan\_65, Zany\_63, Jalebi\_64, MoiGyank\_71, Sampudon\_65
- Track 111 : LuckyLeo\_62, Apeppi\_59
- Track 112 : Genamy16\_68, NovaSharks\_67, Rumi\_66, Alyssamiracle\_68, Avian\_64, Jamemuya19\_65
- Track 113 : Fulcrum\_65, GOATification\_65
- Track 114 : DumpTruck\_64
- Track 115 : Ranch\_65
- Track 116 : DaviePasture\_66
- Track 117 : Alephilan\_66
- Track 118 : Lila22\_69
- Track 119 : Wojtek\_61
- Track 120 : Xenia2\_59
- Track 121 : Tillicus\_61
- Track 122 : ParvusTarda\_64
- Track 123 : Theresita\_43
- Track 124 : Aesir\_42, JDawG\_42
- Track 125 : Karate\_42
- Track 126 : DannyDe\_43, Chivey\_43, Hiddenleaf\_43, FreddieHg\_43
- Track 127 : TinyMiny\_46, Kors\_47, Ajin\_46
- Track 128 : Erudite\_42, MortySmith\_41, JingleBells\_43, Dauntless\_43
- Track 129 : AnnaSerena\_43, Pharpay\_43, Anakin\_43, NarutoRun\_43
- Track 130 : Rie18\_43
- Track 131 : Kate\_44, Krampus\_43, Gilda\_43, CoolCookie\_48, Cybele\_43, Neptune\_43, Potty\_43, PhunaPhoke\_43, OverHedge\_43
- Track 132 : RikSengupta\_46
- Track 133 : Crestdrop\_44

- Track 134 : Tedro\_43
- Track 135 : Poultruss\_43
- Track 136 : Rachella\_43
- Track 137 : Haunter\_43
- Track 138 : Hager\_44
- Track 139 : Sparcetuss\_46
- Track 140 : Snakehole\_43
- Track 141 : Typher\_45, TurboVicky\_43
- Track 142 : Goodman\_43, Johann\_43
- Track 143 : Milani\_41
- Track 144 : Jera\_43
- Track 145 : Zanella\_42
- Track 146 : Sucha\_40
- Track 147 : Cicada\_44
- Track 148 : FireCastle\_42
- Track 149 : Rasovi\_43, Htur\_43
- Track 150 : PermaG\_43
- Track 151 : SBlackberry\_42
- Track 152 : Benry\_42
- Track 153 : Stickynote\_69, Darwin\_70
- Track 154 : C3PO\_69, Cruella\_69
- Track 155 : PeteyPab\_68, PotatoChip\_69, Zion\_69
- Track 156 : Kimchi1738\_70
- Track 157 : Megatron06\_68, Thumb\_68, Phreeze\_66
- Track 158 : Konstantine\_71
- Track 159 : Damien\_67, Beckerton\_66
- Track 160 : Oaker\_67
- Track 161 : Predator\_68
- Track 162 : Cborch11\_69
- Track 163 : Puissant\_69
- Track 164 : DrLupo\_75
- Track 165 : Barnyard\_72
- Track 166 : Nilo\_71, Riparian\_71, Papyrus\_69, Rope\_69, Weiss13\_69, Candle\_67
- Track 167 : MontyDev\_72
- Track 168 : Zenon\_71, Send513\_69
- Track 169 : Yelo\_68
- Track 170 : Patience\_81, Labelle\_80
- Track 171 : Madruga\_79
- Track 172 : Wollypog\_46
- Track 173 : P1201\_73
- Track 174 : ChewyVIII\_80

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

The start number called the most often in the published annotations is 55, it was called in 66 of the 290 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Albanese\_42, AppleCider\_41, Beethoven\_41, Bennie\_39, BigMack\_39, Bodacious\_39, BrotherBLo\_41, CallieOMalley\_41, Canowicakte\_41, Carpal\_41,



ChewChew\_39, Cholula\_41, Christian\_39, CristinaYang\_39, Dino\_42, DrRobert\_38, DreamTeam\_39, EstebanJulior\_40, Fluke\_42, Gisselle\_39, Glenn\_42, GreenHearts\_42, Greenhouse\_43, HeadNerd\_39, Huckleberry\_39, Huntingdon\_41, Immaculata\_41, Joann\_42, Jumboset\_42, Kalizoi\_42, Kittykat\_40, Korra\_41, Lakshmi\_42, Lasagna\_38, Lennox\_39, LilStuart\_39, Litotes\_41, Lucy\_39, Makoto\_39, MamaPearl\_40, MeganNoll\_41, Misaeng\_41, Moki\_39, MrGloopy\_42, Nancia\_39, Nubia\_42, OurGirlNessie\_38, Oxynfrius\_42, PartyCup\_44, Patio\_68, PitaDog\_39, Potatoes\_41, Preamble\_39, Pterodactyl\_39, RAP15\_42, RcigaStruga\_41, Riverdale\_42, Rozby\_41, Savage2526\_42, Scuttle\_41, Suppi\_41, TattModd\_40, Urla\_40, Vallejo\_42, Wawa\_41, Wayne\_41, WonderBoy\_38, Zorro\_42,

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

- Ennea\_73, Lollipop1437\_70,

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

- Adjutor\_56, Aesir\_42, Aikoy\_74, Ajin\_46, Aledel\_39, Alephilan\_66, Alyssamiracle\_68, Anakin\_43, AnnaSerena\_43, Apeppi\_59, Apiary\_67, Araceli\_50, Archimedes\_34, Arti\_65, AustinPowers\_39, Avian\_64, Barnyard\_72, Beckerton\_66, Benry\_42, Beyoncage\_54, BiPauneto\_69, BigMama\_55, BirthdayBoy\_67, BiteSize\_54, Bogota\_51, Bonum\_70, Braxoaddie\_67, Buggaboo\_68, Butterscotch\_56, C3PO\_69, Candle\_67, Cborch11\_69, ChewyVIII\_80, Chill\_59, Chivey\_43, Chridison\_38, Cicada\_44, CoffeeBean\_67, Commandaria\_67, CoolCookie\_48, Crestdrop\_44, Crosby\_51, Cruella\_69, Cuke\_76, Cybele\_43, Daiboju\_39, Dalilpop\_70, Damien\_67, DannyDe\_43, Darwin\_70, Dauntless\_43, DaviePasture\_66, Delton\_58, Djokovic\_54, DoobyDoo\_63, DrLupo\_75, Dryad\_70, DumpTruck\_64, Emianna\_66, Erk16\_56, Erudite\_42, Erutan\_65, Eunoia\_39, FireCastle\_42, Flapper\_69, Float294\_67, Fowlmouth\_77, Foxboro\_67, FreddieHg\_43, Fulcrum\_65, Fury\_75, GOATification\_65, GRU1\_55, GTE5\_55, GTE8\_55, Galactica\_39, Genamy16\_68, Ghobes\_32, Gibbin\_67, Gibson\_66, Gilda\_43, Giuseppe\_58, Goodman\_43, Gretellyn\_65, GrootJr\_68, Gumball\_57, GuyFagieri\_66, Hager\_44, Haunter\_43, Hawkeye\_60, Helpful\_60, Henoccus\_51, Herb\_39, Hiddenleaf\_43, Hiyaa\_41, Htur\_43, HubbaBubba\_62, HunterDalle\_39, IDyn\_65, Indlulamithi\_68, Intolerant\_48, JDawG\_42, JackieB\_51, Jalebi\_64, Jamemuya19\_65, Jera\_43, Jifall16\_66, JingleBells\_43, Johann\_43, Kabluna\_69, KandZ\_56, Karate\_42, Kate\_44, Keanu\_40, KidneyBean\_67, Kimchi1738\_70, KingBob\_39, Konstantine\_71, Kors\_47, Krampus\_43, Kurt\_66, Labelle\_80, Lambo\_63, LazerLemon\_51, Leopard\_73, Lila22\_69, LilyPad\_56, LittleFella\_61, Lizz\_66, LuckyLeo\_62, MacGully\_76, Madi\_54, Madruga\_79, Maria1952\_38, Marietta\_68, Marky\_53, Maselop\_67, Megatron06\_68, MerCougar\_69, Microdon\_49, Milani\_41, Mima20\_66, MoiGyank\_71, MontyDev\_72, Mopey\_58, MortySmith\_41, MrMiyagi\_76, NadineRae\_67, NarutoRun\_43, NatB6\_66, Neptune\_43, Nilo\_71, NorManre\_69, NosilaM\_69, NovaSharks\_67, Nova\_56, NovumRegina\_66, OMalley\_39, Oaker\_67, Onyinye\_74, OtterstedtS21\_65, Outis\_67, OverHedge\_43, P1201\_73, PBI1\_54, PHTowN\_66, PLOT\_57, Papyrus\_69, ParvusTarda\_64, Patience\_81, Patos\_69, Penelope2018\_57, PermaG\_43, PeteyPab\_68, Pharpay\_43, Phomeo\_67, Phreeze\_66, PhunaPhoke\_43, PinkFriday\_39, Pleakley\_75, Polyyuki\_67, PotatoChip\_69, Potty\_43, Poultruss\_43, Prager\_57, Predator\_68, Puissant\_69, Pumancara\_39, Rachella\_43, Ranch\_65, Rasovi\_43, Rie18\_43, RikSengupta\_46, Rivovina\_39, Riparian\_71, Rooney\_66, Rope\_69, Rumi\_66, SBlackberry\_42, Sadboi\_66, Sampudon\_65, Sapo\_31, Send513\_69, Sergei\_39, ShakeNBake\_66, Sienna\_54, SirHarley\_59, Skysand\_68, Snakehole\_43, Sparcetus\_46, Spocter\_42, StarStruck\_67, Stickynote\_69, Stuff\_50, Sucha\_40, Sukkupi\_67, Supakev\_39, SuperSulley\_68, Suzy\_54, Tedro\_43, Temper16\_39,

Terapin\_55, Theresita\_43, Thoth\_57, Thumb\_68, Tillicus\_61, TinyMiny\_46, Tracker\_66, Troll4\_57, TurboVicky\_43, Turuncu\_69, Typher\_45, UNTPL\_52, Visconti\_58, Vulture\_39, WaldoWhy\_59, Weiss13\_69, Wentworth\_66, Wheezy\_66, WhoseManz\_67, Wilkos\_68, Wojtek\_61, Wollypog\_46, Xenia2\_59, Yara\_62, Yelo\_68, Yikes\_67, Yndexa\_67, Zanella\_42, Zany\_63, Zenon\_71, Zion\_69,

### Summary by start number:

#### Start 24:

- Found in 3 of 322 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 290
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Sapo\_31 (DA),

#### Start 29:

- Found in 17 of 322 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 15 of 290
- Called 94.1% of time when present
- Phage (with cluster) where this start called: Berry\_42 (EJ), Cicada\_44 (EJ), FireCastle\_42 (EJ), Goodman\_43 (EJ), Htur\_43 (EJ), Jera\_43 (EJ), Johann\_43 (EJ), Milani\_41 (EJ), PermaG\_43 (EJ), Rasovi\_43 (EJ), SBlackberry\_42 (EJ), Sucha\_40 (EJ), Theresita\_43 (EA7), TurboVicky\_43 (EJ), Typher\_45 (EJ), Zanella\_42 (EJ),

#### Start 31:

- Found in 6 of 322 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 4 of 290
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Beyoncage\_54 (DG1), BiteSize\_54 (DG1), Madi\_54 (DG1), Sienna\_54 (DG1),

#### Start 33:

- Found in 4 of 322 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 290
- Called 25.0% of time when present
- Phage (with cluster) where this start called: RikSengupta\_46 (EF),

#### Start 38:

- Found in 10 of 322 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 1 of 290
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Predator\_68 (H1),

#### Start 41:

- Found in 2 of 322 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 2 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Galactica\_39 (BQ), Keanu\_40 (BQ),

#### Start 42:

- Found in 1 of 322 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ChewyVIII\_80 (singleton),

Start 43:

- Found in 2 of 322 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hiya\_41 (BQ), Spocter\_42 (BQ),

Start 44:

- Found in 9 of 322 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 8 of 290
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Beckerton\_66 (H1), Cborch11\_69 (H1), Damien\_67 (H1), Konstantine\_71 (H1), Megatron06\_68 (H1), Oaker\_67 (H1), Phreeze\_66 (H1), Thumb\_68 (H1),

Start 45:

- Found in 2 of 322 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Puissant\_69 (H1),

Start 48:

- Found in 4 of 322 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 290
- Called 25.0% of time when present
- Phage (with cluster) where this start called: UNTPL\_52 (BH),

Start 52:

- Found in 3 of 322 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 290
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Ennea\_73 (CR3), Lollipop1437\_70 (CR3),

Start 53:

- Found in 12 of 322 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 10 of 290
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Araceli\_50 (BH), Bogota\_51 (BH), Crosby\_51 (BH), Henoccus\_51 (BH), Intolerant\_48 (BH), JackieB\_51 (BH), LazerLemon\_51 (BH), Marky\_53 (BH), Microdon\_49 (BH), Stuff\_50 (BH),

Start 54:

- Found in 3 of 322 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 3 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Labelle\_80 (U), Madrug\_79 (U), Patience\_81 (U),

Start 55:

- Found in 70 of 322 ( 21.7% ) of genes in pham
- Manual Annotations of this start: 66 of 290
- Called 97.1% of time when present

- Phage (with cluster) where this start called: Albanese\_42 (AK), AppleCider\_41 (AK), Beethoven\_41 (AK), Bennie\_39 (AK), BigMack\_39 (AK), Bodacious\_39 (AK), BrotherBLo\_41 (AK), CallieOMalley\_41 (AK), Canowicakte\_41 (AK), Carpal\_41 (AK), ChewChew\_39 (AK), Cholula\_41 (AK), Christian\_39 (AK), CristinaYang\_39 (AK), Dino\_42 (AK), DrRobert\_38 (AK), DreamTeam\_39 (AK), EstebanJulior\_40 (AK), Fluke\_42 (AK), Gisselle\_39 (AK), Glenn\_42 (AK), GreenHearts\_42 (AK), Greenhouse\_43 (AK), HeadNerd\_39 (AK), Huckleberry\_39 (AK), Huntingdon\_41 (AK), Immaculata\_41 (AK), Joann\_42 (AK), Jumboset\_42 (AK), Kalizoi\_42 (AK), Kittykat\_40 (AK), Korra\_41 (AK), Lakshmi\_42 (AK), Lasagna\_38 (AK), Lennox\_39 (AK), LilStuart\_39 (AK), Litotes\_41 (AK), Lucy\_39 (AK), Makoto\_39 (AK), MamaPearl\_40 (AK), MeganNoll\_41 (AK), Misaeng\_41 (AK), Moki\_39 (AK), MrGloopy\_42 (AK), Nancia\_39 (AK), Nubia\_42 (AK), OurGirlNessie\_38 (AK), Oxynfrius\_42 (AK), PartyCup\_44 (AK), Patio\_68 (CR3), PitaDog\_39 (AK), Potatoes\_41 (AK), Preamble\_39 (AK), Pterodactyl\_39 (AK), RAP15\_42 (AK), RcigaStruga\_41 (AK), Riverdale\_42 (AK), Rozby\_41 (AK), Savage2526\_42 (AK), Scuttle\_41 (AK), Suppi\_41 (AK), TattModd\_40 (AK), Urla\_40 (AK), Vallejo\_42 (AK), Wawa\_41 (AK), Wayne\_41 (AK), WonderBoy\_38 (AK), Zorro\_42 (AK),

Start 56:

- Found in 3 of 322 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 3 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fury\_75 (CR5), LittleFella\_61 (DG2), Pleakley\_75 (CR5),

Start 57:

- Found in 4 of 322 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 3 of 290
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Aikoy\_74 (AE), Leopard\_73 (AE), Onyinye\_74 (AE),

Start 58:

- Found in 66 of 322 ( 20.5% ) of genes in pham
- Manual Annotations of this start: 54 of 290
- Called 86.4% of time when present
- Phage (with cluster) where this start called: Adjutor\_56 (D1), Apiary\_67 (CR), Arti\_65 (CR2), Barnyard\_72 (H2), BigMama\_55 (D1), Bonum\_70 (CR2), Braxoaddie\_67 (CR), Buggaboo\_68 (CR2), Butterscotch\_56 (D1), Chill\_59 (D1), CoffeeBean\_67 (CR), Commandaria\_67 (CR2), Cuke\_76 (AC), Delton\_58 (D1), Djokovic\_54 (DG1), DrLupo\_75 (H2), Emianna\_66 (CR2), Erk16\_56 (D1), Fowlmouth\_77 (AC), Foxboro\_67 (CR2), GTE8\_55 (CR2), Giuseppe\_58 (D1), GrootJr\_68 (CR2), GuyFagieri\_66 (CR), Hawkeye\_60 (D2), Helpful\_60 (D1), Jifall16\_66 (CR2), Kabluna\_69 (CR2), KidneyBean\_67 (CR2), Kurt\_66 (CR2), LilyPad\_56 (DG1), MacGully\_76 (CR), Maselop\_67 (CR), MerCougar\_69 (CR2), Mopey\_58 (D1), MrMiyagi\_76 (AC), NatB6\_66 (CR2), NosilaM\_69 (CR2), Nova\_56 (D1), NovumRegina\_66 (CR2), Outis\_67 (CR2), P1201\_73 (singleton), PBI1\_54 (D1), PLOT\_57 (D1), Penelope2018\_57 (D1), Phomeo\_67 (CR2), Polyuyuki\_67 (CR), StarStruck\_67 (CR2), SuperSulley\_68 (CR2), Suzy\_54 (DG1), Terapin\_55 (DG1), Thoth\_57 (D1), Tracker\_66 (CR2), Troll4\_57 (D1), Visconti\_58 (D1), WaldoWhy\_59 (D1), Wheezy\_66 (CR2),

Start 59:

- Found in 10 of 322 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 9 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BiPauneto\_69 (CR4), Dalilpop\_70 (CR1), Flapper\_69 (CR1), GRU1\_55 (CR1), IDyn\_65 (CR4), Marietta\_68 (CR4), NadineRae\_67 (CR4), Sukkupi\_67 (CR4), WhoseManz\_67 (CR4), Yndexa\_67 (CR4),

#### Start 60:

- Found in 32 of 322 ( 9.9% ) of genes in pham
- Manual Annotations of this start: 25 of 290
- Called 96.9% of time when present
- Phage (with cluster) where this start called: Aesir\_42 (EF), Anakin\_43 (EF), AnnaSerena\_43 (EF), Chivey\_43 (EF), CoolCookie\_48 (EF), Crestdrop\_44 (EF), Cybele\_43 (EF), DannyDe\_43 (EF), Dauntless\_43 (EF), Erudite\_42 (EF), FreddieHg\_43 (EF), Gilda\_43 (EF), Hager\_44 (EF), Haunter\_43 (EF), Hiddenleaf\_43 (EF), JDawG\_42 (EF), JingleBells\_43 (EF), Karate\_42 (EF), Kate\_44 (EF), Krampus\_43 (EF), MortySmith\_41 (EF), NarutoRun\_43 (EF), Neptune\_43 (EF), OverHedge\_43 (EF), Pharpay\_43 (EF), PhunaPhoke\_43 (EF), Potty\_43 (EF), Poultruss\_43 (EF), Rie18\_43 (EF), Snakehole\_43 (EF), Tedro\_43 (EF),

#### Start 61:

- Found in 66 of 322 ( 20.5% ) of genes in pham
- Manual Annotations of this start: 51 of 290
- Called 93.9% of time when present
- Phage (with cluster) where this start called: Aledel\_39 (AK), Alephilan\_66 (DV), Alyssamiracle\_68 (DV), Apeppi\_59 (DV), AustinPowers\_39 (AK), Avian\_64 (DV), BirthdayBoy\_67 (DV), Candle\_67 (R), Chridison\_38 (AK), Daiboju\_39 (AK), DoobyDoo\_63 (DV), DumpTruck\_64 (DV), Erutan\_65 (DV), Eunoia\_39 (AK), Fulcrum\_65 (DV), GOATification\_65 (DV), Genamy16\_68 (DV), Gibbin\_67 (DV), Gretellyn\_65 (DV), Herb\_39 (AK), HunterDalle\_39 (AK), Indlulamithi\_68 (AC), Jalebi\_64 (DV), Jamemuya19\_65 (DV), KingBob\_39 (AK), Lambo\_63 (DV), Lila22\_69 (DV), LuckyLeo\_62 (DV), Maria1952\_38 (AK), Mima20\_66 (DV), MoiGyank\_71 (DV), MontyDev\_72 (R), Nilo\_71 (R), NorManre\_69 (DV), NovaSharks\_67 (DV), OMalley\_39 (AK), OtterstedtS21\_65 (DV), Papyrus\_69 (R), ParvusTarda\_64 (DV), Patos\_69 (DV), PinkFriday\_39 (AK), Pumancara\_39 (AK), Ranch\_65 (DV), Rivovina\_39 (AK), Riparian\_71 (R), Rope\_69 (R), Rumi\_66 (DV), Sadboi\_66 (DV), Sampudon\_65 (DV), Send513\_69 (R), Sergei\_39 (AK), Supakev\_39 (AK), Temper16\_39 (AK), Tillicus\_61 (DV), Vulture\_39 (AK), Weiss13\_69 (R), Wojtek\_61 (DV), Xenia2\_59 (DV), Yelo\_68 (R), Yikes\_67 (DV), Zany\_63 (DV), Zenon\_71 (R),

#### Start 62:

- Found in 8 of 322 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 7 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dryad\_70 (BN), Gibson\_66 (BN), Lizz\_66 (BN), PHTowN\_66 (BN), Rooney\_66 (BN), ShakeNBake\_66 (BN), Wentworth\_66 (BN), Wilkos\_68 (BN),

#### Start 63:

- Found in 5 of 322 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 3 of 290
- Called 80.0% of time when present

- Phage (with cluster) where this start called: Ajin\_46 (EF), Kors\_47 (EF), Sparcetus\_46 (EF), TinyMiny\_46 (EF),

#### Start 64:

- Found in 10 of 322 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 10 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: C3PO\_69 (EN), Cruella\_69 (EN), Darwin\_70 (EN), Kimchi1738\_70 (EN), PeteyPab\_68 (EN), PotatoChip\_69 (EN), Stickynote\_69 (EN), Wollypog\_46 (singleton), Yara\_62 (BN), Zion\_69 (EN),

#### Start 67:

- Found in 65 of 322 ( 20.2% ) of genes in pham
- Manual Annotations of this start: 1 of 290
- Called 3.1% of time when present
- Phage (with cluster) where this start called: Archimedes\_34 (DA), DaviePasture\_66 (DV),

#### Start 68:

- Found in 43 of 322 ( 13.4% ) of genes in pham
- Manual Annotations of this start: 2 of 290
- Called 4.7% of time when present
- Phage (with cluster) where this start called: Ghobes\_32 (DA), Rachella\_43 (EF),

#### Start 69:

- Found in 2 of 322 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 2 of 290
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Float294\_67 (CR3), Skysand\_68 (CR3),

#### Start 72:

- Found in 21 of 322 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 3 of 290
- Called 19.0% of time when present
- Phage (with cluster) where this start called: Gumball\_57 (D1), KandZ\_56 (D1), Prager\_57 (D1), SirHarley\_59 (D1),

#### Start 113:

- Found in 22 of 322 ( 6.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.5% of time when present
- Phage (with cluster) where this start called: HubbaBubba\_62 (CR4),

#### Start 114:

- Found in 5 of 322 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 290
- Called 40.0% of time when present
- Phage (with cluster) where this start called: GTE5\_55 (CR1), Turuncu\_69 (CR1),

### **Summary by clusters:**

There are 27 clusters represented in this pham: singleton, BN, BH, DA, BQ, DV, AC, EN, AE, EJ, AK, EF, DG2, DG1, U, CR, EA7, CR2, CR3, CR1, CR4, CR5, H2, H1, R,

D2, D1,

Info for manual annotations of cluster AC:

- Start number 58 was manually annotated 3 times for cluster AC.
- Start number 61 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster AE:

- Start number 57 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster AK:

- Start number 55 was manually annotated 65 times for cluster AK.
- Start number 61 was manually annotated 17 times for cluster AK.

Info for manual annotations of cluster BH:

- Start number 48 was manually annotated 1 time for cluster BH.
- Start number 53 was manually annotated 10 times for cluster BH.

Info for manual annotations of cluster BN:

- Start number 62 was manually annotated 7 times for cluster BN.
- Start number 64 was manually annotated 1 time for cluster BN.

Info for manual annotations of cluster BQ:

- Start number 41 was manually annotated 2 times for cluster BQ.
- Start number 43 was manually annotated 1 time for cluster BQ.

Info for manual annotations of cluster CR:

- Start number 58 was manually annotated 7 times for cluster CR.

Info for manual annotations of cluster CR1:

- Start number 59 was manually annotated 2 times for cluster CR1.
- Start number 114 was manually annotated 1 time for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 58 was manually annotated 20 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 52 was manually annotated 2 times for cluster CR3.
- Start number 55 was manually annotated 1 time for cluster CR3.
- Start number 69 was manually annotated 2 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 59 was manually annotated 7 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 56 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster D1:

- Start number 58 was manually annotated 17 times for cluster D1.
- Start number 72 was manually annotated 3 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 58 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DA:

- Start number 24 was manually annotated 1 time for cluster DA.
- Start number 67 was manually annotated 1 time for cluster DA.
- Start number 68 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DG1:

- Start number 31 was manually annotated 4 times for cluster DG1.
- Start number 58 was manually annotated 4 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 56 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 61 was manually annotated 24 times for cluster DV.

Info for manual annotations of cluster EA7:

- Start number 29 was manually annotated 1 time for cluster EA7.

Info for manual annotations of cluster EF:

- Start number 33 was manually annotated 1 time for cluster EF.
- Start number 60 was manually annotated 25 times for cluster EF.
- Start number 63 was manually annotated 3 times for cluster EF.
- Start number 68 was manually annotated 1 time for cluster EF.

Info for manual annotations of cluster EJ:

- Start number 29 was manually annotated 14 times for cluster EJ.

Info for manual annotations of cluster EN:

- Start number 64 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster H1:

- Start number 38 was manually annotated 1 time for cluster H1.
- Start number 44 was manually annotated 8 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 58 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:

- Start number 61 was manually annotated 9 times for cluster R.

Info for manual annotations of cluster U:

- Start number 54 was manually annotated 3 times for cluster U.

### **Gene Information:**

Gene: Adjutor\_56 Start: 43047, Stop: 44225, Start Num: 58

Candidate Starts for Adjutor\_56:

(6, 42765), (10, 42795), (17, 42858), (Start: 58 @43047 has 54 MA's), (Start: 72 @43095 has 3 MA's), (78, 43134), (81, 43146), (103, 43245), (123, 43308), (136, 43362), (147, 43410), (171, 43476), (198, 43590), (201, 43617), (207, 43647), (218, 43692), (279, 43926), (292, 43992), (295, 44001), (297, 44010), (325, 44136), (344, 44217),



Gene: Aesir\_42 Start: 28494, Stop: 29621, Start Num: 60

Candidate Starts for Aesir\_42:

(2, 28101), (5, 28182), (Start: 60 @28494 has 25 MA's), (Start: 68 @28515 has 2 MA's), (118, 28725), (136, 28788), (160, 28884), (187, 28989), (218, 29139), (264, 29307), (282, 29373), (312, 29514), (323, 29571),

Gene: Aikoy\_74 Start: 50610, Stop: 51827, Start Num: 57

Candidate Starts for Aikoy\_74:

(Start: 57 @50610 has 3 MA's), (Start: 68 @50637 has 2 MA's), (77, 50691), (89, 50736), (102, 50802), (105, 50814), (122, 50874), (129, 50904), (130, 50907), (136, 50934), (142, 50961), (173, 51090), (196, 51210), (197, 51216), (214, 51306), (222, 51348), (226, 51366), (230, 51384), (253, 51447), (279, 51531), (295, 51606), (296, 51612), (297, 51615), (312, 51684), (314, 51693), (324, 51738), (336, 51795),

Gene: Ajin\_46 Start: 29709, Stop: 30806, Start Num: 63

Candidate Starts for Ajin\_46:

(Start: 33 @29655 has 1 MA's), (Start: 63 @29709 has 3 MA's), (66, 29712), (Start: 68 @29718 has 2 MA's), (118, 29928), (119, 29934), (133, 29979), (136, 29991), (151, 30054), (160, 30087), (187, 30192), (221, 30354), (264, 30489), (272, 30513), (314, 30705), (323, 30753),

Gene: Albanese\_42 Start: 28164, Stop: 29111, Start Num: 55

Candidate Starts for Albanese\_42:

(Start: 55 @28164 has 66 MA's), (93, 28311), (97, 28329), (103, 28353), (124, 28428), (143, 28509), (146, 28524), (150, 28536), (193, 28686), (211, 28755), (212, 28758), (306, 28992), (314, 29037), (315, 29040), (320, 29067), (321, 29070),

Gene: Aledel\_39 Start: 27504, Stop: 28451, Start Num: 61

Candidate Starts for Aledel\_39:

(Start: 61 @27504 has 51 MA's), (75, 27570), (97, 27669), (103, 27693), (121, 27759), (134, 27807), (139, 27831), (146, 27861), (151, 27879), (153, 27891), (175, 27933), (205, 28071), (211, 28092), (212, 28095), (300, 28302), (314, 28377), (315, 28380), (320, 28407), (321, 28410),

Gene: Alephilan\_66 Start: 44039, Stop: 45202, Start Num: 61

Candidate Starts for Alephilan\_66:

(Start: 61 @44039 has 51 MA's), (Start: 67 @44054 has 1 MA's), (92, 44183), (117, 44273), (118, 44276), (127, 44312), (136, 44345), (173, 44459), (181, 44486), (187, 44525), (188, 44540), (191, 44549), (197, 44570), (201, 44600), (204, 44615), (207, 44630), (218, 44675), (219, 44678), (231, 44753), (244, 44774), (253, 44813), (282, 44915), (292, 44969), (295, 44978), (297, 44987), (305, 45011), (322, 45104),

Gene: Alyssamiracle\_68 Start: 43081, Stop: 44298, Start Num: 61

Candidate Starts for Alyssamiracle\_68:

(Start: 61 @43081 has 51 MA's), (Start: 67 @43096 has 1 MA's), (92, 43225), (117, 43315), (118, 43318), (127, 43354), (136, 43387), (173, 43501), (181, 43528), (187, 43567), (188, 43582), (197, 43612), (201, 43642), (207, 43672), (219, 43720), (253, 43909), (292, 44065), (295, 44074), (297, 44083), (305, 44107), (314, 44161), (322, 44200), (344, 44290),

Gene: Anakin\_43 Start: 28820, Stop: 29974, Start Num: 60

Candidate Starts for Anakin\_43:

(2, 28421), (Start: 60 @28820 has 25 MA's), (Start: 68 @28841 has 2 MA's), (80, 28910), (118, 29051), (136, 29114), (160, 29210), (187, 29315), (218, 29465), (233, 29555), (243, 29591), (253, 29621), (282, 29726), (293, 29783), (312, 29867), (323, 29924),

Gene: AnnaSerena\_43 Start: 28855, Stop: 30009, Start Num: 60

Candidate Starts for AnnaSerena\_43:

(2, 28456), (Start: 60 @28855 has 25 MA's), (Start: 68 @28876 has 2 MA's), (80, 28945), (118, 29086), (136, 29149), (160, 29245), (187, 29350), (218, 29500), (233, 29590), (243, 29626), (253, 29656), (282, 29761), (293, 29818), (312, 29902), (323, 29959),

Gene: Apeppi\_59 Start: 43297, Stop: 44457, Start Num: 61

Candidate Starts for Apeppi\_59:

(Start: 61 @43297 has 51 MA's), (Start: 67 @43312 has 1 MA's), (92, 43441), (117, 43531), (130, 43576), (136, 43603), (181, 43744), (188, 43795), (197, 43825), (201, 43855), (219, 43933), (230, 43993), (231, 44008), (239, 44029), (253, 44068), (256, 44074), (283, 44176), (292, 44224), (295, 44233), (305, 44266), (322, 44359), (344, 44449),

Gene: Apiary\_67 Start: 50069, Stop: 48903, Start Num: 58

Candidate Starts for Apiary\_67:

(18, 50207), (34, 50099), (Start: 58 @50069 has 54 MA's), (106, 49871), (136, 49748), (153, 49673), (181, 49610), (184, 49583), (202, 49490), (206, 49475), (210, 49451), (218, 49424), (219, 49421), (268, 49211), (280, 49163), (295, 49094), (296, 49088), (323, 48962),

Gene: AppleCider\_41 Start: 27545, Stop: 28492, Start Num: 55

Candidate Starts for AppleCider\_41:

(Start: 55 @27545 has 66 MA's), (92, 27689), (93, 27692), (96, 27707), (103, 27734), (120, 27797), (125, 27812), (136, 27860), (146, 27905), (150, 27917), (155, 27941), (193, 28067), (211, 28136), (212, 28139), (285, 28283), (300, 28343), (314, 28418), (315, 28421), (320, 28448), (321, 28451),

Gene: Araceli\_50 Start: 35827, Stop: 36834, Start Num: 53

Candidate Starts for Araceli\_50:

(7, 35590), (20, 35740), (Start: 53 @35827 has 10 MA's), (93, 35992), (101, 36022), (107, 36058), (126, 36133), (134, 36166), (139, 36190), (153, 36250), (176, 36280), (181, 36298), (182, 36301), (187, 36334), (194, 36370), (215, 36460), (270, 36556), (291, 36655), (295, 36667), (314, 36745), (320, 36778), (328, 36811),

Gene: Archimedes\_34 Start: 31001, Stop: 30105, Start Num: 67

Candidate Starts for Archimedes\_34:

(19, 31136), (23, 31091), (Start: 24 @31085 has 1 MA's), (25, 31076), (47, 31007), (50, 31004), (Start: 67 @31001 has 1 MA's), (92, 30872), (93, 30869), (108, 30821), (136, 30728), (148, 30677), (155, 30647), (174, 30617), (181, 30593), (186, 30560), (205, 30476), (212, 30452), (227, 30404), (275, 30398), (314, 30227),

Gene: Arti\_65 Start: 52065, Stop: 50866, Start Num: 58

Candidate Starts for Arti\_65:

(Start: 58 @52065 has 54 MA's), (129, 51777), (130, 51774), (135, 51753), (136, 51747), (201, 51474), (203, 51462), (207, 51444), (215, 51411), (219, 51396), (233, 51309), (253, 51222), (266, 51180), (267, 51177), (282, 51120), (293, 51063), (294, 51060), (295, 51057), (297, 51048), (320, 50940), (327, 50916),

Gene: AustinPowers\_39 Start: 27502, Stop: 28449, Start Num: 61

Candidate Starts for AustinPowers\_39:

(Start: 61 @27502 has 51 MA's), (75, 27568), (97, 27667), (103, 27691), (121, 27757), (134, 27805), (139, 27829), (146, 27859), (151, 27877), (153, 27889), (175, 27931), (205, 28069), (211, 28090), (212, 28093), (300, 28300), (314, 28375), (315, 28378), (320, 28405), (321, 28408),

Gene: Avian\_64 Start: 42809, Stop: 44026, Start Num: 61

Candidate Starts for Avian\_64:

(Start: 61 @42809 has 51 MA's), (Start: 67 @42824 has 1 MA's), (92, 42953), (117, 43043), (118, 43046), (127, 43082), (136, 43115), (173, 43229), (181, 43256), (187, 43295), (188, 43310), (197, 43340), (201, 43370), (207, 43400), (219, 43448), (253, 43637), (292, 43793), (295, 43802), (297, 43811), (305, 43835), (314, 43889), (322, 43928), (344, 44018),

Gene: Barnyard\_72 Start: 49524, Stop: 50783, Start Num: 58

Candidate Starts for Barnyard\_72:

(35, 49479), (37, 49482), (39, 49488), (Start: 58 @49524 has 54 MA's), (Start: 68 @49542 has 2 MA's), (81, 49614), (92, 49668), (133, 49833), (136, 49845), (147, 49899), (149, 49905), (175, 50010), (180, 50028), (187, 50073), (207, 50181), (232, 50316), (236, 50325), (246, 50358), (248, 50364), (251, 50370), (268, 50442), (295, 50559), (339, 50751), (344, 50775),

Gene: Beckerton\_66 Start: 50602, Stop: 51891, Start Num: 44

Candidate Starts for Beckerton\_66:

(28, 50563), (Start: 38 @50587 has 1 MA's), (Start: 44 @50602 has 8 MA's), (79, 50716), (84, 50734), (91, 50776), (135, 50950), (136, 50956), (147, 51007), (175, 51121), (180, 51139), (181, 51142), (183, 51157), (187, 51178), (212, 51310), (214, 51316), (247, 51454), (262, 51499), (268, 51517), (282, 51571), (294, 51631), (305, 51667), (323, 51763),

Gene: Beethoven\_41 Start: 27476, Stop: 28423, Start Num: 55

Candidate Starts for Beethoven\_41:

(Start: 55 @27476 has 66 MA's), (76, 27545), (90, 27608), (92, 27620), (93, 27623), (99, 27647), (125, 27743), (136, 27791), (143, 27821), (150, 27848), (179, 27920), (212, 28070), (215, 28079), (275, 28166), (285, 28214), (300, 28274), (314, 28349), (315, 28352), (320, 28379), (321, 28382),

Gene: Bennie\_39 Start: 26287, Stop: 27234, Start Num: 55

Candidate Starts for Bennie\_39:

(Start: 55 @26287 has 66 MA's), (90, 26419), (92, 26431), (93, 26434), (99, 26458), (125, 26554), (136, 26602), (150, 26659), (179, 26731), (181, 26740), (212, 26881), (215, 26890), (275, 26977), (300, 27085), (314, 27160), (315, 27163), (320, 27190), (321, 27193),

Gene: Benry\_42 Start: 26004, Stop: 27011, Start Num: 29

Candidate Starts for Benry\_42:

(Start: 29 @26004 has 15 MA's), (75, 26133), (93, 26214), (136, 26361), (194, 26568), (197, 26580), (214, 26643), (221, 26670), (225, 26676), (278, 26760), (282, 26775), (314, 26937),

Gene: Beyoncage\_54 Start: 40427, Stop: 41632, Start Num: 31

Candidate Starts for Beyoncage\_54:

(Start: 31 @40427 has 4 MA's), (Start: 58 @40487 has 54 MA's), (65, 40496), (99, 40634), (111, 40658), (152, 40811), (160, 40844), (214, 41090), (215, 41093), (216, 41099), (220, 41114), (253, 41234), (268, 41282), (276, 41312), (277, 41318), (284, 41348), (290, 41381), (295, 41399), (296, 41405), (314, 41486), (321, 41516), (323, 41528), (339, 41591),

Gene: BiPauneto\_69 Start: 51654, Stop: 50455, Start Num: 59

Candidate Starts for BiPauneto\_69:

(Start: 59 @51654 has 9 MA's), (113, 51435), (119, 51411), (128, 51375), (129, 51372), (130, 51369), (136, 51342), (140, 51324), (153, 51267), (201, 51069), (203, 51057), (219, 50991), (223, 50964), (233, 50904), (253, 50811), (258, 50796), (267, 50766), (268, 50763), (272, 50751), (282, 50709), (295, 50646), (297, 50637), (319, 50535), (320, 50529), (327, 50505),

Gene: BigMack\_39 Start: 26387, Stop: 27334, Start Num: 55

Candidate Starts for BigMack\_39:

(Start: 55 @26387 has 66 MA's), (74, 26444), (76, 26456), (90, 26519), (92, 26531), (93, 26534), (99, 26558), (125, 26654), (136, 26702), (143, 26732), (150, 26759), (179, 26831), (212, 26981), (215, 26990), (275, 27077), (285, 27125), (300, 27185), (314, 27260), (315, 27263), (320, 27290), (321, 27293),

Gene: BigMama\_55 Start: 43123, Stop: 44301, Start Num: 58

Candidate Starts for BigMama\_55:

(6, 42841), (10, 42871), (17, 42934), (Start: 58 @43123 has 54 MA's), (Start: 72 @43171 has 3 MA's), (78, 43210), (81, 43222), (103, 43321), (123, 43384), (136, 43438), (147, 43486), (171, 43552), (198, 43666), (201, 43693), (207, 43723), (218, 43768), (279, 44002), (292, 44068), (295, 44077), (297, 44086), (325, 44212), (344, 44293),

Gene: BirthdayBoy\_67 Start: 44385, Stop: 45602, Start Num: 61

Candidate Starts for BirthdayBoy\_67:

(Start: 61 @44385 has 51 MA's), (Start: 67 @44400 has 1 MA's), (92, 44529), (117, 44619), (118, 44622), (127, 44658), (136, 44691), (173, 44805), (181, 44832), (187, 44871), (188, 44886), (197, 44916), (201, 44946), (207, 44976), (219, 45024), (282, 45315), (292, 45369), (295, 45378), (297, 45387), (305, 45411), (322, 45504), (344, 45594),

Gene: BiteSize\_54 Start: 40513, Stop: 41718, Start Num: 31

Candidate Starts for BiteSize\_54:

(Start: 31 @40513 has 4 MA's), (Start: 58 @40573 has 54 MA's), (65, 40582), (99, 40720), (111, 40744), (152, 40897), (160, 40930), (214, 41176), (215, 41179), (216, 41185), (220, 41200), (253, 41320), (268, 41368), (276, 41398), (277, 41404), (284, 41434), (290, 41467), (295, 41485), (296, 41491), (314, 41572), (321, 41602), (323, 41614), (339, 41677),

Gene: Bodacious\_39 Start: 26343, Stop: 27293, Start Num: 55

Candidate Starts for Bodacious\_39:

(Start: 55 @26343 has 66 MA's), (70, 26376), (76, 26412), (90, 26475), (92, 26487), (93, 26490), (99, 26514), (125, 26610), (136, 26658), (139, 26673), (150, 26715), (155, 26739), (179, 26787), (205, 26913), (211, 26937), (212, 26940), (215, 26949), (285, 27084), (300, 27144), (314, 27219), (315, 27222), (320, 27249), (321, 27252),

Gene: Bogota\_51 Start: 36181, Stop: 37179, Start Num: 53

Candidate Starts for Bogota\_51:

(1, 35788), (7, 35944), (16, 36022), (Start: 48 @36175 has 1 MA's), (Start: 53 @36181 has 10 MA's), (93, 36346), (99, 36370), (126, 36478), (134, 36511), (139, 36535), (153, 36595), (176, 36625), (178, 36631), (181, 36643), (182, 36646), (184, 36670), (187, 36679), (194, 36715), (215, 36805), (270, 36901), (291, 37000), (295, 37012), (328, 37156),

Gene: Bonum\_70 Start: 52948, Stop: 51740, Start Num: 58

Candidate Starts for Bonum\_70:

(Start: 58 @52948 has 54 MA's), (113, 52726), (119, 52702), (123, 52687), (129, 52663), (130, 52660), (136, 52633), (153, 52558), (184, 52441), (203, 52345), (219, 52279), (236, 52168), (250, 52120), (253, 52099), (266, 52057), (272, 52039), (282, 51997), (292, 51943), (295, 51934), (297, 51925), (320, 51817),

Gene: Braxoaddie\_67 Start: 50055, Stop: 48892, Start Num: 58

Candidate Starts for Braxoaddie\_67:

(18, 50193), (34, 50085), (Start: 58 @50055 has 54 MA's), (106, 49857), (136, 49734), (138, 49722), (181, 49596), (184, 49569), (219, 49407), (247, 49263), (261, 49224), (268, 49200), (295, 49083), (296, 49077), (323, 48951),

Gene: BrotherBLo\_41 Start: 27508, Stop: 28455, Start Num: 55

Candidate Starts for BrotherBLo\_41:

(Start: 55 @27508 has 66 MA's), (76, 27577), (90, 27640), (92, 27652), (93, 27655), (99, 27679), (125, 27775), (136, 27823), (143, 27853), (150, 27880), (179, 27952), (212, 28102), (215, 28111), (275, 28198), (285, 28246), (300, 28306), (314, 28381), (315, 28384), (320, 28411), (321, 28414),

Gene: Buggaboo\_68 Start: 53499, Stop: 52291, Start Num: 58

Candidate Starts for Buggaboo\_68:

(Start: 58 @53499 has 54 MA's), (113, 53277), (119, 53253), (129, 53214), (130, 53211), (136, 53184), (140, 53166), (153, 53109), (203, 52896), (219, 52830), (236, 52719), (250, 52671), (272, 52590), (282, 52548), (292, 52494), (295, 52485), (297, 52476), (320, 52368),

Gene: Butterscotch\_56 Start: 43107, Stop: 44285, Start Num: 58

Candidate Starts for Butterscotch\_56:

(6, 42825), (10, 42855), (17, 42918), (Start: 58 @43107 has 54 MA's), (Start: 72 @43155 has 3 MA's), (78, 43194), (81, 43206), (103, 43305), (123, 43368), (136, 43422), (147, 43470), (171, 43536), (198, 43650), (201, 43677), (207, 43707), (218, 43752), (279, 43986), (292, 44052), (295, 44061), (297, 44070), (325, 44196), (344, 44277),

Gene: C3PO\_69 Start: 50533, Stop: 49421, Start Num: 64

Candidate Starts for C3PO\_69:

(Start: 64 @50533 has 10 MA's), (91, 50398), (106, 50347), (123, 50284), (136, 50233), (145, 50191), (153, 50158), (176, 50095), (179, 50086), (181, 50077), (187, 50041), (197, 49987), (231, 49804), (289, 49615), (295, 49594), (304, 49564), (316, 49492), (321, 49477), (322, 49468),

Gene: CallieOMalley\_41 Start: 27545, Stop: 28492, Start Num: 55

Candidate Starts for CallieOMalley\_41:

(Start: 55 @27545 has 66 MA's), (92, 27689), (93, 27692), (96, 27707), (103, 27734), (120, 27797), (125, 27812), (136, 27860), (146, 27905), (150, 27917), (155, 27941), (193, 28067), (211, 28136), (212, 28139), (285, 28283), (300, 28343), (314, 28418), (315, 28421), (320, 28448), (321, 28451),

Gene: Candle\_67 Start: 51720, Stop: 52889, Start Num: 61

Candidate Starts for Candle\_67:

(Start: 61 @51720 has 51 MA's), (Start: 67 @51735 has 1 MA's), (74, 51777), (81, 51810), (132, 52011), (136, 52026), (173, 52158), (187, 52221), (188, 52236), (207, 52326), (213, 52353), (264, 52554), (266, 52560), (268, 52566), (293, 52677), (295, 52683), (323, 52815), (337, 52875),

Gene: Canowicakte\_41 Start: 27580, Stop: 28527, Start Num: 55

Candidate Starts for Canowicakte\_41:

(Start: 55 @27580 has 66 MA's), (92, 27724), (93, 27727), (96, 27742), (103, 27769), (120, 27832), (125, 27847), (136, 27895), (146, 27940), (150, 27952), (155, 27976), (193, 28102), (211, 28171), (212, 28174), (285, 28318), (300, 28378), (314, 28453), (315, 28456), (320, 28483), (321, 28486),

Gene: Carpal\_41 Start: 27488, Stop: 28435, Start Num: 55

Candidate Starts for Carpal\_41:

(Start: 55 @27488 has 66 MA's), (76, 27557), (90, 27620), (92, 27632), (93, 27635), (99, 27659), (125, 27755), (136, 27803), (143, 27833), (150, 27860), (179, 27932), (212, 28082), (215, 28091), (275, 28178), (285, 28226), (300, 28286), (314, 28361), (315, 28364), (320, 28391), (321, 28394),

Gene: Cborch11\_69 Start: 50121, Stop: 51410, Start Num: 44

Candidate Starts for Cborch11\_69:

(28, 50082), (Start: 38 @50106 has 1 MA's), (Start: 44 @50121 has 8 MA's), (79, 50235), (81, 50244), (84, 50253), (91, 50295), (135, 50469), (136, 50475), (147, 50526), (175, 50640), (180, 50658), (181, 50661), (183, 50676), (187, 50697), (212, 50829), (214, 50835), (262, 51018), (268, 51036), (277, 51072), (282, 51090), (294, 51150), (305, 51186), (323, 51282),

Gene: ChewChew\_39 Start: 26335, Stop: 27285, Start Num: 55

Candidate Starts for ChewChew\_39:

(Start: 55 @26335 has 66 MA's), (90, 26467), (92, 26479), (93, 26482), (99, 26506), (125, 26602), (136, 26650), (150, 26707), (155, 26731), (177, 26773), (179, 26779), (205, 26905), (211, 26929), (212, 26932), (215, 26941), (285, 27076), (300, 27136), (314, 27211), (320, 27241), (321, 27244),

Gene: ChewyVIII\_80 Start: 59181, Stop: 57982, Start Num: 42

Candidate Starts for ChewyVIII\_80:

(13, 59355), (Start: 42 @59181 has 1 MA's), (Start: 57 @59148 has 3 MA's), (77, 59064), (130, 58863), (135, 58842), (136, 58836), (138, 58824), (153, 58761), (178, 58707), (181, 58695), (186, 58662), (197, 58614), (232, 58422), (258, 58314), (260, 58308), (282, 58227), (309, 58095), (311, 58089), (312, 58086), (332, 57990),

Gene: Chill\_59 Start: 43170, Stop: 44348, Start Num: 58

Candidate Starts for Chill\_59:

(6, 42888), (10, 42918), (17, 42981), (Start: 58 @43170 has 54 MA's), (Start: 72 @43218 has 3 MA's), (78, 43257), (81, 43269), (103, 43368), (123, 43431), (136, 43485), (147, 43533), (171, 43599), (198, 43713), (201, 43740), (207, 43770), (218, 43815), (279, 44049), (292, 44115), (295, 44124), (297, 44133), (325, 44259), (344, 44340),

Gene: Chivey\_43 Start: 28072, Stop: 29199, Start Num: 60

Candidate Starts for Chivey\_43:

(2, 27679), (4, 27745), (5, 27760), (Start: 60 @28072 has 25 MA's), (Start: 68 @28093 has 2 MA's), (88, 28189), (118, 28303), (136, 28366), (160, 28462), (187, 28567), (218, 28717), (264, 28885), (282, 28951), (293, 29008), (312, 29092), (323, 29149),

Gene: Cholula\_41 Start: 27534, Stop: 28481, Start Num: 55

Candidate Starts for Cholula\_41:

(Start: 55 @27534 has 66 MA's), (76, 27603), (90, 27666), (92, 27678), (93, 27681), (99, 27705), (125, 27801), (136, 27849), (143, 27879), (150, 27906), (179, 27978), (212, 28128), (215, 28137), (275, 28224), (285, 28272), (300, 28332), (314, 28407), (315, 28410), (320, 28437), (321, 28440),

Gene: Chridison\_38 Start: 27433, Stop: 28383, Start Num: 61

Candidate Starts for Chridison\_38:

(30, 27379), (Start: 61 @27433 has 51 MA's), (93, 27580), (97, 27598), (121, 27688), (134, 27739), (143, 27778), (146, 27793), (151, 27811), (177, 27871), (199, 27988), (211, 28027), (215, 28039), (275, 28126), (285, 28174), (300, 28234), (314, 28309), (315, 28312), (320, 28339), (321, 28342),

Gene: Christian\_39 Start: 26331, Stop: 27281, Start Num: 55

Candidate Starts for Christian\_39:

(Start: 55 @26331 has 66 MA's), (90, 26463), (92, 26475), (93, 26478), (99, 26502), (125, 26598), (136, 26646), (150, 26703), (155, 26727), (179, 26775), (205, 26901), (211, 26925), (212, 26928), (215, 26937), (285, 27072), (300, 27132), (314, 27207), (320, 27237), (321, 27240),

Gene: Cicada\_44 Start: 27802, Stop: 28815, Start Num: 29

Candidate Starts for Cicada\_44:

(Start: 29 @27802 has 15 MA's), (93, 28012), (110, 28081), (136, 28165), (150, 28222), (181, 28300), (193, 28369), (194, 28372), (214, 28447), (221, 28474), (282, 28579), (291, 28630), (303, 28678),

(314, 28741),

Gene: CoffeeBean\_67 Start: 50013, Stop: 48850, Start Num: 58

Candidate Starts for CoffeeBean\_67:

(18, 50151), (34, 50043), (Start: 58 @50013 has 54 MA's), (106, 49815), (136, 49692), (138, 49680), (181, 49554), (184, 49527), (219, 49365), (247, 49221), (261, 49182), (268, 49158), (295, 49041), (296, 49035), (323, 48909),

Gene: Commandaria\_67 Start: 53320, Stop: 52109, Start Num: 58

Candidate Starts for Commandaria\_67:

(Start: 58 @53320 has 54 MA's), (100, 53140), (113, 53092), (136, 52999), (166, 52876), (169, 52867), (201, 52726), (203, 52714), (219, 52648), (267, 52420), (272, 52405), (282, 52363), (292, 52309), (294, 52303), (295, 52300), (297, 52291), (302, 52276), (320, 52183), (327, 52159),

Gene: CoolCookie\_48 Start: 28850, Stop: 30004, Start Num: 60

Candidate Starts for CoolCookie\_48:

(2, 28451), (Start: 60 @28850 has 25 MA's), (Start: 68 @28871 has 2 MA's), (118, 29081), (136, 29144), (160, 29240), (187, 29345), (218, 29495), (233, 29585), (243, 29621), (253, 29651), (282, 29756), (293, 29813), (312, 29897), (323, 29954),

Gene: Crestdrop\_44 Start: 28106, Stop: 29230, Start Num: 60

Candidate Starts for Crestdrop\_44:

(2, 27713), (4, 27779), (5, 27794), (Start: 60 @28106 has 25 MA's), (Start: 68 @28127 has 2 MA's), (118, 28337), (136, 28400), (160, 28496), (187, 28601), (218, 28751), (253, 28880), (282, 28982), (312, 29123), (323, 29180),

Gene: CristinaYang\_39 Start: 26331, Stop: 27281, Start Num: 55

Candidate Starts for CristinaYang\_39:

(Start: 55 @26331 has 66 MA's), (90, 26463), (92, 26475), (93, 26478), (99, 26502), (125, 26598), (136, 26646), (150, 26703), (155, 26727), (177, 26769), (179, 26775), (205, 26901), (211, 26925), (212, 26928), (215, 26937), (285, 27072), (300, 27132), (314, 27207), (320, 27237), (321, 27240),

Gene: Crosby\_51 Start: 35943, Stop: 36941, Start Num: 53

Candidate Starts for Crosby\_51:

(7, 35706), (11, 35733), (16, 35784), (Start: 48 @35937 has 1 MA's), (Start: 53 @35943 has 10 MA's), (93, 36108), (99, 36132), (126, 36240), (134, 36273), (139, 36297), (153, 36357), (176, 36387), (178, 36393), (181, 36405), (182, 36408), (187, 36441), (194, 36477), (215, 36567), (270, 36663), (286, 36735), (295, 36774), (328, 36918),

Gene: Cruella\_69 Start: 50533, Stop: 49421, Start Num: 64

Candidate Starts for Cruella\_69:

(Start: 64 @50533 has 10 MA's), (91, 50398), (106, 50347), (123, 50284), (136, 50233), (145, 50191), (153, 50158), (176, 50095), (179, 50086), (181, 50077), (187, 50041), (197, 49987), (231, 49804), (289, 49615), (295, 49594), (304, 49564), (316, 49492), (321, 49477), (322, 49468),

Gene: Cuke\_76 Start: 45241, Stop: 46281, Start Num: 58

Candidate Starts for Cuke\_76:

(Start: 58 @45241 has 54 MA's), (Start: 61 @45250 has 51 MA's), (Start: 67 @45265 has 1 MA's), (71, 45286), (88, 45367), (115, 45475), (127, 45526), (137, 45565), (139, 45577), (150, 45619), (180, 45700), (188, 45757), (200, 45811), (207, 45847), (214, 45877), (271, 45961), (282, 46003), (295, 46066), (304, 46096), (322, 46195), (334, 46249),

Gene: Cybele\_43 Start: 28820, Stop: 29974, Start Num: 60

Candidate Starts for Cybele\_43:

(2, 28421), (Start: 60 @28820 has 25 MA's), (Start: 68 @28841 has 2 MA's), (118, 29051), (136, 29114), (160, 29210), (187, 29315), (218, 29465), (233, 29555), (243, 29591), (253, 29621), (282, 29726), (293, 29783), (312, 29867), (323, 29924),

Gene: Daiboju\_39 Start: 27511, Stop: 28464, Start Num: 61

Candidate Starts for Daiboju\_39:

(Start: 61 @27511 has 51 MA's), (74, 27568), (93, 27658), (97, 27676), (121, 27766), (134, 27817), (143, 27856), (146, 27871), (151, 27889), (153, 27901), (177, 27949), (199, 28066), (211, 28105), (215, 28117), (300, 28315), (314, 28390), (320, 28420), (321, 28423),

Gene: Dalilpop\_70 Start: 54174, Stop: 52993, Start Num: 59

Candidate Starts for Dalilpop\_70:

(Start: 59 @54174 has 9 MA's), (Start: 114 @53949 has 1 MA's), (120, 53925), (129, 53889), (136, 53859), (147, 53811), (169, 53748), (207, 53577), (219, 53529), (231, 53454), (233, 53442), (250, 53370), (268, 53301), (295, 53184), (297, 53175), (302, 53160), (327, 53043),

Gene: Damien\_67 Start: 50083, Stop: 51372, Start Num: 44

Candidate Starts for Damien\_67:

(28, 50044), (Start: 38 @50068 has 1 MA's), (Start: 44 @50083 has 8 MA's), (79, 50197), (84, 50215), (91, 50257), (135, 50431), (136, 50437), (147, 50488), (175, 50602), (180, 50620), (181, 50623), (183, 50638), (187, 50659), (212, 50791), (214, 50797), (247, 50935), (262, 50980), (268, 50998), (282, 51052), (294, 51112), (305, 51148), (323, 51244),

Gene: DannyDe\_43 Start: 28078, Stop: 29205, Start Num: 60

Candidate Starts for DannyDe\_43:

(2, 27685), (4, 27751), (5, 27766), (Start: 60 @28078 has 25 MA's), (Start: 68 @28099 has 2 MA's), (88, 28195), (118, 28309), (136, 28372), (160, 28468), (187, 28573), (218, 28723), (264, 28891), (282, 28957), (293, 29014), (312, 29098), (323, 29155),

Gene: Darwin\_70 Start: 49774, Stop: 48662, Start Num: 64

Candidate Starts for Darwin\_70:

(Start: 64 @49774 has 10 MA's), (106, 49588), (136, 49474), (145, 49432), (153, 49399), (176, 49336), (179, 49327), (181, 49318), (187, 49282), (197, 49228), (231, 49045), (289, 48856), (295, 48835), (304, 48805), (316, 48733), (321, 48718), (322, 48709),

Gene: Dauntless\_43 Start: 28400, Stop: 29557, Start Num: 60

Candidate Starts for Dauntless\_43:

(2, 28007), (5, 28088), (Start: 60 @28400 has 25 MA's), (Start: 68 @28421 has 2 MA's), (118, 28631), (136, 28694), (160, 28790), (187, 28895), (218, 29045), (263, 29237), (264, 29243), (282, 29309), (312, 29450), (323, 29507),

Gene: DaviePasture\_66 Start: 44008, Stop: 45210, Start Num: 67

Candidate Starts for DaviePasture\_66:

(Start: 61 @43993 has 51 MA's), (Start: 67 @44008 has 1 MA's), (92, 44137), (117, 44227), (118, 44230), (127, 44266), (136, 44299), (173, 44413), (181, 44440), (187, 44479), (188, 44494), (197, 44524), (201, 44554), (207, 44584), (219, 44632), (282, 44923), (292, 44977), (295, 44986), (297, 44995), (305, 45019), (322, 45112), (344, 45202),

Gene: Delton\_58 Start: 43505, Stop: 44683, Start Num: 58

Candidate Starts for Delton\_58:

(6, 43223), (10, 43253), (17, 43316), (Start: 58 @43505 has 54 MA's), (Start: 72 @43553 has 3 MA's), (78, 43592), (81, 43604), (103, 43703), (123, 43766), (136, 43820), (147, 43868), (171, 43934), (198,



44048), (201, 44075), (207, 44105), (218, 44150), (279, 44384), (292, 44450), (295, 44459), (297, 44468), (325, 44594), (344, 44675),

Gene: Dino\_42 Start: 27635, Stop: 28582, Start Num: 55

Candidate Starts for Dino\_42:

(Start: 55 @27635 has 66 MA's), (90, 27767), (92, 27779), (93, 27782), (99, 27806), (125, 27902), (136, 27950), (143, 27980), (150, 28007), (179, 28079), (212, 28229), (215, 28238), (275, 28325), (285, 28373), (300, 28433), (314, 28508), (320, 28538), (321, 28541),

Gene: Djokovic\_54 Start: 40486, Stop: 41631, Start Num: 58

Candidate Starts for Djokovic\_54:

(Start: 31 @40426 has 4 MA's), (Start: 58 @40486 has 54 MA's), (65, 40495), (99, 40633), (111, 40657), (152, 40810), (160, 40843), (214, 41089), (215, 41092), (216, 41098), (220, 41113), (253, 41233), (268, 41281), (276, 41311), (277, 41317), (284, 41347), (290, 41380), (295, 41398), (296, 41404), (314, 41485), (321, 41515), (323, 41527), (339, 41590),

Gene: DoobyDoo\_63 Start: 43023, Stop: 44186, Start Num: 61

Candidate Starts for DoobyDoo\_63:

(Start: 61 @43023 has 51 MA's), (Start: 67 @43038 has 1 MA's), (92, 43167), (117, 43257), (118, 43260), (127, 43296), (136, 43329), (173, 43443), (181, 43470), (187, 43509), (188, 43524), (197, 43554), (201, 43584), (207, 43614), (219, 43662), (253, 43797), (282, 43899), (292, 43953), (295, 43962), (297, 43971), (305, 43995), (322, 44088), (344, 44178),

Gene: DrLupo\_75 Start: 50706, Stop: 51980, Start Num: 58

Candidate Starts for DrLupo\_75:

(Start: 58 @50706 has 54 MA's), (Start: 67 @50730 has 1 MA's), (92, 50859), (133, 51027), (136, 51039), (147, 51093), (149, 51099), (156, 51132), (161, 51153), (165, 51177), (166, 51183), (180, 51228), (182, 51234), (185, 51267), (186, 51270), (187, 51273), (207, 51381), (232, 51516), (236, 51525), (248, 51564), (251, 51570), (257, 51600), (259, 51606), (268, 51639), (269, 51642), (282, 51693), (286, 51717), (288, 51726), (295, 51756), (323, 51885), (327, 51894), (339, 51948), (344, 51972),

Gene: DrRobert\_38 Start: 26111, Stop: 27061, Start Num: 55

Candidate Starts for DrRobert\_38:

(Start: 55 @26111 has 66 MA's), (76, 26180), (90, 26243), (92, 26255), (93, 26258), (96, 26273), (97, 26276), (99, 26282), (125, 26378), (136, 26426), (139, 26441), (150, 26483), (155, 26507), (175, 26543), (177, 26549), (179, 26555), (205, 26681), (211, 26705), (212, 26708), (215, 26717), (285, 26852), (300, 26912), (314, 26987), (315, 26990), (320, 27017), (321, 27020),

Gene: DreamTeam\_39 Start: 26441, Stop: 27388, Start Num: 55

Candidate Starts for DreamTeam\_39:

(Start: 55 @26441 has 66 MA's), (76, 26510), (90, 26573), (92, 26585), (93, 26588), (99, 26612), (125, 26708), (136, 26756), (150, 26813), (153, 26831), (175, 26873), (179, 26885), (285, 27179), (300, 27239), (314, 27314), (315, 27317), (320, 27344), (321, 27347),

Gene: Dryad\_70 Start: 48069, Stop: 47071, Start Num: 62

Candidate Starts for Dryad\_70:

(Start: 53 @48093 has 10 MA's), (Start: 62 @48069 has 7 MA's), (Start: 67 @48057 has 1 MA's), (80, 47985), (83, 47976), (136, 47778), (137, 47775), (181, 47619), (187, 47583), (201, 47508), (203, 47496), (218, 47433), (221, 47421), (272, 47364), (279, 47334), (287, 47292), (293, 47265), (295, 47259), (297, 47250), (312, 47178), (313, 47172),

Gene: DumpTruck\_64 Start: 42784, Stop: 43998, Start Num: 61

Candidate Starts for DumpTruck\_64:

(51, 42760), (Start: 61 @42784 has 51 MA's), (Start: 67 @42796 has 1 MA's), (117, 43015), (118, 43018), (130, 43060), (136, 43087), (139, 43102), (181, 43228), (188, 43282), (197, 43312), (201, 43342), (217, 43414), (234, 43513), (242, 43561), (245, 43576), (281, 43708), (292, 43765), (295, 43774), (297, 43783), (305, 43807), (322, 43900), (340, 43969), (344, 43990),

Gene: Emianna\_66 Start: 53297, Stop: 52098, Start Num: 58

Candidate Starts for Emianna\_66:

(Start: 58 @53297 has 54 MA's), (129, 53009), (130, 53006), (135, 52985), (136, 52979), (201, 52706), (203, 52694), (207, 52676), (215, 52643), (219, 52628), (233, 52541), (253, 52454), (258, 52439), (267, 52409), (268, 52406), (282, 52352), (293, 52295), (294, 52292), (295, 52289), (297, 52280), (320, 52172), (327, 52148),

Gene: Ennea\_73 Start: 54279, Stop: 53080, Start Num: 52

Candidate Starts for Ennea\_73:

(Start: 52 @54279 has 2 MA's), (Start: 55 @54270 has 66 MA's), (103, 54072), (128, 53979), (129, 53976), (130, 53973), (136, 53946), (140, 53928), (153, 53871), (203, 53676), (204, 53673), (207, 53658), (219, 53610), (238, 53496), (242, 53484), (253, 53436), (268, 53388), (282, 53334), (295, 53271), (297, 53262), (322, 53142),

Gene: Erk16\_56 Start: 43209, Stop: 44387, Start Num: 58

Candidate Starts for Erk16\_56:

(6, 42927), (10, 42957), (17, 43020), (Start: 58 @43209 has 54 MA's), (Start: 72 @43257 has 3 MA's), (78, 43296), (81, 43308), (103, 43407), (123, 43470), (136, 43524), (147, 43572), (171, 43638), (198, 43752), (201, 43779), (207, 43809), (218, 43854), (279, 44088), (292, 44154), (295, 44163), (297, 44172), (325, 44298), (344, 44379),

Gene: Erudite\_42 Start: 28400, Stop: 29557, Start Num: 60

Candidate Starts for Erudite\_42:

(2, 28007), (5, 28088), (Start: 60 @28400 has 25 MA's), (Start: 68 @28421 has 2 MA's), (118, 28631), (136, 28694), (160, 28790), (187, 28895), (218, 29045), (263, 29237), (264, 29243), (282, 29309), (312, 29450), (323, 29507),

Gene: Erutan\_65 Start: 43665, Stop: 44828, Start Num: 61

Candidate Starts for Erutan\_65:

(Start: 61 @43665 has 51 MA's), (Start: 67 @43680 has 1 MA's), (92, 43809), (117, 43899), (118, 43902), (127, 43938), (136, 43971), (173, 44085), (181, 44112), (187, 44151), (188, 44166), (197, 44196), (201, 44226), (207, 44256), (219, 44304), (253, 44439), (282, 44541), (292, 44595), (295, 44604), (297, 44613), (305, 44637), (322, 44730), (344, 44820),

Gene: EstebanJulior\_40 Start: 27489, Stop: 28439, Start Num: 55

Candidate Starts for EstebanJulior\_40:

(Start: 55 @27489 has 66 MA's), (90, 27621), (93, 27636), (96, 27651), (99, 27660), (125, 27756), (136, 27804), (139, 27819), (150, 27861), (155, 27885), (179, 27933), (181, 27942), (205, 28059), (212, 28086), (215, 28095), (300, 28290), (303, 28302), (314, 28365), (315, 28368), (320, 28395), (321, 28398),

Gene: Eunoia\_39 Start: 27504, Stop: 28451, Start Num: 61

Candidate Starts for Eunoia\_39:

(Start: 61 @27504 has 51 MA's), (75, 27570), (97, 27669), (103, 27693), (121, 27759), (134, 27807), (139, 27831), (146, 27861), (151, 27879), (153, 27891), (175, 27933), (205, 28071), (211, 28092), (212, 28095), (300, 28302), (314, 28377), (315, 28380), (320, 28407), (321, 28410),

Gene: FireCastle\_42 Start: 27533, Stop: 28546, Start Num: 29

Candidate Starts for FireCastle\_42:

(Start: 29 @27533 has 15 MA's), (Start: 68 @27614 has 2 MA's), (92, 27740), (93, 27743), (110, 27812), (119, 27836), (136, 27896), (139, 27911), (150, 27953), (181, 28031), (193, 28100), (194, 28103), (197, 28115), (211, 28169), (221, 28205), (225, 28211), (278, 28295), (282, 28310), (291, 28361), (303, 28409), (310, 28457), (314, 28472),

Gene: Flapper\_69 Start: 53365, Stop: 52184, Start Num: 59

Candidate Starts for Flapper\_69:

(Start: 59 @53365 has 9 MA's), (Start: 114 @53140 has 1 MA's), (120, 53116), (129, 53080), (136, 53050), (147, 53002), (169, 52939), (207, 52768), (219, 52720), (233, 52633), (236, 52609), (250, 52561), (268, 52492), (295, 52375), (297, 52366), (302, 52351), (327, 52234),

Gene: Float294\_67 Start: 53958, Stop: 52795, Start Num: 69

Candidate Starts for Float294\_67:

(Start: 69 @53958 has 2 MA's), (103, 53787), (128, 53694), (129, 53691), (130, 53688), (136, 53661), (140, 53643), (153, 53586), (203, 53391), (204, 53388), (207, 53373), (219, 53325), (238, 53211), (242, 53199), (253, 53151), (268, 53103), (282, 53049), (295, 52986), (297, 52977), (322, 52857),

Gene: Fluke\_42 Start: 27751, Stop: 28698, Start Num: 55

Candidate Starts for Fluke\_42:

(Start: 55 @27751 has 66 MA's), (76, 27820), (90, 27883), (92, 27895), (93, 27898), (99, 27922), (125, 28018), (136, 28066), (143, 28096), (150, 28123), (179, 28195), (212, 28345), (215, 28354), (275, 28441), (285, 28489), (300, 28549), (314, 28624), (315, 28627), (320, 28654), (321, 28657),

Gene: Fowlmouth\_77 Start: 47770, Stop: 48810, Start Num: 58

Candidate Starts for Fowlmouth\_77:

(40, 47731), (Start: 58 @47770 has 54 MA's), (Start: 61 @47779 has 51 MA's), (Start: 67 @47794 has 1 MA's), (71, 47815), (88, 47896), (115, 48004), (127, 48055), (137, 48094), (147, 48139), (150, 48148), (184, 48262), (188, 48286), (211, 48397), (271, 48490), (282, 48532), (295, 48595), (304, 48625), (322, 48724),

Gene: Foxboro\_67 Start: 53822, Stop: 52623, Start Num: 58

Candidate Starts for Foxboro\_67:

(Start: 58 @53822 has 54 MA's), (129, 53534), (130, 53531), (135, 53510), (136, 53504), (201, 53231), (203, 53219), (207, 53201), (215, 53168), (219, 53153), (233, 53066), (253, 52979), (258, 52964), (267, 52934), (268, 52931), (282, 52877), (293, 52820), (294, 52817), (295, 52814), (297, 52805), (320, 52697), (327, 52673),

Gene: FreddieHg\_43 Start: 28088, Stop: 29215, Start Num: 60

Candidate Starts for FreddieHg\_43:

(2, 27695), (4, 27761), (5, 27776), (Start: 60 @28088 has 25 MA's), (Start: 68 @28109 has 2 MA's), (88, 28205), (118, 28319), (136, 28382), (160, 28478), (187, 28583), (218, 28733), (264, 28901), (282, 28967), (293, 29024), (312, 29108), (323, 29165),

Gene: Fulcrum\_65 Start: 43693, Stop: 44910, Start Num: 61

Candidate Starts for Fulcrum\_65:

(Start: 61 @43693 has 51 MA's), (Start: 67 @43708 has 1 MA's), (92, 43837), (117, 43927), (118, 43930), (127, 43966), (136, 43999), (173, 44113), (181, 44140), (187, 44179), (188, 44194), (197, 44224), (201, 44254), (207, 44284), (217, 44326), (219, 44332), (282, 44623), (292, 44677), (295, 44686), (297, 44695), (305, 44719), (322, 44812), (344, 44902),

Gene: Fury\_75 Start: 52498, Stop: 51308, Start Num: 56

Candidate Starts for Fury\_75:

(3, 52828), (12, 52726), (Start: 56 @52498 has 3 MA's), (Start: 67 @52471 has 1 MA's), (87, 52378), (116, 52255), (119, 52243), (130, 52201), (136, 52174), (137, 52171), (219, 51841), (233, 51754), (253, 51661), (268, 51613), (295, 51496), (304, 51466), (313, 51409), (320, 51379), (327, 51355),

Gene: GOATification\_65 Start: 43693, Stop: 44910, Start Num: 61

Candidate Starts for GOATification\_65:

(Start: 61 @43693 has 51 MA's), (Start: 67 @43708 has 1 MA's), (92, 43837), (117, 43927), (118, 43930), (127, 43966), (136, 43999), (173, 44113), (181, 44140), (187, 44179), (188, 44194), (197, 44224), (201, 44254), (207, 44284), (217, 44326), (219, 44332), (282, 44623), (292, 44677), (295, 44686), (297, 44695), (305, 44719), (322, 44812), (344, 44902),

Gene: GRU1\_55 Start: 45213, Stop: 44032, Start Num: 59

Candidate Starts for GRU1\_55:

(Start: 59 @45213 has 9 MA's), (Start: 114 @44988 has 1 MA's), (120, 44964), (129, 44928), (136, 44898), (147, 44850), (169, 44787), (207, 44616), (219, 44568), (231, 44493), (233, 44481), (250, 44409), (268, 44340), (295, 44223), (297, 44214), (302, 44199), (327, 44082),

Gene: GTE5\_55 Start: 46020, Stop: 45064, Start Num: 114

Candidate Starts for GTE5\_55:

(Start: 114 @46020 has 1 MA's), (116, 46011), (120, 45996), (129, 45960), (136, 45930), (147, 45882), (169, 45819), (219, 45600), (232, 45516), (233, 45513), (250, 45441), (268, 45372), (295, 45255), (297, 45246), (302, 45231), (320, 45138), (327, 45114),

Gene: GTE8\_55 Start: 46534, Stop: 45335, Start Num: 58

Candidate Starts for GTE8\_55:

(Start: 58 @46534 has 54 MA's), (128, 46249), (130, 46243), (135, 46222), (136, 46216), (203, 45931), (207, 45913), (215, 45880), (219, 45865), (233, 45778), (267, 45646), (268, 45643), (282, 45589), (294, 45529), (295, 45526), (297, 45517), (320, 45409), (327, 45385),

Gene: Galactica\_39 Start: 28326, Stop: 29291, Start Num: 41

Candidate Starts for Galactica\_39:

(Start: 41 @28326 has 2 MA's), (90, 28488), (113, 28563), (135, 28626), (136, 28632), (177, 28755), (181, 28770), (182, 28773), (184, 28797), (199, 28872), (211, 28908), (273, 29025), (282, 29064), (295, 29127),

Gene: Genamy16\_68 Start: 43067, Stop: 44284, Start Num: 61

Candidate Starts for Genamy16\_68:

(Start: 61 @43067 has 51 MA's), (Start: 67 @43082 has 1 MA's), (92, 43211), (117, 43301), (118, 43304), (127, 43340), (136, 43373), (173, 43487), (181, 43514), (187, 43553), (188, 43568), (197, 43598), (201, 43628), (207, 43658), (219, 43706), (253, 43895), (292, 44051), (295, 44060), (297, 44069), (305, 44093), (314, 44147), (322, 44186), (344, 44276),

Gene: Ghobes\_32 Start: 30098, Stop: 29172, Start Num: 68

Candidate Starts for Ghobes\_32:

(Start: 24 @30206 has 1 MA's), (66, 30104), (Start: 67 @30101 has 1 MA's), (Start: 68 @30098 has 2 MA's), (86, 30011), (103, 29927), (108, 29921), (119, 29894), (155, 29747), (168, 29726), (170, 29720), (179, 29702), (196, 29615), (197, 29609), (209, 29567), (211, 29555), (227, 29504), (275, 29498), (317, 29309), (333, 29228), (335, 29225), (345, 29186),

Gene: Gibbin\_67 Start: 44498, Stop: 45715, Start Num: 61

Candidate Starts for Gibbin\_67:

(Start: 61 @44498 has 51 MA's), (Start: 67 @44513 has 1 MA's), (92, 44642), (117, 44732), (118, 44735), (127, 44771), (136, 44804), (173, 44918), (181, 44945), (187, 44984), (188, 44999), (197, 45029), (201, 45059), (207, 45089), (219, 45137), (282, 45428), (292, 45482), (295, 45491), (297, 45500), (305, 45524), (322, 45617), (344, 45707),

Gene: Gibson\_66 Start: 47338, Stop: 46340, Start Num: 62

Candidate Starts for Gibson\_66:

(Start: 62 @47338 has 7 MA's), (Start: 67 @47326 has 1 MA's), (136, 47047), (137, 47044), (172, 46915), (181, 46888), (187, 46852), (201, 46777), (203, 46765), (218, 46702), (279, 46603), (287, 46561), (295, 46528), (297, 46519), (312, 46447), (313, 46441), (330, 46357),

Gene: Gilda\_43 Start: 28844, Stop: 29998, Start Num: 60

Candidate Starts for Gilda\_43:

(2, 28445), (Start: 60 @28844 has 25 MA's), (Start: 68 @28865 has 2 MA's), (118, 29075), (136, 29138), (160, 29234), (187, 29339), (218, 29489), (233, 29579), (243, 29615), (253, 29645), (282, 29750), (293, 29807), (312, 29891), (323, 29948),

Gene: Gisselle\_39 Start: 26441, Stop: 27388, Start Num: 55

Candidate Starts for Gisselle\_39:

(Start: 55 @26441 has 66 MA's), (76, 26510), (90, 26573), (92, 26585), (93, 26588), (99, 26612), (125, 26708), (136, 26756), (150, 26813), (153, 26831), (175, 26873), (179, 26885), (285, 27179), (300, 27239), (314, 27314), (315, 27317), (320, 27344), (321, 27347),

Gene: Giuseppe\_58 Start: 43075, Stop: 44253, Start Num: 58

Candidate Starts for Giuseppe\_58:

(6, 42793), (10, 42823), (17, 42886), (Start: 58 @43075 has 54 MA's), (Start: 72 @43123 has 3 MA's), (78, 43162), (81, 43174), (103, 43273), (123, 43336), (136, 43390), (147, 43438), (171, 43504), (198, 43618), (201, 43645), (207, 43675), (218, 43720), (279, 43954), (292, 44020), (295, 44029), (297, 44038), (325, 44164), (344, 44245),

Gene: Glenn\_42 Start: 27742, Stop: 28689, Start Num: 55

Candidate Starts for Glenn\_42:

(Start: 55 @27742 has 66 MA's), (90, 27874), (92, 27886), (93, 27889), (99, 27913), (125, 28009), (136, 28057), (143, 28087), (150, 28114), (179, 28186), (212, 28336), (215, 28345), (275, 28432), (285, 28480), (300, 28540), (314, 28615), (315, 28618), (320, 28645), (321, 28648),

Gene: Goodman\_43 Start: 27572, Stop: 28585, Start Num: 29

Candidate Starts for Goodman\_43:

(22, 27527), (Start: 29 @27572 has 15 MA's), (75, 27701), (93, 27782), (110, 27851), (136, 27935), (150, 27992), (181, 28070), (193, 28139), (194, 28142), (214, 28217), (221, 28244), (225, 28250), (278, 28334), (282, 28349), (291, 28400), (303, 28448), (314, 28511),

Gene: GreenHearts\_42 Start: 28250, Stop: 29197, Start Num: 55

Candidate Starts for GreenHearts\_42:

(Start: 55 @28250 has 66 MA's), (93, 28397), (103, 28439), (119, 28499), (124, 28514), (143, 28595), (146, 28610), (150, 28622), (193, 28772), (211, 28841), (212, 28844), (306, 29078), (314, 29123), (315, 29126), (320, 29153), (321, 29156),

Gene: Greenhouse\_43 Start: 28175, Stop: 29122, Start Num: 55

Candidate Starts for Greenhouse\_43:

(Start: 55 @28175 has 66 MA's), (93, 28322), (103, 28364), (124, 28439), (143, 28520), (146, 28535), (150, 28547), (193, 28697), (211, 28766), (212, 28769), (306, 29003), (314, 29048), (315, 29051), (320, 29078), (321, 29081),

Gene: Gretellyn\_65 Start: 44537, Stop: 45700, Start Num: 61

Candidate Starts for Gretellyn\_65:

(Start: 61 @44537 has 51 MA's), (Start: 67 @44552 has 1 MA's), (92, 44681), (117, 44771), (118, 44774), (127, 44810), (136, 44843), (173, 44957), (181, 44984), (187, 45023), (188, 45038), (197, 45068), (201, 45098), (207, 45128), (219, 45176), (231, 45251), (244, 45272), (253, 45311), (282, 45413), (292, 45467), (295, 45476), (297, 45485), (305, 45509), (322, 45602), (344, 45692),

Gene: GrootJr\_68 Start: 52691, Stop: 51492, Start Num: 58

Candidate Starts for GrootJr\_68:

(Start: 58 @52691 has 54 MA's), (129, 52403), (130, 52400), (135, 52379), (136, 52373), (201, 52100), (203, 52088), (207, 52070), (215, 52037), (219, 52022), (233, 51935), (253, 51848), (258, 51833), (267, 51803), (268, 51800), (282, 51746), (293, 51689), (294, 51686), (295, 51683), (297, 51674), (320, 51566), (327, 51542),

Gene: Gumball\_57 Start: 43615, Stop: 44745, Start Num: 72

Candidate Starts for Gumball\_57:

(32, 43522), (46, 43549), (49, 43552), (Start: 58 @43567 has 54 MA's), (Start: 72 @43615 has 3 MA's), (78, 43654), (81, 43666), (103, 43765), (123, 43828), (136, 43882), (147, 43930), (171, 43996), (198, 44110), (201, 44137), (207, 44167), (218, 44212), (279, 44446), (292, 44512), (295, 44521), (297, 44530), (325, 44656), (344, 44737),

Gene: GuyFagieri\_66 Start: 50059, Stop: 48929, Start Num: 58

Candidate Starts for GuyFagieri\_66:

(18, 50194), (34, 50089), (Start: 58 @50059 has 54 MA's), (106, 49861), (136, 49738), (138, 49726), (181, 49600), (184, 49573), (219, 49411), (237, 49318), (265, 49246), (295, 49120), (296, 49114), (323, 48988),

Gene: Hager\_44 Start: 28317, Stop: 29423, Start Num: 60

Candidate Starts for Hager\_44:

(Start: 60 @28317 has 25 MA's), (Start: 68 @28338 has 2 MA's), (118, 28548), (133, 28599), (136, 28611), (160, 28707), (187, 28812), (218, 28962), (282, 29175), (312, 29316), (323, 29373),

Gene: Haunter\_43 Start: 28275, Stop: 29381, Start Num: 60

Candidate Starts for Haunter\_43:

(Start: 60 @28275 has 25 MA's), (Start: 68 @28296 has 2 MA's), (118, 28506), (136, 28569), (160, 28665), (187, 28770), (218, 28920), (282, 29133), (293, 29190), (312, 29274), (323, 29331),

Gene: Hawkeye\_60 Start: 42876, Stop: 44036, Start Num: 58

Candidate Starts for Hawkeye\_60:

(40, 42849), (Start: 58 @42876 has 54 MA's), (78, 42963), (103, 43074), (136, 43191), (141, 43212), (180, 43332), (200, 43440), (201, 43446), (203, 43458), (218, 43521), (249, 43638), (268, 43695), (292, 43803), (295, 43812), (296, 43818), (297, 43821),

Gene: HeadNerd\_39 Start: 26287, Stop: 27234, Start Num: 55

Candidate Starts for HeadNerd\_39:

(Start: 55 @26287 has 66 MA's), (90, 26419), (92, 26431), (93, 26434), (99, 26458), (125, 26554), (136, 26602), (150, 26659), (179, 26731), (212, 26881), (215, 26890), (300, 27085), (314, 27160), (315, 27163), (320, 27190), (321, 27193),

Gene: Helpful\_60 Start: 43436, Stop: 44614, Start Num: 58

Candidate Starts for Helpful\_60:

(6, 43154), (17, 43247), (Start: 58 @43436 has 54 MA's), (Start: 72 @43484 has 3 MA's), (78, 43523), (81, 43535), (103, 43634), (123, 43697), (136, 43751), (147, 43799), (171, 43865), (198, 43979), (201, 44006), (207, 44036), (218, 44081), (279, 44315), (292, 44381), (295, 44390), (297, 44399), (325, 44525), (344, 44606),

Gene: Henococcus\_51 Start: 35844, Stop: 36851, Start Num: 53

Candidate Starts for Henococcus\_51:

(7, 35607), (20, 35757), (Start: 53 @35844 has 10 MA's), (93, 36009), (101, 36039), (107, 36075), (126, 36150), (134, 36183), (139, 36207), (153, 36267), (176, 36297), (181, 36315), (182, 36318), (187, 36351), (194, 36387), (215, 36477), (270, 36573), (291, 36672), (295, 36684), (320, 36795), (328, 36828),

Gene: Herb\_39 Start: 27510, Stop: 28463, Start Num: 61

Candidate Starts for Herb\_39:

(Start: 61 @27510 has 51 MA's), (74, 27567), (93, 27657), (97, 27675), (121, 27765), (134, 27816), (143, 27855), (146, 27870), (151, 27888), (153, 27900), (177, 27948), (199, 28065), (211, 28104), (215, 28116), (300, 28314), (314, 28389), (320, 28419), (321, 28422),

Gene: Hiddenleaf\_43 Start: 28072, Stop: 29199, Start Num: 60

Candidate Starts for Hiddenleaf\_43:

(2, 27679), (4, 27745), (5, 27760), (Start: 60 @28072 has 25 MA's), (Start: 68 @28093 has 2 MA's), (88, 28189), (118, 28303), (136, 28366), (160, 28462), (187, 28567), (218, 28717), (264, 28885), (282, 28951), (293, 29008), (312, 29092), (323, 29149),

Gene: Hiyaa\_41 Start: 29720, Stop: 30685, Start Num: 43

Candidate Starts for Hiyaa\_41:

(Start: 43 @29720 has 1 MA's), (70, 29783), (90, 29882), (98, 29918), (113, 29957), (135, 30020), (136, 30026), (177, 30149), (182, 30167), (184, 30191), (211, 30302), (273, 30419), (282, 30458), (295, 30521),

Gene: Htur\_43 Start: 27973, Stop: 28986, Start Num: 29

Candidate Starts for Htur\_43:

(Start: 29 @27973 has 15 MA's), (93, 28183), (110, 28252), (136, 28336), (151, 28399), (181, 28471), (182, 28474), (193, 28540), (194, 28543), (221, 28645), (225, 28651), (278, 28735), (282, 28750), (291, 28801), (303, 28849), (314, 28912),

Gene: HubbaBubba\_62 Start: 48109, Stop: 47129, Start Num: 113

Candidate Starts for HubbaBubba\_62:

(113, 48109), (119, 48085), (129, 48046), (130, 48043), (136, 48016), (140, 47998), (153, 47941), (201, 47743), (203, 47731), (219, 47665), (223, 47638), (232, 47581), (253, 47485), (267, 47440), (268, 47437), (272, 47425), (282, 47383), (295, 47320), (297, 47311), (319, 47209), (320, 47203), (327, 47179),

Gene: Huckleberry\_39 Start: 26270, Stop: 27217, Start Num: 55

Candidate Starts for Huckleberry\_39:

(Start: 55 @26270 has 66 MA's), (90, 26402), (92, 26414), (93, 26417), (99, 26441), (125, 26537), (136, 26585), (150, 26642), (179, 26714), (181, 26723), (212, 26864), (215, 26873), (275, 26960), (300, 27068), (314, 27143), (315, 27146), (320, 27173), (321, 27176),

Gene: HunterDalle\_39 Start: 27432, Stop: 28382, Start Num: 61

Candidate Starts for HunterDalle\_39:

(30, 27378), (Start: 61 @27432 has 51 MA's), (93, 27579), (97, 27597), (121, 27687), (134, 27738), (143, 27777), (146, 27792), (151, 27810), (153, 27822), (177, 27870), (199, 27987), (211, 28026),

(215, 28038), (275, 28125), (285, 28173), (300, 28233), (314, 28308), (315, 28311), (320, 28338), (321, 28341),

Gene: Huntingdon\_41 Start: 27893, Stop: 28828, Start Num: 55

Candidate Starts for Huntingdon\_41:

(Start: 55 @27893 has 66 MA's), (93, 28040), (97, 28058), (103, 28082), (124, 28157), (136, 28208), (143, 28238), (146, 28253), (150, 28265), (193, 28415), (211, 28484), (212, 28487), (282, 28598), (314, 28754), (315, 28757), (320, 28784), (321, 28787),

Gene: IDyn\_65 Start: 49575, Stop: 48376, Start Num: 59

Candidate Starts for IDyn\_65:

(45, 49602), (Start: 59 @49575 has 9 MA's), (113, 49356), (119, 49332), (129, 49293), (130, 49290), (136, 49263), (140, 49245), (153, 49188), (201, 48990), (203, 48978), (219, 48912), (223, 48885), (232, 48828), (253, 48732), (267, 48687), (268, 48684), (272, 48672), (282, 48630), (295, 48567), (297, 48558), (319, 48456), (320, 48450), (327, 48426),

Gene: Immaculata\_41 Start: 27533, Stop: 28480, Start Num: 55

Candidate Starts for Immaculata\_41:

(Start: 55 @27533 has 66 MA's), (76, 27602), (90, 27665), (92, 27677), (93, 27680), (99, 27704), (125, 27800), (136, 27848), (143, 27878), (150, 27905), (179, 27977), (212, 28127), (215, 28136), (275, 28223), (285, 28271), (300, 28331), (314, 28406), (315, 28409), (320, 28436), (321, 28439),

Gene: Indlulamithi\_68 Start: 48569, Stop: 49600, Start Num: 61

Candidate Starts for Indlulamithi\_68:

(Start: 61 @48569 has 51 MA's), (Start: 67 @48584 has 1 MA's), (85, 48671), (88, 48686), (91, 48710), (115, 48794), (127, 48845), (139, 48896), (154, 48959), (173, 48995), (179, 49013), (180, 49019), (188, 49076), (207, 49166), (218, 49211), (229, 49250), (280, 49316), (293, 49379), (295, 49385), (304, 49415),

Gene: Intolerant\_48 Start: 35879, Stop: 36877, Start Num: 53

Candidate Starts for Intolerant\_48:

(1, 35486), (7, 35642), (16, 35720), (Start: 48 @35873 has 1 MA's), (Start: 53 @35879 has 10 MA's), (93, 36044), (99, 36068), (126, 36176), (134, 36209), (139, 36233), (153, 36293), (176, 36323), (178, 36329), (181, 36341), (182, 36344), (187, 36377), (194, 36413), (215, 36503), (270, 36599), (291, 36698), (295, 36710), (328, 36854),

Gene: JDawG\_42 Start: 28489, Stop: 29616, Start Num: 60

Candidate Starts for JDawG\_42:

(2, 28096), (5, 28177), (Start: 60 @28489 has 25 MA's), (Start: 68 @28510 has 2 MA's), (118, 28720), (136, 28783), (160, 28879), (187, 28984), (218, 29134), (264, 29302), (282, 29368), (312, 29509), (323, 29566),

Gene: JackieB\_51 Start: 35683, Stop: 36690, Start Num: 53

Candidate Starts for JackieB\_51:

(7, 35446), (20, 35596), (Start: 53 @35683 has 10 MA's), (93, 35848), (101, 35878), (107, 35914), (126, 35989), (134, 36022), (139, 36046), (153, 36106), (176, 36136), (181, 36154), (182, 36157), (187, 36190), (194, 36226), (215, 36316), (270, 36412), (291, 36511), (295, 36523), (314, 36601), (320, 36634), (328, 36667),

Gene: Jalebi\_64 Start: 44890, Stop: 46053, Start Num: 61

Candidate Starts for Jalebi\_64:

(Start: 61 @44890 has 51 MA's), (Start: 67 @44905 has 1 MA's), (92, 45034), (117, 45124), (118, 45127), (127, 45163), (136, 45196), (173, 45310), (181, 45337), (187, 45376), (188, 45391), (197,



45421), (201, 45451), (207, 45481), (219, 45529), (253, 45664), (282, 45766), (292, 45820), (295, 45829), (297, 45838), (305, 45862), (322, 45955), (344, 46045),

Gene: Jamemuya19\_65 Start: 42672, Stop: 43889, Start Num: 61

Candidate Starts for Jamemuya19\_65:

(Start: 61 @42672 has 51 MA's), (Start: 67 @42687 has 1 MA's), (92, 42816), (117, 42906), (118, 42909), (127, 42945), (136, 42978), (173, 43092), (181, 43119), (187, 43158), (188, 43173), (197, 43203), (201, 43233), (207, 43263), (219, 43311), (253, 43500), (292, 43656), (295, 43665), (297, 43674), (305, 43698), (314, 43752), (322, 43791), (344, 43881),

Gene: Jera\_43 Start: 26765, Stop: 27778, Start Num: 29

Candidate Starts for Jera\_43:

(Start: 29 @26765 has 15 MA's), (75, 26894), (93, 26975), (110, 27044), (136, 27128), (157, 27212), (181, 27263), (193, 27332), (194, 27335), (221, 27437), (225, 27443), (278, 27527), (282, 27542), (303, 27641), (314, 27704),

Gene: Jifall16\_66 Start: 53318, Stop: 52119, Start Num: 58

Candidate Starts for Jifall16\_66:

(Start: 58 @53318 has 54 MA's), (129, 53030), (130, 53027), (135, 53006), (136, 53000), (201, 52727), (203, 52715), (207, 52697), (215, 52664), (219, 52649), (233, 52562), (253, 52475), (258, 52460), (267, 52430), (268, 52427), (282, 52373), (293, 52316), (294, 52313), (295, 52310), (297, 52301), (320, 52193), (327, 52169),

Gene: JingleBells\_43 Start: 28193, Stop: 29350, Start Num: 60

Candidate Starts for JingleBells\_43:

(2, 27800), (5, 27881), (Start: 60 @28193 has 25 MA's), (Start: 68 @28214 has 2 MA's), (118, 28424), (136, 28487), (160, 28583), (187, 28688), (218, 28838), (263, 29030), (264, 29036), (282, 29102), (312, 29243), (323, 29300),

Gene: Joann\_42 Start: 28143, Stop: 29078, Start Num: 55

Candidate Starts for Joann\_42:

(Start: 55 @28143 has 66 MA's), (93, 28290), (97, 28308), (103, 28332), (124, 28407), (143, 28488), (146, 28503), (150, 28515), (211, 28734), (212, 28737), (300, 28929), (306, 28959), (314, 29004), (315, 29007), (320, 29034), (321, 29037),

Gene: Johann\_43 Start: 27572, Stop: 28585, Start Num: 29

Candidate Starts for Johann\_43:

(22, 27527), (Start: 29 @27572 has 15 MA's), (75, 27701), (93, 27782), (110, 27851), (136, 27935), (150, 27992), (181, 28070), (193, 28139), (194, 28142), (214, 28217), (221, 28244), (225, 28250), (278, 28334), (282, 28349), (291, 28400), (303, 28448), (314, 28511),

Gene: Jumboset\_42 Start: 27650, Stop: 28597, Start Num: 55

Candidate Starts for Jumboset\_42:

(Start: 55 @27650 has 66 MA's), (90, 27782), (92, 27794), (93, 27797), (99, 27821), (125, 27917), (136, 27965), (143, 27995), (150, 28022), (179, 28094), (212, 28244), (215, 28253), (275, 28340), (285, 28388), (300, 28448), (314, 28523), (315, 28526), (320, 28553), (321, 28556),

Gene: Kabluna\_69 Start: 52277, Stop: 51069, Start Num: 58

Candidate Starts for Kabluna\_69:

(Start: 58 @52277 has 54 MA's), (113, 52055), (119, 52031), (123, 52016), (129, 51992), (130, 51989), (136, 51962), (153, 51887), (184, 51770), (203, 51674), (219, 51608), (236, 51497), (250, 51449), (253, 51428), (266, 51386), (272, 51368), (282, 51326), (292, 51272), (295, 51263), (297, 51254), (320, 51146),

Gene: Kalizoi\_42 Start: 27475, Stop: 28422, Start Num: 55

Candidate Starts for Kalizoi\_42:

(Start: 55 @27475 has 66 MA's), (76, 27544), (90, 27607), (92, 27619), (93, 27622), (99, 27646), (125, 27742), (136, 27790), (143, 27820), (150, 27847), (179, 27919), (212, 28069), (215, 28078), (275, 28165), (285, 28213), (300, 28273), (314, 28348), (315, 28351), (320, 28378), (321, 28381),

Gene: KandZ\_56 Start: 43281, Stop: 44411, Start Num: 72

Candidate Starts for KandZ\_56:

(Start: 58 @43233 has 54 MA's), (Start: 72 @43281 has 3 MA's), (78, 43320), (81, 43332), (103, 43431), (123, 43494), (136, 43548), (147, 43596), (171, 43662), (198, 43776), (201, 43803), (207, 43833), (218, 43878), (279, 44112), (292, 44178), (295, 44187), (297, 44196), (325, 44322), (344, 44403),

Gene: Karate\_42 Start: 28845, Stop: 29999, Start Num: 60

Candidate Starts for Karate\_42:

(Start: 60 @28845 has 25 MA's), (Start: 68 @28866 has 2 MA's), (118, 29076), (136, 29139), (160, 29235), (187, 29340), (218, 29490), (243, 29616), (253, 29646), (282, 29751), (312, 29892), (323, 29949),

Gene: Kate\_44 Start: 28852, Stop: 30006, Start Num: 60

Candidate Starts for Kate\_44:

(2, 28453), (Start: 60 @28852 has 25 MA's), (Start: 68 @28873 has 2 MA's), (118, 29083), (136, 29146), (160, 29242), (187, 29347), (218, 29497), (233, 29587), (243, 29623), (253, 29653), (282, 29758), (293, 29815), (312, 29899), (323, 29956),

Gene: Keanu\_40 Start: 29418, Stop: 30383, Start Num: 41

Candidate Starts for Keanu\_40:

(Start: 41 @29418 has 2 MA's), (90, 29580), (98, 29616), (99, 29619), (113, 29655), (135, 29718), (136, 29724), (177, 29847), (182, 29865), (184, 29889), (189, 29919), (209, 29988), (211, 30000), (228, 30060), (273, 30117), (282, 30156), (295, 30219),

Gene: KidneyBean\_67 Start: 53442, Stop: 52243, Start Num: 58

Candidate Starts for KidneyBean\_67:

(Start: 58 @53442 has 54 MA's), (129, 53154), (130, 53151), (135, 53130), (136, 53124), (201, 52851), (203, 52839), (207, 52821), (215, 52788), (219, 52773), (233, 52686), (253, 52599), (258, 52584), (267, 52554), (268, 52551), (282, 52497), (293, 52440), (294, 52437), (295, 52434), (297, 52425), (320, 52317), (327, 52293),

Gene: Kimchi1738\_70 Start: 50509, Stop: 49391, Start Num: 64

Candidate Starts for Kimchi1738\_70:

(Start: 64 @50509 has 10 MA's), (91, 50374), (106, 50323), (136, 50209), (145, 50167), (153, 50134), (176, 50071), (179, 50062), (181, 50053), (187, 50017), (197, 49963), (231, 49780), (289, 49591), (295, 49570), (304, 49540), (316, 49468), (321, 49453), (322, 49444),

Gene: KingBob\_39 Start: 27511, Stop: 28464, Start Num: 61

Candidate Starts for KingBob\_39:

(Start: 61 @27511 has 51 MA's), (74, 27568), (93, 27658), (97, 27676), (121, 27766), (134, 27817), (143, 27856), (146, 27871), (151, 27889), (153, 27901), (177, 27949), (199, 28066), (211, 28105), (215, 28117), (300, 28315), (314, 28390), (320, 28420), (321, 28423),

Gene: Kittykat\_40 Start: 26532, Stop: 27479, Start Num: 55

Candidate Starts for Kittykat\_40:

(Start: 55 @26532 has 66 MA's), (76, 26601), (90, 26664), (92, 26676), (93, 26679), (99, 26703), (125, 26799), (136, 26847), (150, 26904), (179, 26976), (285, 27270), (300, 27330), (314, 27405), (315, 27408), (320, 27435), (321, 27438),

Gene: Konstantine\_71 Start: 50914, Stop: 52203, Start Num: 44

Candidate Starts for Konstantine\_71:

(28, 50875), (Start: 38 @50899 has 1 MA's), (Start: 44 @50914 has 8 MA's), (79, 51028), (84, 51046), (91, 51088), (135, 51262), (136, 51268), (147, 51319), (175, 51433), (180, 51451), (181, 51454), (183, 51469), (187, 51490), (212, 51622), (214, 51628), (262, 51811), (268, 51829), (282, 51883), (294, 51943), (305, 51979), (323, 52075),

Gene: Korra\_41 Start: 27487, Stop: 28434, Start Num: 55

Candidate Starts for Korra\_41:

(Start: 55 @27487 has 66 MA's), (90, 27619), (92, 27631), (93, 27634), (99, 27658), (125, 27754), (136, 27802), (143, 27832), (150, 27859), (179, 27931), (212, 28081), (215, 28090), (275, 28177), (285, 28225), (300, 28285), (314, 28360), (315, 28363), (320, 28390), (321, 28393),

Gene: Kors\_47 Start: 29786, Stop: 30883, Start Num: 63

Candidate Starts for Kors\_47:

(Start: 33 @29732 has 1 MA's), (Start: 63 @29786 has 3 MA's), (66, 29789), (Start: 68 @29795 has 2 MA's), (118, 30005), (119, 30011), (133, 30056), (136, 30068), (151, 30131), (160, 30164), (187, 30269), (221, 30431), (264, 30566), (272, 30590), (314, 30782), (323, 30830),

Gene: Krampus\_43 Start: 28852, Stop: 30006, Start Num: 60

Candidate Starts for Krampus\_43:

(2, 28453), (Start: 60 @28852 has 25 MA's), (Start: 68 @28873 has 2 MA's), (118, 29083), (136, 29146), (160, 29242), (187, 29347), (218, 29497), (233, 29587), (243, 29623), (253, 29653), (282, 29758), (293, 29815), (312, 29899), (323, 29956),

Gene: Kurt\_66 Start: 53312, Stop: 52113, Start Num: 58

Candidate Starts for Kurt\_66:

(Start: 58 @53312 has 54 MA's), (129, 53024), (130, 53021), (135, 53000), (136, 52994), (201, 52721), (203, 52709), (207, 52691), (215, 52658), (219, 52643), (233, 52556), (253, 52469), (258, 52454), (267, 52424), (268, 52421), (282, 52367), (293, 52310), (294, 52307), (295, 52304), (297, 52295), (320, 52187), (327, 52163),

Gene: Labelle\_80 Start: 52685, Stop: 53917, Start Num: 54

Candidate Starts for Labelle\_80:

(Start: 54 @52685 has 3 MA's), (73, 52739), (80, 52778), (81, 52781), (84, 52790), (90, 52823), (94, 52847), (133, 53012), (136, 53024), (155, 53105), (176, 53189), (182, 53210), (187, 53252), (214, 53390), (224, 53441), (232, 53492), (254, 53528), (268, 53576), (282, 53630), (295, 53693), (329, 53861), (341, 53903),

Gene: Lakshmi\_42 Start: 28138, Stop: 29085, Start Num: 55

Candidate Starts for Lakshmi\_42:

(Start: 55 @28138 has 66 MA's), (93, 28285), (103, 28327), (124, 28402), (143, 28483), (146, 28498), (150, 28510), (193, 28660), (211, 28729), (212, 28732), (306, 28966), (314, 29011), (315, 29014), (320, 29041), (321, 29044),

Gene: Lambo\_63 Start: 43490, Stop: 44707, Start Num: 61

Candidate Starts for Lambo\_63:

(Start: 61 @43490 has 51 MA's), (Start: 67 @43505 has 1 MA's), (92, 43634), (117, 43724), (118, 43727), (127, 43763), (136, 43796), (173, 43910), (181, 43937), (187, 43976), (188, 43991), (197,

44021), (201, 44051), (207, 44081), (219, 44129), (282, 44420), (292, 44474), (295, 44483), (297, 44492), (305, 44516), (322, 44609), (344, 44699),

Gene: Lasagna\_38 Start: 26108, Stop: 27058, Start Num: 55

Candidate Starts for Lasagna\_38:

(Start: 55 @26108 has 66 MA's), (90, 26240), (92, 26252), (93, 26255), (99, 26279), (125, 26375), (136, 26423), (139, 26438), (150, 26480), (155, 26504), (179, 26552), (205, 26678), (211, 26702), (212, 26705), (215, 26714), (285, 26849), (300, 26909), (314, 26984), (320, 27014), (321, 27017),

Gene: LazerLemon\_51 Start: 36312, Stop: 37310, Start Num: 53

Candidate Starts for LazerLemon\_51:

(7, 36060), (11, 36087), (15, 36132), (16, 36135), (Start: 53 @36312 has 10 MA's), (93, 36477), (103, 36519), (126, 36609), (134, 36642), (139, 36666), (176, 36756), (181, 36774), (182, 36777), (194, 36846), (215, 36936), (226, 36975), (270, 37032), (295, 37143), (319, 37248), (328, 37287),

Gene: Lennox\_39 Start: 26316, Stop: 27266, Start Num: 55

Candidate Starts for Lennox\_39:

(Start: 55 @26316 has 66 MA's), (90, 26448), (92, 26460), (93, 26463), (99, 26487), (125, 26583), (136, 26631), (139, 26646), (150, 26688), (155, 26712), (177, 26754), (179, 26760), (205, 26886), (211, 26910), (212, 26913), (215, 26922), (285, 27057), (300, 27117), (314, 27192), (320, 27222), (321, 27225),

Gene: Leopard\_73 Start: 50916, Stop: 52133, Start Num: 57

Candidate Starts for Leopard\_73:

(Start: 57 @50916 has 3 MA's), (Start: 68 @50943 has 2 MA's), (77, 50997), (89, 51042), (102, 51108), (105, 51120), (119, 51168), (122, 51180), (129, 51210), (130, 51213), (136, 51240), (142, 51267), (173, 51396), (196, 51516), (197, 51522), (214, 51612), (222, 51654), (226, 51672), (230, 51690), (253, 51753), (279, 51837), (295, 51912), (296, 51918), (297, 51921), (312, 51990), (314, 51999), (324, 52044), (336, 52101),

Gene: LilStuart\_39 Start: 26319, Stop: 27269, Start Num: 55

Candidate Starts for LilStuart\_39:

(Start: 55 @26319 has 66 MA's), (90, 26451), (92, 26463), (93, 26466), (99, 26490), (125, 26586), (136, 26634), (150, 26691), (155, 26715), (177, 26757), (179, 26763), (205, 26889), (211, 26913), (212, 26916), (215, 26925), (285, 27060), (300, 27120), (314, 27195), (320, 27225), (321, 27228),

Gene: Lila22\_69 Start: 44442, Stop: 45659, Start Num: 61

Candidate Starts for Lila22\_69:

(Start: 61 @44442 has 51 MA's), (Start: 67 @44457 has 1 MA's), (92, 44586), (117, 44676), (118, 44679), (127, 44715), (136, 44748), (173, 44862), (181, 44889), (187, 44928), (188, 44943), (197, 44973), (201, 45003), (207, 45033), (219, 45081), (292, 45426), (295, 45435), (297, 45444), (305, 45468), (322, 45561), (344, 45651),

Gene: LilyPad\_56 Start: 41683, Stop: 42828, Start Num: 58

Candidate Starts for LilyPad\_56:

(Start: 58 @41683 has 54 MA's), (65, 41692), (95, 41818), (99, 41830), (152, 42007), (181, 42112), (214, 42286), (217, 42298), (253, 42430), (268, 42478), (274, 42499), (276, 42508), (277, 42514), (282, 42532), (284, 42544), (290, 42577), (294, 42592), (295, 42595), (296, 42601), (308, 42646), (321, 42712), (323, 42724),

Gene: Litotes\_41 Start: 27533, Stop: 28480, Start Num: 55

Candidate Starts for Litotes\_41:

(Start: 55 @27533 has 66 MA's), (92, 27677), (93, 27680), (96, 27695), (103, 27722), (120, 27785), (136, 27848), (146, 27893), (150, 27905), (155, 27929), (193, 28055), (211, 28124), (212, 28127), (275, 28223), (285, 28271), (300, 28331), (314, 28406), (320, 28436), (321, 28439),

Gene: LittleFella\_61 Start: 43303, Stop: 44364, Start Num: 56

Candidate Starts for LittleFella\_61:

(Start: 56 @43303 has 3 MA's), (Start: 58 @43309 has 54 MA's), (65, 43318), (82, 43387), (117, 43528), (118, 43531), (152, 43663), (160, 43696), (180, 43765), (197, 43852), (219, 43960), (290, 44113), (294, 44128), (295, 44131), (301, 44152), (321, 44248), (323, 44260), (339, 44323), (343, 44341),

Gene: Lizz\_66 Start: 47161, Stop: 46163, Start Num: 62

Candidate Starts for Lizz\_66:

(39, 47212), (Start: 62 @47161 has 7 MA's), (Start: 67 @47149 has 1 MA's), (136, 46870), (137, 46867), (172, 46738), (181, 46711), (187, 46675), (201, 46600), (203, 46588), (218, 46525), (287, 46384), (295, 46351), (297, 46342), (312, 46270), (313, 46264), (330, 46180),

Gene: Lollipop1437\_70 Start: 53959, Stop: 52760, Start Num: 52

Candidate Starts for Lollipop1437\_70:

(Start: 52 @53959 has 2 MA's), (Start: 55 @53950 has 66 MA's), (103, 53752), (128, 53659), (129, 53656), (130, 53653), (136, 53626), (140, 53608), (153, 53551), (203, 53356), (204, 53353), (207, 53338), (219, 53290), (238, 53176), (242, 53164), (253, 53116), (268, 53068), (282, 53014), (295, 52951), (297, 52942), (322, 52822),

Gene: LuckyLeo\_62 Start: 43297, Stop: 44457, Start Num: 61

Candidate Starts for LuckyLeo\_62:

(Start: 61 @43297 has 51 MA's), (Start: 67 @43312 has 1 MA's), (92, 43441), (117, 43531), (130, 43576), (136, 43603), (181, 43744), (188, 43795), (197, 43825), (201, 43855), (219, 43933), (230, 43993), (231, 44008), (239, 44029), (253, 44068), (256, 44074), (283, 44176), (292, 44224), (295, 44233), (305, 44266), (322, 44359), (344, 44449),

Gene: Lucy\_39 Start: 26316, Stop: 27266, Start Num: 55

Candidate Starts for Lucy\_39:

(Start: 55 @26316 has 66 MA's), (90, 26448), (92, 26460), (93, 26463), (99, 26487), (125, 26583), (136, 26631), (139, 26646), (150, 26688), (155, 26712), (177, 26754), (179, 26760), (205, 26886), (211, 26910), (212, 26913), (215, 26922), (285, 27057), (300, 27117), (314, 27192), (320, 27222), (321, 27225),

Gene: MacGully\_76 Start: 53240, Stop: 52086, Start Num: 58

Candidate Starts for MacGully\_76:

(34, 53291), (Start: 58 @53240 has 54 MA's), (106, 53042), (130, 52946), (136, 52919), (138, 52907), (147, 52871), (181, 52781), (218, 52595), (219, 52592), (226, 52550), (236, 52490), (268, 52394), (295, 52277), (296, 52271), (322, 52148), (323, 52145),

Gene: Madi\_54 Start: 40504, Stop: 41709, Start Num: 31

Candidate Starts for Madi\_54:

(Start: 31 @40504 has 4 MA's), (Start: 58 @40564 has 54 MA's), (65, 40573), (99, 40711), (111, 40735), (152, 40888), (160, 40921), (214, 41167), (215, 41170), (216, 41176), (220, 41191), (253, 41311), (268, 41359), (276, 41389), (277, 41395), (284, 41425), (290, 41458), (295, 41476), (296, 41482), (314, 41563), (321, 41593), (323, 41605), (339, 41668),

Gene: Madruga\_79 Start: 52639, Stop: 53871, Start Num: 54

Candidate Starts for Madruga\_79:

(Start: 54 @52639 has 3 MA's), (73, 52693), (81, 52735), (84, 52744), (90, 52777), (94, 52801), (133, 52966), (136, 52978), (155, 53059), (176, 53143), (182, 53164), (187, 53206), (214, 53344), (224, 53395), (232, 53446), (254, 53482), (268, 53530), (282, 53584), (295, 53647), (329, 53815), (341, 53857),

Gene: Makoto\_39 Start: 26327, Stop: 27277, Start Num: 55

Candidate Starts for Makoto\_39:

(Start: 55 @26327 has 66 MA's), (90, 26459), (92, 26471), (93, 26474), (99, 26498), (125, 26594), (136, 26642), (139, 26657), (150, 26699), (155, 26723), (177, 26765), (179, 26771), (205, 26897), (211, 26921), (212, 26924), (215, 26933), (285, 27068), (300, 27128), (314, 27203), (320, 27233), (321, 27236),

Gene: MamaPearl\_40 Start: 27489, Stop: 28439, Start Num: 55

Candidate Starts for MamaPearl\_40:

(Start: 55 @27489 has 66 MA's), (90, 27621), (93, 27636), (96, 27651), (99, 27660), (125, 27756), (136, 27804), (139, 27819), (150, 27861), (155, 27885), (179, 27933), (181, 27942), (205, 28059), (212, 28086), (215, 28095), (300, 28290), (303, 28302), (314, 28365), (315, 28368), (320, 28395), (321, 28398),

Gene: Maria1952\_38 Start: 27510, Stop: 28463, Start Num: 61

Candidate Starts for Maria1952\_38:

(Start: 61 @27510 has 51 MA's), (74, 27567), (93, 27657), (97, 27675), (121, 27765), (134, 27816), (143, 27855), (146, 27870), (151, 27888), (153, 27900), (177, 27948), (199, 28065), (211, 28104), (215, 28116), (300, 28314), (314, 28389), (320, 28419), (321, 28422),

Gene: Marietta\_68 Start: 49875, Stop: 48676, Start Num: 59

Candidate Starts for Marietta\_68:

(Start: 59 @49875 has 9 MA's), (113, 49656), (119, 49632), (129, 49593), (130, 49590), (136, 49563), (140, 49545), (153, 49488), (201, 49290), (219, 49212), (223, 49185), (232, 49128), (233, 49125), (253, 49032), (267, 48987), (268, 48984), (272, 48972), (282, 48930), (295, 48867), (297, 48858), (319, 48756), (320, 48750), (327, 48726),

Gene: Marky\_53 Start: 36621, Stop: 37619, Start Num: 53

Candidate Starts for Marky\_53:

(9, 36390), (27, 36564), (Start: 53 @36621 has 10 MA's), (93, 36786), (104, 36831), (112, 36867), (126, 36918), (134, 36951), (178, 37071), (182, 37086), (184, 37110), (191, 37146), (215, 37263), (255, 37311), (292, 37437), (295, 37446), (318, 37548), (328, 37590),

Gene: Maselop\_67 Start: 50089, Stop: 48926, Start Num: 58

Candidate Starts for Maselop\_67:

(18, 50227), (34, 50119), (Start: 58 @50089 has 54 MA's), (106, 49891), (136, 49768), (138, 49756), (181, 49630), (184, 49603), (219, 49441), (247, 49297), (261, 49258), (268, 49234), (295, 49117), (296, 49111), (323, 48985),

Gene: MeganNoll\_41 Start: 27707, Stop: 28654, Start Num: 55

Candidate Starts for MeganNoll\_41:

(Start: 55 @27707 has 66 MA's), (90, 27839), (92, 27851), (93, 27854), (99, 27878), (125, 27974), (136, 28022), (143, 28052), (150, 28079), (179, 28151), (212, 28301), (215, 28310), (275, 28397), (285, 28445), (300, 28505), (314, 28580), (320, 28610), (321, 28613),

Gene: Megatron06\_68 Start: 50660, Stop: 51949, Start Num: 44

Candidate Starts for Megatron06\_68:

(28, 50621), (Start: 38 @50645 has 1 MA's), (Start: 44 @50660 has 8 MA's), (79, 50774), (81, 50783), (84, 50792), (91, 50834), (135, 51008), (136, 51014), (147, 51065), (175, 51179), (180, 51197), (181, 51200), (183, 51215), (187, 51236), (212, 51368), (214, 51374), (247, 51512), (262, 51557), (268, 51575), (282, 51629), (294, 51689), (305, 51725), (323, 51821),

Gene: MerCougar\_69 Start: 54002, Stop: 52794, Start Num: 58

Candidate Starts for MerCougar\_69:

(Start: 58 @54002 has 54 MA's), (113, 53780), (119, 53756), (129, 53717), (130, 53714), (136, 53687), (153, 53612), (203, 53399), (219, 53333), (233, 53246), (236, 53222), (250, 53174), (268, 53105), (272, 53093), (282, 53051), (292, 52997), (295, 52988), (297, 52979), (320, 52871), (322, 52859),

Gene: Microdon\_49 Start: 35690, Stop: 36691, Start Num: 53

Candidate Starts for Microdon\_49:

(7, 35453), (8, 35459), (11, 35480), (16, 35531), (Start: 53 @35690 has 10 MA's), (93, 35855), (97, 35873), (99, 35879), (126, 35990), (134, 36023), (139, 36047), (141, 36053), (153, 36107), (176, 36137), (178, 36143), (181, 36155), (182, 36158), (187, 36191), (194, 36227), (215, 36317), (270, 36413), (286, 36485), (295, 36524), (318, 36626), (328, 36668),

Gene: Milani\_41 Start: 26576, Stop: 27577, Start Num: 29

Candidate Starts for Milani\_41:

(Start: 29 @26576 has 15 MA's), (75, 26705), (93, 26786), (101, 26816), (136, 26927), (194, 27134), (197, 27146), (221, 27236), (225, 27242), (278, 27326), (282, 27341), (291, 27392), (314, 27503),

Gene: Mima20\_66 Start: 44053, Stop: 45216, Start Num: 61

Candidate Starts for Mima20\_66:

(Start: 61 @44053 has 51 MA's), (Start: 67 @44068 has 1 MA's), (92, 44197), (117, 44287), (118, 44290), (127, 44326), (136, 44359), (173, 44473), (181, 44500), (187, 44539), (188, 44554), (197, 44584), (201, 44614), (207, 44644), (219, 44692), (253, 44827), (282, 44929), (292, 44983), (295, 44992), (297, 45001), (305, 45025), (322, 45118), (344, 45208),

Gene: Misaeng\_41 Start: 28126, Stop: 29073, Start Num: 55

Candidate Starts for Misaeng\_41:

(Start: 55 @28126 has 66 MA's), (93, 28273), (97, 28291), (103, 28315), (112, 28351), (124, 28390), (136, 28441), (143, 28471), (146, 28486), (150, 28498), (193, 28648), (211, 28717), (212, 28720), (306, 28954), (314, 28999), (315, 29002), (320, 29029), (321, 29032),

Gene: MoiGyank\_71 Start: 44818, Stop: 45981, Start Num: 61

Candidate Starts for MoiGyank\_71:

(Start: 61 @44818 has 51 MA's), (Start: 67 @44833 has 1 MA's), (92, 44962), (117, 45052), (118, 45055), (127, 45091), (136, 45124), (173, 45238), (181, 45265), (187, 45304), (188, 45319), (197, 45349), (201, 45379), (207, 45409), (219, 45457), (253, 45592), (282, 45694), (292, 45748), (295, 45757), (297, 45766), (305, 45790), (322, 45883), (344, 45973),

Gene: Moki\_39 Start: 26432, Stop: 27379, Start Num: 55

Candidate Starts for Moki\_39:

(Start: 55 @26432 has 66 MA's), (90, 26564), (92, 26576), (93, 26579), (99, 26603), (125, 26699), (136, 26747), (150, 26804), (179, 26876), (181, 26885), (212, 27026), (215, 27035), (275, 27122), (300, 27230), (314, 27305), (315, 27308), (320, 27335), (321, 27338),

Gene: MontyDev\_72 Start: 51361, Stop: 52530, Start Num: 61

Candidate Starts for MontyDev\_72:

(Start: 61 @51361 has 51 MA's), (Start: 67 @51376 has 1 MA's), (74, 51418), (81, 51451), (132, 51652), (136, 51667), (173, 51799), (187, 51862), (188, 51877), (213, 51994), (264, 52195), (266, 52201), (268, 52207), (269, 52210), (293, 52318), (295, 52324), (323, 52456), (337, 52516),

Gene: Mopey\_58 Start: 43111, Stop: 44289, Start Num: 58

Candidate Starts for Mopey\_58:

(6, 42829), (10, 42859), (17, 42922), (Start: 58 @43111 has 54 MA's), (Start: 72 @43159 has 3 MA's), (78, 43198), (81, 43210), (103, 43309), (123, 43372), (136, 43426), (147, 43474), (171, 43540), (198, 43654), (201, 43681), (207, 43711), (218, 43756), (279, 43990), (292, 44056), (295, 44065), (297, 44074), (325, 44200), (344, 44281),

Gene: MortySmith\_41 Start: 27877, Stop: 29034, Start Num: 60

Candidate Starts for MortySmith\_41:

(2, 27484), (5, 27565), (Start: 60 @27877 has 25 MA's), (Start: 68 @27898 has 2 MA's), (118, 28108), (136, 28171), (160, 28267), (187, 28372), (218, 28522), (263, 28714), (264, 28720), (282, 28786), (312, 28927), (323, 28984),

Gene: MrGloopy\_42 Start: 27636, Stop: 28583, Start Num: 55

Candidate Starts for MrGloopy\_42:

(Start: 55 @27636 has 66 MA's), (90, 27768), (92, 27780), (93, 27783), (99, 27807), (125, 27903), (136, 27951), (143, 27981), (150, 28008), (179, 28080), (212, 28230), (215, 28239), (275, 28326), (285, 28374), (300, 28434), (314, 28509), (315, 28512), (320, 28539), (321, 28542),

Gene: MrMiyagi\_76 Start: 48172, Stop: 49212, Start Num: 58

Candidate Starts for MrMiyagi\_76:

(40, 48133), (Start: 58 @48172 has 54 MA's), (Start: 61 @48181 has 51 MA's), (Start: 67 @48196 has 1 MA's), (71, 48217), (88, 48298), (115, 48406), (127, 48457), (137, 48496), (147, 48541), (150, 48550), (184, 48664), (188, 48688), (211, 48799), (271, 48892), (282, 48934), (295, 48997), (304, 49027), (322, 49126),

Gene: NadineRae\_67 Start: 49484, Stop: 48285, Start Num: 59

Candidate Starts for NadineRae\_67:

(Start: 59 @49484 has 9 MA's), (113, 49265), (119, 49241), (129, 49202), (130, 49199), (136, 49172), (140, 49154), (153, 49097), (201, 48899), (219, 48821), (223, 48794), (253, 48641), (267, 48596), (268, 48593), (272, 48581), (282, 48539), (295, 48476), (297, 48467), (319, 48365), (320, 48359), (327, 48335),

Gene: Nancia\_39 Start: 26343, Stop: 27293, Start Num: 55

Candidate Starts for Nancia\_39:

(Start: 55 @26343 has 66 MA's), (70, 26376), (76, 26412), (90, 26475), (92, 26487), (93, 26490), (99, 26514), (125, 26610), (136, 26658), (139, 26673), (150, 26715), (155, 26739), (179, 26787), (205, 26913), (211, 26937), (212, 26940), (215, 26949), (285, 27084), (300, 27144), (314, 27219), (315, 27222), (320, 27249), (321, 27252),

Gene: NarutoRun\_43 Start: 28820, Stop: 29974, Start Num: 60

Candidate Starts for NarutoRun\_43:

(2, 28421), (Start: 60 @28820 has 25 MA's), (Start: 68 @28841 has 2 MA's), (80, 28910), (118, 29051), (136, 29114), (160, 29210), (187, 29315), (218, 29465), (233, 29555), (243, 29591), (253, 29621), (282, 29726), (293, 29783), (312, 29867), (323, 29924),

Gene: NatB6\_66 Start: 52381, Stop: 51182, Start Num: 58

Candidate Starts for NatB6\_66:



(Start: 58 @52381 has 54 MA's), (129, 52093), (130, 52090), (135, 52069), (136, 52063), (201, 51790), (203, 51778), (207, 51760), (215, 51727), (219, 51712), (233, 51625), (253, 51538), (258, 51523), (267, 51493), (268, 51490), (282, 51436), (293, 51379), (294, 51376), (295, 51373), (297, 51364), (320, 51256), (327, 51232),

Gene: Neptune\_43 Start: 28820, Stop: 29974, Start Num: 60

Candidate Starts for Neptune\_43:

(2, 28421), (Start: 60 @28820 has 25 MA's), (Start: 68 @28841 has 2 MA's), (118, 29051), (136, 29114), (160, 29210), (187, 29315), (218, 29465), (233, 29555), (243, 29591), (253, 29621), (282, 29726), (293, 29783), (312, 29867), (323, 29924),

Gene: Nilo\_71 Start: 51718, Stop: 52887, Start Num: 61

Candidate Starts for Nilo\_71:

(Start: 61 @51718 has 51 MA's), (Start: 67 @51733 has 1 MA's), (74, 51775), (81, 51808), (132, 52009), (136, 52024), (173, 52156), (187, 52219), (188, 52234), (207, 52324), (213, 52351), (264, 52552), (266, 52558), (268, 52564), (293, 52675), (295, 52681), (323, 52813), (337, 52873),

Gene: NorManre\_69 Start: 44890, Stop: 46107, Start Num: 61

Candidate Starts for NorManre\_69:

(Start: 61 @44890 has 51 MA's), (Start: 67 @44905 has 1 MA's), (92, 45034), (117, 45124), (118, 45127), (127, 45163), (136, 45196), (173, 45310), (181, 45337), (187, 45376), (188, 45391), (197, 45421), (201, 45451), (207, 45481), (219, 45529), (282, 45820), (292, 45874), (295, 45883), (297, 45892), (305, 45916), (322, 46009), (344, 46099),

Gene: NosilaM\_69 Start: 53310, Stop: 52105, Start Num: 58

Candidate Starts for NosilaM\_69:

(Start: 58 @53310 has 54 MA's), (113, 53091), (119, 53067), (129, 53028), (130, 53025), (136, 52998), (203, 52710), (219, 52644), (236, 52533), (250, 52485), (272, 52404), (282, 52362), (292, 52308), (295, 52299), (297, 52290), (320, 52182),

Gene: Nova\_56 Start: 43563, Stop: 44741, Start Num: 58

Candidate Starts for Nova\_56:

(6, 43281), (10, 43311), (Start: 29 @43497 has 15 MA's), (Start: 58 @43563 has 54 MA's), (Start: 72 @43611 has 3 MA's), (78, 43650), (81, 43662), (103, 43761), (123, 43824), (136, 43878), (147, 43926), (171, 43992), (198, 44106), (201, 44133), (207, 44163), (218, 44208), (279, 44442), (292, 44508), (295, 44517), (297, 44526), (325, 44652), (344, 44733),

Gene: NovaSharks\_67 Start: 42658, Stop: 43875, Start Num: 61

Candidate Starts for NovaSharks\_67:

(Start: 61 @42658 has 51 MA's), (Start: 67 @42673 has 1 MA's), (92, 42802), (117, 42892), (118, 42895), (127, 42931), (136, 42964), (173, 43078), (181, 43105), (187, 43144), (188, 43159), (197, 43189), (201, 43219), (207, 43249), (219, 43297), (253, 43486), (292, 43642), (295, 43651), (297, 43660), (305, 43684), (314, 43738), (322, 43777), (344, 43867),

Gene: NovumRegina\_66 Start: 52690, Stop: 51491, Start Num: 58

Candidate Starts for NovumRegina\_66:

(Start: 58 @52690 has 54 MA's), (129, 52402), (130, 52399), (135, 52378), (136, 52372), (201, 52099), (203, 52087), (207, 52069), (215, 52036), (219, 52021), (233, 51934), (253, 51847), (258, 51832), (267, 51802), (268, 51799), (282, 51745), (293, 51688), (294, 51685), (295, 51682), (297, 51673), (320, 51565), (327, 51541),

Gene: Nubia\_42 Start: 28083, Stop: 29030, Start Num: 55

Candidate Starts for Nubia\_42:

(Start: 55 @28083 has 66 MA's), (93, 28230), (103, 28272), (124, 28347), (143, 28428), (146, 28443), (150, 28455), (193, 28605), (211, 28674), (212, 28677), (306, 28911), (314, 28956), (315, 28959), (320, 28986), (321, 28989),

Gene: OMalley\_39 Start: 27504, Stop: 28451, Start Num: 61

Candidate Starts for OMalley\_39:

(Start: 61 @27504 has 51 MA's), (75, 27570), (97, 27669), (103, 27693), (121, 27759), (134, 27807), (139, 27831), (146, 27861), (151, 27879), (153, 27891), (175, 27933), (205, 28071), (211, 28092), (212, 28095), (300, 28302), (314, 28377), (315, 28380), (320, 28407), (321, 28410),

Gene: Oaker\_67 Start: 50680, Stop: 52002, Start Num: 44

Candidate Starts for Oaker\_67:

(28, 50641), (Start: 38 @50665 has 1 MA's), (Start: 44 @50680 has 8 MA's), (79, 50794), (81, 50803), (84, 50812), (91, 50854), (135, 51028), (136, 51034), (147, 51085), (175, 51232), (180, 51250), (181, 51253), (183, 51268), (187, 51289), (212, 51421), (214, 51427), (262, 51610), (268, 51628), (282, 51682), (294, 51742), (305, 51778), (323, 51874),

Gene: Onyinye\_74 Start: 50783, Stop: 52000, Start Num: 57

Candidate Starts for Onyinye\_74:

(Start: 57 @50783 has 3 MA's), (Start: 68 @50810 has 2 MA's), (77, 50864), (89, 50909), (102, 50975), (105, 50987), (122, 51047), (129, 51077), (130, 51080), (136, 51107), (142, 51134), (173, 51263), (196, 51383), (197, 51389), (214, 51479), (222, 51521), (226, 51539), (230, 51557), (253, 51620), (279, 51704), (295, 51779), (296, 51785), (297, 51788), (312, 51857), (314, 51866), (324, 51911), (336, 51968),

Gene: OtterstedtS21\_65 Start: 43824, Stop: 45041, Start Num: 61

Candidate Starts for OtterstedtS21\_65:

(Start: 61 @43824 has 51 MA's), (Start: 67 @43839 has 1 MA's), (92, 43968), (117, 44058), (118, 44061), (127, 44097), (136, 44130), (173, 44244), (181, 44271), (187, 44310), (188, 44325), (197, 44355), (201, 44385), (207, 44415), (219, 44463), (282, 44754), (292, 44808), (295, 44817), (297, 44826), (305, 44850), (322, 44943), (344, 45033),

Gene: OurGirlNessie\_38 Start: 26071, Stop: 27021, Start Num: 55

Candidate Starts for OurGirlNessie\_38:

(Start: 55 @26071 has 66 MA's), (90, 26203), (92, 26215), (93, 26218), (99, 26242), (125, 26338), (136, 26386), (139, 26401), (150, 26443), (155, 26467), (179, 26515), (205, 26641), (211, 26665), (212, 26668), (215, 26677), (285, 26812), (300, 26872), (314, 26947), (320, 26977), (321, 26980),

Gene: Outis\_67 Start: 53139, Stop: 51931, Start Num: 58

Candidate Starts for Outis\_67:

(Start: 58 @53139 has 54 MA's), (Start: 67 @53121 has 1 MA's), (113, 52917), (119, 52893), (129, 52854), (130, 52851), (136, 52824), (153, 52749), (181, 52662), (203, 52536), (219, 52470), (236, 52359), (250, 52311), (268, 52242), (282, 52188), (292, 52134), (295, 52125), (297, 52116), (320, 52008), (322, 51996),

Gene: OverHedge\_43 Start: 28810, Stop: 29964, Start Num: 60

Candidate Starts for OverHedge\_43:

(2, 28411), (Start: 60 @28810 has 25 MA's), (Start: 68 @28831 has 2 MA's), (118, 29041), (136, 29104), (160, 29200), (187, 29305), (218, 29455), (233, 29545), (243, 29581), (253, 29611), (282, 29716), (293, 29773), (312, 29857), (323, 29914),

Gene: Oxynfrius\_42 Start: 28104, Stop: 29051, Start Num: 55

Candidate Starts for Oxynfrius\_42:

(Start: 55 @28104 has 66 MA's), (93, 28251), (103, 28293), (124, 28368), (143, 28449), (146, 28464), (150, 28476), (193, 28626), (211, 28695), (212, 28698), (306, 28932), (314, 28977), (315, 28980), (320, 29007), (321, 29010),

Gene: P1201\_73 Start: 54596, Stop: 53460, Start Num: 58

Candidate Starts for P1201\_73:

(Start: 58 @54596 has 54 MA's), (123, 54338), (136, 54287), (137, 54284), (163, 54173), (219, 53918), (268, 53753), (295, 53636), (321, 53519),

Gene: PBI1\_54 Start: 43038, Stop: 44216, Start Num: 58

Candidate Starts for PBI1\_54:

(6, 42756), (10, 42786), (17, 42849), (Start: 58 @43038 has 54 MA's), (Start: 72 @43086 has 3 MA's), (78, 43125), (81, 43137), (103, 43236), (123, 43299), (136, 43353), (147, 43401), (171, 43467), (198, 43581), (201, 43608), (207, 43638), (218, 43683), (279, 43917), (292, 43983), (295, 43992), (297, 44001), (325, 44127), (344, 44208),

Gene: PHTowN\_66 Start: 47159, Stop: 46161, Start Num: 62

Candidate Starts for PHTowN\_66:

(39, 47210), (Start: 62 @47159 has 7 MA's), (Start: 67 @47147 has 1 MA's), (136, 46868), (137, 46865), (172, 46736), (181, 46709), (187, 46673), (201, 46598), (203, 46586), (218, 46523), (287, 46382), (295, 46349), (297, 46340), (312, 46268), (313, 46262), (330, 46178),

Gene: PLOT\_57 Start: 43090, Stop: 44268, Start Num: 58

Candidate Starts for PLOT\_57:

(6, 42808), (17, 42901), (Start: 58 @43090 has 54 MA's), (Start: 72 @43138 has 3 MA's), (78, 43177), (81, 43189), (103, 43288), (123, 43351), (136, 43405), (147, 43453), (171, 43519), (198, 43633), (201, 43660), (207, 43690), (218, 43735), (279, 43969), (292, 44035), (295, 44044), (297, 44053), (325, 44179), (344, 44260),

Gene: Papyrus\_69 Start: 51328, Stop: 52497, Start Num: 61

Candidate Starts for Papyrus\_69:

(Start: 61 @51328 has 51 MA's), (Start: 67 @51343 has 1 MA's), (74, 51385), (81, 51418), (132, 51619), (136, 51634), (173, 51766), (187, 51829), (188, 51844), (207, 51934), (213, 51961), (264, 52162), (266, 52168), (268, 52174), (293, 52285), (295, 52291), (323, 52423), (337, 52483),

Gene: PartyCup\_44 Start: 27759, Stop: 28706, Start Num: 55

Candidate Starts for PartyCup\_44:

(Start: 55 @27759 has 66 MA's), (92, 27903), (93, 27906), (96, 27921), (103, 27948), (120, 28011), (125, 28026), (136, 28074), (146, 28119), (150, 28131), (155, 28155), (193, 28281), (211, 28350), (212, 28353), (285, 28497), (300, 28557), (314, 28632), (315, 28635), (320, 28662), (321, 28665),

Gene: ParvusTarda\_64 Start: 43199, Stop: 44413, Start Num: 61

Candidate Starts for ParvusTarda\_64:

(Start: 61 @43199 has 51 MA's), (Start: 67 @43214 has 1 MA's), (92, 43343), (115, 43427), (130, 43478), (136, 43505), (173, 43619), (181, 43646), (188, 43697), (193, 43712), (197, 43727), (201, 43757), (219, 43835), (253, 44024), (283, 44132), (292, 44180), (295, 44189), (297, 44198), (305, 44222), (322, 44315), (344, 44405),

Gene: Patience\_81 Start: 53552, Stop: 54784, Start Num: 54

Candidate Starts for Patience\_81:

(Start: 54 @53552 has 3 MA's), (73, 53606), (80, 53645), (81, 53648), (84, 53657), (90, 53690), (94, 53714), (133, 53879), (136, 53891), (155, 53972), (176, 54056), (182, 54077), (187, 54119), (214, 54257), (224, 54308), (232, 54359), (254, 54395), (268, 54443), (282, 54497), (295, 54560), (329,

54728), (341, 54770),

Gene: Patio\_68 Start: 53007, Stop: 51817, Start Num: 55

Candidate Starts for Patio\_68:

(Start: 52 @53016 has 2 MA's), (Start: 55 @53007 has 66 MA's), (103, 52809), (128, 52716), (129, 52713), (130, 52710), (136, 52683), (140, 52665), (153, 52608), (203, 52413), (204, 52410), (207, 52395), (219, 52347), (238, 52233), (242, 52221), (253, 52173), (268, 52125), (282, 52071), (295, 52008), (297, 51999), (322, 51879),

Gene: Patos\_69 Start: 44889, Stop: 46106, Start Num: 61

Candidate Starts for Patos\_69:

(Start: 61 @44889 has 51 MA's), (Start: 67 @44904 has 1 MA's), (92, 45033), (117, 45123), (118, 45126), (127, 45162), (136, 45195), (173, 45309), (181, 45336), (187, 45375), (188, 45390), (197, 45420), (201, 45450), (207, 45480), (219, 45528), (282, 45819), (292, 45873), (295, 45882), (297, 45891), (305, 45915), (322, 46008), (344, 46098),

Gene: Penelope2018\_57 Start: 43108, Stop: 44286, Start Num: 58

Candidate Starts for Penelope2018\_57:

(6, 42826), (17, 42919), (Start: 58 @43108 has 54 MA's), (Start: 72 @43156 has 3 MA's), (78, 43195), (81, 43207), (103, 43306), (123, 43369), (136, 43423), (147, 43471), (171, 43537), (198, 43651), (201, 43678), (207, 43708), (218, 43753), (279, 43987), (292, 44053), (295, 44062), (297, 44071), (325, 44197), (344, 44278),

Gene: PermaG\_43 Start: 27639, Stop: 28652, Start Num: 29

Candidate Starts for PermaG\_43:

(Start: 29 @27639 has 15 MA's), (75, 27768), (93, 27849), (136, 28002), (150, 28059), (181, 28137), (193, 28206), (194, 28209), (214, 28284), (221, 28311), (278, 28401), (282, 28416), (291, 28467), (314, 28578),

Gene: PeteyPab\_68 Start: 50318, Stop: 49200, Start Num: 64

Candidate Starts for PeteyPab\_68:

(Start: 64 @50318 has 10 MA's), (91, 50183), (106, 50132), (123, 50069), (136, 50018), (145, 49976), (153, 49943), (160, 49922), (176, 49880), (179, 49871), (181, 49862), (187, 49826), (197, 49772), (231, 49589), (289, 49400), (295, 49379), (304, 49349), (316, 49277), (321, 49262), (322, 49253),

Gene: Pharpay\_43 Start: 28865, Stop: 30019, Start Num: 60

Candidate Starts for Pharpay\_43:

(2, 28466), (Start: 60 @28865 has 25 MA's), (Start: 68 @28886 has 2 MA's), (80, 28955), (118, 29096), (136, 29159), (160, 29255), (187, 29360), (218, 29510), (233, 29600), (243, 29636), (253, 29666), (282, 29771), (293, 29828), (312, 29912), (323, 29969),

Gene: Phomeo\_67 Start: 53314, Stop: 52115, Start Num: 58

Candidate Starts for Phomeo\_67:

(Start: 58 @53314 has 54 MA's), (129, 53026), (130, 53023), (135, 53002), (136, 52996), (201, 52723), (203, 52711), (207, 52693), (215, 52660), (219, 52645), (233, 52558), (253, 52471), (258, 52456), (267, 52426), (268, 52423), (282, 52369), (293, 52312), (294, 52309), (295, 52306), (297, 52297), (320, 52189), (327, 52165),

Gene: Phreeze\_66 Start: 49680, Stop: 50969, Start Num: 44

Candidate Starts for Phreeze\_66:

(28, 49641), (Start: 38 @49665 has 1 MA's), (Start: 44 @49680 has 8 MA's), (79, 49794), (81, 49803), (84, 49812), (91, 49854), (135, 50028), (136, 50034), (147, 50085), (175, 50199), (180, 50217), (181, 50220), (183, 50235), (187, 50256), (212, 50388), (214, 50394), (247, 50532), (262, 50577), (268,

50595), (282, 50649), (294, 50709), (305, 50745), (323, 50841),

Gene: PhunaPhoke\_43 Start: 28838, Stop: 29992, Start Num: 60

Candidate Starts for PhunaPhoke\_43:

(2, 28439), (Start: 60 @28838 has 25 MA's), (Start: 68 @28859 has 2 MA's), (118, 29069), (136, 29132), (160, 29228), (187, 29333), (218, 29483), (233, 29573), (243, 29609), (253, 29639), (282, 29744), (293, 29801), (312, 29885), (323, 29942),

Gene: PinkFriday\_39 Start: 26620, Stop: 27570, Start Num: 61

Candidate Starts for PinkFriday\_39:

(Start: 61 @26620 has 51 MA's), (74, 26677), (93, 26767), (97, 26785), (121, 26875), (134, 26926), (143, 26965), (146, 26980), (151, 26998), (153, 27010), (177, 27058), (199, 27175), (211, 27214), (215, 27226), (275, 27313), (285, 27361), (300, 27421), (314, 27496), (320, 27526), (321, 27529),

Gene: PitaDog\_39 Start: 26328, Stop: 27278, Start Num: 55

Candidate Starts for PitaDog\_39:

(Start: 55 @26328 has 66 MA's), (90, 26460), (92, 26472), (93, 26475), (99, 26499), (125, 26595), (136, 26643), (139, 26658), (150, 26700), (155, 26724), (177, 26766), (179, 26772), (205, 26898), (211, 26922), (212, 26925), (215, 26934), (285, 27069), (300, 27129), (314, 27204), (320, 27234), (321, 27237),

Gene: Pleakley\_75 Start: 52499, Stop: 51309, Start Num: 56

Candidate Starts for Pleakley\_75:

(3, 52829), (12, 52727), (Start: 56 @52499 has 3 MA's), (Start: 67 @52472 has 1 MA's), (87, 52379), (116, 52256), (119, 52244), (130, 52202), (136, 52175), (137, 52172), (219, 51842), (233, 51755), (253, 51662), (268, 51614), (295, 51497), (304, 51467), (313, 51410), (320, 51380), (327, 51356),

Gene: Polyuyki\_67 Start: 50081, Stop: 48915, Start Num: 58

Candidate Starts for Polyuyki\_67:

(18, 50219), (34, 50111), (Start: 58 @50081 has 54 MA's), (106, 49883), (136, 49760), (153, 49685), (181, 49622), (184, 49595), (202, 49502), (206, 49487), (210, 49463), (218, 49436), (219, 49433), (268, 49223), (280, 49175), (295, 49106), (296, 49100), (323, 48974),

Gene: PotatoChip\_69 Start: 50320, Stop: 49202, Start Num: 64

Candidate Starts for PotatoChip\_69:

(Start: 64 @50320 has 10 MA's), (91, 50185), (106, 50134), (123, 50071), (136, 50020), (145, 49978), (153, 49945), (160, 49924), (176, 49882), (179, 49873), (181, 49864), (187, 49828), (197, 49774), (231, 49591), (289, 49402), (295, 49381), (304, 49351), (316, 49279), (321, 49264), (322, 49255),

Gene: Potatoes\_41 Start: 27534, Stop: 28481, Start Num: 55

Candidate Starts for Potatoes\_41:

(Start: 55 @27534 has 66 MA's), (76, 27603), (90, 27666), (92, 27678), (93, 27681), (99, 27705), (125, 27801), (136, 27849), (143, 27879), (150, 27906), (179, 27978), (212, 28128), (215, 28137), (275, 28224), (285, 28272), (300, 28332), (314, 28407), (315, 28410), (320, 28437), (321, 28440),

Gene: Potty\_43 Start: 28843, Stop: 29997, Start Num: 60

Candidate Starts for Potty\_43:

(2, 28444), (Start: 60 @28843 has 25 MA's), (Start: 68 @28864 has 2 MA's), (118, 29074), (136, 29137), (160, 29233), (187, 29338), (218, 29488), (233, 29578), (243, 29614), (253, 29644), (282, 29749), (293, 29806), (312, 29890), (323, 29947),

Gene: Poultriss\_43 Start: 29185, Stop: 30312, Start Num: 60

Candidate Starts for Poultriss\_43:

(Start: 60 @29185 has 25 MA's), (Start: 68 @29206 has 2 MA's), (118, 29416), (136, 29479), (160, 29575), (187, 29680), (218, 29830), (264, 29998), (282, 30064), (293, 30121), (312, 30205), (323, 30262),

Gene: Prager\_57 Start: 43175, Stop: 44305, Start Num: 72

Candidate Starts for Prager\_57:

(6, 42845), (10, 42875), (17, 42938), (Start: 58 @43127 has 54 MA's), (Start: 72 @43175 has 3 MA's), (78, 43214), (81, 43226), (103, 43325), (123, 43388), (136, 43442), (147, 43490), (171, 43556), (198, 43670), (201, 43697), (207, 43727), (218, 43772), (279, 44006), (292, 44072), (295, 44081), (297, 44090), (325, 44216), (344, 44297),

Gene: Preamble\_39 Start: 26398, Stop: 27345, Start Num: 55

Candidate Starts for Preamble\_39:

(Start: 55 @26398 has 66 MA's), (90, 26530), (92, 26542), (93, 26545), (99, 26569), (125, 26665), (136, 26713), (139, 26728), (150, 26770), (153, 26788), (175, 26830), (179, 26842), (285, 27136), (300, 27196), (314, 27271), (315, 27274), (320, 27301), (321, 27304),

Gene: Predator\_68 Start: 49458, Stop: 50774, Start Num: 38

Candidate Starts for Predator\_68:

(21, 49386), (26, 49425), (28, 49434), (Start: 38 @49458 has 1 MA's), (Start: 44 @49473 has 8 MA's), (79, 49578), (80, 49584), (84, 49596), (103, 49686), (136, 49818), (139, 49833), (147, 49869), (159, 49932), (164, 49971), (167, 49980), (180, 50022), (184, 50052), (187, 50061), (195, 50106), (208, 50172), (214, 50199), (218, 50214), (229, 50274), (247, 50337), (262, 50382), (277, 50436), (282, 50454), (294, 50514), (305, 50550), (319, 50625), (323, 50646), (325, 50652), (331, 50691), (342, 50727), (346, 50739),

Gene: Pterodactyl\_39 Start: 26308, Stop: 27258, Start Num: 55

Candidate Starts for Pterodactyl\_39:

(Start: 55 @26308 has 66 MA's), (90, 26440), (92, 26452), (93, 26455), (99, 26479), (125, 26575), (136, 26623), (139, 26638), (150, 26680), (155, 26704), (179, 26752), (205, 26878), (211, 26902), (212, 26905), (215, 26914), (285, 27049), (300, 27109), (314, 27184), (320, 27214), (321, 27217),

Gene: Puissant\_69 Start: 49917, Stop: 51227, Start Num: 45

Candidate Starts for Puissant\_69:

(14, 49746), (26, 49866), (28, 49875), (Start: 38 @49899 has 1 MA's), (45, 49917), (79, 50019), (84, 50037), (135, 50253), (136, 50259), (144, 50289), (147, 50310), (175, 50457), (180, 50475), (181, 50478), (183, 50493), (184, 50505), (187, 50514), (212, 50646), (214, 50652), (229, 50727), (241, 50778), (262, 50835), (294, 50967), (305, 51003), (319, 51078),

Gene: Pumancara\_39 Start: 26532, Stop: 27482, Start Num: 61

Candidate Starts for Pumancara\_39:

(Start: 61 @26532 has 51 MA's), (74, 26589), (93, 26679), (97, 26697), (121, 26787), (134, 26838), (143, 26877), (146, 26892), (151, 26910), (153, 26922), (177, 26970), (199, 27087), (215, 27138), (275, 27225), (285, 27273), (300, 27333), (314, 27408), (320, 27438), (321, 27441),

Gene: RAP15\_42 Start: 27707, Stop: 28654, Start Num: 55

Candidate Starts for RAP15\_42:

(Start: 55 @27707 has 66 MA's), (90, 27839), (92, 27851), (93, 27854), (99, 27878), (125, 27974), (136, 28022), (143, 28052), (150, 28079), (179, 28151), (212, 28301), (215, 28310), (275, 28397), (285, 28445), (300, 28505), (314, 28580), (320, 28610), (321, 28613),

Gene: Rachella\_43 Start: 28867, Stop: 30000, Start Num: 68

Candidate Starts for Rachella\_43:

(2, 28447), (Start: 60 @28846 has 25 MA's), (Start: 68 @28867 has 2 MA's), (80, 28936), (118, 29077), (136, 29140), (160, 29236), (187, 29341), (218, 29491), (233, 29581), (243, 29617), (253, 29647), (282, 29752), (293, 29809), (312, 29893), (323, 29950),

Gene: Ranch\_65 Start: 42668, Stop: 43885, Start Num: 61

Candidate Starts for Ranch\_65:

(Start: 61 @42668 has 51 MA's), (Start: 67 @42683 has 1 MA's), (92, 42812), (117, 42902), (118, 42905), (127, 42941), (136, 42974), (173, 43088), (181, 43115), (187, 43154), (188, 43169), (197, 43199), (201, 43229), (207, 43259), (217, 43301), (282, 43598), (292, 43652), (295, 43661), (297, 43670), (305, 43694), (322, 43787), (344, 43877),

Gene: Rasovi\_43 Start: 27973, Stop: 28986, Start Num: 29

Candidate Starts for Rasovi\_43:

(Start: 29 @27973 has 15 MA's), (93, 28183), (110, 28252), (136, 28336), (151, 28399), (181, 28471), (182, 28474), (193, 28540), (194, 28543), (221, 28645), (225, 28651), (278, 28735), (282, 28750), (291, 28801), (303, 28849), (314, 28912),

Gene: RcigaStruga\_41 Start: 27893, Stop: 28828, Start Num: 55

Candidate Starts for RcigaStruga\_41:

(Start: 55 @27893 has 66 MA's), (93, 28040), (97, 28058), (103, 28082), (124, 28157), (136, 28208), (143, 28238), (146, 28253), (150, 28265), (193, 28415), (211, 28484), (212, 28487), (282, 28598), (314, 28754), (315, 28757), (320, 28784), (321, 28787),

Gene: Rie18\_43 Start: 28391, Stop: 29497, Start Num: 60

Candidate Starts for Rie18\_43:

(Start: 60 @28391 has 25 MA's), (Start: 68 @28412 has 2 MA's), (118, 28622), (136, 28685), (160, 28781), (187, 28886), (218, 29036), (282, 29249), (312, 29390), (323, 29447),

Gene: RikSengupta\_46 Start: 29769, Stop: 30920, Start Num: 33

Candidate Starts for RikSengupta\_46:

(Start: 33 @29769 has 1 MA's), (Start: 63 @29823 has 3 MA's), (66, 29826), (Start: 68 @29832 has 2 MA's), (118, 30042), (119, 30048), (133, 30093), (136, 30105), (151, 30168), (160, 30201), (187, 30306), (221, 30468), (264, 30603), (272, 30627), (314, 30819), (323, 30867),

Gene: Riovina\_39 Start: 27504, Stop: 28451, Start Num: 61

Candidate Starts for Riovina\_39:

(Start: 61 @27504 has 51 MA's), (75, 27570), (97, 27669), (103, 27693), (121, 27759), (134, 27807), (139, 27831), (146, 27861), (151, 27879), (153, 27891), (175, 27933), (205, 28071), (211, 28092), (212, 28095), (300, 28302), (314, 28377), (315, 28380), (320, 28407), (321, 28410),

Gene: Riparian\_71 Start: 51165, Stop: 52334, Start Num: 61

Candidate Starts for Riparian\_71:

(Start: 61 @51165 has 51 MA's), (Start: 67 @51180 has 1 MA's), (74, 51222), (81, 51255), (132, 51456), (136, 51471), (173, 51603), (187, 51666), (188, 51681), (207, 51771), (213, 51798), (264, 51999), (266, 52005), (268, 52011), (293, 52122), (295, 52128), (323, 52260), (337, 52320),

Gene: Riverdale\_42 Start: 27672, Stop: 28619, Start Num: 55

Candidate Starts for Riverdale\_42:

(Start: 55 @27672 has 66 MA's), (76, 27741), (90, 27804), (92, 27816), (93, 27819), (99, 27843), (125, 27939), (136, 27987), (143, 28017), (150, 28044), (179, 28116), (212, 28266), (215, 28275), (275, 28362), (285, 28410), (300, 28470), (314, 28545), (315, 28548), (320, 28575), (321, 28578),

Gene: Rooney\_66 Start: 47314, Stop: 46316, Start Num: 62

Candidate Starts for Rooney\_66:

(Start: 62 @47314 has 7 MA's), (Start: 67 @47302 has 1 MA's), (136, 47023), (137, 47020), (172, 46891), (181, 46864), (187, 46828), (201, 46753), (203, 46741), (218, 46678), (279, 46579), (287, 46537), (295, 46504), (297, 46495), (312, 46423), (313, 46417), (330, 46333),

Gene: Rope\_69 Start: 51321, Stop: 52490, Start Num: 61

Candidate Starts for Rope\_69:

(Start: 61 @51321 has 51 MA's), (Start: 67 @51336 has 1 MA's), (74, 51378), (81, 51411), (132, 51612), (136, 51627), (173, 51759), (187, 51822), (188, 51837), (207, 51927), (213, 51954), (264, 52155), (266, 52161), (268, 52167), (293, 52278), (295, 52284), (323, 52416), (337, 52476),

Gene: Rozby\_41 Start: 27464, Stop: 28411, Start Num: 55

Candidate Starts for Rozby\_41:

(Start: 55 @27464 has 66 MA's), (76, 27533), (90, 27596), (92, 27608), (93, 27611), (99, 27635), (125, 27731), (136, 27779), (143, 27809), (150, 27836), (179, 27908), (212, 28058), (215, 28067), (275, 28154), (285, 28202), (300, 28262), (314, 28337), (315, 28340), (320, 28367), (321, 28370),

Gene: Rumi\_66 Start: 42355, Stop: 43572, Start Num: 61

Candidate Starts for Rumi\_66:

(Start: 61 @42355 has 51 MA's), (Start: 67 @42370 has 1 MA's), (92, 42499), (117, 42589), (118, 42592), (127, 42628), (136, 42661), (173, 42775), (181, 42802), (187, 42841), (188, 42856), (197, 42886), (201, 42916), (207, 42946), (219, 42994), (253, 43183), (292, 43339), (295, 43348), (297, 43357), (305, 43381), (314, 43435), (322, 43474), (344, 43564),

Gene: SBlackberry\_42 Start: 27445, Stop: 28458, Start Num: 29

Candidate Starts for SBlackberry\_42:

(22, 27400), (Start: 29 @27445 has 15 MA's), (93, 27655), (110, 27724), (136, 27808), (150, 27865), (181, 27943), (193, 28012), (194, 28015), (214, 28090), (221, 28117), (282, 28222), (291, 28273), (303, 28321), (314, 28384),

Gene: Sadboi\_66 Start: 44538, Stop: 45701, Start Num: 61

Candidate Starts for Sadboi\_66:

(Start: 61 @44538 has 51 MA's), (Start: 67 @44553 has 1 MA's), (92, 44682), (117, 44772), (118, 44775), (127, 44811), (136, 44844), (173, 44958), (181, 44985), (187, 45024), (188, 45039), (197, 45069), (201, 45099), (207, 45129), (219, 45177), (231, 45252), (244, 45273), (253, 45312), (282, 45414), (292, 45468), (295, 45477), (297, 45486), (305, 45510), (322, 45603), (344, 45693),

Gene: Sampudon\_65 Start: 44890, Stop: 46053, Start Num: 61

Candidate Starts for Sampudon\_65:

(Start: 61 @44890 has 51 MA's), (Start: 67 @44905 has 1 MA's), (92, 45034), (117, 45124), (118, 45127), (127, 45163), (136, 45196), (173, 45310), (181, 45337), (187, 45376), (188, 45391), (197, 45421), (201, 45451), (207, 45481), (219, 45529), (253, 45664), (282, 45766), (292, 45820), (295, 45829), (297, 45838), (305, 45862), (322, 45955), (344, 46045),

Gene: Sapo\_31 Start: 30227, Stop: 29166, Start Num: 24

Candidate Starts for Sapo\_31:

(Start: 24 @30227 has 1 MA's), (86, 30014), (113, 29909), (143, 29801), (155, 29750), (158, 29744), (181, 29696), (186, 29663), (215, 29546), (227, 29507), (317, 29315), (333, 29234), (335, 29231), (338, 29222), (345, 29192),

Gene: Savage2526\_42 Start: 27701, Stop: 28648, Start Num: 55

Candidate Starts for Savage2526\_42:



(Start: 55 @27701 has 66 MA's), (90, 27833), (92, 27845), (93, 27848), (99, 27872), (125, 27968), (136, 28016), (143, 28046), (150, 28073), (179, 28145), (212, 28295), (215, 28304), (275, 28391), (285, 28439), (300, 28499), (314, 28574), (315, 28577), (320, 28604), (321, 28607),

Gene: Scuttle\_41 Start: 27661, Stop: 28608, Start Num: 55

Candidate Starts for Scuttle\_41:

(Start: 55 @27661 has 66 MA's), (90, 27793), (93, 27808), (99, 27832), (125, 27928), (136, 27976), (143, 28006), (150, 28033), (179, 28105), (212, 28255), (215, 28264), (275, 28351), (285, 28399), (300, 28459), (314, 28534), (315, 28537), (320, 28564), (321, 28567),

Gene: Send513\_69 Start: 51699, Stop: 52868, Start Num: 61

Candidate Starts for Send513\_69:

(Start: 61 @51699 has 51 MA's), (Start: 67 @51714 has 1 MA's), (74, 51756), (81, 51789), (132, 51990), (136, 52005), (173, 52137), (187, 52200), (188, 52215), (213, 52332), (264, 52533), (266, 52539), (268, 52545), (293, 52656), (295, 52662), (323, 52794), (337, 52854),

Gene: Sergei\_39 Start: 27511, Stop: 28464, Start Num: 61

Candidate Starts for Sergei\_39:

(Start: 61 @27511 has 51 MA's), (74, 27568), (93, 27658), (97, 27676), (121, 27766), (134, 27817), (143, 27856), (146, 27871), (151, 27889), (153, 27901), (177, 27949), (199, 28066), (211, 28105), (215, 28117), (300, 28315), (314, 28390), (320, 28420), (321, 28423),

Gene: ShakeNBake\_66 Start: 47186, Stop: 46188, Start Num: 62

Candidate Starts for ShakeNBake\_66:

(39, 47237), (Start: 62 @47186 has 7 MA's), (Start: 67 @47174 has 1 MA's), (136, 46895), (137, 46892), (172, 46763), (181, 46736), (187, 46700), (201, 46625), (203, 46613), (218, 46550), (287, 46409), (295, 46376), (297, 46367), (312, 46295), (313, 46289), (330, 46205),

Gene: Sienna\_54 Start: 40504, Stop: 41709, Start Num: 31

Candidate Starts for Sienna\_54:

(Start: 31 @40504 has 4 MA's), (Start: 58 @40564 has 54 MA's), (65, 40573), (99, 40711), (111, 40735), (152, 40888), (160, 40921), (214, 41167), (215, 41170), (216, 41176), (220, 41191), (253, 41311), (268, 41359), (276, 41389), (277, 41395), (284, 41425), (290, 41458), (295, 41476), (296, 41482), (314, 41563), (321, 41593), (323, 41605), (339, 41668),

Gene: SirHarley\_59 Start: 43598, Stop: 44728, Start Num: 72

Candidate Starts for SirHarley\_59:

(32, 43505), (46, 43532), (49, 43535), (Start: 58 @43550 has 54 MA's), (Start: 72 @43598 has 3 MA's), (78, 43637), (81, 43649), (103, 43748), (123, 43811), (136, 43865), (147, 43913), (171, 43979), (198, 44093), (201, 44120), (207, 44150), (218, 44195), (279, 44429), (292, 44495), (295, 44504), (297, 44513), (325, 44639), (344, 44720),

Gene: Skysand\_68 Start: 53458, Stop: 52295, Start Num: 69

Candidate Starts for Skysand\_68:

(Start: 69 @53458 has 2 MA's), (103, 53287), (128, 53194), (129, 53191), (130, 53188), (136, 53161), (140, 53143), (153, 53086), (203, 52891), (204, 52888), (207, 52873), (219, 52825), (238, 52711), (242, 52699), (253, 52651), (268, 52603), (282, 52549), (295, 52486), (297, 52477), (322, 52357),

Gene: Snakehole\_43 Start: 28023, Stop: 29177, Start Num: 60

Candidate Starts for Snakehole\_43:

(2, 27624), (Start: 60 @28023 has 25 MA's), (Start: 68 @28044 has 2 MA's), (118, 28254), (136, 28317), (160, 28413), (187, 28518), (218, 28668), (243, 28794), (253, 28824), (282, 28929), (293, 28986), (312, 29070), (323, 29127),

Gene: Sparcetus\_46 Start: 29700, Stop: 30797, Start Num: 63

Candidate Starts for Sparcetus\_46:

(36, 29652), (Start: 63 @29700 has 3 MA's), (66, 29703), (Start: 68 @29709 has 2 MA's), (118, 29919), (119, 29925), (133, 29970), (136, 29982), (151, 30045), (160, 30078), (187, 30183), (221, 30345), (264, 30480), (272, 30504), (314, 30696), (323, 30744),

Gene: Spocter\_42 Start: 29643, Stop: 30608, Start Num: 43

Candidate Starts for Spocter\_42:

(Start: 43 @29643 has 1 MA's), (70, 29706), (90, 29805), (98, 29841), (113, 29880), (135, 29943), (136, 29949), (177, 30072), (182, 30090), (184, 30114), (190, 30147), (211, 30225), (273, 30342), (282, 30381), (295, 30444),

Gene: StarStruck\_67 Start: 53139, Stop: 51931, Start Num: 58

Candidate Starts for StarStruck\_67:

(Start: 58 @53139 has 54 MA's), (Start: 67 @53121 has 1 MA's), (113, 52917), (119, 52893), (129, 52854), (130, 52851), (136, 52824), (153, 52749), (181, 52662), (203, 52536), (219, 52470), (236, 52359), (250, 52311), (268, 52242), (282, 52188), (292, 52134), (295, 52125), (297, 52116), (320, 52008), (322, 51996),

Gene: Stickynote\_69 Start: 50521, Stop: 49409, Start Num: 64

Candidate Starts for Stickynote\_69:

(Start: 64 @50521 has 10 MA's), (106, 50335), (136, 50221), (145, 50179), (153, 50146), (176, 50083), (179, 50074), (181, 50065), (187, 50029), (197, 49975), (231, 49792), (289, 49603), (295, 49582), (304, 49552), (316, 49480), (321, 49465), (322, 49456),

Gene: Stuff\_50 Start: 36182, Stop: 37180, Start Num: 53

Candidate Starts for Stuff\_50:

(7, 35945), (8, 35951), (16, 36023), (Start: 53 @36182 has 10 MA's), (93, 36347), (99, 36371), (126, 36479), (134, 36512), (139, 36536), (176, 36626), (178, 36632), (181, 36644), (182, 36647), (194, 36716), (215, 36806), (270, 36902), (295, 37013), (328, 37157),

Gene: Sucha\_40 Start: 25225, Stop: 26232, Start Num: 29

Candidate Starts for Sucha\_40:

(Start: 29 @25225 has 15 MA's), (93, 25435), (136, 25582), (151, 25645), (194, 25789), (197, 25801), (214, 25864), (221, 25891), (225, 25897), (278, 25981), (282, 25996), (298, 26071), (314, 26158),

Gene: Sukkupi\_67 Start: 51527, Stop: 50328, Start Num: 59

Candidate Starts for Sukkupi\_67:

(Start: 59 @51527 has 9 MA's), (113, 51308), (119, 51284), (128, 51248), (129, 51245), (130, 51242), (136, 51215), (140, 51197), (153, 51140), (201, 50942), (219, 50864), (233, 50777), (253, 50684), (258, 50669), (267, 50639), (268, 50636), (272, 50624), (282, 50582), (295, 50519), (297, 50510), (319, 50408), (320, 50402),

Gene: Supakev\_39 Start: 27504, Stop: 28451, Start Num: 61

Candidate Starts for Supakev\_39:

(Start: 61 @27504 has 51 MA's), (75, 27570), (97, 27669), (103, 27693), (121, 27759), (134, 27807), (139, 27831), (146, 27861), (151, 27879), (153, 27891), (175, 27933), (205, 28071), (211, 28092), (212, 28095), (300, 28302), (314, 28377), (315, 28380), (320, 28407), (321, 28410),

Gene: SuperSulley\_68 Start: 53499, Stop: 52291, Start Num: 58

Candidate Starts for SuperSulley\_68:

(Start: 58 @53499 has 54 MA's), (113, 53277), (119, 53253), (129, 53214), (130, 53211), (136, 53184), (140, 53166), (153, 53109), (203, 52896), (219, 52830), (236, 52719), (250, 52671), (272, 52590), (282, 52548), (292, 52494), (295, 52485), (297, 52476), (320, 52368),

Gene: Suppi\_41 Start: 27580, Stop: 28527, Start Num: 55

Candidate Starts for Suppi\_41:

(Start: 55 @27580 has 66 MA's), (92, 27724), (93, 27727), (96, 27742), (103, 27769), (120, 27832), (125, 27847), (136, 27895), (146, 27940), (150, 27952), (155, 27976), (193, 28102), (211, 28171), (212, 28174), (285, 28318), (300, 28378), (314, 28453), (315, 28456), (320, 28483), (321, 28486),

Gene: Suzy\_54 Start: 41757, Stop: 42902, Start Num: 58

Candidate Starts for Suzy\_54:

(Start: 58 @41757 has 54 MA's), (65, 41766), (99, 41904), (152, 42081), (160, 42114), (214, 42360), (215, 42363), (216, 42369), (220, 42384), (226, 42420), (251, 42495), (253, 42504), (268, 42552), (276, 42582), (277, 42588), (284, 42618), (290, 42651), (295, 42669), (296, 42675), (314, 42756), (321, 42786), (323, 42798), (339, 42861),

Gene: TattModd\_40 Start: 27321, Stop: 28268, Start Num: 55

Candidate Starts for TattModd\_40:

(Start: 55 @27321 has 66 MA's), (76, 27390), (90, 27453), (92, 27465), (93, 27468), (99, 27492), (125, 27588), (136, 27636), (143, 27666), (150, 27693), (151, 27699), (179, 27765), (212, 27915), (215, 27924), (275, 28011), (285, 28059), (300, 28119), (314, 28194), (315, 28197), (320, 28224), (321, 28227),

Gene: Tedro\_43 Start: 28325, Stop: 29431, Start Num: 60

Candidate Starts for Tedro\_43:

(2, 27932), (5, 28013), (Start: 60 @28325 has 25 MA's), (Start: 68 @28346 has 2 MA's), (118, 28556), (136, 28619), (160, 28715), (187, 28820), (218, 28970), (282, 29183), (293, 29240), (312, 29324), (323, 29381),

Gene: Temper16\_39 Start: 27511, Stop: 28464, Start Num: 61

Candidate Starts for Temper16\_39:

(Start: 61 @27511 has 51 MA's), (74, 27568), (93, 27658), (97, 27676), (121, 27766), (134, 27817), (143, 27856), (146, 27871), (151, 27889), (153, 27901), (177, 27949), (199, 28066), (211, 28105), (215, 28117), (300, 28315), (314, 28390), (320, 28420), (321, 28423),

Gene: Terapin\_55 Start: 40488, Stop: 41633, Start Num: 58

Candidate Starts for Terapin\_55:

(Start: 31 @40428 has 4 MA's), (Start: 58 @40488 has 54 MA's), (65, 40497), (99, 40635), (111, 40659), (152, 40812), (160, 40845), (214, 41091), (215, 41094), (216, 41100), (220, 41115), (253, 41235), (268, 41283), (276, 41313), (277, 41319), (284, 41349), (290, 41382), (295, 41400), (296, 41406), (314, 41487), (321, 41517), (323, 41529), (339, 41592),

Gene: Theresita\_43 Start: 26461, Stop: 27471, Start Num: 29

Candidate Starts for Theresita\_43:

(Start: 29 @26461 has 15 MA's), (92, 26668), (93, 26671), (136, 26821), (186, 26989), (197, 27040), (211, 27094), (278, 27220), (287, 27265), (299, 27313), (307, 27355), (314, 27397), (320, 27427), (326, 27448),

Gene: Thoth\_57 Start: 43106, Stop: 44284, Start Num: 58

Candidate Starts for Thoth\_57:

(6, 42824), (10, 42854), (17, 42917), (Start: 58 @43106 has 54 MA's), (Start: 72 @43154 has 3 MA's), (78, 43193), (81, 43205), (103, 43304), (123, 43367), (136, 43421), (147, 43469), (171, 43535), (198,

43649), (201, 43676), (207, 43706), (218, 43751), (279, 43985), (292, 44051), (295, 44060), (297, 44069), (325, 44195), (344, 44276),

Gene: Thumb\_68 Start: 50115, Stop: 51404, Start Num: 44

Candidate Starts for Thumb\_68:

(28, 50076), (Start: 38 @50100 has 1 MA's), (Start: 44 @50115 has 8 MA's), (79, 50229), (81, 50238), (84, 50247), (91, 50289), (135, 50463), (136, 50469), (147, 50520), (175, 50634), (180, 50652), (181, 50655), (183, 50670), (187, 50691), (212, 50823), (214, 50829), (247, 50967), (262, 51012), (268, 51030), (282, 51084), (294, 51144), (305, 51180), (323, 51276),

Gene: Tillicus\_61 Start: 43238, Stop: 44398, Start Num: 61

Candidate Starts for Tillicus\_61:

(Start: 61 @43238 has 51 MA's), (Start: 67 @43253 has 1 MA's), (92, 43382), (115, 43466), (130, 43517), (136, 43544), (173, 43658), (181, 43685), (187, 43721), (188, 43736), (193, 43751), (197, 43766), (201, 43796), (219, 43874), (230, 43934), (235, 43961), (253, 44009), (256, 44015), (283, 44117), (292, 44165), (295, 44174), (305, 44207), (322, 44300), (344, 44390),

Gene: TinyMiny\_46 Start: 29721, Stop: 30818, Start Num: 63

Candidate Starts for TinyMiny\_46:

(Start: 33 @29667 has 1 MA's), (Start: 63 @29721 has 3 MA's), (66, 29724), (Start: 68 @29730 has 2 MA's), (118, 29940), (119, 29946), (133, 29991), (136, 30003), (151, 30066), (160, 30099), (187, 30204), (221, 30366), (264, 30501), (272, 30525), (314, 30717), (323, 30765),

Gene: Tracker\_66 Start: 52125, Stop: 50926, Start Num: 58

Candidate Starts for Tracker\_66:

(Start: 58 @52125 has 54 MA's), (129, 51837), (130, 51834), (135, 51813), (136, 51807), (201, 51534), (203, 51522), (207, 51504), (215, 51471), (219, 51456), (233, 51369), (253, 51282), (266, 51240), (267, 51237), (268, 51234), (282, 51180), (293, 51123), (294, 51120), (295, 51117), (297, 51108), (320, 51000), (327, 50976),

Gene: Troll4\_57 Start: 43237, Stop: 44415, Start Num: 58

Candidate Starts for Troll4\_57:

(6, 42955), (10, 42985), (17, 43048), (Start: 58 @43237 has 54 MA's), (Start: 72 @43285 has 3 MA's), (78, 43324), (81, 43336), (103, 43435), (123, 43498), (136, 43552), (147, 43600), (171, 43666), (198, 43780), (201, 43807), (207, 43837), (218, 43882), (279, 44116), (292, 44182), (295, 44191), (297, 44200), (325, 44326), (344, 44407),

Gene: TurboVicky\_43 Start: 27685, Stop: 28698, Start Num: 29

Candidate Starts for TurboVicky\_43:

(Start: 29 @27685 has 15 MA's), (75, 27814), (93, 27895), (110, 27964), (136, 28048), (157, 28132), (181, 28183), (193, 28252), (194, 28255), (221, 28357), (225, 28363), (278, 28447), (282, 28462), (291, 28513), (303, 28561), (314, 28624),

Gene: Turuncu\_69 Start: 52823, Stop: 51867, Start Num: 114

Candidate Starts for Turuncu\_69:

(Start: 114 @52823 has 1 MA's), (120, 52799), (129, 52763), (136, 52733), (147, 52685), (169, 52622), (219, 52403), (233, 52316), (236, 52292), (250, 52244), (268, 52175), (295, 52058), (297, 52049), (302, 52034), (327, 51917),

Gene: Typher\_45 Start: 27803, Stop: 28816, Start Num: 29

Candidate Starts for Typher\_45:

(Start: 29 @27803 has 15 MA's), (75, 27932), (93, 28013), (110, 28082), (136, 28166), (157, 28250), (181, 28301), (193, 28370), (194, 28373), (221, 28475), (225, 28481), (278, 28565), (282, 28580),

(291, 28631), (303, 28679), (314, 28742),

Gene: UNTPL\_52 Start: 36210, Stop: 37214, Start Num: 48

Candidate Starts for UNTPL\_52:

(1, 35823), (7, 35979), (16, 36057), (Start: 48 @36210 has 1 MA's), (Start: 53 @36216 has 10 MA's), (93, 36381), (99, 36405), (126, 36513), (134, 36546), (139, 36570), (153, 36630), (176, 36660), (178, 36666), (181, 36678), (182, 36681), (184, 36705), (187, 36714), (194, 36750), (215, 36840), (270, 36936), (291, 37035), (292, 37038), (295, 37047), (328, 37191),

Gene: Urla\_40 Start: 27482, Stop: 28432, Start Num: 55

Candidate Starts for Urla\_40:

(Start: 55 @27482 has 66 MA's), (90, 27614), (92, 27626), (93, 27629), (96, 27644), (99, 27653), (125, 27749), (136, 27797), (139, 27812), (150, 27854), (155, 27878), (179, 27926), (181, 27935), (205, 28052), (212, 28079), (215, 28088), (300, 28283), (306, 28313), (314, 28358), (315, 28361), (320, 28388), (321, 28391),

Gene: Vallejo\_42 Start: 27675, Stop: 28622, Start Num: 55

Candidate Starts for Vallejo\_42:

(Start: 55 @27675 has 66 MA's), (76, 27744), (90, 27807), (92, 27819), (93, 27822), (99, 27846), (125, 27942), (136, 27990), (143, 28020), (150, 28047), (179, 28119), (212, 28269), (215, 28278), (275, 28365), (285, 28413), (300, 28473), (314, 28548), (315, 28551), (320, 28578), (321, 28581),

Gene: Visconti\_58 Start: 43117, Stop: 44295, Start Num: 58

Candidate Starts for Visconti\_58:

(6, 42835), (10, 42865), (17, 42928), (Start: 58 @43117 has 54 MA's), (Start: 72 @43165 has 3 MA's), (78, 43204), (81, 43216), (103, 43315), (123, 43378), (136, 43432), (147, 43480), (171, 43546), (198, 43660), (201, 43687), (207, 43717), (218, 43762), (279, 43996), (292, 44062), (295, 44071), (297, 44080), (325, 44206), (344, 44287),

Gene: Vulture\_39 Start: 27432, Stop: 28382, Start Num: 61

Candidate Starts for Vulture\_39:

(30, 27378), (Start: 61 @27432 has 51 MA's), (93, 27579), (97, 27597), (121, 27687), (134, 27738), (143, 27777), (146, 27792), (151, 27810), (153, 27822), (177, 27870), (199, 27987), (211, 28026), (215, 28038), (275, 28125), (285, 28173), (300, 28233), (314, 28308), (315, 28311), (320, 28338), (321, 28341),

Gene: WaldoWhy\_59 Start: 43170, Stop: 44348, Start Num: 58

Candidate Starts for WaldoWhy\_59:

(6, 42888), (10, 42918), (17, 42981), (Start: 58 @43170 has 54 MA's), (Start: 72 @43218 has 3 MA's), (78, 43257), (81, 43269), (103, 43368), (123, 43431), (136, 43485), (147, 43533), (171, 43599), (198, 43713), (201, 43740), (207, 43770), (218, 43815), (279, 44049), (292, 44115), (295, 44124), (297, 44133), (325, 44259), (344, 44340),

Gene: Wawa\_41 Start: 27508, Stop: 28455, Start Num: 55

Candidate Starts for Wawa\_41:

(Start: 55 @27508 has 66 MA's), (90, 27640), (92, 27652), (93, 27655), (99, 27679), (125, 27775), (136, 27823), (143, 27853), (150, 27880), (179, 27952), (212, 28102), (215, 28111), (275, 28198), (285, 28246), (300, 28306), (314, 28381), (315, 28384), (320, 28411), (321, 28414),

Gene: Wayne\_41 Start: 27626, Stop: 28573, Start Num: 55

Candidate Starts for Wayne\_41:

(Start: 55 @27626 has 66 MA's), (92, 27770), (93, 27773), (96, 27788), (103, 27815), (120, 27878), (125, 27893), (136, 27941), (146, 27986), (150, 27998), (155, 28022), (193, 28148), (211, 28217),

(212, 28220), (285, 28364), (300, 28424), (314, 28499), (315, 28502), (320, 28529), (321, 28532),

Gene: Weiss13\_69 Start: 51402, Stop: 52571, Start Num: 61

Candidate Starts for Weiss13\_69:

(Start: 61 @51402 has 51 MA's), (Start: 67 @51417 has 1 MA's), (74, 51459), (81, 51492), (132, 51693), (136, 51708), (173, 51840), (187, 51903), (188, 51918), (207, 52008), (213, 52035), (264, 52236), (266, 52242), (268, 52248), (293, 52359), (295, 52365), (323, 52497), (337, 52557),

Gene: Wentworth\_66 Start: 47288, Stop: 46290, Start Num: 62

Candidate Starts for Wentworth\_66:

(39, 47339), (Start: 62 @47288 has 7 MA's), (Start: 67 @47276 has 1 MA's), (136, 46997), (137, 46994), (162, 46898), (181, 46838), (187, 46802), (201, 46727), (203, 46715), (215, 46664), (218, 46652), (287, 46511), (295, 46478), (297, 46469), (312, 46397), (313, 46391), (319, 46367),

Gene: Wheezy\_66 Start: 52339, Stop: 51140, Start Num: 58

Candidate Starts for Wheezy\_66:

(Start: 58 @52339 has 54 MA's), (129, 52051), (130, 52048), (135, 52027), (136, 52021), (201, 51748), (203, 51736), (207, 51718), (215, 51685), (219, 51670), (233, 51583), (253, 51496), (267, 51451), (268, 51448), (293, 51337), (294, 51334), (295, 51331), (297, 51322), (313, 51244), (320, 51214), (327, 51190),

Gene: WhoseManz\_67 Start: 49542, Stop: 48343, Start Num: 59

Candidate Starts for WhoseManz\_67:

(Start: 59 @49542 has 9 MA's), (113, 49323), (119, 49299), (129, 49260), (130, 49257), (136, 49230), (140, 49212), (153, 49155), (201, 48957), (219, 48879), (223, 48852), (232, 48795), (233, 48792), (253, 48699), (267, 48654), (268, 48651), (272, 48639), (282, 48597), (295, 48534), (297, 48525), (319, 48423), (320, 48417), (327, 48393),

Gene: Wilkos\_68 Start: 47443, Stop: 46445, Start Num: 62

Candidate Starts for Wilkos\_68:

(39, 47494), (Start: 62 @47443 has 7 MA's), (Start: 67 @47431 has 1 MA's), (136, 47152), (137, 47149), (172, 47020), (181, 46993), (187, 46957), (201, 46882), (203, 46870), (215, 46819), (218, 46807), (287, 46666), (295, 46633), (297, 46624), (312, 46552), (313, 46546), (319, 46522),

Gene: Wojtek\_61 Start: 42920, Stop: 44134, Start Num: 61

Candidate Starts for Wojtek\_61:

(Start: 61 @42920 has 51 MA's), (Start: 67 @42935 has 1 MA's), (92, 43064), (115, 43148), (130, 43199), (136, 43226), (173, 43340), (181, 43367), (188, 43418), (193, 43433), (197, 43448), (201, 43478), (219, 43556), (253, 43745), (283, 43853), (292, 43901), (295, 43910), (305, 43943), (322, 44036), (344, 44126),

Gene: Wollypog\_46 Start: 33478, Stop: 34599, Start Num: 64

Candidate Starts for Wollypog\_46:

(Start: 64 @33478 has 10 MA's), (109, 33679), (115, 33697), (131, 33751), (136, 33769), (153, 33844), (201, 34045), (202, 34054), (233, 34210), (252, 34234), (253, 34246), (256, 34252), (266, 34288), (312, 34498), (323, 34549),

Gene: WonderBoy\_38 Start: 26303, Stop: 27253, Start Num: 55

Candidate Starts for WonderBoy\_38:

(Start: 55 @26303 has 66 MA's), (90, 26435), (92, 26447), (93, 26450), (99, 26474), (125, 26570), (136, 26618), (139, 26633), (150, 26675), (155, 26699), (177, 26741), (179, 26747), (205, 26873), (211, 26897), (212, 26900), (215, 26909), (285, 27044), (300, 27104), (314, 27179), (320, 27209), (321, 27212),

Gene: Xenia2\_59 Start: 42310, Stop: 43470, Start Num: 61

Candidate Starts for Xenia2\_59:

(51, 42286), (Start: 61 @42310 has 51 MA's), (Start: 67 @42322 has 1 MA's), (92, 42451), (117, 42541), (118, 42544), (130, 42586), (136, 42613), (139, 42628), (155, 42694), (181, 42754), (188, 42808), (197, 42838), (201, 42868), (217, 42940), (233, 43033), (240, 43042), (256, 43087), (281, 43180), (292, 43237), (295, 43246), (297, 43255), (305, 43279), (322, 43372),

Gene: Yara\_62 Start: 46145, Stop: 45150, Start Num: 64

Candidate Starts for Yara\_62:

(Start: 64 @46145 has 10 MA's), (Start: 67 @46136 has 1 MA's), (136, 45857), (137, 45854), (181, 45698), (187, 45662), (192, 45635), (201, 45587), (203, 45575), (215, 45524), (218, 45512), (282, 45401), (287, 45371), (295, 45338), (297, 45329), (312, 45257), (319, 45227),

Gene: Yelo\_68 Start: 51781, Stop: 52950, Start Num: 61

Candidate Starts for Yelo\_68:

(Start: 61 @51781 has 51 MA's), (Start: 67 @51796 has 1 MA's), (74, 51838), (81, 51871), (132, 52072), (136, 52087), (162, 52186), (173, 52219), (187, 52282), (188, 52297), (207, 52387), (213, 52414), (264, 52615), (266, 52621), (268, 52627), (293, 52738), (295, 52744), (323, 52876), (337, 52936),

Gene: Yikes\_67 Start: 44984, Stop: 46147, Start Num: 61

Candidate Starts for Yikes\_67:

(Start: 61 @44984 has 51 MA's), (Start: 67 @44999 has 1 MA's), (92, 45128), (117, 45218), (118, 45221), (127, 45257), (136, 45290), (173, 45404), (181, 45431), (187, 45470), (188, 45485), (197, 45515), (201, 45545), (207, 45575), (219, 45623), (231, 45698), (244, 45719), (253, 45758), (282, 45860), (292, 45914), (295, 45923), (297, 45932), (305, 45956), (322, 46049), (344, 46139),

Gene: Yndexa\_67 Start: 51527, Stop: 50328, Start Num: 59

Candidate Starts for Yndexa\_67:

(Start: 59 @51527 has 9 MA's), (113, 51308), (119, 51284), (128, 51248), (129, 51245), (130, 51242), (136, 51215), (140, 51197), (153, 51140), (201, 50942), (219, 50864), (233, 50777), (253, 50684), (258, 50669), (267, 50639), (268, 50636), (272, 50624), (282, 50582), (295, 50519), (297, 50510), (319, 50408), (320, 50402),

Gene: Zanella\_42 Start: 27511, Stop: 28524, Start Num: 29

Candidate Starts for Zanella\_42:

(Start: 29 @27511 has 15 MA's), (93, 27721), (110, 27790), (136, 27874), (157, 27958), (181, 28009), (193, 28078), (194, 28081), (221, 28183), (225, 28189), (278, 28273), (282, 28288), (291, 28339), (303, 28387), (314, 28450),

Gene: Zany\_63 Start: 44385, Stop: 45548, Start Num: 61

Candidate Starts for Zany\_63:

(Start: 61 @44385 has 51 MA's), (Start: 67 @44400 has 1 MA's), (92, 44529), (117, 44619), (118, 44622), (127, 44658), (136, 44691), (173, 44805), (181, 44832), (187, 44871), (188, 44886), (197, 44916), (201, 44946), (207, 44976), (219, 45024), (253, 45159), (282, 45261), (292, 45315), (295, 45324), (297, 45333), (305, 45357), (322, 45450), (344, 45540),

Gene: Zenon\_71 Start: 51725, Stop: 52894, Start Num: 61

Candidate Starts for Zenon\_71:

(Start: 61 @51725 has 51 MA's), (Start: 67 @51740 has 1 MA's), (74, 51782), (81, 51815), (132, 52016), (136, 52031), (173, 52163), (187, 52226), (188, 52241), (213, 52358), (264, 52559), (266, 52565), (268, 52571), (293, 52682), (295, 52688), (323, 52820), (337, 52880),

Gene: Zion\_69 Start: 50318, Stop: 49200, Start Num: 64

Candidate Starts for Zion\_69:

(Start: 64 @50318 has 10 MA's), (91, 50183), (106, 50132), (123, 50069), (136, 50018), (145, 49976), (153, 49943), (160, 49922), (176, 49880), (179, 49871), (181, 49862), (187, 49826), (197, 49772), (231, 49589), (289, 49400), (295, 49379), (304, 49349), (316, 49277), (321, 49262), (322, 49253),

Gene: Zorro\_42 Start: 27635, Stop: 28582, Start Num: 55

Candidate Starts for Zorro\_42:

(Start: 55 @27635 has 66 MA's), (90, 27767), (92, 27779), (93, 27782), (99, 27806), (125, 27902), (136, 27950), (143, 27980), (150, 28007), (179, 28079), (212, 28229), (215, 28238), (275, 28325), (285, 28373), (300, 28433), (314, 28508), (320, 28538), (321, 28541),