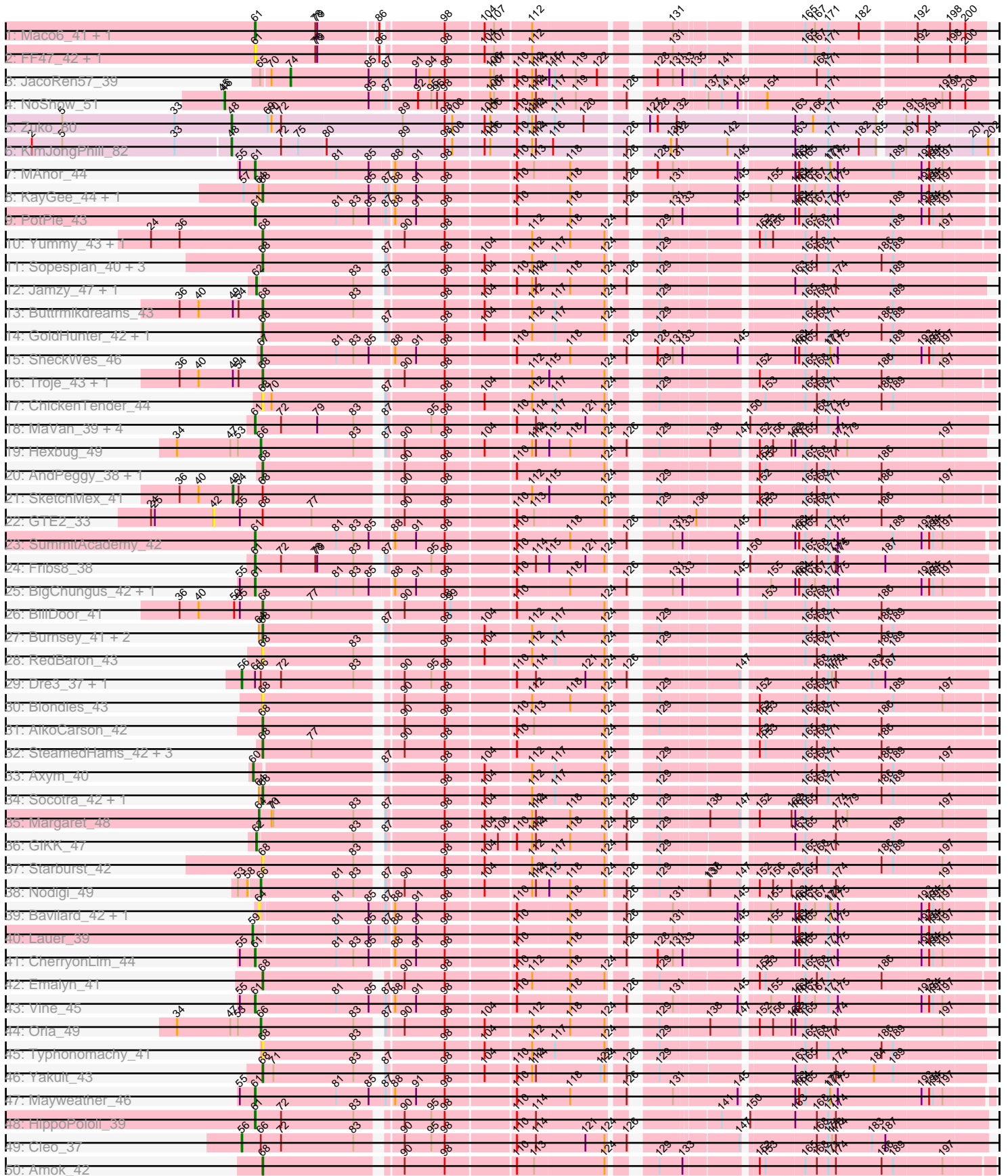
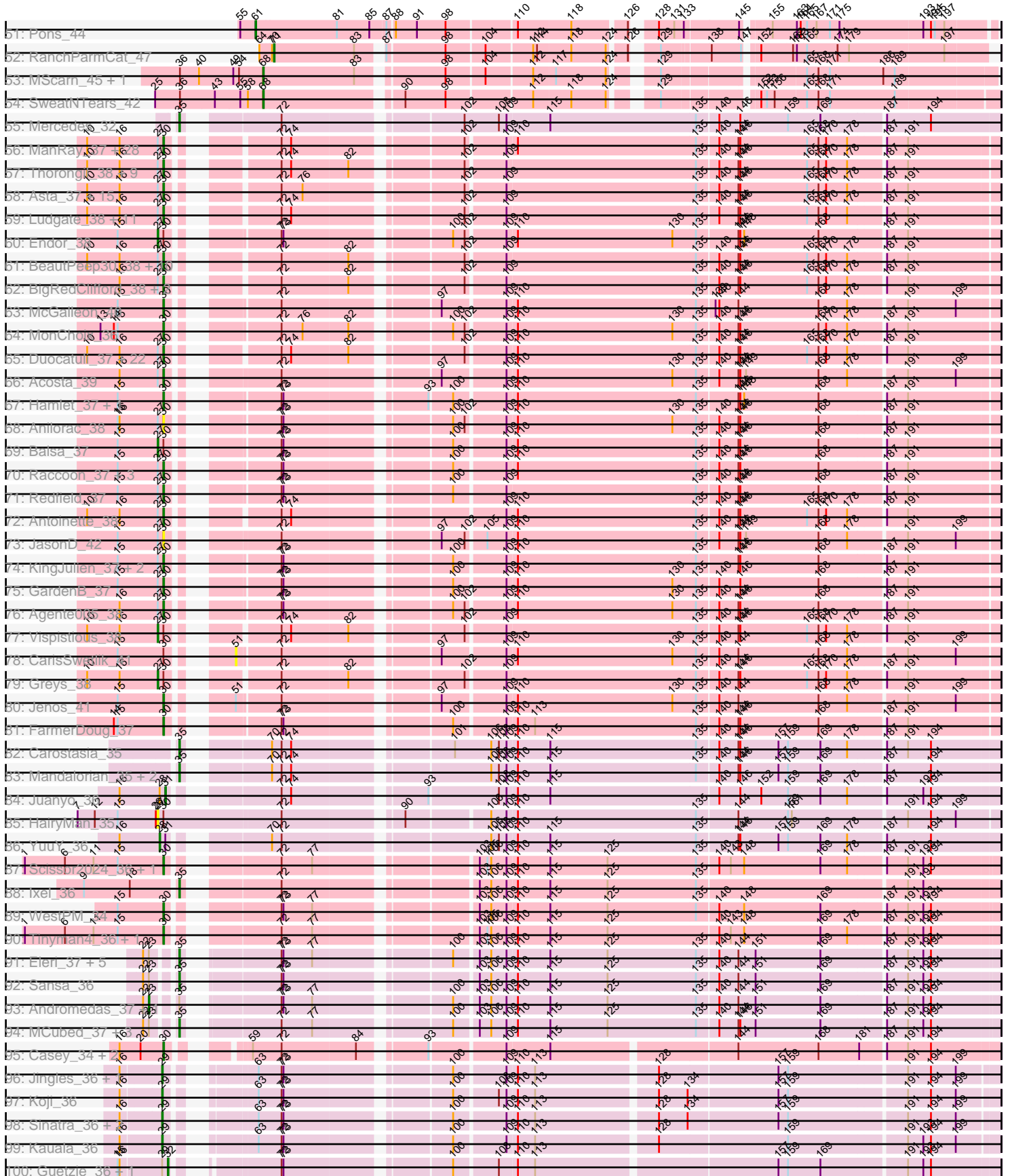


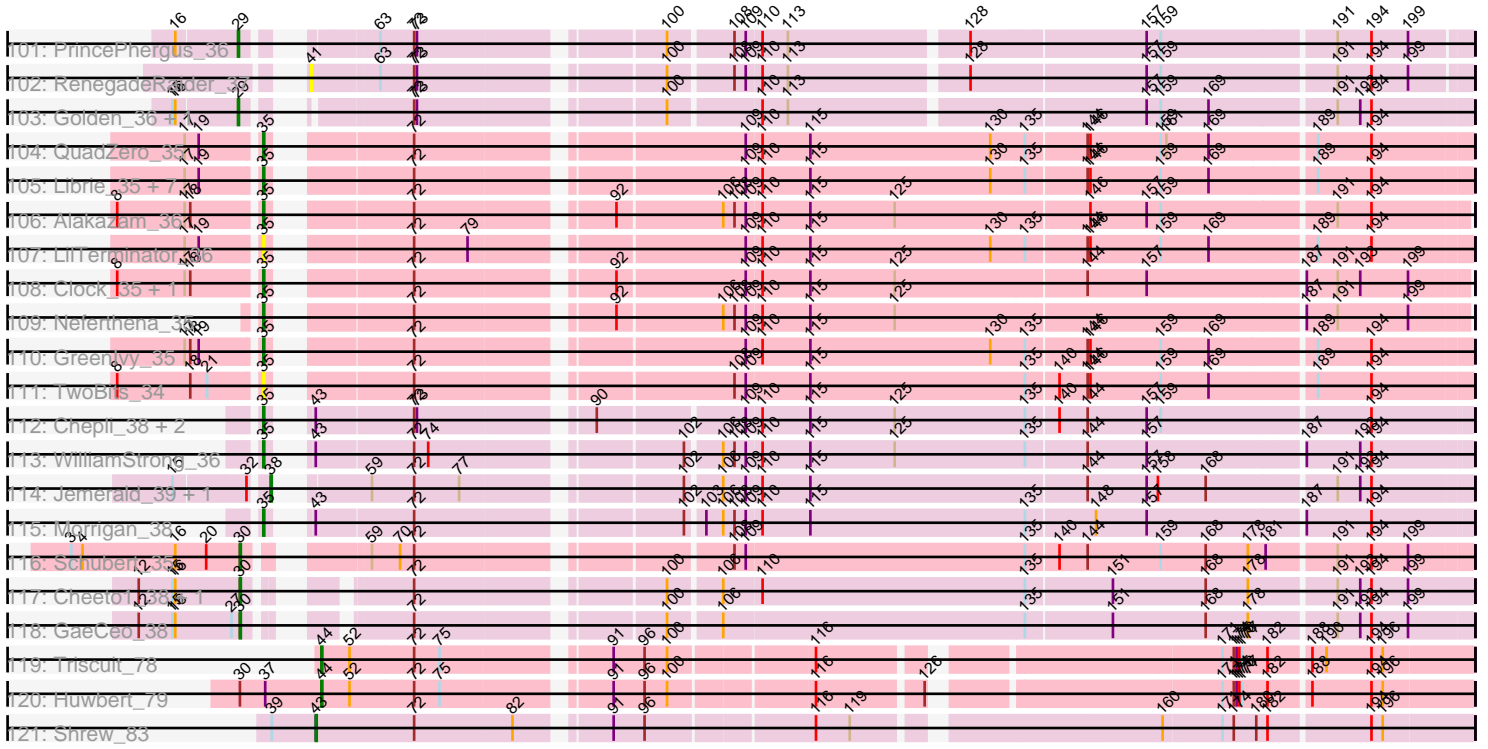
Pham 210111



Pham 210111



Pham 210111



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 210111 Report

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

Pham number 210111 has 281 members, 39 are drafts.

Phages represented in each track:

- Track 1 : Maco6\_41, Muddy\_43
- Track 2 : FF47\_42, 8UZL\_43
- Track 3 : JacoRen57\_39
- Track 4 : NoShow\_51
- Track 5 : Zuko\_80
- Track 6 : KimJongPhill\_82
- Track 7 : MAnor\_44
- Track 8 : KayGee\_44, Elinal\_46
- Track 9 : PotPie\_43
- Track 10 : Yummy\_43, Horseradish\_43
- Track 11 : Sopespian\_40, MunkgeeRoachy\_39, Elliott\_41, PsychoKiller\_40
- Track 12 : Jamzy\_47, Button\_45
- Track 13 : Buttrmilkdreams\_43
- Track 14 : GoldHunter\_42, Quasar\_41
- Track 15 : SheckWes\_46
- Track 16 : Troje\_43, Biskit\_43
- Track 17 : ChickenTender\_44
- Track 18 : MaVan\_39, Azira\_39, Zareef\_41, Nibbles\_38, Survivors\_39
- Track 19 : Hexbug\_49
- Track 20 : AndPeggy\_38, Yarn\_38
- Track 21 : SketchMex\_41
- Track 22 : GTE2\_33
- Track 23 : SummitAcademy\_42
- Track 24 : Fribs8\_38
- Track 25 : BigChungus\_42, Feastonyeet\_42
- Track 26 : BillDoor\_41
- Track 27 : Burnsey\_41, Agatha\_41, Cozz\_39
- Track 28 : RedBaron\_43
- Track 29 : Dre3\_37, Gibbous\_37
- Track 30 : Blondies\_43
- Track 31 : AikoCarson\_42
- Track 32 : SteamedHams\_42, CanesSauce\_40, Tolls\_42, ChocoMunchkin\_40
- Track 33 : Axym\_40
- Track 34 : Socotra\_42, Nina\_40
- Track 35 : Margaret\_48
- Track 36 : GiKK\_47
- Track 37 : Starburst\_42

- Track 38 : Nodigi\_49
- Track 39 : Bavidard\_42, Yucky\_46
- Track 40 : Lauer\_39
- Track 41 : CherryonLim\_44
- Track 42 : Emalyn\_41
- Track 43 : Vine\_45
- Track 44 : Orla\_49
- Track 45 : Typhonomachy\_41
- Track 46 : Yakult\_43
- Track 47 : Mayweather\_46
- Track 48 : HippoPololi\_39
- Track 49 : Cleo\_37
- Track 50 : Amok\_42
- Track 51 : Pons\_44
- Track 52 : RanchParmCat\_47
- Track 53 : MScarn\_45, Carsonalex\_44
- Track 54 : SweatNTears\_42
- Track 55 : Mercedes\_32
- Track 56 : ManRay\_37, Christoph\_37, Martin\_39, Espinosa\_37, MillyPhilly\_38, Kurt1\_38, Bandik\_38, Robinson\_38, TinSulphur\_38, Dothraki\_38, Janus167\_37, MaeLinda\_38, Superfresh\_38, Aubergine\_37, Byron23\_38, Pherferi\_38, Rappheph\_38, Stanktossa\_38, Inventa\_38, Tenda\_37, Phiderman\_38, AlexAdler\_38, Dave\_38, Peep\_38, TatarkaPM\_38, PhredFlintston\_38, Oats\_37, NickSell\_38, Renzie\_38
- Track 57 : Thorongil\_38, Alyxandracam\_38, AxiPup\_38, ParleG\_38, ShaiHulud\_38, MrWorldwide\_38, PuppyEggo\_38, WildNOut\_38, Riyhil\_38, Strathdee\_38
- Track 58 : Asta\_37, Etta\_37, Raptor\_38, Erla\_37, Klimt\_37, TeddyBear\_37, Nagem\_38, Calix\_37, Gershwin\_37, Chamuel\_37, Pocket\_37, Gelo\_37, SJay\_38, Exploradora\_38, SonOfLevi\_37, Baines\_37
- Track 59 : Ludgate\_38, Nattles\_37, Phriends\_38, Symere\_38, SoilGremlin\_38, Shee\_38, Delphidian\_38, Garey24\_37, OldNelly\_38, Sedgewig\_37, Bonino\_37, Kale\_37
- Track 60 : Endor\_38
- Track 61 : BeautPeep30\_38, BonesMcCoy\_38, Velene\_38, Gargoyle\_38, Convict\_38, Den3\_38, Knox\_38, Phireproof\_38, Oxtober96\_38, Lovelyunicorn\_38, Thompsone\_38
- Track 62 : BigRedClifford\_38, Blage\_38, Teagan\_38
- Track 63 : McGalleon\_40
- Track 64 : MonChoix\_36
- Track 65 : Duocatuli\_37, Benjal Lauren\_38, StirfryIV\_37, HankSprout\_38, Ilzat\_37, AranulaLuti\_37, Jerbirus\_38, Clancy\_37, JeriBeth\_38, Rog141\_37, HanSolo\_37, Gubbabump\_37, Winzigespinne\_37, JasperRussell\_37, HungryHenry\_37, Chako\_37, Ioannes\_38, RosieMae\_38, StingRay\_37, Zada\_38, Papafritta\_37, KannH\_37, Figueroism\_38
- Track 66 : Acosta\_39
- Track 67 : Hamlet\_37, Leafus\_37
- Track 68 : Anilorac\_38
- Track 69 : Balsa\_37
- Track 70 : Raccoon\_37, BeeBee8\_38, Schnapsidee\_37, Peppino\_37
- Track 71 : Redfield\_37
- Track 72 : Antoinette\_38
- Track 73 : JasonD\_42
- Track 74 : KingJulien\_37, Etna\_37, Stormbreaker8\_37

- Track 75 : GardenB\_37
- Track 76 : Agente005\_38
- Track 77 : Vispistious\_38
- Track 78 : CarisSwetlik\_41
- Track 79 : Greys\_38
- Track 80 : Jenos\_41
- Track 81 : FarmerDoug\_37
- Track 82 : Carostasia\_35
- Track 83 : Mandalorian\_35, Nucci\_35, Quartz\_36
- Track 84 : Juanyo\_36
- Track 85 : HairyMan\_35
- Track 86 : YuuY\_36
- Track 87 : Scissor2024\_36, Schimmels22\_36
- Track 88 : Ixel\_36
- Track 89 : WestPM\_34
- Track 90 : Tinyman4\_36, HerculesXL\_36
- Track 91 : Eleri\_37, ColaCorta\_37, ChikPic\_37, Shamu\_37, Saratos\_37, PSirce\_36
- Track 92 : Sansa\_36
- Track 93 : Andromedas\_37, Glamour\_36
- Track 94 : MCubed\_37, Phanita\_36, Finny\_37, Zenitsu\_37
- Track 95 : Casey\_34, Pajaza\_34, Pikmin\_34
- Track 96 : Jingles\_36, BouleyBill\_35
- Track 97 : Koji\_36
- Track 98 : Sinatra\_36, Bustleton\_36, Pherbot\_36
- Track 99 : Kauala\_36
- Track 100 : Guetzie\_36, SirVictor\_36
- Track 101 : PrincePhergus\_36
- Track 102 : RenegadeRaider\_37
- Track 103 : Golden\_36, Lucky3\_36
- Track 104 : QuadZero\_35
- Track 105 : Librie\_35, Zepp\_36, Zayuliv\_35, Wardwill\_37, CaptainRex\_35, Fulton\_35, BaronJohn\_36, Hasitha\_35
- Track 106 : Alakazam\_36
- Track 107 : LilTerminator\_36
- Track 108 : Clock\_35, Nebulous\_35
- Track 109 : Neferthena\_35
- Track 110 : Greenlvy\_35
- Track 111 : TwoBits\_34
- Track 112 : Chepli\_38, KatChan\_38, Luna18\_38
- Track 113 : WilliamStrong\_36
- Track 114 : Jemerald\_39, Juicer\_39
- Track 115 : Morrigan\_38
- Track 116 : Schubert\_35
- Track 117 : Cheeto1\_38, ChickenKing\_37
- Track 118 : GaeCeo\_38
- Track 119 : Triscuit\_78
- Track 120 : Huwbert\_79
- Track 121 : Shrew\_83

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

The start number called the most often in the published annotations is 30, it was called in 126 of the 242 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acosta\_39, Agente005\_38, AlexAdler\_38, Alyxandracam\_38, Anilorac\_38, Antoinette\_38, AranulaLuti\_37, Asta\_37, Aubergine\_37, AxiPup\_38, Baines\_37, Bandik\_38, BeautPeep30\_38, BeeBee8\_38, Benjalauren\_38, BigRedClifford\_38, Blage\_38, BonesMcCoy\_38, Bonino\_37, Byron23\_38, Calix\_37, Casey\_34, Chako\_37, Chamuel\_37, Cheeto1\_38, ChickenKing\_37, Christoph\_37, Clancy\_37, Convict\_38, Dave\_38, Delphidian\_38, Den3\_38, Dothraki\_38, Duocatuli\_37, Erla\_37, Espinosa\_37, Etna\_37, Etta\_37, Exploradora\_38, FarmerDoug\_37, Figueroism\_38, GaeCeo\_38, GardenB\_37, Garey24\_37, Gargoyle\_38, Gelo\_37, Gershwin\_37, Gubbabump\_37, Hamlet\_37, HanSolo\_37, HankSprout\_38, HerculesXL\_36, HungryHenry\_37, Ilzat\_37, Inventa\_38, Ioannes\_38, Janus167\_37, JasonD\_42, JasperRussell\_37, Jenos\_41, Jerbirus\_38, JeriBeth\_38, Kale\_37, KannH\_37, KingJulien\_37, Klimt\_37, Knox\_38, Kurt1\_38, Leafus\_37, Lovelyunicorn\_38, Ludgate\_38, MaeLinda\_38, ManRay\_37, Martin\_39, McGalleon\_40, MillyPhilly\_38, MonChoix\_36, MrWorldwide\_38, Nagem\_38, Nattles\_37, NickSell\_38, Oats\_37, OldNelly\_38, Oxtober96\_38, Pajaza\_34, Papafritta\_37, ParleG\_38, Peep\_38, Peppino\_37, Pherferi\_38, Phiderman\_38, Phireproof\_38, PhredFlintston\_38, Phriends\_38, Pikmin\_34, Pocket\_37, PuppyEggo\_38, Raccoon\_37, Rapheph\_38, Raptor\_38, Redfield\_37, Renzie\_38, Riyhil\_38, Robinson\_38, Rog141\_37, RosieMae\_38, SJay\_38, Schimmels22\_36, Schnapsidee\_37, Schubert\_35, Scissor2024\_36, Sedgewig\_37, ShaiHulud\_38, Shee\_38, SoilGremlin\_38, SonOfLevi\_37, Stanktossa\_38, StingRay\_37, StirfryIV\_37, Stormbreaker8\_37, Strathdee\_38, Superfresh\_38, Symere\_38, TatarkaPM\_38, Teagan\_38, TeddyBear\_37, Tenda\_37, Thompsone\_38, Thorongil\_38, TinSulphur\_38, Tinyman4\_36, Velene\_38, WestPM\_34, WildNOut\_38, Winzigespinne\_37, Zada\_38,

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

- Balsa\_37, CarisSwetlik\_41, Endor\_38, Greys\_38, HairyMan\_35, Huwburt\_79, Vispitious\_38,

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

- 8UZL\_43, Agatha\_41, AikoCarson\_42, Alakazam\_36, Amok\_42, AndPeggy\_38, Andromedas\_37, Axym\_40, Azira\_39, BaronJohn\_36, Bavilard\_42, BigChungus\_42, BillDoor\_41, Biskit\_43, Blondies\_43, BouleyBill\_35, Burnsey\_41, Bustleton\_36, Button\_45, Buttrmikedreams\_43, CanesSauce\_40, CaptainRex\_35, Carostasia\_35, Carsonalex\_44, Chepli\_38, CherryonLim\_44, ChickenTender\_44, ChikPic\_37, ChocoMunchkin\_40, Cleo\_37, Clock\_35, ColaCorta\_37, Cozz\_39, Dre3\_37, Eleri\_37, Elinal\_46, Elliott\_41, Emalyn\_41, FF47\_42, Feastonyeet\_42, Finny\_37, Frib8\_38, Fulton\_35, GTE2\_33, GiKK\_47, Gibbous\_37, Glamour\_36, GoldHunter\_42, Golden\_36, Greenlvy\_35, Guetzie\_36, Hasitha\_35, Hexbug\_49, HippoPololi\_39, Horseradish\_43, Ixel\_36, JacoRen57\_39, Jamzy\_47, Jemerald\_39, Jingles\_36, Juanyo\_36, Juicer\_39, KatChan\_38, Kauala\_36, KayGee\_44, KimJongPhill\_82, Koji\_36, Lauer\_39, Librie\_35, LilTerminator\_36, Lucky3\_36, Luna18\_38, MAnor\_44, MCubed\_37, MScarn\_45, MaVan\_39, Maco6\_41, Mandalorian\_35, Margaret\_48, Mayweather\_46, Mercedes\_32, Morigan\_38, Muddy\_43, MunkgeeRoachy\_39, Nebulous\_35, Neferthena\_35, Nibbles\_38, Nina\_40, NoShow\_51, Nodigi\_49, Nucci\_35, Orla\_49, PSirce\_36, Phanita\_36, Pherbot\_36, Pons\_44, PotPie\_43, PrincePhergus\_36, PsychoKiller\_40, QuadZero\_35, Quartz\_36, Quasar\_41, RanchParmCat\_47, RedBaron\_43, RenegadeRaider\_37, Sansa\_36, Saratos\_37,

Shamu\_37, SheckWes\_46, Shrew\_83, Sinatra\_36, SirVictor\_36, SketchMex\_41, Socotra\_42, Sopespian\_40, Starburst\_42, SteamedHams\_42, SummitAcademy\_42, Survivors\_39, SweatNTears\_42, Tolls\_42, Triscuit\_78, Troje\_43, TwoBits\_34, Typhonomachy\_41, Vine\_45, Wardwill\_37, WilliamStrong\_36, Yakult\_43, Yarn\_38, Yucky\_46, Yummy\_43, YuuY\_36, Zareef\_41, Zayuliv\_35, Zenitsu\_37, Zepp\_36, Zuko\_80,

### Summary by start number:

#### Start 23:

- Found in 13 of 281 ( 4.6% ) of genes in pham
- Manual Annotations of this start: 2 of 242
- Called 15.4% of time when present
- Phage (with cluster) where this start called: Andromedas\_37 (EA2), Glamour\_36 (EA2),

#### Start 27:

- Found in 124 of 281 ( 44.1% ) of genes in pham
- Manual Annotations of this start: 4 of 242
- Called 4.0% of time when present
- Phage (with cluster) where this start called: Balsa\_37 (EA1), Endor\_38 (EA1), Greys\_38 (EA1), HairyMan\_35 (EA10), Vispistious\_38 (EA1),

#### Start 28:

- Found in 2 of 281 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 50.0% of time when present
- Phage (with cluster) where this start called: YuuY\_36 (EA10),

#### Start 29:

- Found in 12 of 281 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 9 of 242
- Called 83.3% of time when present
- Phage (with cluster) where this start called: BouleyBill\_35 (EA4), Bustleton\_36 (EA4), Golden\_36 (EA4), Jingles\_36 (EA4), Kauala\_36 (EA4), Koji\_36 (EA4), Lucky3\_36 (EA4), Pherbot\_36 (EA4), PrincePhergus\_36 (EA4), Sinatra\_36 (EA4),

#### Start 30:

- Found in 143 of 281 ( 50.9% ) of genes in pham
- Manual Annotations of this start: 126 of 242
- Called 95.1% of time when present
- Phage (with cluster) where this start called: Acosta\_39 (EA1), Agente005\_38 (EA1), AlexAdler\_38 (EA1), Alyxandracam\_38 (EA1), Anilorac\_38 (EA1), Antoinette\_38 (EA1), AranulaLuti\_37 (EA1), Asta\_37 (EA1), Aubergine\_37 (EA1), AxiPup\_38 (EA1), Baines\_37 (EA1), Bandik\_38 (EA1), BeautPeep30\_38 (EA1), BeeBee8\_38 (EA1), Benjalauen\_38 (EA1), BigRedClifford\_38 (EA1), Blage\_38 (EA1), BonesMcCoy\_38 (EA1), Bonino\_37 (EA1), Byron23\_38 (EA1), Calix\_37 (EA1), Casey\_34 (EA3), Chako\_37 (EA1), Chamuel\_37 (EA1), Cheeto1\_38 (EA9), ChickenKing\_37 (EA9), Christoph\_37 (EA1), Clancy\_37 (EA1), Convict\_38 (EA1), Dave\_38 (EA1), Delphidian\_38 (EA1), Den3\_38 (EA1), Dothraki\_38 (EA1), Duocatuli\_37 (EA1), Erla\_37 (EA1), Espinosa\_37 (EA1), Etna\_37 (EA1), Etta\_37 (EA1), Exploradora\_38 (UNK), FarmerDoug\_37 (EA1), Figueroism\_38 (EA1), GaeCeo\_38 (EA9), GardenB\_37 (EA1), Garey24\_37 (EA1), Gargoyle\_38 (EA1), Gelo\_37 (EA1),



Gershwin\_37 (EA1), Gubbabump\_37 (EA1), Hamlet\_37 (EA1), HanSolo\_37 (EA1), HankSprout\_38 (EA1), HerculesXL\_36 (EA11), HungryHenry\_37 (EA1), Ilzat\_37 (EA1), Inventa\_38 (EA1), Ioannes\_38 (EA1), Janus167\_37 (EA1), JasonD\_42 (EA1), JasperRussell\_37 (EA1), Jenos\_41 (EA1), Jerbirus\_38 (EA1), JeriBeth\_38 (EA1), Kale\_37 (EA1), KannH\_37 (EA1), KingJulien\_37 (EA1), Klimt\_37 (EA1), Knox\_38 (EA1), Kurt1\_38 (EA1), Leafus\_37 (EA1), Lovelyunicorn\_38 (EA1), Ludgate\_38 (EA1), MaeLinda\_38 (EA1), ManRay\_37 (EA1), Martin\_39 (EA1), McGalleon\_40 (EA1), MillyPhilly\_38 (EA1), MonChoix\_36 (EA1), MrWorldwide\_38 (EA1), Nagem\_38 (EA1), Nattles\_37 (EA1), NickSell\_38 (EA1), Oats\_37 (EA1), OldNelly\_38 (EA1), Oxtober96\_38 (EA1), Pajaza\_34 (EA3), Papafritta\_37 (EA1), ParleG\_38 (EA1), Peep\_38 (EA1), Peppino\_37 (EA1), Pherferi\_38 (EA1), Phiderman\_38 (EA1), Phireproof\_38 (EA1), PhredFlintston\_38 (EA1), Phriends\_38 (EA1), Pikmin\_34 (EA3), Pocket\_37 (EA1), PuppyEggo\_38 (EA1), Raccoon\_37 (EA1), Rappheph\_38 (EA1), Raptor\_38 (EA1), Redfield\_37 (EA1), Renzie\_38 (EA1), Riyhil\_38 (EA1), Robinson\_38 (EA1), Rog141\_37 (EA1), RosieMae\_38 (EA1), SJay\_38 (EA1), Schimmels22\_36 (EA11), Schnapsidee\_37 (EA1), Schubert\_35 (EA8), Scissor2024\_36 (EA11), Sedgewig\_37 (EA1), ShaiHulud\_38 (EA1), Shee\_38 (EA1), SoilGremlin\_38 (EA1), SonOfLevi\_37 (EA1), Stanktossa\_38 (EA1), StingRay\_37 (EA1), StirfryIV\_37 (EA1), Stormbreaker8\_37 (EA1), Strathdee\_38 (EA1), Superfresh\_38 (EA1), Symere\_38 (EA1), TatarkaPM\_38 (EA1), Teagan\_38 (EA1), TeddyBear\_37 (EA1), Tenda\_37 (EA1), Thompsone\_38 (EA1), Thorongil\_38 (EA1), TinSulphur\_38 (EA1), Tinyman4\_36 (EA11), Velene\_38 (EA1), WestPM\_34 (EA11), WildNOut\_38 (EA1), Winzigespinne\_37 (EA1), Zada\_38 (EA1),

#### Start 31:

- Found in 2 of 281 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Juanyo\_36 (EA10),

#### Start 32:

- Found in 4 of 281 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 242
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Guetzie\_36 (EA4), SirVictor\_36 (EA4),

#### Start 35:

- Found in 40 of 281 ( 14.2% ) of genes in pham
- Manual Annotations of this start: 32 of 242
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Alakazam\_36 (EA5), BaronJohn\_36 (EA5), CaptainRex\_35 (EA5), Carostasia\_35 (EA10), Chepli\_38 (EA6), ChikPic\_37 (EA2), Clock\_35 (EA5), ColaCorta\_37 (EA2), Eleri\_37 (EA2), Finny\_37 (EA2), Fulton\_35 (EA5), Greenlvy\_35 (EA5), Hasitha\_35 (EA5), Ixel\_36 (EA11), KatChan\_38 (EA6), Librie\_35 (EA5), LilTerminator\_36 (EA5), Luna18\_38 (EA6), MCubed\_37 (EA2), Mandalorian\_35 (EA10), Mercedes\_32 (EA), Morrigan\_38 (EA6), Nebulous\_35 (EA5), Neferthena\_35 (EA5), Nucci\_35 (EA10), PSirce\_36 (EA2), Phanita\_36 (EA2), QuadZero\_35 (EA5), Quartz\_36 (EA10), Sansa\_36 (EA2), Saratos\_37 (EA2), Shamu\_37 (EA2), TwoBits\_34 (EA5), Wardwill\_37 (EA5), WilliamStrong\_36 (EA6), Zayuliv\_35 (EA5), Zenitsu\_37 (EA2), Zepp\_36 (EA5),

#### Start 38:

- Found in 2 of 281 ( 0.7% ) of genes in pham

- Manual Annotations of this start: 2 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jemerald\_39 (EA6), Juicer\_39 (EA6),

Start 41:

- Found in 1 of 281 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RenegadeRaider\_37 (EA4),

Start 42:

- Found in 1 of 281 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GTE2\_33 (CT),

Start 43:

- Found in 7 of 281 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Shrew\_83 (singleton),

Start 44:

- Found in 2 of 281 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Huwbert\_79 (GG), Triscuit\_78 (GG),

Start 46:

- Found in 1 of 281 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NoShow\_51 (AB),

Start 48:

- Found in 2 of 281 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KimJongPhill\_82 (BR), Zuko\_80 (BR),

Start 49:

- Found in 6 of 281 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 16.7% of time when present
- Phage (with cluster) where this start called: SketchMex\_41 (CT),

Start 51:

- Found in 2 of 281 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: CarisSwetlik\_41 (EA1),

Start 56:

- Found in 3 of 281 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 3 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cleo\_37 (CT), Dre3\_37 (CT), Gibbous\_37 (CT),

#### Start 59:

- Found in 7 of 281 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Lauer\_39 (CT),

#### Start 60:

- Found in 1 of 281 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Axym\_40 (CT),

#### Start 61:

- Found in 22 of 281 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 17 of 242
- Called 90.9% of time when present
- Phage (with cluster) where this start called: 8UZL\_43 (AB), Azira\_39 (CT), BigChungus\_42 (CT), CherryonLim\_44 (CT), FF47\_42 (AB), Feastonyeet\_42 (CT), Fribs8\_38 (CT), HippoPololi\_39 (CT), MAnor\_44 (CT), MaVan\_39 (CT), Maco6\_41 (AB), Mayweather\_46 (CT), Muddy\_43 (AB), Nibbles\_38 (CT), Pons\_44 (CT), PotPie\_43 (CT), SummitAcademy\_42 (CT), Survivors\_39 (CT), Vine\_45 (CT), Zareef\_41 (CT),

#### Start 62:

- Found in 3 of 281 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 3 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Button\_45 (CT), GiKK\_47 (CT), Jamzy\_47 (CT),

#### Start 64:

- Found in 11 of 281 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 27.3% of time when present
- Phage (with cluster) where this start called: Bavidard\_42 (CT), Margaret\_48 (CT), Yucky\_46 (CT),

#### Start 66:

- Found in 6 of 281 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 3 of 242
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Hexbug\_49 (CT), Nodigi\_49 (CT), Orla\_49 (CT),

#### Start 67:

- Found in 1 of 281 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 242

- Called 100.0% of time when present
- Phage (with cluster) where this start called: SheckWes\_46 (CT),

Start 68:

- Found in 39 of 281 ( 13.9% ) of genes in pham
- Manual Annotations of this start: 24 of 242
- Called 94.9% of time when present
- Phage (with cluster) where this start called: Agatha\_41 (CT), AikoCarson\_42 (CT), Amok\_42 (CT), AndPeggy\_38 (CT), BillDoor\_41 (CT), Biskit\_43 (CT), Blondies\_43 (CT), Burnsey\_41 (CT), Buttrmilkdreams\_43 (CT), CanesSauce\_40 (CT), Carsonalex\_44 (CT), ChickenTender\_44 (CT), ChocoMunchkin\_40 (CT), Cozz\_39 (CT), Elinal\_46 (CT), Elliott\_41 (CT), Emalyn\_41 (CT), GoldHunter\_42 (CT), Horseradish\_43 (CT), KayGee\_44 (CT), MScarn\_45 (CT), MunkgeeRoachy\_39 (CT), Nina\_40 (CT), PsychoKiller\_40 (CT), Quasar\_41 (CT), RedBaron\_43 (CT), Socotra\_42 (CT), Sopespian\_40 (CT), Starburst\_42 (CT), SteamedHams\_42 (CT), SweatNTears\_42 (CT), Tolls\_42 (CT), Troje\_43 (CT), Typhonmarchy\_41 (CT), Yakult\_43 (CT), Yarn\_38 (CT), Yummy\_43 (CT),

Start 71:

- Found in 3 of 281 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 33.3% of time when present
- Phage (with cluster) where this start called: RanchParmCat\_47 (CT),

Start 74:

- Found in 83 of 281 ( 29.5% ) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 1.2% of time when present
- Phage (with cluster) where this start called: JacoRen57\_39 (AB),

### Summary by clusters:

There are 17 clusters represented in this pham: EA9, singleton, AB, EA11, EA10, EA6, UNK, EA, GG, EA8, BR, EA1, EA3, EA2, EA5, EA4, CT,

Info for manual annotations of cluster AB:

- Start number 46 was manually annotated 1 time for cluster AB.
- Start number 61 was manually annotated 2 times for cluster AB.
- Start number 74 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster BR:

- Start number 48 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster CT:

- Start number 49 was manually annotated 1 time for cluster CT.
- Start number 56 was manually annotated 3 times for cluster CT.
- Start number 59 was manually annotated 1 time for cluster CT.
- Start number 60 was manually annotated 1 time for cluster CT.
- Start number 61 was manually annotated 15 times for cluster CT.
- Start number 62 was manually annotated 3 times for cluster CT.
- Start number 64 was manually annotated 1 time for cluster CT.
- Start number 66 was manually annotated 3 times for cluster CT.
- Start number 67 was manually annotated 1 time for cluster CT.

- Start number 68 was manually annotated 24 times for cluster CT.
- Start number 71 was manually annotated 1 time for cluster CT.

Info for manual annotations of cluster EA:

- Start number 35 was manually annotated 1 time for cluster EA.

Info for manual annotations of cluster EA1:

- Start number 27 was manually annotated 4 times for cluster EA1.
- Start number 30 was manually annotated 115 times for cluster EA1.

Info for manual annotations of cluster EA10:

- Start number 28 was manually annotated 1 time for cluster EA10.
- Start number 31 was manually annotated 1 time for cluster EA10.
- Start number 35 was manually annotated 4 times for cluster EA10.

Info for manual annotations of cluster EA11:

- Start number 30 was manually annotated 4 times for cluster EA11.
- Start number 35 was manually annotated 1 time for cluster EA11.

Info for manual annotations of cluster EA2:

- Start number 23 was manually annotated 2 times for cluster EA2.
- Start number 35 was manually annotated 9 times for cluster EA2.

Info for manual annotations of cluster EA3:

- Start number 30 was manually annotated 3 times for cluster EA3.

Info for manual annotations of cluster EA4:

- Start number 29 was manually annotated 9 times for cluster EA4.
- Start number 32 was manually annotated 2 times for cluster EA4.

Info for manual annotations of cluster EA5:

- Start number 35 was manually annotated 12 times for cluster EA5.

Info for manual annotations of cluster EA6:

- Start number 35 was manually annotated 5 times for cluster EA6.
- Start number 38 was manually annotated 2 times for cluster EA6.

Info for manual annotations of cluster EA8:

- Start number 30 was manually annotated 1 time for cluster EA8.

Info for manual annotations of cluster EA9:

- Start number 30 was manually annotated 3 times for cluster EA9.

Info for manual annotations of cluster GG:

- Start number 44 was manually annotated 2 times for cluster GG.

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

Gene: 8UZL\_43 Start: 31938, Stop: 30922, Start Num: 61

Candidate Starts for 8UZL\_43:

(Start: 61 @31938 has 17 MA's), (78, 31845), (79, 31842), (86, 31755), (98, 31668), (104, 31611), (107, 31596), (112, 31542), (131, 31359), (165, 31188), (167, 31173), (171, 31152), (192, 31026), (198, 30975), (200, 30954),

Gene: Acosta\_39 Start: 27483, Stop: 26302, Start Num: 30

Candidate Starts for Acosta\_39:

(16, 27552), (Start: 27 @27492 has 4 MA's), (Start: 30 @27483 has 126 MA's), (72, 27354), (97, 27138), (109, 27045), (110, 27030), (130, 26787), (135, 26751), (140, 26721), (144, 26691), (146, 26688), (149, 26679), (168, 26565), (178, 26520), (191, 26436), (199, 26361),

Gene: Agatha\_41 Start: 29791, Stop: 28760, Start Num: 68

Candidate Starts for Agatha\_41:

(Start: 64 @29797 has 1 MA's), (Start: 68 @29791 has 24 MA's), (87, 29620), (98, 29533), (104, 29476), (112, 29407), (117, 29374), (124, 29296), (129, 29245), (165, 29050), (168, 29032), (171, 29014), (186, 28930), (189, 28912),

Gene: Agente005\_38 Start: 27312, Stop: 26134, Start Num: 30

Candidate Starts for Agente005\_38:

(16, 27381), (Start: 27 @27321 has 4 MA's), (Start: 30 @27312 has 126 MA's), (72, 27186), (73, 27183), (100, 26952), (102, 26934), (109, 26877), (110, 26862), (130, 26619), (135, 26583), (140, 26553), (144, 26523), (146, 26520), (168, 26397), (187, 26301), (191, 26268),

Gene: AikoCarson\_42 Start: 30036, Stop: 29008, Start Num: 68

Candidate Starts for AikoCarson\_42:

(Start: 68 @30036 has 24 MA's), (90, 29841), (98, 29778), (110, 29676), (113, 29649), (124, 29541), (129, 29490), (152, 29361), (153, 29352), (165, 29295), (168, 29277), (171, 29259), (186, 29175),

Gene: Alakazam\_36 Start: 26644, Stop: 25469, Start Num: 35

Candidate Starts for Alakazam\_36:

(8, 26788), (17, 26716), (18, 26710), (Start: 35 @26644 has 32 MA's), (72, 26530), (92, 26344), (106, 26236), (108, 26224), (109, 26212), (110, 26197), (115, 26146), (125, 26056), (146, 25855), (157, 25795), (159, 25780), (191, 25603), (194, 25567),

Gene: AlexAdler\_38 Start: 27073, Stop: 25898, Start Num: 30

Candidate Starts for AlexAdler\_38:

(10, 27193), (16, 27142), (Start: 27 @27082 has 4 MA's), (Start: 30 @27073 has 126 MA's), (72, 26950), (Start: 74 @26935 has 1 MA's), (102, 26698), (109, 26641), (110, 26626), (135, 26347), (140, 26317), (144, 26287), (146, 26284), (165, 26179), (168, 26161), (170, 26149), (178, 26116), (187, 26065), (191, 26032),

Gene: Alyxandracam\_38 Start: 27083, Stop: 25908, Start Num: 30

Candidate Starts for Alyxandracam\_38:

(10, 27203), (16, 27152), (Start: 27 @27092 has 4 MA's), (Start: 30 @27083 has 126 MA's), (72, 26960), (Start: 74 @26945 has 1 MA's), (82, 26858), (102, 26708), (109, 26651), (135, 26357), (140, 26327), (144, 26297), (146, 26294), (165, 26189), (168, 26171), (170, 26159), (178, 26126), (187, 26075), (191, 26042),

Gene: Amok\_42 Start: 30060, Stop: 29032, Start Num: 68

Candidate Starts for Amok\_42:

(Start: 68 @30060 has 24 MA's), (90, 29865), (98, 29802), (110, 29700), (113, 29673), (124, 29565), (129, 29514), (133, 29481), (152, 29385), (153, 29376), (165, 29319), (168, 29301), (171, 29283), (174, 29271), (186, 29199), (189, 29181), (197, 29106),

Gene: AndPeggy\_38 Start: 29466, Stop: 28432, Start Num: 68

Candidate Starts for AndPeggy\_38:

(Start: 68 @29466 has 24 MA's), (90, 29271), (98, 29208), (110, 29106), (124, 28971), (152, 28791), (153, 28782), (165, 28725), (168, 28707), (171, 28689), (186, 28605),

Gene: Andromedas\_37 Start: 26832, Stop: 25642, Start Num: 23

Candidate Starts for Andromedas\_37:

(22, 26841), (Start: 23 @26832 has 2 MA's), (Start: 35 @26805 has 32 MA's), (72, 26694), (73, 26691), (77, 26646), (100, 26460), (103, 26427), (106, 26409), (109, 26385), (110, 26370), (115, 26319), (125, 26229), (135, 26091), (140, 26061), (144, 26031), (151, 26004), (169, 25902), (187, 25809), (191, 25776), (193, 25752), (194, 25740),

Gene: Anilorac\_38 Start: 27156, Stop: 25978, Start Num: 30

Candidate Starts for Anilorac\_38:

(15, 27228), (16, 27225), (Start: 27 @27165 has 4 MA's), (Start: 30 @27156 has 126 MA's), (72, 27030), (73, 27027), (100, 26796), (102, 26778), (109, 26721), (110, 26706), (130, 26463), (135, 26427), (140, 26397), (144, 26367), (146, 26364), (168, 26241), (187, 26145), (191, 26112),

Gene: Antoinette\_38 Start: 27070, Stop: 25895, Start Num: 30

Candidate Starts for Antoinette\_38:

(10, 27190), (16, 27139), (Start: 27 @27079 has 4 MA's), (Start: 30 @27070 has 126 MA's), (72, 26947), (Start: 74 @26932 has 1 MA's), (109, 26638), (110, 26623), (135, 26344), (140, 26314), (144, 26284), (146, 26281), (165, 26176), (168, 26158), (170, 26146), (178, 26113), (187, 26062), (191, 26029),

Gene: AranulaLuti\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for AranulaLuti\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (82, 26542), (102, 26392), (109, 26335), (110, 26320), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: Asta\_37 Start: 26780, Stop: 25605, Start Num: 30

Candidate Starts for Asta\_37:

(10, 26900), (16, 26849), (Start: 27 @26789 has 4 MA's), (Start: 30 @26780 has 126 MA's), (72, 26657), (76, 26624), (102, 26405), (109, 26348), (135, 26054), (140, 26024), (144, 25994), (146, 25991), (165, 25886), (168, 25868), (170, 25856), (178, 25823), (187, 25772), (191, 25739),

Gene: Aubergine\_37 Start: 26780, Stop: 25605, Start Num: 30

Candidate Starts for Aubergine\_37:

(10, 26900), (16, 26849), (Start: 27 @26789 has 4 MA's), (Start: 30 @26780 has 126 MA's), (72, 26657), (Start: 74 @26642 has 1 MA's), (102, 26405), (109, 26348), (110, 26333), (135, 26054), (140, 26024), (144, 25994), (146, 25991), (165, 25886), (168, 25868), (170, 25856), (178, 25823), (187, 25772), (191, 25739),

Gene: AxiPup\_38 Start: 27052, Stop: 25877, Start Num: 30

Candidate Starts for AxiPup\_38:

(10, 27172), (16, 27121), (Start: 27 @27061 has 4 MA's), (Start: 30 @27052 has 126 MA's), (72, 26929), (Start: 74 @26914 has 1 MA's), (82, 26827), (102, 26677), (109, 26620), (135, 26326), (140, 26296), (144, 26266), (146, 26263), (165, 26158), (168, 26140), (170, 26128), (178, 26095), (187, 26044), (191, 26011),

Gene: Axym\_40 Start: 29775, Stop: 28738, Start Num: 60

Candidate Starts for Axym\_40:

(Start: 60 @29775 has 1 MA's), (87, 29598), (98, 29511), (104, 29454), (112, 29385), (117, 29352), (124, 29274), (129, 29223), (165, 29028), (168, 29010), (171, 28992), (186, 28908), (189, 28890), (197, 28815),

Gene: Azira\_39 Start: 29680, Stop: 28649, Start Num: 61

Candidate Starts for Azira\_39:

(Start: 61 @29680 has 17 MA's), (72, 29641), (79, 29584), (83, 29527), (87, 29497), (95, 29431), (98, 29410), (110, 29308), (114, 29278), (117, 29251), (121, 29203), (124, 29173), (150, 29008), (168, 28912), (171, 28894), (175, 28879),

Gene: Baines\_37 Start: 26770, Stop: 25595, Start Num: 30

Candidate Starts for Baines\_37:

(10, 26890), (16, 26839), (Start: 27 @26779 has 4 MA's), (Start: 30 @26770 has 126 MA's), (72, 26647), (76, 26614), (102, 26395), (109, 26338), (135, 26044), (140, 26014), (144, 25984), (146, 25981), (165, 25876), (168, 25858), (170, 25846), (178, 25813), (187, 25762), (191, 25729),

Gene: Balsa\_37 Start: 27212, Stop: 26025, Start Num: 27

Candidate Starts for Balsa\_37:

(15, 27275), (Start: 27 @27212 has 4 MA's), (Start: 30 @27203 has 126 MA's), (72, 27077), (73, 27074), (100, 26843), (109, 26768), (110, 26753), (135, 26474), (140, 26444), (144, 26414), (146, 26411), (168, 26288), (187, 26192), (191, 26159),

Gene: Bandik\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Bandik\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (110, 26631), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: BaronJohn\_36 Start: 25562, Stop: 24384, Start Num: 35

Candidate Starts for BaronJohn\_36:

(17, 25634), (19, 25619), (Start: 35 @25562 has 32 MA's), (72, 25448), (109, 25130), (110, 25115), (115, 25064), (130, 24872), (135, 24836), (144, 24776), (146, 24773), (159, 24698), (169, 24647), (189, 24542), (194, 24485),

Gene: Bavilard\_42 Start: 31061, Stop: 30012, Start Num: 64

Candidate Starts for Bavilard\_42:

(Start: 64 @31061 has 1 MA's), (81, 30944), (85, 30893), (87, 30869), (88, 30860), (91, 30827), (98, 30782), (110, 30680), (118, 30599), (126, 30521), (131, 30473), (145, 30380), (155, 30344), (163, 30311), (164, 30305), (165, 30296), (167, 30281), (171, 30260), (172, 30257), (175, 30245), (193, 30116), (194, 30104), (195, 30098), (197, 30083),

Gene: BeautPeep30\_38 Start: 27084, Stop: 25909, Start Num: 30

Candidate Starts for BeautPeep30\_38:

(10, 27204), (16, 27153), (Start: 27 @27093 has 4 MA's), (Start: 30 @27084 has 126 MA's), (72, 26961), (82, 26859), (102, 26709), (109, 26652), (135, 26358), (140, 26328), (144, 26298), (146, 26295), (165, 26190), (168, 26172), (170, 26160), (178, 26127), (187, 26076), (191, 26043),

Gene: BeeBee8\_38 Start: 27373, Stop: 26195, Start Num: 30

Candidate Starts for BeeBee8\_38:

(15, 27445), (Start: 27 @27382 has 4 MA's), (Start: 30 @27373 has 126 MA's), (72, 27247), (73, 27244), (100, 27013), (109, 26938), (110, 26923), (135, 26644), (140, 26614), (144, 26584), (146,



26581), (168, 26458), (187, 26362), (191, 26329),

Gene: Benjalauren\_38 Start: 26783, Stop: 25608, Start Num: 30

Candidate Starts for Benjalauren\_38:

(10, 26903), (16, 26852), (Start: 27 @26792 has 4 MA's), (Start: 30 @26783 has 126 MA's), (72, 26660), (Start: 74 @26645 has 1 MA's), (82, 26558), (102, 26408), (109, 26351), (110, 26336), (135, 26057), (140, 26027), (144, 25997), (146, 25994), (165, 25889), (168, 25871), (170, 25859), (178, 25826), (187, 25775), (191, 25742),

Gene: BigChungus\_42 Start: 31250, Stop: 30192, Start Num: 61

Candidate Starts for BigChungus\_42:

(55, 31274), (Start: 61 @31250 has 17 MA's), (81, 31124), (83, 31097), (85, 31073), (88, 31040), (91, 31007), (98, 30962), (110, 30860), (118, 30779), (126, 30701), (131, 30653), (133, 30641), (145, 30560), (155, 30524), (163, 30491), (164, 30485), (165, 30476), (167, 30461), (171, 30440), (175, 30425), (193, 30296), (194, 30284), (195, 30278), (197, 30263),

Gene: BigRedClifford\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for BigRedClifford\_38:

(16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (82, 26857), (102, 26707), (109, 26650), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: BillDoor\_41 Start: 29137, Stop: 28103, Start Num: 68

Candidate Starts for BillDoor\_41:

(36, 29266), (40, 29236), (50, 29182), (55, 29173), (Start: 68 @29137 has 24 MA's), (77, 29062), (90, 28942), (98, 28879), (99, 28870), (110, 28777), (124, 28642), (153, 28453), (165, 28396), (168, 28378), (171, 28360), (186, 28276),

Gene: Biskit\_43 Start: 29824, Stop: 28796, Start Num: 68

Candidate Starts for Biskit\_43:

(36, 29953), (40, 29923), (Start: 49 @29869 has 1 MA's), (54, 29860), (Start: 68 @29824 has 24 MA's), (90, 29629), (98, 29566), (112, 29440), (115, 29416), (124, 29329), (129, 29278), (152, 29149), (165, 29083), (168, 29065), (171, 29047), (186, 28963), (197, 28870),

Gene: Blage\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for Blage\_38:

(16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (82, 26857), (102, 26707), (109, 26650), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: Blondies\_43 Start: 30140, Stop: 29112, Start Num: 68

Candidate Starts for Blondies\_43:

(Start: 68 @30140 has 24 MA's), (90, 29945), (98, 29882), (112, 29756), (118, 29699), (124, 29645), (129, 29594), (152, 29465), (165, 29399), (168, 29381), (171, 29363), (189, 29261), (197, 29186),

Gene: BonesMcCoy\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for BonesMcCoy\_38:

(10, 27202), (16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (82, 26857), (102, 26707), (109, 26650), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: Bonino\_37 Start: 26756, Stop: 25581, Start Num: 30

Candidate Starts for Bonino\_37:

(10, 26876), (16, 26825), (Start: 27 @26765 has 4 MA's), (Start: 30 @26756 has 126 MA's), (72, 26633), (Start: 74 @26618 has 1 MA's), (102, 26381), (109, 26324), (135, 26030), (140, 26000), (144, 25970), (146, 25967), (165, 25862), (168, 25844), (170, 25832), (178, 25799), (187, 25748), (191, 25715),

Gene: BouleyBill\_35 Start: 26662, Stop: 25499, Start Num: 29

Candidate Starts for BouleyBill\_35:

(16, 26722), (Start: 29 @26662 has 9 MA's), (63, 26572), (72, 26536), (73, 26533), (100, 26302), (109, 26227), (110, 26212), (113, 26185), (128, 26005), (157, 25825), (159, 25810), (191, 25633), (194, 25597), (199, 25558),

Gene: Burnsey\_41 Start: 29782, Stop: 28751, Start Num: 68

Candidate Starts for Burnsey\_41:

(Start: 64 @29788 has 1 MA's), (Start: 68 @29782 has 24 MA's), (87, 29611), (98, 29524), (104, 29467), (112, 29398), (117, 29365), (124, 29287), (129, 29236), (165, 29041), (168, 29023), (171, 29005), (186, 28921), (189, 28903),

Gene: Bustleton\_36 Start: 26665, Stop: 25502, Start Num: 29

Candidate Starts for Bustleton\_36:

(16, 26725), (Start: 29 @26665 has 9 MA's), (63, 26575), (72, 26539), (73, 26536), (100, 26305), (109, 26230), (110, 26215), (113, 26188), (128, 26008), (134, 25963), (157, 25828), (159, 25813), (191, 25636), (194, 25600), (199, 25561),

Gene: Button\_45 Start: 30428, Stop: 29406, Start Num: 62

Candidate Starts for Button\_45:

(Start: 62 @30428 has 3 MA's), (83, 30281), (87, 30251), (98, 30164), (104, 30107), (110, 30062), (112, 30038), (114, 30032), (118, 29981), (124, 29927), (126, 29903), (129, 29876), (163, 29699), (165, 29684), (174, 29636), (189, 29546),

Gene: Buttrmlkdreams\_43 Start: 30271, Stop: 29240, Start Num: 68

Candidate Starts for Buttrmlkdreams\_43:

(36, 30400), (40, 30370), (Start: 49 @30316 has 1 MA's), (54, 30307), (Start: 68 @30271 has 24 MA's), (83, 30130), (98, 30013), (104, 29956), (112, 29887), (117, 29854), (124, 29776), (129, 29725), (165, 29530), (168, 29512), (171, 29494), (189, 29392),

Gene: Byron23\_38 Start: 27081, Stop: 25906, Start Num: 30

Candidate Starts for Byron23\_38:

(10, 27201), (16, 27150), (Start: 27 @27090 has 4 MA's), (Start: 30 @27081 has 126 MA's), (72, 26958), (Start: 74 @26943 has 1 MA's), (102, 26706), (109, 26649), (110, 26634), (135, 26355), (140, 26325), (144, 26295), (146, 26292), (165, 26187), (168, 26169), (170, 26157), (178, 26124), (187, 26073), (191, 26040),

Gene: Calix\_37 Start: 26763, Stop: 25588, Start Num: 30

Candidate Starts for Calix\_37:

(10, 26883), (16, 26832), (Start: 27 @26772 has 4 MA's), (Start: 30 @26763 has 126 MA's), (72, 26640), (76, 26607), (102, 26388), (109, 26331), (135, 26037), (140, 26007), (144, 25977), (146, 25974), (165, 25869), (168, 25851), (170, 25839), (178, 25806), (187, 25755), (191, 25722),

Gene: CanesSauce\_40 Start: 29639, Stop: 28605, Start Num: 68

Candidate Starts for CanesSauce\_40:

(Start: 68 @29639 has 24 MA's), (77, 29564), (90, 29444), (98, 29381), (110, 29279), (124, 29144), (152, 28964), (153, 28955), (165, 28898), (168, 28880), (171, 28862), (186, 28778),

Gene: CaptainRex\_35 Start: 24974, Stop: 23796, Start Num: 35

Candidate Starts for CaptainRex\_35:

(17, 25046), (19, 25031), (Start: 35 @24974 has 32 MA's), (72, 24860), (109, 24542), (110, 24527), (115, 24476), (130, 24284), (135, 24248), (144, 24188), (146, 24185), (159, 24110), (169, 24059), (189, 23954), (194, 23897),

Gene: CarisSwetlik\_41 Start: 27919, Stop: 26804, Start Num: 51

Candidate Starts for CarisSwetlik\_41:

(15, 28054), (Start: 30 @27982 has 126 MA's), (51, 27919), (72, 27856), (97, 27640), (109, 27547), (110, 27532), (130, 27289), (135, 27253), (140, 27223), (144, 27193), (168, 27067), (178, 27022), (191, 26938), (199, 26863),

Gene: Carostasia\_35 Start: 26513, Stop: 25335, Start Num: 35

Candidate Starts for Carostasia\_35:

(Start: 35 @26513 has 32 MA's), (70, 26414), (72, 26399), (Start: 74 @26384 has 1 MA's), (101, 26162), (106, 26105), (108, 26093), (109, 26081), (110, 26066), (115, 26015), (135, 25787), (140, 25757), (144, 25727), (146, 25724), (157, 25664), (159, 25649), (169, 25598), (178, 25556), (187, 25505), (191, 25472), (194, 25436),

Gene: Carsonalex\_44 Start: 29819, Stop: 28788, Start Num: 68

Candidate Starts for Carsonalex\_44:

(36, 29948), (40, 29918), (Start: 49 @29864 has 1 MA's), (54, 29855), (Start: 68 @29819 has 24 MA's), (83, 29678), (98, 29561), (104, 29504), (112, 29435), (117, 29402), (124, 29324), (129, 29273), (165, 29078), (168, 29060), (171, 29042), (186, 28958), (189, 28940),

Gene: Casey\_34 Start: 25918, Stop: 24758, Start Num: 30

Candidate Starts for Casey\_34:

(16, 25987), (20, 25954), (Start: 30 @25918 has 126 MA's), (Start: 59 @25843 has 1 MA's), (72, 25798), (84, 25684), (93, 25597), (109, 25489), (115, 25423), (144, 25150), (168, 25024), (181, 24961), (187, 24928), (191, 24895), (194, 24859),

Gene: Chako\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for Chako\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (82, 26542), (102, 26392), (109, 26335), (110, 26320), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: Chamuel\_37 Start: 26756, Stop: 25581, Start Num: 30

Candidate Starts for Chamuel\_37:

(10, 26876), (16, 26825), (Start: 27 @26765 has 4 MA's), (Start: 30 @26756 has 126 MA's), (72, 26633), (76, 26600), (102, 26381), (109, 26324), (135, 26030), (140, 26000), (144, 25970), (146, 25967), (165, 25862), (168, 25844), (170, 25832), (178, 25799), (187, 25748), (191, 25715),

Gene: Cheeto1\_38 Start: 27209, Stop: 26040, Start Num: 30

Candidate Starts for Cheeto1\_38:

(12, 27317), (15, 27281), (16, 27278), (Start: 30 @27209 has 126 MA's), (72, 27098), (100, 26864), (106, 26813), (110, 26774), (135, 26495), (151, 26408), (168, 26309), (178, 26264), (191, 26180), (193, 26156), (194, 26144), (199, 26105),

Gene: Chepli\_38 Start: 26309, Stop: 25146, Start Num: 35

Candidate Starts for Chepli\_38:

(Start: 35 @26309 has 32 MA's), (Start: 43 @26297 has 1 MA's), (72, 26198), (73, 26195), (90, 26033), (109, 25889), (110, 25874), (115, 25823), (125, 25733), (135, 25595), (140, 25565), (144, 25535), (157, 25472), (159, 25457), (194, 25244),

Gene: CherryonLim\_44 Start: 32388, Stop: 31330, Start Num: 61

Candidate Starts for CherryonLim\_44:

(55, 32412), (Start: 61 @32388 has 17 MA's), (81, 32262), (83, 32235), (85, 32211), (88, 32178), (91, 32145), (98, 32100), (110, 31998), (118, 31917), (126, 31839), (128, 31815), (131, 31791), (133, 31779), (145, 31698), (163, 31629), (164, 31623), (165, 31614), (171, 31578), (175, 31563), (193, 31434), (194, 31422), (195, 31416), (197, 31401),

Gene: ChickenKing\_37 Start: 27122, Stop: 25956, Start Num: 30

Candidate Starts for ChickenKing\_37:

(12, 27230), (15, 27194), (16, 27191), (Start: 30 @27122 has 126 MA's), (72, 27011), (100, 26777), (106, 26726), (110, 26687), (135, 26408), (151, 26321), (168, 26222), (178, 26177), (191, 26093), (193, 26069), (194, 26057), (199, 26018),

Gene: ChickenTender\_44 Start: 29703, Stop: 28672, Start Num: 68

Candidate Starts for ChickenTender\_44:

(Start: 68 @29703 has 24 MA's), (70, 29691), (87, 29532), (98, 29445), (104, 29388), (112, 29319), (117, 29286), (124, 29208), (129, 29157), (153, 29019), (165, 28962), (168, 28944), (171, 28926), (186, 28842), (189, 28824),

Gene: ChikPic\_37 Start: 26815, Stop: 25652, Start Num: 35

Candidate Starts for ChikPic\_37:

(22, 26851), (Start: 23 @26842 has 2 MA's), (Start: 35 @26815 has 32 MA's), (72, 26704), (73, 26701), (77, 26656), (100, 26470), (103, 26437), (106, 26419), (109, 26395), (110, 26380), (115, 26329), (125, 26239), (135, 26101), (140, 26071), (144, 26041), (151, 26014), (169, 25912), (187, 25819), (191, 25786), (193, 25762), (194, 25750),

Gene: ChocoMunchkin\_40 Start: 29639, Stop: 28605, Start Num: 68

Candidate Starts for ChocoMunchkin\_40:

(Start: 68 @29639 has 24 MA's), (77, 29564), (90, 29444), (98, 29381), (110, 29279), (124, 29144), (152, 28964), (153, 28955), (165, 28898), (168, 28880), (171, 28862), (186, 28778),

Gene: Christoph\_37 Start: 26778, Stop: 25603, Start Num: 30

Candidate Starts for Christoph\_37:

(10, 26898), (16, 26847), (Start: 27 @26787 has 4 MA's), (Start: 30 @26778 has 126 MA's), (72, 26655), (Start: 74 @26640 has 1 MA's), (102, 26403), (109, 26346), (110, 26331), (135, 26052), (140, 26022), (144, 25992), (146, 25989), (165, 25884), (168, 25866), (170, 25854), (178, 25821), (187, 25770), (191, 25737),

Gene: Clancy\_37 Start: 26812, Stop: 25637, Start Num: 30

Candidate Starts for Clancy\_37:

(10, 26932), (16, 26881), (Start: 27 @26821 has 4 MA's), (Start: 30 @26812 has 126 MA's), (72, 26689), (Start: 74 @26674 has 1 MA's), (82, 26587), (102, 26437), (109, 26380), (110, 26365), (135, 26086), (140, 26056), (144, 26026), (146, 26023), (165, 25918), (168, 25900), (170, 25888), (178, 25855), (187, 25804), (191, 25771),

Gene: Cleo\_37 Start: 29247, Stop: 28195, Start Num: 56

Candidate Starts for Cleo\_37:

(Start: 56 @29247 has 3 MA's), (Start: 66 @29217 has 3 MA's), (72, 29187), (83, 29073), (90, 29019), (95, 28977), (98, 28956), (110, 28854), (114, 28824), (121, 28749), (124, 28719), (126, 28695), (147,

28557), (168, 28458), (171, 28440), (173, 28434), (174, 28428), (183, 28371), (187, 28350),

Gene: Clock\_35 Start: 27801, Stop: 26626, Start Num: 35

Candidate Starts for Clock\_35:

(8, 27945), (17, 27873), (18, 27867), (Start: 35 @27801 has 32 MA's), (72, 27687), (92, 27501), (109, 27369), (110, 27354), (115, 27303), (125, 27213), (144, 27015), (157, 26952), (187, 26793), (191, 26760), (193, 26736), (199, 26685),

Gene: ColaCorta\_37 Start: 26805, Stop: 25642, Start Num: 35

Candidate Starts for ColaCorta\_37:

(22, 26841), (Start: 23 @26832 has 2 MA's), (Start: 35 @26805 has 32 MA's), (72, 26694), (73, 26691), (77, 26646), (100, 26460), (103, 26427), (106, 26409), (109, 26385), (110, 26370), (115, 26319), (125, 26229), (135, 26091), (140, 26061), (144, 26031), (151, 26004), (169, 25902), (187, 25809), (191, 25776), (193, 25752), (194, 25740),

Gene: Convict\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for Convict\_38:

(10, 27202), (16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (82, 26857), (102, 26707), (109, 26650), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: Cozz\_39 Start: 29379, Stop: 28348, Start Num: 68

Candidate Starts for Cozz\_39:

(Start: 64 @29385 has 1 MA's), (Start: 68 @29379 has 24 MA's), (87, 29208), (98, 29121), (104, 29064), (112, 28995), (117, 28962), (124, 28884), (129, 28833), (165, 28638), (168, 28620), (171, 28602), (186, 28518), (189, 28500),

Gene: Dave\_38 Start: 27070, Stop: 25895, Start Num: 30

Candidate Starts for Dave\_38:

(10, 27190), (16, 27139), (Start: 27 @27079 has 4 MA's), (Start: 30 @27070 has 126 MA's), (72, 26947), (Start: 74 @26932 has 1 MA's), (102, 26695), (109, 26638), (110, 26623), (135, 26344), (140, 26314), (144, 26284), (146, 26281), (165, 26176), (168, 26158), (170, 26146), (178, 26113), (187, 26062), (191, 26029),

Gene: Delphidian\_38 Start: 27081, Stop: 25906, Start Num: 30

Candidate Starts for Delphidian\_38:

(10, 27201), (16, 27150), (Start: 27 @27090 has 4 MA's), (Start: 30 @27081 has 126 MA's), (72, 26958), (Start: 74 @26943 has 1 MA's), (102, 26706), (109, 26649), (135, 26355), (140, 26325), (144, 26295), (146, 26292), (165, 26187), (168, 26169), (170, 26157), (178, 26124), (187, 26073), (191, 26040),

Gene: Den3\_38 Start: 27087, Stop: 25912, Start Num: 30

Candidate Starts for Den3\_38:

(10, 27207), (16, 27156), (Start: 27 @27096 has 4 MA's), (Start: 30 @27087 has 126 MA's), (72, 26964), (82, 26862), (102, 26712), (109, 26655), (135, 26361), (140, 26331), (144, 26301), (146, 26298), (165, 26193), (168, 26175), (170, 26163), (178, 26130), (187, 26079), (191, 26046),

Gene: Dothraki\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Dothraki\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (110, 26631), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: Dre3\_37 Start: 28990, Stop: 27938, Start Num: 56

Candidate Starts for Dre3\_37:

(Start: 56 @28990 has 3 MA's), (Start: 61 @28969 has 17 MA's), (Start: 66 @28960 has 3 MA's), (72, 28930), (83, 28816), (90, 28762), (95, 28720), (98, 28699), (110, 28597), (114, 28567), (121, 28492), (124, 28462), (126, 28438), (147, 28300), (168, 28201), (171, 28183), (173, 28177), (174, 28171), (183, 28114), (187, 28093),

Gene: Duocatuli\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for Duocatuli\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (82, 26542), (102, 26392), (109, 26335), (110, 26320), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: Eleri\_37 Start: 26806, Stop: 25643, Start Num: 35

Candidate Starts for Eleri\_37:

(22, 26842), (Start: 23 @26833 has 2 MA's), (Start: 35 @26806 has 32 MA's), (72, 26695), (73, 26692), (77, 26647), (100, 26461), (103, 26428), (106, 26410), (109, 26386), (110, 26371), (115, 26320), (125, 26230), (135, 26092), (140, 26062), (144, 26032), (151, 26005), (169, 25903), (187, 25810), (191, 25777), (193, 25753), (194, 25741),

Gene: Elinal\_46 Start: 31626, Stop: 30580, Start Num: 68

Candidate Starts for Elinal\_46:

(57, 31656), (Start: 64 @31632 has 1 MA's), (Start: 68 @31626 has 24 MA's), (85, 31461), (87, 31437), (88, 31428), (91, 31395), (98, 31350), (110, 31248), (118, 31167), (126, 31089), (131, 31041), (145, 30948), (155, 30912), (163, 30879), (164, 30873), (165, 30864), (167, 30849), (171, 30828), (175, 30813), (193, 30684), (194, 30672), (195, 30666), (197, 30651),

Gene: Elliott\_41 Start: 29790, Stop: 28759, Start Num: 68

Candidate Starts for Elliott\_41:

(Start: 68 @29790 has 24 MA's), (87, 29619), (98, 29532), (104, 29475), (112, 29406), (117, 29373), (124, 29295), (129, 29244), (165, 29049), (168, 29031), (171, 29013), (186, 28929), (189, 28911),

Gene: Emalyn\_41 Start: 29228, Stop: 28200, Start Num: 68

Candidate Starts for Emalyn\_41:

(Start: 68 @29228 has 24 MA's), (90, 29033), (98, 28970), (110, 28868), (112, 28844), (118, 28787), (124, 28733), (129, 28682), (152, 28553), (153, 28544), (165, 28487), (168, 28469), (171, 28451), (186, 28367),

Gene: Endor\_38 Start: 27441, Stop: 26254, Start Num: 27

Candidate Starts for Endor\_38:

(15, 27504), (Start: 27 @27441 has 4 MA's), (Start: 30 @27432 has 126 MA's), (72, 27306), (73, 27303), (100, 27072), (102, 27054), (109, 26997), (110, 26982), (130, 26739), (135, 26703), (144, 26643), (146, 26640), (148, 26634), (168, 26517), (187, 26421), (191, 26388),

Gene: Erla\_37 Start: 26760, Stop: 25585, Start Num: 30

Candidate Starts for Erla\_37:

(10, 26880), (16, 26829), (Start: 27 @26769 has 4 MA's), (Start: 30 @26760 has 126 MA's), (72, 26637), (76, 26604), (102, 26385), (109, 26328), (135, 26034), (140, 26004), (144, 25974), (146, 25971), (165, 25866), (168, 25848), (170, 25836), (178, 25803), (187, 25752), (191, 25719),

Gene: Espinosa\_37 Start: 26778, Stop: 25603, Start Num: 30

Candidate Starts for Espinosa\_37:

(10, 26898), (16, 26847), (Start: 27 @26787 has 4 MA's), (Start: 30 @26778 has 126 MA's), (72, 26655), (Start: 74 @26640 has 1 MA's), (102, 26403), (109, 26346), (110, 26331), (135, 26052), (140, 26022), (144, 25992), (146, 25989), (165, 25884), (168, 25866), (170, 25854), (178, 25821), (187, 25770), (191, 25737),

Gene: Etna\_37 Start: 27214, Stop: 26036, Start Num: 30

Candidate Starts for Etna\_37:

(15, 27286), (Start: 27 @27223 has 4 MA's), (Start: 30 @27214 has 126 MA's), (72, 27088), (73, 27085), (100, 26854), (109, 26779), (110, 26764), (135, 26485), (144, 26425), (146, 26422), (168, 26299), (187, 26203), (191, 26170),

Gene: Etta\_37 Start: 26764, Stop: 25589, Start Num: 30

Candidate Starts for Etta\_37:

(10, 26884), (16, 26833), (Start: 27 @26773 has 4 MA's), (Start: 30 @26764 has 126 MA's), (72, 26641), (76, 26608), (102, 26389), (109, 26332), (135, 26038), (140, 26008), (144, 25978), (146, 25975), (165, 25870), (168, 25852), (170, 25840), (178, 25807), (187, 25756), (191, 25723),

Gene: Exploradora\_38 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for Exploradora\_38:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (76, 26611), (102, 26392), (109, 26335), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: FF47\_42 Start: 31849, Stop: 30833, Start Num: 61

Candidate Starts for FF47\_42:

(Start: 61 @31849 has 17 MA's), (78, 31756), (79, 31753), (86, 31666), (98, 31579), (104, 31522), (107, 31507), (112, 31453), (131, 31270), (165, 31099), (167, 31084), (171, 31063), (192, 30937), (198, 30886), (200, 30865),

Gene: FarmerDoug\_37 Start: 27063, Stop: 25885, Start Num: 30

Candidate Starts for FarmerDoug\_37:

(14, 27141), (15, 27135), (Start: 30 @27063 has 126 MA's), (72, 26937), (73, 26934), (100, 26703), (109, 26628), (110, 26613), (113, 26586), (135, 26334), (140, 26304), (144, 26274), (146, 26271), (168, 26148), (187, 26052), (191, 26019),

Gene: Feastonyeet\_42 Start: 31250, Stop: 30192, Start Num: 61

Candidate Starts for Feastonyeet\_42:

(55, 31274), (Start: 61 @31250 has 17 MA's), (81, 31124), (83, 31097), (85, 31073), (88, 31040), (91, 31007), (98, 30962), (110, 30860), (118, 30779), (126, 30701), (131, 30653), (133, 30641), (145, 30560), (155, 30524), (163, 30491), (164, 30485), (165, 30476), (167, 30461), (171, 30440), (175, 30425), (193, 30296), (194, 30284), (195, 30278), (197, 30263),

Gene: Figueroism\_38 Start: 27072, Stop: 25897, Start Num: 30

Candidate Starts for Figueroism\_38:

(10, 27192), (16, 27141), (Start: 27 @27081 has 4 MA's), (Start: 30 @27072 has 126 MA's), (72, 26949), (Start: 74 @26934 has 1 MA's), (82, 26847), (102, 26697), (109, 26640), (110, 26625), (135, 26346), (140, 26316), (144, 26286), (146, 26283), (165, 26178), (168, 26160), (170, 26148), (178, 26115), (187, 26064), (191, 26031),

Gene: Finny\_37 Start: 26846, Stop: 25683, Start Num: 35

Candidate Starts for Finny\_37:

(22, 26882), (Start: 23 @26873 has 2 MA's), (Start: 35 @26846 has 32 MA's), (72, 26735), (77, 26687), (100, 26501), (103, 26468), (106, 26450), (109, 26426), (110, 26411), (115, 26360), (125, 26270), (135, 26132), (140, 26102), (144, 26072), (146, 26069), (151, 26045), (169, 25943), (187, 25850), (191, 25817), (193, 25793), (194, 25781),

Gene: Fribs8\_38 Start: 29408, Stop: 28377, Start Num: 61

Candidate Starts for Fribs8\_38:

(Start: 61 @29408 has 17 MA's), (72, 29369), (78, 29315), (79, 29312), (83, 29255), (87, 29225), (95, 29159), (98, 29138), (110, 29036), (114, 29006), (115, 28988), (121, 28931), (124, 28901), (150, 28736), (165, 28658), (168, 28640), (171, 28622), (174, 28610), (175, 28607), (187, 28532),

Gene: Fulton\_35 Start: 24975, Stop: 23797, Start Num: 35

Candidate Starts for Fulton\_35:

(17, 25047), (19, 25032), (Start: 35 @24975 has 32 MA's), (72, 24861), (109, 24543), (110, 24528), (115, 24477), (130, 24285), (135, 24249), (144, 24189), (146, 24186), (159, 24111), (169, 24060), (189, 23955), (194, 23898),

Gene: GTE2\_33 Start: 29525, Stop: 28416, Start Num: 42

Candidate Starts for GTE2\_33:

(24, 29624), (25, 29618), (42, 29525), (55, 29486), (Start: 68 @29450 has 24 MA's), (77, 29375), (90, 29255), (98, 29192), (110, 29090), (113, 29063), (124, 28955), (129, 28904), (136, 28853), (152, 28775), (153, 28766), (165, 28709), (168, 28691), (171, 28673), (186, 28589),

Gene: GaeCeo\_38 Start: 27355, Stop: 26189, Start Num: 30

Candidate Starts for GaeCeo\_38:

(12, 27463), (15, 27427), (16, 27424), (Start: 27 @27364 has 4 MA's), (Start: 30 @27355 has 126 MA's), (72, 27244), (100, 27010), (106, 26959), (135, 26641), (151, 26554), (168, 26455), (178, 26410), (191, 26326), (193, 26302), (194, 26290), (199, 26251),

Gene: GardenB\_37 Start: 27181, Stop: 26003, Start Num: 30

Candidate Starts for GardenB\_37:

(15, 27253), (Start: 27 @27190 has 4 MA's), (Start: 30 @27181 has 126 MA's), (72, 27055), (73, 27052), (100, 26821), (109, 26746), (110, 26731), (130, 26488), (135, 26452), (140, 26422), (146, 26389), (168, 26266), (187, 26170), (191, 26137),

Gene: Garey24\_37 Start: 26746, Stop: 25571, Start Num: 30

Candidate Starts for Garey24\_37:

(10, 26866), (16, 26815), (Start: 27 @26755 has 4 MA's), (Start: 30 @26746 has 126 MA's), (72, 26623), (Start: 74 @26608 has 1 MA's), (102, 26371), (109, 26314), (135, 26020), (140, 25990), (144, 25960), (146, 25957), (165, 25852), (168, 25834), (170, 25822), (178, 25789), (187, 25738), (191, 25705),

Gene: Gargoyle\_38 Start: 27087, Stop: 25912, Start Num: 30

Candidate Starts for Gargoyle\_38:

(10, 27207), (16, 27156), (Start: 27 @27096 has 4 MA's), (Start: 30 @27087 has 126 MA's), (72, 26964), (82, 26862), (102, 26712), (109, 26655), (135, 26361), (140, 26331), (144, 26301), (146, 26298), (165, 26193), (168, 26175), (170, 26163), (178, 26130), (187, 26079), (191, 26046),

Gene: Gelo\_37 Start: 26770, Stop: 25595, Start Num: 30

Candidate Starts for Gelo\_37:

(10, 26890), (16, 26839), (Start: 27 @26779 has 4 MA's), (Start: 30 @26770 has 126 MA's), (72, 26647), (76, 26614), (102, 26395), (109, 26338), (135, 26044), (140, 26014), (144, 25984), (146, 25981), (165, 25876), (168, 25858), (170, 25846), (178, 25813), (187, 25762), (191, 25729),



Gene: Gershwin\_37 Start: 26780, Stop: 25605, Start Num: 30

Candidate Starts for Gershwin\_37:

(10, 26900), (16, 26849), (Start: 27 @26789 has 4 MA's), (Start: 30 @26780 has 126 MA's), (72, 26657), (76, 26624), (102, 26405), (109, 26348), (135, 26054), (140, 26024), (144, 25994), (146, 25991), (165, 25886), (168, 25868), (170, 25856), (178, 25823), (187, 25772), (191, 25739),

Gene: GiKK\_47 Start: 30758, Stop: 29736, Start Num: 62

Candidate Starts for GiKK\_47:

(Start: 62 @30758 has 3 MA's), (83, 30611), (87, 30581), (98, 30494), (104, 30437), (108, 30416), (110, 30392), (112, 30368), (114, 30362), (118, 30311), (124, 30257), (126, 30233), (129, 30206), (163, 30029), (165, 30014), (174, 29966), (189, 29876),

Gene: Gibbous\_37 Start: 28990, Stop: 27938, Start Num: 56

Candidate Starts for Gibbous\_37:

(Start: 56 @28990 has 3 MA's), (Start: 61 @28969 has 17 MA's), (Start: 66 @28960 has 3 MA's), (72, 28930), (83, 28816), (90, 28762), (95, 28720), (98, 28699), (110, 28597), (114, 28567), (121, 28492), (124, 28462), (126, 28438), (147, 28300), (168, 28201), (171, 28183), (173, 28177), (174, 28171), (183, 28114), (187, 28093),

Gene: Glamour\_36 Start: 26824, Stop: 25634, Start Num: 23

Candidate Starts for Glamour\_36:

(22, 26833), (Start: 23 @26824 has 2 MA's), (Start: 35 @26797 has 32 MA's), (72, 26686), (73, 26683), (77, 26638), (100, 26452), (103, 26419), (106, 26401), (109, 26377), (110, 26362), (115, 26311), (125, 26221), (135, 26083), (140, 26053), (144, 26023), (151, 25996), (169, 25894), (187, 25801), (191, 25768), (193, 25744), (194, 25732),

Gene: GoldHunter\_42 Start: 29791, Stop: 28760, Start Num: 68

Candidate Starts for GoldHunter\_42:

(Start: 68 @29791 has 24 MA's), (87, 29620), (98, 29533), (104, 29476), (112, 29407), (117, 29374), (124, 29296), (129, 29245), (165, 29050), (168, 29032), (171, 29014), (186, 28930), (189, 28912),

Gene: Golden\_36 Start: 26754, Stop: 25594, Start Num: 29

Candidate Starts for Golden\_36:

(15, 26817), (16, 26814), (Start: 29 @26754 has 9 MA's), (72, 26634), (73, 26631), (100, 26400), (110, 26310), (113, 26283), (157, 25923), (159, 25908), (169, 25857), (191, 25731), (193, 25707), (194, 25695),

Gene: Greenlvy\_35 Start: 25564, Stop: 24386, Start Num: 35

Candidate Starts for Greenlvy\_35:

(17, 25636), (18, 25630), (19, 25621), (Start: 35 @25564 has 32 MA's), (72, 25450), (109, 25132), (110, 25117), (115, 25066), (130, 24874), (135, 24838), (144, 24778), (146, 24775), (159, 24700), (169, 24649), (189, 24544), (194, 24487),

Gene: Greys\_38 Start: 27089, Stop: 25905, Start Num: 27

Candidate Starts for Greys\_38:

(10, 27200), (16, 27149), (Start: 27 @27089 has 4 MA's), (Start: 30 @27080 has 126 MA's), (72, 26957), (82, 26855), (102, 26705), (109, 26648), (135, 26354), (140, 26324), (144, 26294), (146, 26291), (165, 26186), (168, 26168), (170, 26156), (178, 26123), (187, 26072), (191, 26039),

Gene: Gubbabump\_37 Start: 26760, Stop: 25585, Start Num: 30

Candidate Starts for Gubbabump\_37:

(10, 26880), (16, 26829), (Start: 27 @26769 has 4 MA's), (Start: 30 @26760 has 126 MA's), (72, 26637), (Start: 74 @26622 has 1 MA's), (82, 26535), (102, 26385), (109, 26328), (110, 26313), (135, 26034), (140, 26004), (144, 25974), (146, 25971), (165, 25866), (168, 25848), (170, 25836), (178, 25803), (187, 25752), (191, 25719),

Gene: Guetzie\_36 Start: 26730, Stop: 25579, Start Num: 32

Candidate Starts for Guetzie\_36:

(15, 26802), (16, 26799), (Start: 29 @26739 has 9 MA's), (Start: 32 @26730 has 2 MA's), (72, 26619), (73, 26616), (100, 26385), (108, 26322), (110, 26295), (113, 26268), (157, 25908), (159, 25893), (169, 25842), (191, 25716), (193, 25692), (194, 25680),

Gene: HairyMan\_35 Start: 26176, Stop: 24935, Start Num: 27

Candidate Starts for HairyMan\_35:

(7, 26302), (12, 26275), (15, 26239), (26, 26179), (Start: 27 @26176 has 4 MA's), (Start: 30 @26167 has 126 MA's), (72, 25987), (90, 25822), (106, 25702), (109, 25678), (110, 25663), (135, 25384), (144, 25324), (159, 25246), (161, 25240), (191, 25069), (194, 25033), (199, 24994),

Gene: Hamlet\_37 Start: 27212, Stop: 26034, Start Num: 30

Candidate Starts for Hamlet\_37:

(15, 27284), (Start: 30 @27212 has 126 MA's), (72, 27086), (73, 27083), (93, 26885), (100, 26852), (109, 26777), (110, 26762), (135, 26483), (144, 26423), (146, 26420), (148, 26414), (168, 26297), (187, 26201), (191, 26168),

Gene: HanSolo\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for HanSolo\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (82, 26542), (102, 26392), (109, 26335), (110, 26320), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: HankSprout\_38 Start: 26647, Stop: 25472, Start Num: 30

Candidate Starts for HankSprout\_38:

(10, 26767), (16, 26716), (Start: 27 @26656 has 4 MA's), (Start: 30 @26647 has 126 MA's), (72, 26524), (Start: 74 @26509 has 1 MA's), (82, 26422), (102, 26272), (109, 26215), (110, 26200), (135, 25921), (140, 25891), (144, 25861), (146, 25858), (165, 25753), (168, 25735), (170, 25723), (178, 25690), (187, 25639), (191, 25606),

Gene: Hasitha\_35 Start: 24987, Stop: 23809, Start Num: 35

Candidate Starts for Hasitha\_35:

(17, 25059), (19, 25044), (Start: 35 @24987 has 32 MA's), (72, 24873), (109, 24555), (110, 24540), (115, 24489), (130, 24297), (135, 24261), (144, 24201), (146, 24198), (159, 24123), (169, 24072), (189, 23967), (194, 23910),

Gene: HerculesXL\_36 Start: 25428, Stop: 24247, Start Num: 30

Candidate Starts for HerculesXL\_36:

(1, 25644), (6, 25581), (11, 25536), (15, 25500), (Start: 30 @25428 has 126 MA's), (72, 25299), (77, 25251), (103, 25032), (105, 25020), (106, 25014), (109, 24990), (110, 24975), (115, 24924), (125, 24834), (140, 24666), (143, 24648), (148, 24627), (169, 24507), (178, 24465), (187, 24414), (191, 24381), (193, 24357), (194, 24345),

Gene: Hexbug\_49 Start: 32527, Stop: 31505, Start Num: 66

Candidate Starts for Hexbug\_49:

(34, 32659), (47, 32575), (53, 32563), (Start: 66 @32527 has 3 MA's), (83, 32383), (87, 32353), (90, 32329), (98, 32266), (104, 32209), (112, 32140), (114, 32134), (115, 32116), (118, 32083), (124, 32029), (126, 32005), (129, 31978), (138, 31909), (147, 31864), (152, 31849), (156, 31828), (162, 31801), (163, 31798), (165, 31783), (174, 31735), (179, 31717), (197, 31570),

Gene: HippoPololi\_39 Start: 29421, Stop: 28390, Start Num: 61

Candidate Starts for HippoPololi\_39:

(Start: 61 @29421 has 17 MA's), (72, 29382), (83, 29268), (90, 29214), (95, 29172), (98, 29151), (110, 29049), (114, 29019), (141, 28779), (150, 28749), (163, 28686), (168, 28653), (171, 28635), (174, 28623),

Gene: Horseradish\_43 Start: 29685, Stop: 28657, Start Num: 68

Candidate Starts for Horseradish\_43:

(24, 29859), (36, 29814), (Start: 68 @29685 has 24 MA's), (90, 29490), (98, 29427), (112, 29301), (118, 29244), (124, 29190), (129, 29139), (152, 29010), (153, 29001), (156, 28989), (165, 28944), (168, 28926), (171, 28908), (189, 28806), (197, 28731),

Gene: HungryHenry\_37 Start: 26772, Stop: 25597, Start Num: 30

Candidate Starts for HungryHenry\_37:

(10, 26892), (16, 26841), (Start: 27 @26781 has 4 MA's), (Start: 30 @26772 has 126 MA's), (72, 26649), (Start: 74 @26634 has 1 MA's), (82, 26547), (102, 26397), (109, 26340), (110, 26325), (135, 26046), (140, 26016), (144, 25986), (146, 25983), (165, 25878), (168, 25860), (170, 25848), (178, 25815), (187, 25764), (191, 25731),

Gene: Huwbert\_79 Start: 48394, Stop: 49503, Start Num: 44

Candidate Starts for Huwbert\_79:

(Start: 30 @48307 has 126 MA's), (37, 48334), (Start: 44 @48394 has 2 MA's), (52, 48424), (72, 48490), (75, 48517), (91, 48673), (96, 48706), (100, 48730), (116, 48871), (126, 48976), (171, 49252), (174, 49264), (175, 49267), (176, 49270), (177, 49273), (182, 49297), (188, 49336), (194, 49399), (196, 49411),

Gene: Ilzat\_37 Start: 26783, Stop: 25608, Start Num: 30

Candidate Starts for Ilzat\_37:

(10, 26903), (16, 26852), (Start: 27 @26792 has 4 MA's), (Start: 30 @26783 has 126 MA's), (72, 26660), (Start: 74 @26645 has 1 MA's), (82, 26558), (102, 26408), (109, 26351), (110, 26336), (135, 26057), (140, 26027), (144, 25997), (146, 25994), (165, 25889), (168, 25871), (170, 25859), (178, 25826), (187, 25775), (191, 25742),

Gene: Inventa\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Inventa\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (110, 26631), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: loannes\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for loannes\_38:

(10, 27202), (16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (Start: 74 @26944 has 1 MA's), (82, 26857), (102, 26707), (109, 26650), (110, 26635), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: Ixel\_36 Start: 25399, Stop: 24230, Start Num: 35

Candidate Starts for Ixel\_36:

(9, 25537), (18, 25465), (Start: 35 @25399 has 32 MA's), (72, 25285), (103, 25018), (106, 25000), (109, 24976), (110, 24961), (115, 24910), (125, 24820), (135, 24682), (191, 24367), (193, 24343),

Gene: JacoRen57\_39 Start: 32689, Stop: 31700, Start Num: 74

Candidate Starts for JacoRen57\_39:

(65, 32731), (70, 32719), (Start: 74 @32689 has 1 MA's), (85, 32566), (87, 32542), (91, 32500), (94, 32479), (98, 32455), (106, 32389), (107, 32383), (110, 32353), (112, 32329), (114, 32323), (115, 32305), (117, 32296), (119, 32263), (122, 32230), (128, 32170), (131, 32146), (133, 32134), (135, 32122), (141, 32083), (168, 31951), (171, 31933),

Gene: Jamzy\_47 Start: 30741, Stop: 29719, Start Num: 62

Candidate Starts for Jamzy\_47:

(Start: 62 @30741 has 3 MA's), (83, 30594), (87, 30564), (98, 30477), (104, 30420), (110, 30375), (112, 30351), (114, 30345), (118, 30294), (124, 30240), (126, 30216), (129, 30189), (163, 30012), (165, 29997), (174, 29949), (189, 29859),

Gene: Janus167\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for Janus167\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (102, 26392), (109, 26335), (110, 26320), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: JasonD\_42 Start: 27633, Stop: 26452, Start Num: 30

Candidate Starts for JasonD\_42:

(15, 27705), (Start: 27 @27642 has 4 MA's), (Start: 30 @27633 has 126 MA's), (72, 27504), (97, 27288), (102, 27252), (105, 27225), (109, 27195), (110, 27180), (135, 26901), (140, 26871), (144, 26841), (146, 26838), (149, 26829), (168, 26715), (178, 26670), (191, 26586), (199, 26511),

Gene: JasperRussell\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for JasperRussell\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (82, 26542), (102, 26392), (109, 26335), (110, 26320), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: Jemerald\_39 Start: 27469, Stop: 26306, Start Num: 38

Candidate Starts for Jemerald\_39:

(15, 27556), (Start: 32 @27484 has 2 MA's), (Start: 38 @27469 has 2 MA's), (Start: 59 @27406 has 1 MA's), (72, 27361), (77, 27313), (102, 27109), (106, 27076), (109, 27052), (110, 27037), (115, 26986), (144, 26698), (157, 26635), (158, 26623), (168, 26572), (191, 26443), (193, 26419), (194, 26407),

Gene: Jenos\_41 Start: 28279, Stop: 27101, Start Num: 30

Candidate Starts for Jenos\_41:

(15, 28351), (Start: 30 @28279 has 126 MA's), (51, 28216), (72, 28153), (97, 27937), (109, 27844), (110, 27829), (130, 27586), (135, 27550), (140, 27520), (144, 27490), (168, 27364), (178, 27319), (191, 27235), (199, 27160),

Gene: Jerbirus\_38 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for Jerbirus\_38:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (82, 26542), (102, 26392), (109, 26335), (110, 26320), (135,

26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: JeriBeth\_38 Start: 26630, Stop: 25455, Start Num: 30

Candidate Starts for JeriBeth\_38:

(10, 26750), (16, 26699), (Start: 27 @26639 has 4 MA's), (Start: 30 @26630 has 126 MA's), (72, 26507), (Start: 74 @26492 has 1 MA's), (82, 26405), (102, 26255), (109, 26198), (110, 26183), (135, 25904), (140, 25874), (144, 25844), (146, 25841), (165, 25736), (168, 25718), (170, 25706), (178, 25673), (187, 25622), (191, 25589),

Gene: Jingles\_36 Start: 26659, Stop: 25496, Start Num: 29

Candidate Starts for Jingles\_36:

(16, 26719), (Start: 29 @26659 has 9 MA's), (63, 26569), (72, 26533), (73, 26530), (100, 26299), (109, 26224), (110, 26209), (113, 26182), (128, 26002), (157, 25822), (159, 25807), (191, 25630), (194, 25594), (199, 25555),

Gene: Juanyo\_36 Start: 26603, Stop: 25416, Start Num: 31

Candidate Starts for Juanyo\_36:

(16, 26675), (Start: 28 @26612 has 1 MA's), (Start: 31 @26603 has 1 MA's), (72, 26480), (Start: 74 @26465 has 1 MA's), (93, 26279), (108, 26174), (109, 26162), (110, 26147), (115, 26096), (140, 25838), (146, 25805), (152, 25772), (159, 25730), (169, 25679), (178, 25637), (187, 25586), (193, 25529), (194, 25517),

Gene: Juicer\_39 Start: 27469, Stop: 26306, Start Num: 38

Candidate Starts for Juicer\_39:

(15, 27556), (Start: 32 @27484 has 2 MA's), (Start: 38 @27469 has 2 MA's), (Start: 59 @27406 has 1 MA's), (72, 27361), (77, 27313), (102, 27109), (106, 27076), (109, 27052), (110, 27037), (115, 26986), (144, 26698), (157, 26635), (158, 26623), (168, 26572), (191, 26443), (193, 26419), (194, 26407),

Gene: Kale\_37 Start: 26782, Stop: 25607, Start Num: 30

Candidate Starts for Kale\_37:

(10, 26902), (16, 26851), (Start: 27 @26791 has 4 MA's), (Start: 30 @26782 has 126 MA's), (72, 26659), (Start: 74 @26644 has 1 MA's), (102, 26407), (109, 26350), (135, 26056), (140, 26026), (144, 25996), (146, 25993), (165, 25888), (168, 25870), (170, 25858), (178, 25825), (187, 25774), (191, 25741),

Gene: KannH\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for KannH\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (82, 26542), (102, 26392), (109, 26335), (110, 26320), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: KatChan\_38 Start: 26321, Stop: 25158, Start Num: 35

Candidate Starts for KatChan\_38:

(Start: 35 @26321 has 32 MA's), (Start: 43 @26309 has 1 MA's), (72, 26210), (73, 26207), (90, 26045), (109, 25901), (110, 25886), (115, 25835), (125, 25745), (135, 25607), (140, 25577), (144, 25547), (157, 25484), (159, 25469), (194, 25256),

Gene: Kauala\_36 Start: 26645, Stop: 25482, Start Num: 29

Candidate Starts for Kauala\_36:

(16, 26705), (Start: 29 @26645 has 9 MA's), (63, 26555), (72, 26519), (73, 26516), (100, 26285), (109, 26210), (110, 26195), (113, 26168), (128, 25988), (159, 25793), (191, 25616), (193, 25592), (194,

25580), (199, 25541),

Gene: KayGee\_44 Start: 31626, Stop: 30580, Start Num: 68

Candidate Starts for KayGee\_44:

(57, 31656), (Start: 64 @31632 has 1 MA's), (Start: 68 @31626 has 24 MA's), (85, 31461), (87, 31437), (88, 31428), (91, 31395), (98, 31350), (110, 31248), (118, 31167), (126, 31089), (131, 31041), (145, 30948), (155, 30912), (163, 30879), (164, 30873), (165, 30864), (167, 30849), (171, 30828), (175, 30813), (193, 30684), (194, 30672), (195, 30666), (197, 30651),

Gene: KimJongPhill\_82 Start: 60719, Stop: 61843, Start Num: 48

Candidate Starts for KimJongPhill\_82:

(2, 60410), (5, 60458), (33, 60635), (Start: 48 @60719 has 2 MA's), (72, 60797), (75, 60824), (80, 60866), (89, 60986), (98, 61052), (100, 61064), (104, 61109), (106, 61118), (110, 61160), (112, 61184), (114, 61190), (116, 61214), (126, 61319), (130, 61364), (132, 61373), (142, 61451), (163, 61550), (171, 61601), (182, 61649), (185, 61676), (191, 61709), (194, 61745), (201, 61811), (202, 61835),

Gene: KingJulien\_37 Start: 27202, Stop: 26024, Start Num: 30

Candidate Starts for KingJulien\_37:

(15, 27274), (Start: 27 @27211 has 4 MA's), (Start: 30 @27202 has 126 MA's), (72, 27076), (73, 27073), (100, 26842), (109, 26767), (110, 26752), (135, 26473), (144, 26413), (146, 26410), (168, 26287), (187, 26191), (191, 26158),

Gene: Klimt\_37 Start: 26762, Stop: 25587, Start Num: 30

Candidate Starts for Klimt\_37:

(10, 26882), (16, 26831), (Start: 27 @26771 has 4 MA's), (Start: 30 @26762 has 126 MA's), (72, 26639), (76, 26606), (102, 26387), (109, 26330), (135, 26036), (140, 26006), (144, 25976), (146, 25973), (165, 25868), (168, 25850), (170, 25838), (178, 25805), (187, 25754), (191, 25721),

Gene: Knox\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for Knox\_38:

(10, 27202), (16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (82, 26857), (102, 26707), (109, 26650), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: Koji\_36 Start: 26838, Stop: 25675, Start Num: 29

Candidate Starts for Koji\_36:

(16, 26898), (Start: 29 @26838 has 9 MA's), (63, 26748), (72, 26712), (73, 26709), (100, 26478), (108, 26415), (109, 26403), (110, 26388), (113, 26361), (128, 26181), (134, 26136), (157, 26001), (159, 25986), (191, 25809), (194, 25773), (199, 25734),

Gene: Kurt1\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Kurt1\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (110, 26631), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: Lauer\_39 Start: 32447, Stop: 31389, Start Num: 59

Candidate Starts for Lauer\_39:

(Start: 59 @32447 has 1 MA's), (81, 32321), (85, 32270), (87, 32246), (88, 32237), (91, 32204), (98, 32159), (110, 32057), (118, 31976), (126, 31898), (131, 31850), (145, 31757), (155, 31721), (163, 31688), (164, 31682), (165, 31673), (171, 31637), (175, 31622), (193, 31493), (194, 31481), (195,

31475), (197, 31460),

Gene: Leafus\_37 Start: 27347, Stop: 26169, Start Num: 30

Candidate Starts for Leafus\_37:

(15, 27419), (Start: 30 @27347 has 126 MA's), (72, 27221), (73, 27218), (93, 27020), (100, 26987), (109, 26912), (110, 26897), (135, 26618), (144, 26558), (146, 26555), (148, 26549), (168, 26432), (187, 26336), (191, 26303),

Gene: Librie\_35 Start: 24974, Stop: 23796, Start Num: 35

Candidate Starts for Librie\_35:

(17, 25046), (19, 25031), (Start: 35 @24974 has 32 MA's), (72, 24860), (109, 24542), (110, 24527), (115, 24476), (130, 24284), (135, 24248), (144, 24188), (146, 24185), (159, 24110), (169, 24059), (189, 23954), (194, 23897),

Gene: LilTerminator\_36 Start: 24996, Stop: 23818, Start Num: 35

Candidate Starts for LilTerminator\_36:

(17, 25068), (19, 25053), (Start: 35 @24996 has 32 MA's), (72, 24882), (79, 24825), (109, 24564), (110, 24549), (115, 24498), (130, 24306), (135, 24270), (144, 24210), (146, 24207), (159, 24132), (169, 24081), (189, 23976), (194, 23919),

Gene: Lovelyunicorn\_38 Start: 27083, Stop: 25908, Start Num: 30

Candidate Starts for Lovelyunicorn\_38:

(10, 27203), (16, 27152), (Start: 27 @27092 has 4 MA's), (Start: 30 @27083 has 126 MA's), (72, 26960), (82, 26858), (102, 26708), (109, 26651), (135, 26357), (140, 26327), (144, 26297), (146, 26294), (165, 26189), (168, 26171), (170, 26159), (178, 26126), (187, 26075), (191, 26042),

Gene: Lucky3\_36 Start: 26754, Stop: 25594, Start Num: 29

Candidate Starts for Lucky3\_36:

(15, 26817), (16, 26814), (Start: 29 @26754 has 9 MA's), (72, 26634), (73, 26631), (100, 26400), (110, 26310), (113, 26283), (157, 25923), (159, 25908), (169, 25857), (191, 25731), (193, 25707), (194, 25695),

Gene: Ludgate\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Ludgate\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: Luna18\_38 Start: 26321, Stop: 25158, Start Num: 35

Candidate Starts for Luna18\_38:

(Start: 35 @26321 has 32 MA's), (Start: 43 @26309 has 1 MA's), (72, 26210), (73, 26207), (90, 26045), (109, 25901), (110, 25886), (115, 25835), (125, 25745), (135, 25607), (140, 25577), (144, 25547), (157, 25484), (159, 25469), (194, 25256),

Gene: MAnor\_44 Start: 31980, Stop: 30922, Start Num: 61

Candidate Starts for MAnor\_44:

(55, 32004), (Start: 61 @31980 has 17 MA's), (81, 31854), (85, 31803), (88, 31770), (91, 31737), (98, 31692), (110, 31590), (113, 31563), (118, 31509), (126, 31431), (128, 31407), (131, 31383), (145, 31290), (163, 31221), (164, 31215), (165, 31206), (171, 31170), (172, 31167), (175, 31155), (189, 31068), (193, 31026), (194, 31014), (195, 31008), (197, 30993),

Gene: MCubed\_37 Start: 26822, Stop: 25659, Start Num: 35

Candidate Starts for MCubed\_37:

(22, 26858), (Start: 23 @26849 has 2 MA's), (Start: 35 @26822 has 32 MA's), (72, 26711), (77, 26663), (100, 26477), (103, 26444), (106, 26426), (109, 26402), (110, 26387), (115, 26336), (125, 26246), (135, 26108), (140, 26078), (144, 26048), (146, 26045), (151, 26021), (169, 25919), (187, 25826), (191, 25793), (193, 25769), (194, 25757),

Gene: MScarn\_45 Start: 29939, Stop: 28908, Start Num: 68

Candidate Starts for MScarn\_45:

(36, 30068), (40, 30038), (Start: 49 @29984 has 1 MA's), (54, 29975), (Start: 68 @29939 has 24 MA's), (83, 29798), (98, 29681), (104, 29624), (112, 29555), (117, 29522), (124, 29444), (129, 29393), (165, 29198), (168, 29180), (171, 29162), (186, 29078), (189, 29060),

Gene: MaVan\_39 Start: 29709, Stop: 28678, Start Num: 61

Candidate Starts for MaVan\_39:

(Start: 61 @29709 has 17 MA's), (72, 29670), (79, 29613), (83, 29556), (87, 29526), (95, 29460), (98, 29439), (110, 29337), (114, 29307), (117, 29280), (121, 29232), (124, 29202), (150, 29037), (168, 28941), (171, 28923), (175, 28908),

Gene: Maco6\_41 Start: 31189, Stop: 30173, Start Num: 61

Candidate Starts for Maco6\_41:

(Start: 61 @31189 has 17 MA's), (78, 31096), (79, 31093), (86, 31006), (98, 30919), (104, 30862), (107, 30847), (112, 30793), (131, 30610), (165, 30439), (167, 30424), (171, 30403), (182, 30355), (192, 30277), (198, 30226), (200, 30205),

Gene: MaeLinda\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for MaeLinda\_38:

(10, 27202), (16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (Start: 74 @26944 has 1 MA's), (102, 26707), (109, 26650), (110, 26635), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: ManRay\_37 Start: 26780, Stop: 25605, Start Num: 30

Candidate Starts for ManRay\_37:

(10, 26900), (16, 26849), (Start: 27 @26789 has 4 MA's), (Start: 30 @26780 has 126 MA's), (72, 26657), (Start: 74 @26642 has 1 MA's), (102, 26405), (109, 26348), (110, 26333), (135, 26054), (140, 26024), (144, 25994), (146, 25991), (165, 25886), (168, 25868), (170, 25856), (178, 25823), (187, 25772), (191, 25739),

Gene: Mandalorian\_35 Start: 26523, Stop: 25345, Start Num: 35

Candidate Starts for Mandalorian\_35:

(Start: 35 @26523 has 32 MA's), (70, 26424), (72, 26409), (Start: 74 @26394 has 1 MA's), (106, 26115), (108, 26103), (109, 26091), (110, 26076), (115, 26025), (135, 25797), (140, 25767), (144, 25737), (146, 25734), (157, 25674), (159, 25659), (169, 25608), (187, 25515), (194, 25446),

Gene: Margaret\_48 Start: 31484, Stop: 30459, Start Num: 64

Candidate Starts for Margaret\_48:

(Start: 64 @31484 has 1 MA's), (70, 31466), (Start: 71 @31463 has 1 MA's), (83, 31337), (87, 31307), (98, 31220), (104, 31163), (112, 31094), (114, 31088), (118, 31037), (124, 30983), (126, 30959), (129, 30932), (138, 30863), (147, 30818), (152, 30803), (162, 30755), (163, 30752), (165, 30737), (174, 30689), (179, 30671), (197, 30524),

Gene: Martin\_39 Start: 27087, Stop: 25912, Start Num: 30

Candidate Starts for Martin\_39:



(10, 27207), (16, 27156), (Start: 27 @27096 has 4 MA's), (Start: 30 @27087 has 126 MA's), (72, 26964), (Start: 74 @26949 has 1 MA's), (102, 26712), (109, 26655), (110, 26640), (135, 26361), (140, 26331), (144, 26301), (146, 26298), (165, 26193), (168, 26175), (170, 26163), (178, 26130), (187, 26079), (191, 26046),

Gene: Mayweather\_46 Start: 32259, Stop: 31201, Start Num: 61

Candidate Starts for Mayweather\_46:

(55, 32283), (Start: 61 @32259 has 17 MA's), (81, 32133), (85, 32082), (87, 32058), (88, 32049), (91, 32016), (98, 31971), (110, 31869), (118, 31788), (126, 31710), (131, 31662), (145, 31569), (163, 31500), (164, 31494), (165, 31485), (171, 31449), (172, 31446), (175, 31434), (193, 31305), (194, 31293), (195, 31287), (197, 31272),

Gene: McGalleon\_40 Start: 28490, Stop: 27312, Start Num: 30

Candidate Starts for McGalleon\_40:

(15, 28562), (Start: 30 @28490 has 126 MA's), (72, 28364), (97, 28148), (109, 28055), (110, 28040), (135, 27761), (139, 27737), (140, 27731), (144, 27701), (168, 27575), (178, 27530), (191, 27446), (199, 27371),

Gene: Mercedes\_32 Start: 23957, Stop: 22776, Start Num: 35

Candidate Starts for Mercedes\_32:

(Start: 35 @23957 has 32 MA's), (72, 23843), (102, 23591), (108, 23537), (109, 23525), (115, 23459), (135, 23231), (140, 23201), (146, 23168), (159, 23093), (169, 23042), (187, 22949), (194, 22880),

Gene: MillyPhilly\_38 Start: 27075, Stop: 25900, Start Num: 30

Candidate Starts for MillyPhilly\_38:

(10, 27195), (16, 27144), (Start: 27 @27084 has 4 MA's), (Start: 30 @27075 has 126 MA's), (72, 26952), (Start: 74 @26937 has 1 MA's), (102, 26700), (109, 26643), (110, 26628), (135, 26349), (140, 26319), (144, 26289), (146, 26286), (165, 26181), (168, 26163), (170, 26151), (178, 26118), (187, 26067), (191, 26034),

Gene: MonChoix\_36 Start: 27095, Stop: 25917, Start Num: 30

Candidate Starts for MonChoix\_36:

(13, 27194), (14, 27173), (15, 27167), (Start: 30 @27095 has 126 MA's), (72, 26969), (76, 26936), (82, 26867), (100, 26735), (102, 26717), (109, 26660), (110, 26645), (130, 26402), (135, 26366), (140, 26336), (144, 26306), (146, 26303), (168, 26180), (170, 26168), (178, 26135), (187, 26084), (191, 26051),

Gene: Morrigan\_38 Start: 26342, Stop: 25179, Start Num: 35

Candidate Starts for Morrigan\_38:

(Start: 35 @26342 has 32 MA's), (Start: 43 @26330 has 1 MA's), (72, 26231), (102, 25979), (103, 25964), (106, 25946), (108, 25934), (109, 25922), (110, 25907), (115, 25856), (135, 25628), (148, 25559), (157, 25505), (187, 25346), (194, 25277),

Gene: MrWorldwide\_38 Start: 27085, Stop: 25910, Start Num: 30

Candidate Starts for MrWorldwide\_38:

(10, 27205), (16, 27154), (Start: 27 @27094 has 4 MA's), (Start: 30 @27085 has 126 MA's), (72, 26962), (Start: 74 @26947 has 1 MA's), (82, 26860), (102, 26710), (109, 26653), (135, 26359), (140, 26329), (144, 26299), (146, 26296), (165, 26191), (168, 26173), (170, 26161), (178, 26128), (187, 26077), (191, 26044),

Gene: Muddy\_43 Start: 32421, Stop: 31405, Start Num: 61

Candidate Starts for Muddy\_43:

(Start: 61 @32421 has 17 MA's), (78, 32328), (79, 32325), (86, 32238), (98, 32151), (104, 32094), (107, 32079), (112, 32025), (131, 31842), (165, 31671), (167, 31656), (171, 31635), (182, 31587), (192, 31509), (198, 31458), (200, 31437),

Gene: MunkgeeRoachy\_39 Start: 29253, Stop: 28222, Start Num: 68

Candidate Starts for MunkgeeRoachy\_39:

(Start: 68 @29253 has 24 MA's), (87, 29082), (98, 28995), (104, 28938), (112, 28869), (117, 28836), (124, 28758), (129, 28707), (165, 28512), (168, 28494), (171, 28476), (186, 28392), (189, 28374),

Gene: Nagem\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Nagem\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (76, 26922), (102, 26703), (109, 26646), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: Nattles\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for Nattles\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (102, 26392), (109, 26335), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: Nebulous\_35 Start: 27982, Stop: 26807, Start Num: 35

Candidate Starts for Nebulous\_35:

(8, 28126), (17, 28054), (18, 28048), (Start: 35 @27982 has 32 MA's), (72, 27868), (92, 27682), (109, 27550), (110, 27535), (115, 27484), (125, 27394), (144, 27196), (157, 27133), (187, 26974), (191, 26941), (193, 26917), (199, 26866),

Gene: Neferthena\_35 Start: 27068, Stop: 25893, Start Num: 35

Candidate Starts for Neferthena\_35:

(Start: 35 @27068 has 32 MA's), (72, 26954), (92, 26768), (106, 26660), (108, 26648), (109, 26636), (110, 26621), (115, 26570), (125, 26480), (187, 26060), (191, 26027), (199, 25952),

Gene: Nibbles\_38 Start: 29396, Stop: 28365, Start Num: 61

Candidate Starts for Nibbles\_38:

(Start: 61 @29396 has 17 MA's), (72, 29357), (79, 29300), (83, 29243), (87, 29213), (95, 29147), (98, 29126), (110, 29024), (114, 28994), (117, 28967), (121, 28919), (124, 28889), (150, 28724), (168, 28628), (171, 28610), (175, 28595),

Gene: NickSell\_38 Start: 27087, Stop: 25909, Start Num: 30

Candidate Starts for NickSell\_38:

(10, 27207), (16, 27156), (Start: 27 @27096 has 4 MA's), (Start: 30 @27087 has 126 MA's), (72, 26964), (Start: 74 @26949 has 1 MA's), (102, 26712), (109, 26655), (110, 26640), (135, 26361), (140, 26331), (144, 26301), (146, 26298), (165, 26193), (168, 26175), (170, 26163), (178, 26130), (187, 26079), (191, 26046),

Gene: Nina\_40 Start: 29915, Stop: 28884, Start Num: 68

Candidate Starts for Nina\_40:

(Start: 64 @29921 has 1 MA's), (Start: 68 @29915 has 24 MA's), (98, 29657), (104, 29600), (112, 29531), (117, 29498), (124, 29420), (129, 29369), (165, 29174), (168, 29156), (171, 29138), (186, 29054), (189, 29036),

Gene: NoShow\_51 Start: 35399, Stop: 34308, Start Num: 46

Candidate Starts for NoShow\_51:

(45, 35402), (Start: 46 @35399 has 1 MA's), (85, 35174), (87, 35150), (92, 35105), (95, 35084), (96, 35075), (98, 35063), (106, 34997), (107, 34991), (110, 34961), (112, 34937), (114, 34931), (117, 34904), (119, 34871), (126, 34802), (137, 34712), (141, 34691), (145, 34667), (154, 34634), (171, 34544), (197, 34376), (198, 34364), (200, 34343),

Gene: Nodigi\_49 Start: 32513, Stop: 31491, Start Num: 66

Candidate Starts for Nodigi\_49:

(53, 32543), (58, 32528), (Start: 66 @32513 has 3 MA's), (81, 32396), (83, 32369), (87, 32339), (90, 32315), (98, 32252), (104, 32195), (112, 32126), (114, 32120), (115, 32102), (118, 32069), (124, 32015), (126, 31991), (129, 31964), (137, 31898), (138, 31895), (147, 31850), (152, 31835), (156, 31814), (162, 31787), (165, 31769), (174, 31721), (197, 31556),

Gene: Nucci\_35 Start: 26518, Stop: 25340, Start Num: 35

Candidate Starts for Nucci\_35:

(Start: 35 @26518 has 32 MA's), (70, 26419), (72, 26404), (Start: 74 @26389 has 1 MA's), (106, 26110), (108, 26098), (109, 26086), (110, 26071), (115, 26020), (135, 25792), (140, 25762), (144, 25732), (146, 25729), (157, 25669), (159, 25654), (169, 25603), (187, 25510), (194, 25441),

Gene: Oats\_37 Start: 26780, Stop: 25605, Start Num: 30

Candidate Starts for Oats\_37:

(10, 26900), (16, 26849), (Start: 27 @26789 has 4 MA's), (Start: 30 @26780 has 126 MA's), (72, 26657), (Start: 74 @26642 has 1 MA's), (102, 26405), (109, 26348), (110, 26333), (135, 26054), (140, 26024), (144, 25994), (146, 25991), (165, 25886), (168, 25868), (170, 25856), (178, 25823), (187, 25772), (191, 25739),

Gene: OldNelly\_38 Start: 27084, Stop: 25909, Start Num: 30

Candidate Starts for OldNelly\_38:

(10, 27204), (16, 27153), (Start: 27 @27093 has 4 MA's), (Start: 30 @27084 has 126 MA's), (72, 26961), (Start: 74 @26946 has 1 MA's), (102, 26709), (109, 26652), (135, 26358), (140, 26328), (144, 26298), (146, 26295), (165, 26190), (168, 26172), (170, 26160), (178, 26127), (187, 26076), (191, 26043),

Gene: Orla\_49 Start: 32486, Stop: 31464, Start Num: 66

Candidate Starts for Orla\_49:

(34, 32618), (47, 32534), (53, 32522), (Start: 66 @32486 has 3 MA's), (83, 32342), (87, 32312), (90, 32288), (98, 32225), (104, 32168), (112, 32099), (118, 32042), (124, 31988), (129, 31937), (138, 31868), (147, 31823), (152, 31808), (156, 31787), (162, 31760), (163, 31757), (165, 31742), (174, 31694), (197, 31529),

Gene: Oxtober96\_38 Start: 27083, Stop: 25908, Start Num: 30

Candidate Starts for Oxtober96\_38:

(10, 27203), (16, 27152), (Start: 27 @27092 has 4 MA's), (Start: 30 @27083 has 126 MA's), (72, 26960), (82, 26858), (102, 26708), (109, 26651), (135, 26357), (140, 26327), (144, 26297), (146, 26294), (165, 26189), (168, 26171), (170, 26159), (178, 26126), (187, 26075), (191, 26042),

Gene: PSirce\_36 Start: 26809, Stop: 25646, Start Num: 35

Candidate Starts for PSirce\_36:

(22, 26845), (Start: 23 @26836 has 2 MA's), (Start: 35 @26809 has 32 MA's), (72, 26698), (73, 26695), (77, 26650), (100, 26464), (103, 26431), (106, 26413), (109, 26389), (110, 26374), (115, 26323), (125, 26233), (135, 26095), (140, 26065), (144, 26035), (151, 26008), (169, 25906), (187, 25813), (191, 25780), (193, 25756), (194, 25744),

Gene: Pajaza\_34 Start: 25918, Stop: 24758, Start Num: 30

Candidate Starts for Pajaza\_34:

(16, 25987), (20, 25954), (Start: 30 @25918 has 126 MA's), (Start: 59 @25843 has 1 MA's), (72, 25798), (84, 25684), (93, 25597), (109, 25489), (115, 25423), (144, 25150), (168, 25024), (181, 24961), (187, 24928), (191, 24895), (194, 24859),

Gene: Papafritta\_37 Start: 26788, Stop: 25613, Start Num: 30

Candidate Starts for Papafritta\_37:

(10, 26908), (16, 26857), (Start: 27 @26797 has 4 MA's), (Start: 30 @26788 has 126 MA's), (72, 26665), (Start: 74 @26650 has 1 MA's), (82, 26563), (102, 26413), (109, 26356), (110, 26341), (135, 26062), (140, 26032), (144, 26002), (146, 25999), (165, 25894), (168, 25876), (170, 25864), (178, 25831), (187, 25780), (191, 25747),

Gene: ParleG\_38 Start: 27085, Stop: 25910, Start Num: 30

Candidate Starts for ParleG\_38:

(10, 27205), (16, 27154), (Start: 27 @27094 has 4 MA's), (Start: 30 @27085 has 126 MA's), (72, 26962), (Start: 74 @26947 has 1 MA's), (82, 26860), (102, 26710), (109, 26653), (135, 26359), (140, 26329), (144, 26299), (146, 26296), (165, 26191), (168, 26173), (170, 26161), (178, 26128), (187, 26077), (191, 26044),

Gene: Peep\_38 Start: 27070, Stop: 25895, Start Num: 30

Candidate Starts for Peep\_38:

(10, 27190), (16, 27139), (Start: 27 @27079 has 4 MA's), (Start: 30 @27070 has 126 MA's), (72, 26947), (Start: 74 @26932 has 1 MA's), (102, 26695), (109, 26638), (110, 26623), (135, 26344), (140, 26314), (144, 26284), (146, 26281), (165, 26176), (168, 26158), (170, 26146), (178, 26113), (187, 26062), (191, 26029),

Gene: Peppino\_37 Start: 27195, Stop: 26017, Start Num: 30

Candidate Starts for Peppino\_37:

(15, 27267), (Start: 27 @27204 has 4 MA's), (Start: 30 @27195 has 126 MA's), (72, 27069), (73, 27066), (100, 26835), (109, 26760), (110, 26745), (135, 26466), (140, 26436), (144, 26406), (146, 26403), (168, 26280), (187, 26184), (191, 26151),

Gene: Phanita\_36 Start: 26789, Stop: 25626, Start Num: 35

Candidate Starts for Phanita\_36:

(22, 26825), (Start: 23 @26816 has 2 MA's), (Start: 35 @26789 has 32 MA's), (72, 26678), (77, 26630), (100, 26444), (103, 26411), (106, 26393), (109, 26369), (110, 26354), (115, 26303), (125, 26213), (135, 26075), (140, 26045), (144, 26015), (146, 26012), (151, 25988), (169, 25886), (187, 25793), (191, 25760), (193, 25736), (194, 25724),

Gene: Pherbot\_36 Start: 26652, Stop: 25489, Start Num: 29

Candidate Starts for Pherbot\_36:

(16, 26712), (Start: 29 @26652 has 9 MA's), (63, 26562), (72, 26526), (73, 26523), (100, 26292), (109, 26217), (110, 26202), (113, 26175), (128, 25995), (134, 25950), (157, 25815), (159, 25800), (191, 25623), (194, 25587), (199, 25548),

Gene: Pherferi\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Pherferi\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (110, 26631), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: Phiderman\_38 Start: 27075, Stop: 25900, Start Num: 30

Candidate Starts for Phiderman\_38:

(10, 27195), (16, 27144), (Start: 27 @27084 has 4 MA's), (Start: 30 @27075 has 126 MA's), (72, 26952), (Start: 74 @26937 has 1 MA's), (102, 26700), (109, 26643), (110, 26628), (135, 26349), (140, 26319), (144, 26289), (146, 26286), (165, 26181), (168, 26163), (170, 26151), (178, 26118), (187, 26067), (191, 26034),

Gene: Phireproof\_38 Start: 27084, Stop: 25909, Start Num: 30

Candidate Starts for Phireproof\_38:

(10, 27204), (16, 27153), (Start: 27 @27093 has 4 MA's), (Start: 30 @27084 has 126 MA's), (72, 26961), (82, 26859), (102, 26709), (109, 26652), (135, 26358), (140, 26328), (144, 26298), (146, 26295), (165, 26190), (168, 26172), (170, 26160), (178, 26127), (187, 26076), (191, 26043),

Gene: PhredFlintston\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for PhredFlintston\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (110, 26631), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: Phriends\_38 Start: 27084, Stop: 25909, Start Num: 30

Candidate Starts for Phriends\_38:

(10, 27204), (16, 27153), (Start: 27 @27093 has 4 MA's), (Start: 30 @27084 has 126 MA's), (72, 26961), (Start: 74 @26946 has 1 MA's), (102, 26709), (109, 26652), (135, 26358), (140, 26328), (144, 26298), (146, 26295), (165, 26190), (168, 26172), (170, 26160), (178, 26127), (187, 26076), (191, 26043),

Gene: Pikmin\_34 Start: 25918, Stop: 24758, Start Num: 30

Candidate Starts for Pikmin\_34:

(16, 25987), (20, 25954), (Start: 30 @25918 has 126 MA's), (Start: 59 @25843 has 1 MA's), (72, 25798), (84, 25684), (93, 25597), (109, 25489), (115, 25423), (144, 25150), (168, 25024), (181, 24961), (187, 24928), (191, 24895), (194, 24859),

Gene: Pocket\_37 Start: 26771, Stop: 25596, Start Num: 30

Candidate Starts for Pocket\_37:

(10, 26891), (16, 26840), (Start: 27 @26780 has 4 MA's), (Start: 30 @26771 has 126 MA's), (72, 26648), (76, 26615), (102, 26396), (109, 26339), (135, 26045), (140, 26015), (144, 25985), (146, 25982), (165, 25877), (168, 25859), (170, 25847), (178, 25814), (187, 25763), (191, 25730),

Gene: Pons\_44 Start: 31610, Stop: 30552, Start Num: 61

Candidate Starts for Pons\_44:

(55, 31634), (Start: 61 @31610 has 17 MA's), (81, 31484), (85, 31433), (87, 31409), (88, 31400), (91, 31367), (98, 31322), (110, 31220), (118, 31139), (126, 31061), (128, 31037), (131, 31013), (133, 31001), (145, 30920), (155, 30884), (163, 30851), (164, 30845), (165, 30836), (167, 30821), (171, 30800), (175, 30785), (193, 30656), (194, 30644), (195, 30638), (197, 30623),

Gene: PotPie\_43 Start: 32541, Stop: 31483, Start Num: 61

Candidate Starts for PotPie\_43:

(Start: 61 @32541 has 17 MA's), (81, 32415), (83, 32388), (85, 32364), (87, 32340), (88, 32331), (91, 32298), (98, 32253), (110, 32151), (118, 32070), (126, 31992), (131, 31944), (133, 31932), (145, 31851), (163, 31782), (164, 31776), (165, 31767), (167, 31752), (171, 31731), (175, 31716), (189, 31629), (193, 31587), (194, 31575), (195, 31569), (197, 31554),

Gene: PrincePhergus\_36 Start: 26667, Stop: 25504, Start Num: 29

Candidate Starts for PrincePhergus\_36:

(16, 26727), (Start: 29 @26667 has 9 MA's), (63, 26577), (72, 26541), (73, 26538), (100, 26307), (108, 26244), (109, 26232), (110, 26217), (113, 26190), (128, 26010), (157, 25830), (159, 25815), (191, 25638), (194, 25602), (199, 25563),

Gene: PsychoKiller\_40 Start: 29791, Stop: 28760, Start Num: 68

Candidate Starts for PsychoKiller\_40:

(Start: 68 @29791 has 24 MA's), (87, 29620), (98, 29533), (104, 29476), (112, 29407), (117, 29374), (124, 29296), (129, 29245), (165, 29050), (168, 29032), (171, 29014), (186, 28930), (189, 28912),

Gene: PuppyEggo\_38 Start: 27085, Stop: 25910, Start Num: 30

Candidate Starts for PuppyEggo\_38:

(10, 27205), (16, 27154), (Start: 27 @27094 has 4 MA's), (Start: 30 @27085 has 126 MA's), (72, 26962), (Start: 74 @26947 has 1 MA's), (82, 26860), (102, 26710), (109, 26653), (135, 26359), (140, 26329), (144, 26299), (146, 26296), (165, 26191), (168, 26173), (170, 26161), (178, 26128), (187, 26077), (191, 26044),

Gene: QuadZero\_35 Start: 25001, Stop: 23823, Start Num: 35

Candidate Starts for QuadZero\_35:

(17, 25073), (19, 25058), (Start: 35 @25001 has 32 MA's), (72, 24887), (109, 24569), (110, 24554), (115, 24503), (130, 24311), (135, 24275), (144, 24215), (146, 24212), (159, 24137), (161, 24131), (169, 24086), (189, 23981), (194, 23924),

Gene: Quartz\_36 Start: 26636, Stop: 25458, Start Num: 35

Candidate Starts for Quartz\_36:

(Start: 35 @26636 has 32 MA's), (70, 26537), (72, 26522), (Start: 74 @26507 has 1 MA's), (106, 26228), (108, 26216), (109, 26204), (110, 26189), (115, 26138), (135, 25910), (140, 25880), (144, 25850), (146, 25847), (157, 25787), (159, 25772), (169, 25721), (187, 25628), (194, 25559),

Gene: Quasar\_41 Start: 30339, Stop: 29308, Start Num: 68

Candidate Starts for Quasar\_41:

(Start: 68 @30339 has 24 MA's), (87, 30168), (98, 30081), (104, 30024), (112, 29955), (117, 29922), (124, 29844), (129, 29793), (165, 29598), (168, 29580), (171, 29562), (186, 29478), (189, 29460),

Gene: Raccoon\_37 Start: 27170, Stop: 25992, Start Num: 30

Candidate Starts for Raccoon\_37:

(15, 27242), (Start: 27 @27179 has 4 MA's), (Start: 30 @27170 has 126 MA's), (72, 27044), (73, 27041), (100, 26810), (109, 26735), (110, 26720), (135, 26441), (140, 26411), (144, 26381), (146, 26378), (168, 26255), (187, 26159), (191, 26126),

Gene: RanchParmCat\_47 Start: 31601, Stop: 30597, Start Num: 71

Candidate Starts for RanchParmCat\_47:

(Start: 64 @31622 has 1 MA's), (70, 31604), (Start: 71 @31601 has 1 MA's), (83, 31475), (87, 31445), (98, 31358), (104, 31301), (112, 31232), (114, 31226), (118, 31175), (124, 31121), (126, 31097), (129, 31070), (138, 31001), (147, 30956), (152, 30941), (162, 30893), (163, 30890), (165, 30875), (174, 30827), (179, 30809), (197, 30662),

Gene: Rapheph\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Rapheph\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (110, 26631), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187,

26070), (191, 26037),

Gene: Raptor\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for Raptor\_38:

(10, 27202), (16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (76, 26926), (102, 26707), (109, 26650), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: RedBaron\_43 Start: 30028, Stop: 28997, Start Num: 68

Candidate Starts for RedBaron\_43:

(Start: 68 @30028 has 24 MA's), (83, 29887), (98, 29770), (104, 29713), (112, 29644), (117, 29611), (124, 29533), (129, 29482), (165, 29287), (168, 29269), (171, 29251), (186, 29167), (189, 29149),

Gene: Redfield\_37 Start: 27202, Stop: 26024, Start Num: 30

Candidate Starts for Redfield\_37:

(15, 27274), (Start: 27 @27211 has 4 MA's), (Start: 30 @27202 has 126 MA's), (72, 27076), (73, 27073), (100, 26842), (109, 26767), (135, 26473), (140, 26443), (144, 26413), (146, 26410), (168, 26287), (187, 26191), (191, 26158),

Gene: RenegadeRaider\_37 Start: 26510, Stop: 25371, Start Num: 41

Candidate Starts for RenegadeRaider\_37:

(41, 26510), (63, 26444), (72, 26408), (73, 26405), (100, 26174), (108, 26111), (109, 26099), (110, 26084), (113, 26057), (128, 25877), (157, 25697), (159, 25682), (191, 25505), (194, 25469), (199, 25430),

Gene: Renzie\_38 Start: 27070, Stop: 25895, Start Num: 30

Candidate Starts for Renzie\_38:

(10, 27190), (16, 27139), (Start: 27 @27079 has 4 MA's), (Start: 30 @27070 has 126 MA's), (72, 26947), (Start: 74 @26932 has 1 MA's), (102, 26695), (109, 26638), (110, 26623), (135, 26344), (140, 26314), (144, 26284), (146, 26281), (165, 26176), (168, 26158), (170, 26146), (178, 26113), (187, 26062), (191, 26029),

Gene: Riyhil\_38 Start: 27088, Stop: 25913, Start Num: 30

Candidate Starts for Riyhil\_38:

(10, 27208), (16, 27157), (Start: 27 @27097 has 4 MA's), (Start: 30 @27088 has 126 MA's), (72, 26965), (Start: 74 @26950 has 1 MA's), (82, 26863), (102, 26713), (109, 26656), (135, 26362), (140, 26332), (144, 26302), (146, 26299), (165, 26194), (168, 26176), (170, 26164), (178, 26131), (187, 26080), (191, 26047),

Gene: Robinson\_38 Start: 27076, Stop: 25901, Start Num: 30

Candidate Starts for Robinson\_38:

(10, 27196), (16, 27145), (Start: 27 @27085 has 4 MA's), (Start: 30 @27076 has 126 MA's), (72, 26953), (Start: 74 @26938 has 1 MA's), (102, 26701), (109, 26644), (110, 26629), (135, 26350), (140, 26320), (144, 26290), (146, 26287), (165, 26182), (168, 26164), (170, 26152), (178, 26119), (187, 26068), (191, 26035),

Gene: Rog141\_37 Start: 26767, Stop: 25592, Start Num: 30

Candidate Starts for Rog141\_37:

(10, 26887), (16, 26836), (Start: 27 @26776 has 4 MA's), (Start: 30 @26767 has 126 MA's), (72, 26644), (Start: 74 @26629 has 1 MA's), (82, 26542), (102, 26392), (109, 26335), (110, 26320), (135, 26041), (140, 26011), (144, 25981), (146, 25978), (165, 25873), (168, 25855), (170, 25843), (178, 25810), (187, 25759), (191, 25726),

Gene: RosieMae\_38 Start: 26825, Stop: 25650, Start Num: 30

Candidate Starts for RosieMae\_38:

(10, 26945), (16, 26894), (Start: 27 @26834 has 4 MA's), (Start: 30 @26825 has 126 MA's), (72, 26702), (Start: 74 @26687 has 1 MA's), (82, 26600), (102, 26450), (109, 26393), (110, 26378), (135, 26099), (140, 26069), (144, 26039), (146, 26036), (165, 25931), (168, 25913), (170, 25901), (178, 25868), (187, 25817), (191, 25784),

Gene: SJay\_38 Start: 27079, Stop: 25904, Start Num: 30

Candidate Starts for SJay\_38:

(10, 27199), (16, 27148), (Start: 27 @27088 has 4 MA's), (Start: 30 @27079 has 126 MA's), (72, 26956), (76, 26923), (102, 26704), (109, 26647), (135, 26353), (140, 26323), (144, 26293), (146, 26290), (165, 26185), (168, 26167), (170, 26155), (178, 26122), (187, 26071), (191, 26038),

Gene: Sansa\_36 Start: 26883, Stop: 25720, Start Num: 35

Candidate Starts for Sansa\_36:

(22, 26919), (Start: 23 @26910 has 2 MA's), (Start: 35 @26883 has 32 MA's), (72, 26772), (73, 26769), (103, 26505), (106, 26487), (109, 26463), (110, 26448), (115, 26397), (125, 26307), (135, 26169), (140, 26139), (144, 26109), (151, 26082), (169, 25980), (187, 25887), (191, 25854), (193, 25830), (194, 25818),

Gene: Saratos\_37 Start: 26791, Stop: 25628, Start Num: 35

Candidate Starts for Saratos\_37:

(22, 26827), (Start: 23 @26818 has 2 MA's), (Start: 35 @26791 has 32 MA's), (72, 26680), (73, 26677), (77, 26632), (100, 26446), (103, 26413), (106, 26395), (109, 26371), (110, 26356), (115, 26305), (125, 26215), (135, 26077), (140, 26047), (144, 26017), (151, 25990), (169, 25888), (187, 25795), (191, 25762), (193, 25738), (194, 25726),

Gene: Schimmels22\_36 Start: 25802, Stop: 24621, Start Num: 30

Candidate Starts for Schimmels22\_36:

(1, 26018), (6, 25955), (11, 25910), (15, 25874), (Start: 30 @25802 has 126 MA's), (72, 25673), (77, 25625), (103, 25406), (105, 25394), (106, 25388), (109, 25364), (110, 25349), (115, 25298), (125, 25208), (135, 25070), (140, 25040), (143, 25022), (148, 25001), (169, 24881), (178, 24839), (187, 24788), (191, 24755), (193, 24731), (194, 24719),

Gene: Schnapsidee\_37 Start: 27208, Stop: 26030, Start Num: 30

Candidate Starts for Schnapsidee\_37:

(15, 27280), (Start: 27 @27217 has 4 MA's), (Start: 30 @27208 has 126 MA's), (72, 27082), (73, 27079), (100, 26848), (109, 26773), (110, 26758), (135, 26479), (140, 26449), (144, 26419), (146, 26416), (168, 26293), (187, 26197), (191, 26164),

Gene: Schubert\_35 Start: 26499, Stop: 25312, Start Num: 30

Candidate Starts for Schubert\_35:

(3, 26679), (4, 26667), (16, 26568), (20, 26535), (Start: 30 @26499 has 126 MA's), (Start: 59 @26412 has 1 MA's), (70, 26382), (72, 26367), (108, 26070), (109, 26058), (135, 25764), (140, 25734), (144, 25704), (159, 25626), (168, 25578), (178, 25533), (181, 25515), (191, 25449), (194, 25413), (199, 25374),

Gene: Scissor2024\_36 Start: 25439, Stop: 24258, Start Num: 30

Candidate Starts for Scissor2024\_36:

(1, 25655), (6, 25592), (11, 25547), (15, 25511), (Start: 30 @25439 has 126 MA's), (72, 25310), (77, 25262), (103, 25043), (105, 25031), (106, 25025), (109, 25001), (110, 24986), (115, 24935), (125, 24845), (135, 24707), (140, 24677), (143, 24659), (148, 24638), (169, 24518), (178, 24476), (187, 24425), (191, 24392), (193, 24368), (194, 24356),



Gene: Sedgewig\_37 Start: 26765, Stop: 25590, Start Num: 30

Candidate Starts for Sedgewig\_37:

(10, 26885), (16, 26834), (Start: 27 @26774 has 4 MA's), (Start: 30 @26765 has 126 MA's), (72, 26642), (Start: 74 @26627 has 1 MA's), (102, 26390), (109, 26333), (135, 26039), (140, 26009), (144, 25979), (146, 25976), (165, 25871), (168, 25853), (170, 25841), (178, 25808), (187, 25757), (191, 25724),

Gene: ShaiHulud\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for ShaiHulud\_38:

(10, 27202), (16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (Start: 74 @26944 has 1 MA's), (82, 26857), (102, 26707), (109, 26650), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: Shamu\_37 Start: 26812, Stop: 25649, Start Num: 35

Candidate Starts for Shamu\_37:

(22, 26848), (Start: 23 @26839 has 2 MA's), (Start: 35 @26812 has 32 MA's), (72, 26701), (73, 26698), (77, 26653), (100, 26467), (103, 26434), (106, 26416), (109, 26392), (110, 26377), (115, 26326), (125, 26236), (135, 26098), (140, 26068), (144, 26038), (151, 26011), (169, 25909), (187, 25816), (191, 25783), (193, 25759), (194, 25747),

Gene: SheckWes\_46 Start: 31294, Stop: 30236, Start Num: 67

Candidate Starts for SheckWes\_46:

(Start: 67 @31294 has 1 MA's), (81, 31177), (83, 31150), (85, 31126), (88, 31093), (91, 31060), (98, 31015), (110, 30913), (118, 30832), (126, 30754), (128, 30730), (131, 30706), (133, 30694), (145, 30613), (163, 30544), (164, 30538), (165, 30529), (171, 30493), (172, 30490), (175, 30478), (189, 30391), (193, 30349), (194, 30337), (195, 30331), (197, 30316),

Gene: Shee\_38 Start: 27075, Stop: 25900, Start Num: 30

Candidate Starts for Shee\_38:

(10, 27195), (16, 27144), (Start: 27 @27084 has 4 MA's), (Start: 30 @27075 has 126 MA's), (72, 26952), (Start: 74 @26937 has 1 MA's), (102, 26700), (109, 26643), (135, 26349), (140, 26319), (144, 26289), (146, 26286), (165, 26181), (168, 26163), (170, 26151), (178, 26118), (187, 26067), (191, 26034),

Gene: Shrew\_83 Start: 49717, Stop: 50844, Start Num: 43

Candidate Starts for Shrew\_83:

(39, 49672), (Start: 43 @49717 has 1 MA's), (72, 49822), (82, 49924), (91, 50005), (96, 50038), (116, 50206), (119, 50242), (160, 50533), (171, 50593), (174, 50605), (180, 50629), (182, 50638), (194, 50740), (196, 50752),

Gene: Sinatra\_36 Start: 26663, Stop: 25500, Start Num: 29

Candidate Starts for Sinatra\_36:

(16, 26723), (Start: 29 @26663 has 9 MA's), (63, 26573), (72, 26537), (73, 26534), (100, 26303), (109, 26228), (110, 26213), (113, 26186), (128, 26006), (134, 25961), (157, 25826), (159, 25811), (191, 25634), (194, 25598), (199, 25559),

Gene: SirVictor\_36 Start: 26730, Stop: 25579, Start Num: 32

Candidate Starts for SirVictor\_36:

(15, 26802), (16, 26799), (Start: 29 @26739 has 9 MA's), (Start: 32 @26730 has 2 MA's), (72, 26619), (73, 26616), (100, 26385), (108, 26322), (110, 26295), (113, 26268), (157, 25908), (159, 25893), (169, 25842), (191, 25716), (193, 25692), (194, 25680),

Gene: SketchMex\_41 Start: 29869, Stop: 28796, Start Num: 49

Candidate Starts for SketchMex\_41:

(36, 29953), (40, 29923), (Start: 49 @29869 has 1 MA's), (54, 29860), (Start: 68 @29824 has 24 MA's), (90, 29629), (98, 29566), (112, 29440), (115, 29416), (124, 29329), (129, 29278), (152, 29149), (165, 29083), (168, 29065), (171, 29047), (186, 28963), (197, 28870),

Gene: Socotra\_42 Start: 29790, Stop: 28759, Start Num: 68

Candidate Starts for Socotra\_42:

(Start: 64 @29796 has 1 MA's), (Start: 68 @29790 has 24 MA's), (98, 29532), (104, 29475), (112, 29406), (117, 29373), (124, 29295), (129, 29244), (165, 29049), (168, 29031), (171, 29013), (186, 28929), (189, 28911),

Gene: SoilGremlin\_38 Start: 27081, Stop: 25906, Start Num: 30

Candidate Starts for SoilGremlin\_38:

(10, 27201), (16, 27150), (Start: 27 @27090 has 4 MA's), (Start: 30 @27081 has 126 MA's), (72, 26958), (Start: 74 @26943 has 1 MA's), (102, 26706), (109, 26649), (135, 26355), (140, 26325), (144, 26295), (146, 26292), (165, 26187), (168, 26169), (170, 26157), (178, 26124), (187, 26073), (191, 26040),

Gene: SonOfLevi\_37 Start: 26762, Stop: 25587, Start Num: 30

Candidate Starts for SonOfLevi\_37:

(10, 26882), (16, 26831), (Start: 27 @26771 has 4 MA's), (Start: 30 @26762 has 126 MA's), (72, 26639), (76, 26606), (102, 26387), (109, 26330), (135, 26036), (140, 26006), (144, 25976), (146, 25973), (165, 25868), (168, 25850), (170, 25838), (178, 25805), (187, 25754), (191, 25721),

Gene: Sopespian\_40 Start: 29792, Stop: 28761, Start Num: 68

Candidate Starts for Sopespian\_40:

(Start: 68 @29792 has 24 MA's), (87, 29621), (98, 29534), (104, 29477), (112, 29408), (117, 29375), (124, 29297), (129, 29246), (165, 29051), (168, 29033), (171, 29015), (186, 28931), (189, 28913),

Gene: Stanktossa\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Stanktossa\_38:

(10, 27198), (16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (Start: 74 @26940 has 1 MA's), (102, 26703), (109, 26646), (110, 26631), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: Starburst\_42 Start: 29785, Stop: 28754, Start Num: 68

Candidate Starts for Starburst\_42:

(Start: 68 @29785 has 24 MA's), (83, 29644), (98, 29527), (104, 29470), (112, 29401), (117, 29368), (124, 29290), (129, 29239), (165, 29044), (168, 29026), (171, 29008), (186, 28924), (189, 28906), (197, 28831),

Gene: SteamedHams\_42 Start: 29606, Stop: 28572, Start Num: 68

Candidate Starts for SteamedHams\_42:

(Start: 68 @29606 has 24 MA's), (77, 29531), (90, 29411), (98, 29348), (110, 29246), (124, 29111), (152, 28931), (153, 28922), (165, 28865), (168, 28847), (171, 28829), (186, 28745),

Gene: StingRay\_37 Start: 26783, Stop: 25608, Start Num: 30

Candidate Starts for StingRay\_37:

(10, 26903), (16, 26852), (Start: 27 @26792 has 4 MA's), (Start: 30 @26783 has 126 MA's), (72, 26660), (Start: 74 @26645 has 1 MA's), (82, 26558), (102, 26408), (109, 26351), (110, 26336), (135,

26057), (140, 26027), (144, 25997), (146, 25994), (165, 25889), (168, 25871), (170, 25859), (178, 25826), (187, 25775), (191, 25742),

Gene: StirfryIV\_37 Start: 26776, Stop: 25601, Start Num: 30

Candidate Starts for StirfryIV\_37:

(10, 26896), (16, 26845), (Start: 27 @26785 has 4 MA's), (Start: 30 @26776 has 126 MA's), (72, 26653), (Start: 74 @26638 has 1 MA's), (82, 26551), (102, 26401), (109, 26344), (110, 26329), (135, 26050), (140, 26020), (144, 25990), (146, 25987), (165, 25882), (168, 25864), (170, 25852), (178, 25819), (187, 25768), (191, 25735),

Gene: Stormbreaker8\_37 Start: 27202, Stop: 26024, Start Num: 30

Candidate Starts for Stormbreaker8\_37:

(15, 27274), (Start: 27 @27211 has 4 MA's), (Start: 30 @27202 has 126 MA's), (72, 27076), (73, 27073), (100, 26842), (109, 26767), (110, 26752), (135, 26473), (144, 26413), (146, 26410), (168, 26287), (187, 26191), (191, 26158),

Gene: Strathdee\_38 Start: 27083, Stop: 25908, Start Num: 30

Candidate Starts for Strathdee\_38:

(10, 27203), (16, 27152), (Start: 27 @27092 has 4 MA's), (Start: 30 @27083 has 126 MA's), (72, 26960), (Start: 74 @26945 has 1 MA's), (82, 26858), (102, 26708), (109, 26651), (135, 26357), (140, 26327), (144, 26297), (146, 26294), (165, 26189), (168, 26171), (170, 26159), (178, 26126), (187, 26075), (191, 26042),

Gene: SummitAcademy\_42 Start: 31170, Stop: 30112, Start Num: 61

Candidate Starts for SummitAcademy\_42:

(Start: 61 @31170 has 17 MA's), (81, 31044), (83, 31017), (85, 30993), (88, 30960), (91, 30927), (98, 30882), (110, 30780), (118, 30699), (126, 30621), (131, 30573), (133, 30561), (145, 30480), (163, 30411), (164, 30405), (165, 30396), (171, 30360), (175, 30345), (189, 30258), (193, 30216), (194, 30204), (195, 30198), (197, 30183),

Gene: Superfresh\_38 Start: 27070, Stop: 25895, Start Num: 30

Candidate Starts for Superfresh\_38:

(10, 27190), (16, 27139), (Start: 27 @27079 has 4 MA's), (Start: 30 @27070 has 126 MA's), (72, 26947), (Start: 74 @26932 has 1 MA's), (102, 26695), (109, 26638), (110, 26623), (135, 26344), (140, 26314), (144, 26284), (146, 26281), (165, 26176), (168, 26158), (170, 26146), (178, 26113), (187, 26062), (191, 26029),

Gene: Survivors\_39 Start: 29605, Stop: 28574, Start Num: 61

Candidate Starts for Survivors\_39:

(Start: 61 @29605 has 17 MA's), (72, 29566), (79, 29509), (83, 29452), (87, 29422), (95, 29356), (98, 29335), (110, 29233), (114, 29203), (117, 29176), (121, 29128), (124, 29098), (150, 28933), (168, 28837), (171, 28819), (175, 28804),

Gene: SweatNTears\_42 Start: 29688, Stop: 28657, Start Num: 68

Candidate Starts for SweatNTears\_42:

(25, 29856), (36, 29817), (Start: 43 @29763 has 1 MA's), (55, 29724), (58, 29712), (Start: 68 @29688 has 24 MA's), (90, 29493), (98, 29430), (112, 29304), (118, 29247), (124, 29193), (129, 29142), (152, 29013), (153, 29004), (156, 28992), (165, 28947), (168, 28929), (171, 28911), (189, 28809),

Gene: Symere\_38 Start: 26763, Stop: 25588, Start Num: 30

Candidate Starts for Symere\_38:

(10, 26883), (16, 26832), (Start: 27 @26772 has 4 MA's), (Start: 30 @26763 has 126 MA's), (72, 26640), (Start: 74 @26625 has 1 MA's), (102, 26388), (109, 26331), (135, 26037), (140, 26007), (144,

25977), (146, 25974), (165, 25869), (168, 25851), (170, 25839), (178, 25806), (187, 25755), (191, 25722),

Gene: TatarkaPM\_38 Start: 27087, Stop: 25909, Start Num: 30

Candidate Starts for TatarkaPM\_38:

(10, 27207), (16, 27156), (Start: 27 @27096 has 4 MA's), (Start: 30 @27087 has 126 MA's), (72, 26964), (Start: 74 @26949 has 1 MA's), (102, 26712), (109, 26655), (110, 26640), (135, 26361), (140, 26331), (144, 26301), (146, 26298), (165, 26193), (168, 26175), (170, 26163), (178, 26130), (187, 26079), (191, 26046),

Gene: Teagan\_38 Start: 27078, Stop: 25903, Start Num: 30

Candidate Starts for Teagan\_38:

(16, 27147), (Start: 27 @27087 has 4 MA's), (Start: 30 @27078 has 126 MA's), (72, 26955), (82, 26853), (102, 26703), (109, 26646), (135, 26352), (140, 26322), (144, 26292), (146, 26289), (165, 26184), (168, 26166), (170, 26154), (178, 26121), (187, 26070), (191, 26037),

Gene: TeddyBear\_37 Start: 26780, Stop: 25605, Start Num: 30

Candidate Starts for TeddyBear\_37:

(10, 26900), (16, 26849), (Start: 27 @26789 has 4 MA's), (Start: 30 @26780 has 126 MA's), (72, 26657), (76, 26624), (102, 26405), (109, 26348), (135, 26054), (140, 26024), (144, 25994), (146, 25991), (165, 25886), (168, 25868), (170, 25856), (178, 25823), (187, 25772), (191, 25739),

Gene: Tenda\_37 Start: 26778, Stop: 25603, Start Num: 30

Candidate Starts for Tenda\_37:

(10, 26898), (16, 26847), (Start: 27 @26787 has 4 MA's), (Start: 30 @26778 has 126 MA's), (72, 26655), (Start: 74 @26640 has 1 MA's), (102, 26403), (109, 26346), (110, 26331), (135, 26052), (140, 26022), (144, 25992), (146, 25989), (165, 25884), (168, 25866), (170, 25854), (178, 25821), (187, 25770), (191, 25737),

Gene: Thompsone\_38 Start: 27085, Stop: 25910, Start Num: 30

Candidate Starts for Thompsone\_38:

(10, 27205), (16, 27154), (Start: 27 @27094 has 4 MA's), (Start: 30 @27085 has 126 MA's), (72, 26962), (82, 26860), (102, 26710), (109, 26653), (135, 26359), (140, 26329), (144, 26299), (146, 26296), (165, 26191), (168, 26173), (170, 26161), (178, 26128), (187, 26077), (191, 26044),

Gene: Thorongil\_38 Start: 27085, Stop: 25910, Start Num: 30

Candidate Starts for Thorongil\_38:

(10, 27205), (16, 27154), (Start: 27 @27094 has 4 MA's), (Start: 30 @27085 has 126 MA's), (72, 26962), (Start: 74 @26947 has 1 MA's), (82, 26860), (102, 26710), (109, 26653), (135, 26359), (140, 26329), (144, 26299), (146, 26296), (165, 26191), (168, 26173), (170, 26161), (178, 26128), (187, 26077), (191, 26044),

Gene: TinSulphur\_38 Start: 27084, Stop: 25909, Start Num: 30

Candidate Starts for TinSulphur\_38:

(10, 27204), (16, 27153), (Start: 27 @27093 has 4 MA's), (Start: 30 @27084 has 126 MA's), (72, 26961), (Start: 74 @26946 has 1 MA's), (102, 26709), (109, 26652), (110, 26637), (135, 26358), (140, 26328), (144, 26298), (146, 26295), (165, 26190), (168, 26172), (170, 26160), (178, 26127), (187, 26076), (191, 26043),

Gene: Tinyman4\_36 Start: 25428, Stop: 24247, Start Num: 30

Candidate Starts for Tinyman4\_36:

(1, 25644), (6, 25581), (11, 25536), (15, 25500), (Start: 30 @25428 has 126 MA's), (72, 25299), (77, 25251), (103, 25032), (105, 25020), (106, 25014), (109, 24990), (110, 24975), (115, 24924), (125,

24834), (140, 24666), (143, 24648), (148, 24627), (169, 24507), (178, 24465), (187, 24414), (191, 24381), (193, 24357), (194, 24345),

Gene: Tolls\_42 Start: 29711, Stop: 28677, Start Num: 68

Candidate Starts for Tolls\_42:

(Start: 68 @29711 has 24 MA's), (77, 29636), (90, 29516), (98, 29453), (110, 29351), (124, 29216), (152, 29036), (153, 29027), (165, 28970), (168, 28952), (171, 28934), (186, 28850),

Gene: Triscuit\_78 Start: 48360, Stop: 49469, Start Num: 44

Candidate Starts for Triscuit\_78:

(Start: 44 @48360 has 2 MA's), (52, 48390), (72, 48456), (75, 48483), (91, 48639), (96, 48672), (100, 48696), (116, 48837), (171, 49218), (174, 49230), (175, 49233), (176, 49236), (177, 49239), (182, 49263), (188, 49302), (190, 49317), (194, 49365), (196, 49377),

Gene: Troje\_43 Start: 30162, Stop: 29134, Start Num: 68

Candidate Starts for Troje\_43:

(36, 30291), (40, 30261), (Start: 49 @30207 has 1 MA's), (54, 30198), (Start: 68 @30162 has 24 MA's), (90, 29967), (98, 29904), (112, 29778), (115, 29754), (124, 29667), (129, 29616), (152, 29487), (165, 29421), (168, 29403), (171, 29385), (186, 29301), (197, 29208),

Gene: TwoBits\_34 Start: 25411, Stop: 24233, Start Num: 35

Candidate Starts for TwoBits\_34:

(8, 25555), (18, 25477), (21, 25459), (Start: 35 @25411 has 32 MA's), (72, 25297), (108, 24991), (109, 24979), (115, 24913), (135, 24685), (140, 24655), (144, 24625), (146, 24622), (159, 24547), (169, 24496), (189, 24391), (194, 24334),

Gene: Typhonomachy\_41 Start: 29500, Stop: 28469, Start Num: 68

Candidate Starts for Typhonomachy\_41:

(Start: 68 @29500 has 24 MA's), (83, 29359), (98, 29242), (104, 29185), (112, 29116), (117, 29083), (124, 29005), (129, 28954), (165, 28759), (168, 28741), (171, 28723), (186, 28639), (189, 28621),

Gene: Velene\_38 Start: 27083, Stop: 25908, Start Num: 30

Candidate Starts for Velene\_38:

(10, 27203), (16, 27152), (Start: 27 @27092 has 4 MA's), (Start: 30 @27083 has 126 MA's), (72, 26960), (82, 26858), (102, 26708), (109, 26651), (135, 26357), (140, 26327), (144, 26297), (146, 26294), (165, 26189), (168, 26171), (170, 26159), (178, 26126), (187, 26075), (191, 26042),

Gene: Vine\_45 Start: 31897, Stop: 30839, Start Num: 61

Candidate Starts for Vine\_45:

(55, 31921), (Start: 61 @31897 has 17 MA's), (81, 31771), (85, 31720), (87, 31696), (88, 31687), (91, 31654), (98, 31609), (110, 31507), (118, 31426), (126, 31348), (131, 31300), (145, 31207), (155, 31171), (163, 31138), (164, 31132), (165, 31123), (167, 31108), (171, 31087), (175, 31072), (193, 30943), (194, 30931), (195, 30925), (197, 30910),

Gene: Vispitious\_38 Start: 27094, Stop: 25910, Start Num: 27

Candidate Starts for Vispitious\_38:

(10, 27205), (16, 27154), (Start: 27 @27094 has 4 MA's), (Start: 30 @27085 has 126 MA's), (72, 26962), (Start: 74 @26947 has 1 MA's), (82, 26860), (102, 26710), (109, 26653), (135, 26359), (140, 26329), (144, 26299), (146, 26296), (165, 26191), (168, 26173), (170, 26161), (178, 26128), (187, 26077), (191, 26044),

Gene: Wardwill\_37 Start: 25155, Stop: 23977, Start Num: 35

Candidate Starts for Wardwill\_37:

(17, 25227), (19, 25212), (Start: 35 @25155 has 32 MA's), (72, 25041), (109, 24723), (110, 24708), (115, 24657), (130, 24465), (135, 24429), (144, 24369), (146, 24366), (159, 24291), (169, 24240), (189, 24135), (194, 24078),

Gene: WestPM\_34 Start: 25285, Stop: 24104, Start Num: 30

Candidate Starts for WestPM\_34:

(15, 25357), (Start: 30 @25285 has 126 MA's), (72, 25156), (73, 25153), (77, 25108), (103, 24889), (106, 24871), (109, 24847), (110, 24832), (115, 24781), (125, 24691), (135, 24553), (140, 24523), (148, 24484), (169, 24364), (187, 24271), (191, 24238), (193, 24214), (194, 24202),

Gene: WildNOut\_38 Start: 27082, Stop: 25907, Start Num: 30

Candidate Starts for WildNOut\_38:

(10, 27202), (16, 27151), (Start: 27 @27091 has 4 MA's), (Start: 30 @27082 has 126 MA's), (72, 26959), (Start: 74 @26944 has 1 MA's), (82, 26857), (102, 26707), (109, 26650), (135, 26356), (140, 26326), (144, 26296), (146, 26293), (165, 26188), (168, 26170), (170, 26158), (178, 26125), (187, 26074), (191, 26041),

Gene: WilliamStrong\_36 Start: 26624, Stop: 25461, Start Num: 35

Candidate Starts for WilliamStrong\_36:

(Start: 35 @26624 has 32 MA's), (Start: 43 @26612 has 1 MA's), (72, 26513), (Start: 74 @26498 has 1 MA's), (102, 26261), (106, 26228), (108, 26216), (109, 26204), (110, 26189), (115, 26138), (125, 26048), (135, 25910), (144, 25850), (157, 25787), (187, 25628), (193, 25571), (194, 25559),

Gene: Winzigespinne\_37 Start: 26766, Stop: 25591, Start Num: 30

Candidate Starts for Winzigespinne\_37:

(10, 26886), (16, 26835), (Start: 27 @26775 has 4 MA's), (Start: 30 @26766 has 126 MA's), (72, 26643), (Start: 74 @26628 has 1 MA's), (82, 26541), (102, 26391), (109, 26334), (110, 26319), (135, 26040), (140, 26010), (144, 25980), (146, 25977), (165, 25872), (168, 25854), (170, 25842), (178, 25809), (187, 25758), (191, 25725),

Gene: Yakult\_43 Start: 30412, Stop: 29396, Start Num: 68

Candidate Starts for Yakult\_43:

(Start: 68 @30412 has 24 MA's), (Start: 71 @30397 has 1 MA's), (83, 30271), (87, 30241), (98, 30154), (104, 30097), (110, 30052), (112, 30028), (114, 30022), (123, 29923), (124, 29917), (126, 29893), (129, 29866), (163, 29689), (165, 29674), (174, 29626), (184, 29566), (189, 29536),

Gene: Yarn\_38 Start: 29471, Stop: 28437, Start Num: 68

Candidate Starts for Yarn\_38:

(Start: 68 @29471 has 24 MA's), (90, 29276), (98, 29213), (110, 29111), (124, 28976), (152, 28796), (153, 28787), (165, 28730), (168, 28712), (171, 28694), (186, 28610),

Gene: Yucky\_46 Start: 31828, Stop: 30779, Start Num: 64

Candidate Starts for Yucky\_46:

(Start: 64 @31828 has 1 MA's), (81, 31711), (85, 31660), (87, 31636), (88, 31627), (91, 31594), (98, 31549), (110, 31447), (118, 31366), (126, 31288), (131, 31240), (145, 31147), (155, 31111), (163, 31078), (164, 31072), (165, 31063), (167, 31048), (171, 31027), (172, 31024), (175, 31012), (193, 30883), (194, 30871), (195, 30865), (197, 30850),

Gene: Yummy\_43 Start: 29799, Stop: 28771, Start Num: 68

Candidate Starts for Yummy\_43:

(24, 29973), (36, 29928), (Start: 68 @29799 has 24 MA's), (90, 29604), (98, 29541), (112, 29415), (118, 29358), (124, 29304), (129, 29253), (152, 29124), (153, 29115), (156, 29103), (165, 29058), (168, 29040), (171, 29022), (189, 28920), (197, 28845),

Gene: YuuY\_36 Start: 27283, Stop: 26087, Start Num: 28

Candidate Starts for YuuY\_36:

(16, 27346), (Start: 28 @27283 has 1 MA's), (Start: 31 @27274 has 1 MA's), (70, 27166), (72, 27151), (106, 26857), (108, 26845), (109, 26833), (110, 26818), (115, 26767), (135, 26539), (144, 26479), (146, 26476), (157, 26416), (159, 26401), (169, 26350), (178, 26308), (187, 26257), (194, 26188),

Gene: Zada\_38 Start: 27054, Stop: 25879, Start Num: 30

Candidate Starts for Zada\_38:

(10, 27174), (16, 27123), (Start: 27 @27063 has 4 MA's), (Start: 30 @27054 has 126 MA's), (72, 26931), (Start: 74 @26916 has 1 MA's), (82, 26829), (102, 26679), (109, 26622), (110, 26607), (135, 26328), (140, 26298), (144, 26268), (146, 26265), (165, 26160), (168, 26142), (170, 26130), (178, 26097), (187, 26046), (191, 26013),

Gene: Zareef\_41 Start: 29699, Stop: 28668, Start Num: 61

Candidate Starts for Zareef\_41:

(Start: 61 @29699 has 17 MA's), (72, 29660), (79, 29603), (83, 29546), (87, 29516), (95, 29450), (98, 29429), (110, 29327), (114, 29297), (117, 29270), (121, 29222), (124, 29192), (150, 29027), (168, 28931), (171, 28913), (175, 28898),

Gene: Zayuliv\_35 Start: 25574, Stop: 24396, Start Num: 35

Candidate Starts for Zayuliv\_35:

(17, 25646), (19, 25631), (Start: 35 @25574 has 32 MA's), (72, 25460), (109, 25142), (110, 25127), (115, 25076), (130, 24884), (135, 24848), (144, 24788), (146, 24785), (159, 24710), (169, 24659), (189, 24554), (194, 24497),

Gene: Zenitsu\_37 Start: 26827, Stop: 25664, Start Num: 35

Candidate Starts for Zenitsu\_37:

(22, 26863), (Start: 23 @26854 has 2 MA's), (Start: 35 @26827 has 32 MA's), (72, 26716), (77, 26668), (100, 26482), (103, 26449), (106, 26431), (109, 26407), (110, 26392), (115, 26341), (125, 26251), (135, 26113), (140, 26083), (144, 26053), (146, 26050), (151, 26026), (169, 25924), (187, 25831), (191, 25798), (193, 25774), (194, 25762),

Gene: Zepp\_36 Start: 25033, Stop: 23855, Start Num: 35

Candidate Starts for Zepp\_36:

(17, 25105), (19, 25090), (Start: 35 @25033 has 32 MA's), (72, 24919), (109, 24601), (110, 24586), (115, 24535), (130, 24343), (135, 24307), (144, 24247), (146, 24244), (159, 24169), (169, 24118), (189, 24013), (194, 23956),

Gene: Zuko\_80 Start: 60584, Stop: 61708, Start Num: 48

Candidate Starts for Zuko\_80:

(5, 60317), (33, 60494), (Start: 48 @60584 has 2 MA's), (69, 60641), (70, 60647), (72, 60662), (89, 60851), (98, 60917), (100, 60929), (104, 60974), (106, 60983), (110, 61025), (111, 61043), (112, 61049), (114, 61055), (117, 61082), (120, 61127), (127, 61196), (128, 61208), (132, 61238), (163, 61415), (166, 61442), (171, 61466), (185, 61541), (191, 61574), (192, 61592), (194, 61610),