





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 224284 Report

This analysis was run 03/28/25 on database version 593.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 224284 has 218 members, 40 are drafts.

Phages represented in each track:

- Track 1 : Farewell\_11
- Track 2 : Sparky\_11
- Track 3 : Raqqa\_13
- Track 4 : AbbyDaisy\_13
- Track 5 : SPB78\_13
- Track 6 : ClubL\_42, Geeche\_41, Lozinak\_42, Engineer\_43, Toniann\_42, Bachita\_44, Norvs\_43, Cucurbita\_44, Aphelion\_42, Smoothie\_43, PhinkBoden\_42
- Track 7 : Dusty\_40, Miskis\_40, Culver\_42, Abscondus\_41
- Track 8 : WilliamBoone\_42
- Track 9 : BrutonGaster\_30, OneUp\_36
- Track 10 : MacGully\_43
- Track 11 : Dalilpop\_40, Turuncu\_39, GRU1\_25, GTE5\_26
- Track 12 : Flapper\_39
- Track 13 : Outis\_36, Buggaboo\_36, StarStruck\_36, MerCougar\_36, SuperSulley\_36
- Track 14 : NovumRegina\_35, GrootJr\_37, Jifall16\_34, Foxboro\_36, Wheezy\_35, Tracker\_35, Arti\_35, NatB6\_35, Kurt\_35, Phomeo\_34, Emianna\_35
- Track 15 : Bonum\_38
- Track 16 : Kabluna\_38, NosilaM\_38
- Track 17 : Commandaria\_37
- Track 18 : KidneyBean\_35
- Track 19 : GTE8\_24
- Track 20 : Ennea\_41, Patio\_38, Lollipop1437\_40, RedRaider\_42, Float294\_37, Skysand\_37
- Track 21 : Marietta\_37
- Track 22 : Sukkupi\_37, BiPauneto\_38, NadineRae\_35, Yndexa\_37, IDyn\_36
- Track 23 : HubbaBubba\_33, WhoseManz\_37
- Track 24 : Fury\_44, Pleakley\_44, Scuba\_44
- Track 25 : Apiary\_39, Polyuyuki\_39, Maselop\_39, CoffeeBean\_39, Braxoaddie\_39
- Track 26 : GuyFagieri\_39
- Track 27 : Banquo\_21, TinaLin\_20
- Track 28 : Huffy\_19, TZGordon\_19, DinoDaryn\_19
- Track 29 : Goib\_18, Vendetta\_17, Splinter\_17
- Track 30 : Gspu1\_15

- Track 31 : Dardanus\_19
- Track 32 : Schmidt\_15
- Track 33 : Catfish\_16
- Track 34 : Malachai\_14, Begonia\_14
- Track 35 : Pipp\_14
- Track 36 : Murp\_14
- Track 37 : CaptainKirk2\_14, MintFen\_14, Delian\_14, Melba\_14, Guacamole\_14, Archis\_15, BlingBling\_14, Barco\_14, JasperJr\_14, Fenry\_13, JuJu\_14, Zarbodnamra\_14, UmaThurman\_14
- Track 38 : Wisp\_13, Mellie\_13, PhrostedPhlake\_15, Petra\_16, CarolAnn\_14, ZiggyZoo\_13, Blino\_14, Walrus\_15, Hitter\_14, Jalammah\_15, Lysidious\_14
- Track 39 : Gambino\_16, Azula\_16, Blueberry\_16, MissRona\_16
- Track 40 : Frokostdame\_14
- Track 41 : Samba\_14
- Track 42 : PrincePatrick\_14, William\_14, PCoral7\_14
- Track 43 : Toast\_14
- Track 44 : KappaFarmDelta\_14
- Track 45 : Wocket\_15
- Track 46 : Utz\_14
- Track 47 : Obliviate\_13
- Track 48 : Fairfaxidum\_14
- Track 49 : JonJames\_41, Cardigan\_41, Yvonnetastic\_39
- Track 50 : Daredevil\_23, Towmatter\_23
- Track 51 : Bantam\_24
- Track 52 : Mollymur\_25
- Track 53 : SpeedDemon\_250
- Track 54 : DatBoi\_25
- Track 55 : Morgana\_13, ModicumRichard\_13, ObLaDi\_13, Aleemily\_13, Cafasso\_13
- Track 56 : C3PO\_23, Darwin\_26, Cruella\_23, PotatoChip\_23, Kimchi1738\_23, Stickynote\_25, Zion\_23, PeteyPab\_22
- Track 57 : MicyPS\_12
- Track 58 : PSonyx\_12
- Track 59 : Kumotta\_13
- Track 60 : Pigu\_12
- Track 61 : BrayBeast\_12
- Track 62 : Sarge\_12, Shoya\_11
- Track 63 : MargaretKali\_13
- Track 64 : Alatato\_11
- Track 65 : Halloweekend\_14, Ryan\_16
- Track 66 : Zaheer\_16, Ichiang\_14
- Track 67 : Lenoxika\_16, Schism\_16, Guinevere\_16, Nandita\_16, Donatella\_15
- Track 68 : Cole\_14, QuinnAvery\_16, Kihatsu\_17
- Track 69 : GoodLuckBabe\_16
- Track 70 : Julie\_16
- Track 71 : Popper\_14
- Track 72 : AllBusiness\_15, IsHungry\_16, Gusanita\_14
- Track 73 : Elesar\_15
- Track 74 : Bauer\_15, Zucker\_14
- Track 75 : BlackSpider\_13
- Track 76 : Scotia\_14
- Track 77 : NoSwimming\_14
- Track 78 : PrairieDogTown\_19, EvenBluerMoon\_13

- Track 79 : Aoka\_13
- Track 80 : JanetJ\_13
- Track 81 : CocoCinnamon\_16
- Track 82 : Maja\_12
- Track 83 : Skitty\_13, MrSmee\_12
- Track 84 : Corazon\_43, Blackbeetle\_45, Clarkson\_46, GoongGoong\_44, VasuNzinga\_45, FeliMaine\_47, JoieB\_46, Poise\_45, Marvin\_43, Lilbit\_46, Huphlepuuff\_47, Gattaca\_44, MosMoris\_43, Caprice\_42, Raela\_45, Tesla\_44, Pringar\_45, RedRaider77\_45, LittleLaf\_45, Beelzebub\_49
- Track 85 : ChewyVIII\_49
- Track 86 : ArV2\_11
- Track 87 : VanLee\_14
- Track 88 : Samy\_17
- Track 89 : P1201\_38
- Track 90 : GMA4\_13

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

The start number called the most often in the published annotations is 13, it was called in 100 of the 178 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbyDaisy\_13, Abscondus\_41, Alatato\_11, AllBusiness\_15, Aoka\_13, Aphelion\_42, Apiary\_39, Arti\_35, Bachita\_44, Bantam\_24, Bauer\_15, BiPauneto\_38, BlackSpider\_13, Bonum\_38, Braxoaddie\_39, BrayBeast\_12, BrutonGaster\_30, Buggaboo\_36, C3PO\_23, Cardigan\_41, ChewyVIII\_49, ClubL\_42, CocoCinnamon\_16, CoffeeBean\_39, Cole\_14, Commandaria\_37, Cruella\_23, Cucurbita\_44, Culver\_42, Dalilpop\_40, Daredevil\_23, Darwin\_26, DatBoi\_25, Donatella\_15, Dusty\_40, Elesar\_15, Emianna\_35, Engineer\_43, Ennea\_41, EvenBluerMoon\_13, Flapper\_39, Float294\_37, Foxboro\_36, Fury\_44, GMA4\_13, GRU1\_25, GTE5\_26, GTE8\_24, Geeche\_41, GoodLuckBabe\_16, GrootJr\_37, Guinevere\_16, Gusanita\_14, GuyFagieri\_39, Halloweekend\_14, HubbaBubba\_33, IDyn\_36, Ichiang\_14, IsHungry\_16, JanetJ\_13, Jifall16\_34, JonJames\_41, Julie\_16, Kabluna\_38, KidneyBean\_35, Kihatsu\_17, Kimchi1738\_23, Kumotta\_13, Kurt\_35, Lenoxika\_16, Lollipop1437\_40, Lozinak\_42, MacGully\_43, Maja\_12, MargaretKali\_13, Marietta\_37, Maselop\_39, MerCougar\_36, MicyPS\_12, Miskis\_40, Mollymur\_25, MrSmee\_12, NadineRae\_35, Nandita\_16, NatB6\_35, NoSwimming\_14, Norvs\_43, NosilaM\_38, NovumRegina\_35, OneUp\_36, Outis\_36, P1201\_38, PSonyx\_12, Patio\_38, PeteyPab\_22, PhinkBoden\_42, Phomeo\_34, Pigu\_12, Pleakley\_44, Polyuyuki\_39, Popper\_14, PotatoChip\_23, PrairieDogTown\_19, QuinnAvery\_16, Raqqa\_13, RedRaider\_42, Ryan\_16, Sarge\_12, Schism\_16, Scotia\_14, Scuba\_44, Shoya\_11, Skitty\_13, Skysand\_37, Smoothie\_43, SpeedDemon\_250, StarStruck\_36, Stickynote\_25, Sukkupi\_37, SuperSulley\_36, Toniann\_42, Towmatter\_23, Tracker\_35, Turuncu\_39, Wheezy\_35, WhoseManz\_37, WilliamBoone\_42, Yndexa\_37, Yvonnestic\_39, Zaheer\_16, Zion\_23, Zucker\_14,

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

- ArV2\_11,

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

- Aleemily\_13, Archis\_15, Azula\_16, Banquo\_21, Barco\_14, Beelzebub\_49, Begonia\_14, Blackbeetle\_45, BlingBling\_14, Blino\_14, Blueberry\_16, Cafasso\_13, Caprice\_42, CaptainKirk2\_14, CarolAnn\_14, Catfish\_16, Clarkson\_46, Corazon\_43, Dardanus\_19, Delian\_14, DinoDaryn\_19, Fairfaxidum\_14, Farewell\_11, FeliMaine\_47, Fenry\_13, Frokostdame\_14, Gambino\_16, Gattaca\_44, Goib\_18, GoongGoong\_44, Gspu1\_15, Guacamole\_14, Hitter\_14, Huffy\_19, Huphlepuuff\_47, Jalammah\_15, JasperJr\_14, JoieB\_46, JuJu\_14, KappaFarmDelta\_14, Lilbit\_46, LittleLaf\_45, Lysidious\_14, Malachai\_14, Marvin\_43, Melba\_14, Mellie\_13, MintFen\_14, MissRona\_16, ModicumRichard\_13, Morgana\_13, MosMoris\_43, Murp\_14, ObLaDi\_13, Obliviate\_13, PCoral7\_14, Petra\_16, PhrostedPhlake\_15, Pipp\_14, Poise\_45, PrincePatrick\_14, Pringar\_45, Raela\_45, RedRaider77\_45, SPB78\_13, Samba\_14, Samy\_17, Schmidt\_15, Sparky\_11, Splinter\_17, TZGordon\_19, Tesla\_44, TinaLin\_20, Toast\_14, UmaThurman\_14, Utz\_14, VanLee\_14, VasuNzinga\_45, Vendetta\_17, Walrus\_15, William\_14, Wisp\_13, Wocket\_15, Zarbodnamra\_14, ZiggyZoo\_13,

### Summary by start number:

#### Start 7:

- Found in 1 of 218 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArV2\_11 (singleton),

#### Start 10:

- Found in 5 of 218 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Toast\_14 (CV),

#### Start 11:

- Found in 1 of 218 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SPB78\_13 (BA),

#### Start 12:

- Found in 6 of 218 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 5 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aleemily\_13 (DZ), Cafasso\_13 (DZ), ModicumRichard\_13 (DZ), Morgana\_13 (DZ), ObLaDi\_13 (DZ), VanLee\_14 (singleton),

#### Start 13:

- Found in 133 of 218 ( 61.0% ) of genes in pham
- Manual Annotations of this start: 100 of 178
- Called 99.2% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_13 (AY), Abscondus\_41 (CQ1), Alata\_11 (FB), AllBusiness\_15 (FF), Aoka\_13 (FO), Aphelion\_42 (CQ1), Apiary\_39 (CR6), Arti\_35 (CR2), Bachita\_44 (CQ1), Bantam\_24 (DL), Bauer\_15 (FN), BiPauneto\_38 (CR4), BlackSpider\_13 (FN), Bonum\_38 (CR2), Braxoaddie\_39 (CR6), BrayBeast\_12 (FB), BrutonGaster\_30 (CQ2), Buggaboo\_36 (CR2), C3PO\_23 (EN),

Cardigan\_41 (DD), ChewyVIII\_49 (singleton), ClubL\_42 (CQ1), CocoCinnamon\_16 (FO), CoffeeBean\_39 (CR6), Cole\_14 (FF), Commandaria\_37 (CR2), Cruella\_23 (EN), Cucurbita\_44 (CQ1), Culver\_42 (CQ1), Dalilpop\_40 (CR1), Daredevil\_23 (DL), Darwin\_26 (EN), DatBoi\_25 (DL), Donatella\_15 (FF), Dusty\_40 (CQ1), Elesar\_15 (FF), Emianna\_35 (CR2), Engineer\_43 (CQ1), Ennea\_41 (CR3), EvenBluerMoon\_13 (FO), Flapper\_39 (CR1), Float294\_37 (CR3), Foxboro\_36 (CR2), Fury\_44 (CR5), GMA4\_13 (singleton), GRU1\_25 (CR1), GTE5\_26 (CR1), GTE8\_24 (CR2), Geeche\_41 (CQ1), GoodLuckBabe\_16 (FF), GrootJr\_37 (CR2), Guinevere\_16 (FF), Gusanita\_14 (FF), GuyFagieri\_39 (CR6), Halloween\_14 (FF), HubbaBubba\_33 (CR4), IDyn\_36 (CR4), Ichiang\_14 (FF), IsHungry\_16 (FF), JanetJ\_13 (FO), Jifall16\_34 (CR2), JonJames\_41 (DD), Julie\_16 (FF), Kabluna\_38 (CR2), KidneyBean\_35 (CR2), Kihatsu\_17 (FF), Kimchi1738\_23 (EN), Kumotta\_13 (FB), Kurt\_35 (CR2), Lenoxika\_16 (FF), Lollipop1437\_40 (CR3), Lozinak\_42 (CQ1), MacGully\_43 (CR), Maja\_12 (FO), MargaretKali\_13 (FB), Marietta\_37 (CR4), Maselop\_39 (CR6), MerCougar\_36 (CR2), MicyPS\_12 (EQ), Miskis\_40 (CQ1), Mollymur\_25 (DL), MrSmee\_12 (FQ), NadineRae\_35 (CR4), Nandita\_16 (FF), NatB6\_35 (CR2), NoSwimming\_14 (FO), Norvs\_43 (CQ1), NosilaM\_38 (CR2), NovumRegina\_35 (CR2), OneUp\_36 (CQ2), Outis\_36 (CR2), P1201\_38 (singleton), PSonyx\_12 (EQ), Patio\_38 (CR3), PeteyPab\_22 (EN), PhinkBoden\_42 (CQ1), Phomeo\_34 (CR2), Pigu\_12 (FB), Pleakley\_44 (CR5), Polyyuki\_39 (CR6), Popper\_14 (FF), PotatoChip\_23 (EN), PrairieDogTown\_19 (FO), QuinnAvery\_16 (FF), Raqqa\_13 (AY), RedRaider\_42 (CR3), Ryan\_16 (FF), Sarge\_12 (FB), Schism\_16 (FF), Scotia\_14 (FO), Scuba\_44 (CR5), Shoya\_11 (FB), Skitty\_13 (FQ), Skysand\_37 (CR3), Smoothie\_43 (CQ1), SpeedDemon\_250 (DL), StarStruck\_36 (CR2), Stickynote\_25 (EN), Sukkupi\_37 (CR4), SuperSulley\_36 (CR2), Toniann\_42 (CQ1), Towmatter\_23 (DL), Tracker\_35 (CR2), Turuncu\_39 (CR1), Wheezy\_35 (CR2), WhoseManz\_37 (CR4), WilliamBoone\_42 (CQ1), Yndexa\_37 (CR4), Yvonnetastic\_39 (DD), Zaheer\_16 (FF), Zion\_23 (EN), Zucker\_14 (FN),

#### Start 16:

- Found in 20 of 218 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 17 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beelzebub\_49 (S), Blackbeetle\_45 (S), Caprice\_42 (S), Clarkson\_46 (S), Corazon\_43 (S), FeliMaine\_47 (S), Gattaca\_44 (S), GoongGoong\_44 (S), Huphlepuuff\_47 (S), JoieB\_46 (S), Lilbit\_46 (S), LittleLaf\_45 (S), Marvin\_43 (S), MosMoris\_43 (S), Poise\_45 (S), Pringar\_45 (S), Raela\_45 (S), RedRaider77\_45 (S), Tesla\_44 (S), VasuNzinga\_45 (S),

#### Start 19:

- Found in 2 of 218 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Farewell\_11 (AF), Sparky\_11 (AF),

#### Start 20:

- Found in 43 of 218 ( 19.7% ) of genes in pham
- Manual Annotations of this start: 2 of 178
- Called 4.7% of time when present
- Phage (with cluster) where this start called: Obliviate\_13 (CV), Pipp\_14 (CV),

#### Start 21:

- Found in 64 of 218 ( 29.4% ) of genes in pham

- Manual Annotations of this start: 39 of 178
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Archis\_15 (CV), Azula\_16 (CV), Barco\_14 (CV), Begonia\_14 (CV), BlingBling\_14 (CV), Blino\_14 (CV), Blueberry\_16 (CV), CaptainKirk2\_14 (CV), CarolAnn\_14 (CV), Delian\_14 (CV), Fairfaxidum\_14 (CV), Fenry\_13 (CV), Frokostdame\_14 (CV), Gambino\_16 (CV), Guacamole\_14 (CV), Hitter\_14 (CV), Jalammah\_15 (CV), JasperJr\_14 (CV), JuJu\_14 (CV), KappaFarmDelta\_14 (CV), Lysidious\_14 (CV), Malachai\_14 (CV), Melba\_14 (CV), Mellie\_13 (CV), MintFen\_14 (CV), MissRona\_16 (CV), Murp\_14 (CV), PCoral7\_14 (CV), Petra\_16 (CV), PhrostedPhlake\_15 (CV), PrincePatrick\_14 (CV), Samba\_14 (CV), UmaThurman\_14 (CV), Utz\_14 (CV), Walrus\_15 (CV), William\_14 (CV), Wisp\_13 (CV), Wocket\_15 (CV), Zarbodnamra\_14 (CV), ZiggyZoo\_13 (CV),

#### Start 24:

- Found in 5 of 218 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Samy\_17 (singleton),

#### Start 25:

- Found in 2 of 218 ( 0.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Gspu1\_15 (CU2),

#### Start 26:

- Found in 11 of 218 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 11 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Banquo\_21 (CU1), Catfish\_16 (CU5), Dardanus\_19 (CU3), DinoDaryn\_19 (CU1), Goib\_18 (CU1), Huff\_19 (CU1), Schmidt\_15 (CU4), Splinter\_17 (CU1), TZGordon\_19 (CU1), TinaLin\_20 (CU1), Vendetta\_17 (CU1),

### Summary by clusters:

There are 30 clusters represented in this pham: FQ, singleton, BA, DD, DL, FB, DZ, FF, FN, FO, CU5, CU4, CU3, CU2, CU1, CQ2, CQ1, EN, AF, S, AY, CR, EQ, CV, CR2, CR3, CR1, CR6, CR4, CR5,

Info for manual annotations of cluster AF:

- Start number 19 was manually annotated 2 times for cluster AF.

Info for manual annotations of cluster AY:

- Start number 13 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster CQ1:

- Start number 13 was manually annotated 14 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 13 was manually annotated 2 times for cluster CQ2.



Info for manual annotations of cluster CR:

- Start number 13 was manually annotated 1 time for cluster CR.

Info for manual annotations of cluster CR1:

- Start number 13 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 13 was manually annotated 20 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 13 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 13 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 13 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CR6:

- Start number 13 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster CU1:

- Start number 26 was manually annotated 8 times for cluster CU1.

Info for manual annotations of cluster CU3:

- Start number 26 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU4:

- Start number 26 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster CU5:

- Start number 26 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster CV:

- Start number 10 was manually annotated 1 time for cluster CV.
- Start number 20 was manually annotated 2 times for cluster CV.
- Start number 21 was manually annotated 39 times for cluster CV.

Info for manual annotations of cluster DD:

- Start number 13 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DL:

- Start number 13 was manually annotated 5 times for cluster DL.

Info for manual annotations of cluster DZ:

- Start number 12 was manually annotated 4 times for cluster DZ.

Info for manual annotations of cluster EN:

- Start number 13 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster EQ:

- Start number 13 was manually annotated 1 time for cluster EQ.

Info for manual annotations of cluster FB:

- Start number 13 was manually annotated 5 times for cluster FB.

Info for manual annotations of cluster FF:

- Start number 13 was manually annotated 8 times for cluster FF.

Info for manual annotations of cluster FN:

- Start number 13 was manually annotated 2 times for cluster FN.

Info for manual annotations of cluster FO:

- Start number 13 was manually annotated 4 times for cluster FO.

Info for manual annotations of cluster FQ:

- Start number 13 was manually annotated 1 time for cluster FQ.

Info for manual annotations of cluster S:

- Start number 16 was manually annotated 17 times for cluster S.

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

Gene: AbbyDaisy\_13 Start: 7857, Stop: 8522, Start Num: 13

Candidate Starts for AbbyDaisy\_13:

(Start: 13 @7857 has 100 MA's), (38, 7950), (58, 8064), (67, 8127), (71, 8145), (76, 8175), (95, 8265), (115, 8349), (122, 8397), (127, 8421), (132, 8451), (135, 8463),

Gene: Abscondus\_41 Start: 17642, Stop: 18307, Start Num: 13

Candidate Starts for Abscondus\_41:

(Start: 13 @17642 has 100 MA's), (39, 17732), (105, 18089),

Gene: Alatato\_11 Start: 7604, Stop: 8251, Start Num: 13

Candidate Starts for Alatato\_11:

(Start: 13 @7604 has 100 MA's), (29, 7664), (44, 7715), (49, 7736), (54, 7766), (73, 7892), (76, 7913), (77, 7916), (111, 8063), (141, 8228),

Gene: Aleemily\_13 Start: 8905, Stop: 9573, Start Num: 12

Candidate Starts for Aleemily\_13:

(Start: 12 @8905 has 5 MA's), (94, 9307), (114, 9388), (122, 9445), (137, 9526), (144, 9547),

Gene: AllBusiness\_15 Start: 9307, Stop: 9975, Start Num: 13

Candidate Starts for AllBusiness\_15:

(Start: 13 @9307 has 100 MA's), (47, 9442), (60, 9529), (71, 9595), (95, 9715), (130, 9886), (132, 9901),

Gene: Aoka\_13 Start: 9111, Stop: 9773, Start Num: 13

Candidate Starts for Aoka\_13:

(Start: 13 @9111 has 100 MA's), (29, 9177), (54, 9282), (73, 9408), (77, 9432), (111, 9579), (141, 9744),

Gene: Aphelion\_42 Start: 17911, Stop: 18576, Start Num: 13

Candidate Starts for Aphelion\_42:

(Start: 13 @17911 has 100 MA's), (39, 18001), (105, 18358), (132, 18511),

Gene: Apiary\_39 Start: 23228, Stop: 23896, Start Num: 13

Candidate Starts for Apiary\_39:

(Start: 13 @23228 has 100 MA's), (36, 23309), (47, 23366), (60, 23450), (78, 23552), (79, 23564), (100, 23651), (114, 23708), (125, 23777), (126, 23783), (129, 23795), (142, 23861), (144, 23867),

Gene: ArV2\_11 Start: 7388, Stop: 8074, Start Num: 7

Candidate Starts for ArV2\_11:

(7, 7388), (9, 7394), (Start: 13 @7409 has 100 MA's), (Start: 24 @7454 has 1 MA's), (34, 7487), (54, 7580), (60, 7631), (67, 7679), (70, 7691), (71, 7697), (76, 7727), (91, 7793), (101, 7838), (115, 7901), (127, 7973), (132, 8003), (135, 8015), (138, 8033),

Gene: Archis\_15 Start: 8891, Stop: 9529, Start Num: 21

Candidate Starts for Archis\_15:

(Start: 20 @8888 has 2 MA's), (Start: 21 @8891 has 39 MA's), (45, 8981), (46, 8996), (69, 9149), (83, 9224), (89, 9248), (104, 9296), (116, 9353), (121, 9392), (138, 9476), (148, 9512),

Gene: Arti\_35 Start: 21382, Stop: 22065, Start Num: 13

Candidate Starts for Arti\_35:

(Start: 13 @21382 has 100 MA's), (Start: 21 @21400 has 39 MA's), (44, 21493), (56, 21580), (57, 21583), (78, 21715), (100, 21814), (114, 21871), (125, 21940), (131, 21970), (134, 21991), (144, 22030),

Gene: Azula\_16 Start: 9023, Stop: 9661, Start Num: 21

Candidate Starts for Azula\_16:

(Start: 20 @9020 has 2 MA's), (Start: 21 @9023 has 39 MA's), (45, 9113), (46, 9128), (56, 9194), (61, 9230), (69, 9281), (83, 9356), (89, 9380), (104, 9428), (116, 9485), (121, 9524), (138, 9608), (148, 9644),

Gene: Bachita\_44 Start: 18344, Stop: 19009, Start Num: 13

Candidate Starts for Bachita\_44:

(Start: 13 @18344 has 100 MA's), (39, 18434), (105, 18791), (132, 18944),

Gene: Banquo\_21 Start: 11777, Stop: 12373, Start Num: 26

Candidate Starts for Banquo\_21:

(Start: 26 @11777 has 11 MA's), (46, 11861), (51, 11885), (59, 11939), (79, 12062), (106, 12173), (107, 12176), (108, 12185), (113, 12203), (118, 12242), (130, 12293),

Gene: Bantam\_24 Start: 15333, Stop: 15989, Start Num: 13

Candidate Starts for Bantam\_24:

(5, 15276), (Start: 13 @15333 has 100 MA's), (27, 15384), (31, 15399), (83, 15678),

Gene: Barco\_14 Start: 8679, Stop: 9317, Start Num: 21

Candidate Starts for Barco\_14:

(Start: 20 @8676 has 2 MA's), (Start: 21 @8679 has 39 MA's), (45, 8769), (46, 8784), (69, 8937), (83, 9012), (89, 9036), (104, 9084), (116, 9141), (121, 9180), (138, 9264), (148, 9300),

Gene: Bauer\_15 Start: 9233, Stop: 9898, Start Num: 13

Candidate Starts for Bauer\_15:

(Start: 13 @9233 has 100 MA's), (Start: 24 @9278 has 1 MA's), (32, 9308), (54, 9401), (55, 9404), (59, 9443), (66, 9494), (91, 9614), (132, 9824), (138, 9854),

Gene: Beelzebub\_49 Start: 19342, Stop: 20007, Start Num: 16

Candidate Starts for Beelzebub\_49:

(Start: 16 @19342 has 17 MA's), (33, 19408), (53, 19501), (56, 19528), (68, 19612), (81, 19684), (115, 19831), (116, 19837), (120, 19864), (121, 19876),

Gene: Begonia\_14 Start: 8682, Stop: 9320, Start Num: 21

Candidate Starts for Begonia\_14:

(Start: 20 @8679 has 2 MA's), (Start: 21 @8682 has 39 MA's), (45, 8772), (46, 8787), (56, 8853), (83, 9015), (89, 9039), (104, 9087), (116, 9144), (121, 9183), (138, 9267), (148, 9303),

Gene: BiPauneto\_38 Start: 21225, Stop: 21905, Start Num: 13

Candidate Starts for BiPauneto\_38:

(Start: 13 @21225 has 100 MA's), (56, 21420), (68, 21504), (78, 21555), (100, 21654), (114, 21711), (125, 21780), (134, 21831), (144, 21870),

Gene: BlackSpider\_13 Start: 8260, Stop: 8922, Start Num: 13

Candidate Starts for BlackSpider\_13:

(Start: 13 @8260 has 100 MA's), (30, 8329), (36, 8347), (38, 8353), (60, 8482), (70, 8542), (76, 8578), (83, 8614), (86, 8626), (95, 8665), (109, 8725), (115, 8749),

Gene: Blackbeetle\_45 Start: 18361, Stop: 19026, Start Num: 16

Candidate Starts for Blackbeetle\_45:

(Start: 16 @18361 has 17 MA's), (33, 18427), (53, 18520), (56, 18547), (68, 18631), (81, 18703), (115, 18850), (116, 18856), (120, 18883), (121, 18895),

Gene: BlingBling\_14 Start: 8679, Stop: 9317, Start Num: 21

Candidate Starts for BlingBling\_14:

(Start: 20 @8676 has 2 MA's), (Start: 21 @8679 has 39 MA's), (45, 8769), (46, 8784), (69, 8937), (83, 9012), (89, 9036), (104, 9084), (116, 9141), (121, 9180), (138, 9264), (148, 9300),

Gene: Blino\_14 Start: 8579, Stop: 9217, Start Num: 21

Candidate Starts for Blino\_14:

(Start: 20 @8576 has 2 MA's), (Start: 21 @8579 has 39 MA's), (45, 8669), (46, 8684), (56, 8750), (69, 8837), (83, 8912), (89, 8936), (104, 8984), (116, 9041), (121, 9080), (138, 9164), (148, 9200),

Gene: Blueberry\_16 Start: 9023, Stop: 9661, Start Num: 21

Candidate Starts for Blueberry\_16:

(Start: 20 @9020 has 2 MA's), (Start: 21 @9023 has 39 MA's), (45, 9113), (46, 9128), (56, 9194), (61, 9230), (69, 9281), (83, 9356), (89, 9380), (104, 9428), (116, 9485), (121, 9524), (138, 9608), (148, 9644),

Gene: Bonum\_38 Start: 21700, Stop: 22383, Start Num: 13

Candidate Starts for Bonum\_38:

(Start: 13 @21700 has 100 MA's), (57, 21901), (62, 21949), (78, 22033), (84, 22063), (100, 22132), (103, 22141), (114, 22189), (125, 22258), (144, 22348),

Gene: Braxoaddie\_39 Start: 23217, Stop: 23885, Start Num: 13

Candidate Starts for Braxoaddie\_39:

(Start: 13 @23217 has 100 MA's), (36, 23298), (47, 23355), (60, 23439), (78, 23541), (79, 23553), (100, 23640), (114, 23697), (125, 23766), (126, 23772), (129, 23784), (142, 23850), (144, 23856),

Gene: BrayBeast\_12 Start: 8007, Stop: 8660, Start Num: 13

Candidate Starts for BrayBeast\_12:

(Start: 13 @8007 has 100 MA's), (29, 8067), (44, 8118), (54, 8172), (66, 8268), (68, 8277), (73, 8298), (77, 8322), (83, 8355), (111, 8469), (141, 8634),

Gene: BrutonGaster\_30 Start: 14524, Stop: 15189, Start Num: 13

Candidate Starts for BrutonGaster\_30:

(8, 14506), (Start: 13 @14524 has 100 MA's), (60, 14755), (70, 14815), (72, 14824), (96, 14941),

Gene: Buggaboo\_36 Start: 22185, Stop: 22868, Start Num: 13

Candidate Starts for Buggaboo\_36:

(Start: 13 @22185 has 100 MA's), (57, 22386), (78, 22518), (100, 22617), (103, 22626), (114, 22674), (125, 22743), (144, 22833),

Gene: C3PO\_23 Start: 15961, Stop: 16623, Start Num: 13

Candidate Starts for C3PO\_23:

(Start: 13 @15961 has 100 MA's), (Start: 21 @15979 has 39 MA's), (36, 16042), (38, 16048), (78, 16282), (100, 16378), (114, 16435), (116, 16450), (144, 16594),

Gene: Cafasso\_13 Start: 8905, Stop: 9573, Start Num: 12

Candidate Starts for Cafasso\_13:

(Start: 12 @8905 has 5 MA's), (94, 9307), (114, 9388), (122, 9445), (137, 9526), (144, 9547),

Gene: Caprice\_42 Start: 18431, Stop: 19096, Start Num: 16

Candidate Starts for Caprice\_42:

(Start: 16 @18431 has 17 MA's), (33, 18497), (53, 18590), (56, 18617), (68, 18701), (81, 18773), (115, 18920), (116, 18926), (120, 18953), (121, 18965),

Gene: CaptainKirk2\_14 Start: 8682, Stop: 9320, Start Num: 21

Candidate Starts for CaptainKirk2\_14:

(Start: 20 @8679 has 2 MA's), (Start: 21 @8682 has 39 MA's), (45, 8772), (46, 8787), (69, 8940), (83, 9015), (89, 9039), (104, 9087), (116, 9144), (121, 9183), (138, 9267), (148, 9303),

Gene: Cardigan\_41 Start: 19485, Stop: 20150, Start Num: 13

Candidate Starts for Cardigan\_41:

(Start: 13 @19485 has 100 MA's), (40, 19578), (53, 19647), (83, 19836), (90, 19863), (129, 20052),

Gene: CarolAnn\_14 Start: 8578, Stop: 9216, Start Num: 21

Candidate Starts for CarolAnn\_14:

(Start: 20 @8575 has 2 MA's), (Start: 21 @8578 has 39 MA's), (45, 8668), (46, 8683), (56, 8749), (69, 8836), (83, 8911), (89, 8935), (104, 8983), (116, 9040), (121, 9079), (138, 9163), (148, 9199),

Gene: Catfish\_16 Start: 9760, Stop: 10344, Start Num: 26

Candidate Starts for Catfish\_16:

(18, 9721), (Start: 26 @9760 has 11 MA's), (41, 9811), (46, 9844), (51, 9868), (93, 10096), (99, 10135), (106, 10156), (108, 10168), (118, 10225), (133, 10291), (136, 10297),

Gene: ChewyVIII\_49 Start: 28800, Stop: 29486, Start Num: 13

Candidate Starts for ChewyVIII\_49:

(Start: 13 @28800 has 100 MA's), (34, 28875), (68, 29088), (78, 29139), (100, 29238), (111, 29283), (114, 29295), (125, 29364), (126, 29370), (144, 29454), (149, 29472),

Gene: Clarkson\_46 Start: 19043, Stop: 19708, Start Num: 16

Candidate Starts for Clarkson\_46:

(Start: 16 @19043 has 17 MA's), (33, 19109), (53, 19202), (56, 19229), (68, 19313), (81, 19385), (115, 19532), (116, 19538), (120, 19565), (121, 19577),

Gene: ClubL\_42 Start: 17833, Stop: 18498, Start Num: 13

Candidate Starts for ClubL\_42:

(Start: 13 @17833 has 100 MA's), (39, 17923), (105, 18280), (132, 18433),

Gene: CocoCinnamon\_16 Start: 9346, Stop: 9993, Start Num: 13

Candidate Starts for CocoCinnamon\_16:

(Start: 13 @9346 has 100 MA's), (14, 9349), (29, 9406), (44, 9457), (49, 9478), (73, 9634), (77, 9658), (80, 9682), (95, 9742), (100, 9760), (141, 9970),

Gene: CoffeeBean\_39 Start: 23172, Stop: 23840, Start Num: 13

Candidate Starts for CoffeeBean\_39:

(Start: 13 @23172 has 100 MA's), (36, 23253), (47, 23310), (60, 23394), (78, 23496), (79, 23508), (100, 23595), (114, 23652), (125, 23721), (126, 23727), (129, 23739), (142, 23805), (144, 23811),

Gene: Cole\_14 Start: 8911, Stop: 9579, Start Num: 13

Candidate Starts for Cole\_14:

(Start: 13 @8911 has 100 MA's), (71, 9199), (95, 9319), (122, 9451), (132, 9505),

Gene: Commandaria\_37 Start: 22702, Stop: 23388, Start Num: 13

Candidate Starts for Commandaria\_37:

(Start: 13 @22702 has 100 MA's), (56, 22900), (57, 22903), (62, 22951), (78, 23035), (100, 23134), (114, 23191), (123, 23251), (125, 23260), (131, 23290), (134, 23311), (144, 23350),

Gene: Corazon\_43 Start: 18996, Stop: 19661, Start Num: 16

Candidate Starts for Corazon\_43:

(Start: 16 @18996 has 17 MA's), (33, 19062), (53, 19155), (56, 19182), (68, 19266), (81, 19338), (115, 19485), (116, 19491), (120, 19518), (121, 19530),

Gene: Cruella\_23 Start: 15961, Stop: 16623, Start Num: 13

Candidate Starts for Cruella\_23:

(Start: 13 @15961 has 100 MA's), (Start: 21 @15979 has 39 MA's), (36, 16042), (38, 16048), (78, 16282), (100, 16378), (114, 16435), (116, 16450), (144, 16594),

Gene: Cucurbita\_44 Start: 19203, Stop: 19868, Start Num: 13

Candidate Starts for Cucurbita\_44:

(Start: 13 @19203 has 100 MA's), (39, 19293), (105, 19650), (132, 19803),

Gene: Culver\_42 Start: 17642, Stop: 18307, Start Num: 13

Candidate Starts for Culver\_42:

(Start: 13 @17642 has 100 MA's), (39, 17732), (105, 18089),

Gene: Dalilpop\_40 Start: 23693, Stop: 24376, Start Num: 13

Candidate Starts for Dalilpop\_40:

(Start: 13 @23693 has 100 MA's), (57, 23894), (78, 24026), (100, 24125), (109, 24164), (114, 24182), (125, 24251), (134, 24302), (144, 24341),

Gene: Dardanus\_19 Start: 10822, Stop: 11409, Start Num: 26

Candidate Starts for Dardanus\_19:

(Start: 26 @10822 has 11 MA's), (41, 10873), (44, 10888), (46, 10906), (51, 10930), (72, 11062), (79, 11107), (106, 11218), (133, 11353), (136, 11359),

Gene: Daredevil\_23 Start: 13726, Stop: 14382, Start Num: 13

Candidate Starts for Daredevil\_23:

(5, 13669), (Start: 13 @13726 has 100 MA's), (22, 13747), (27, 13777), (70, 14002), (92, 14104), (117, 14224), (132, 14311), (133, 14314), (134, 14320),

Gene: Darwin\_26 Start: 16706, Stop: 17368, Start Num: 13

Candidate Starts for Darwin\_26:

(Start: 13 @16706 has 100 MA's), (Start: 21 @16724 has 39 MA's), (36, 16787), (38, 16793), (78, 17027), (100, 17123), (114, 17180), (116, 17195), (144, 17339),

Gene: DatBoi\_25 Start: 16122, Stop: 16778, Start Num: 13

Candidate Starts for DatBoi\_25:

(5, 16065), (Start: 13 @16122 has 100 MA's), (27, 16173), (83, 16467),

Gene: Delian\_14 Start: 8682, Stop: 9320, Start Num: 21

Candidate Starts for Delian\_14:

(Start: 20 @8679 has 2 MA's), (Start: 21 @8682 has 39 MA's), (45, 8772), (46, 8787), (69, 8940), (83, 9015), (89, 9039), (104, 9087), (116, 9144), (121, 9183), (138, 9267), (148, 9303),

Gene: DinoDaryn\_19 Start: 10919, Stop: 11509, Start Num: 26

Candidate Starts for DinoDaryn\_19:

(Start: 26 @10919 has 11 MA's), (35, 10952), (44, 10985), (46, 11003), (79, 11204), (106, 11315), (107, 11318), (113, 11345), (125, 11417),

Gene: Donatella\_15 Start: 9378, Stop: 10046, Start Num: 13

Candidate Starts for Donatella\_15:

(Start: 13 @9378 has 100 MA's), (30, 9447), (60, 9600), (71, 9666), (95, 9786), (122, 9918), (132, 9972),

Gene: Dusty\_40 Start: 17642, Stop: 18307, Start Num: 13

Candidate Starts for Dusty\_40:

(Start: 13 @17642 has 100 MA's), (39, 17732), (105, 18089),

Gene: Elesar\_15 Start: 9307, Stop: 9969, Start Num: 13

Candidate Starts for Elesar\_15:

(Start: 13 @9307 has 100 MA's), (30, 9376), (36, 9394), (38, 9400), (65, 9568), (67, 9577), (70, 9589), (76, 9625), (115, 9796), (127, 9868), (131, 9886),

Gene: Emianna\_35 Start: 22419, Stop: 23102, Start Num: 13

Candidate Starts for Emianna\_35:

(Start: 13 @22419 has 100 MA's), (Start: 21 @22437 has 39 MA's), (44, 22530), (56, 22617), (57, 22620), (78, 22752), (100, 22851), (114, 22908), (125, 22977), (131, 23007), (134, 23028), (144, 23067),

Gene: Engineer\_43 Start: 17859, Stop: 18524, Start Num: 13

Candidate Starts for Engineer\_43:

(Start: 13 @17859 has 100 MA's), (39, 17949), (105, 18306), (132, 18459),

Gene: Ennea\_41 Start: 23023, Stop: 23706, Start Num: 13

Candidate Starts for Ennea\_41:

(Start: 13 @23023 has 100 MA's), (57, 23224), (78, 23356), (83, 23383), (100, 23455), (114, 23512), (125, 23581), (134, 23632), (144, 23671),

Gene: EvenBluerMoon\_13 Start: 9146, Stop: 9808, Start Num: 13

Candidate Starts for EvenBluerMoon\_13:

(Start: 13 @9146 has 100 MA's), (29, 9212), (48, 9284), (54, 9317), (73, 9443), (77, 9467), (141, 9779),

Gene: Fairfaxidum\_14 Start: 8713, Stop: 9366, Start Num: 21

Candidate Starts for Fairfaxidum\_14:

(Start: 10 @8683 has 1 MA's), (Start: 20 @8710 has 2 MA's), (Start: 21 @8713 has 39 MA's), (45, 8803), (46, 8818), (68, 8968), (83, 9046), (89, 9070), (98, 9100), (104, 9118), (121, 9214), (138, 9298),

Gene: Farewell\_11 Start: 8044, Stop: 8706, Start Num: 19

Candidate Starts for Farewell\_11:

(Start: 19 @8044 has 2 MA's), (23, 8065), (52, 8194), (58, 8242), (63, 8284), (69, 8311), (72, 8326), (89, 8410), (101, 8458), (116, 8527), (144, 8677),

Gene: FeliMaine\_47 Start: 19044, Stop: 19709, Start Num: 16

Candidate Starts for FeliMaine\_47:

(Start: 16 @19044 has 17 MA's), (33, 19110), (53, 19203), (56, 19230), (68, 19314), (81, 19386), (115, 19533), (116, 19539), (120, 19566), (121, 19578),

Gene: Fenry\_13 Start: 8428, Stop: 9066, Start Num: 21

Candidate Starts for Fenry\_13:

(Start: 20 @8425 has 2 MA's), (Start: 21 @8428 has 39 MA's), (45, 8518), (46, 8533), (69, 8686), (83, 8761), (89, 8785), (104, 8833), (116, 8890), (121, 8929), (138, 9013), (148, 9049),

Gene: Flapper\_39 Start: 22775, Stop: 23458, Start Num: 13

Candidate Starts for Flapper\_39:

(Start: 13 @22775 has 100 MA's), (57, 22976), (62, 23024), (78, 23108), (100, 23207), (109, 23246), (114, 23264), (125, 23333), (134, 23384), (144, 23423),

Gene: Float294\_37 Start: 22462, Stop: 23145, Start Num: 13

Candidate Starts for Float294\_37:

(Start: 13 @22462 has 100 MA's), (57, 22663), (78, 22795), (83, 22822), (100, 22894), (114, 22951), (125, 23020), (134, 23071), (144, 23110),

Gene: Foxboro\_36 Start: 22925, Stop: 23608, Start Num: 13

Candidate Starts for Foxboro\_36:

(Start: 13 @22925 has 100 MA's), (Start: 21 @22943 has 39 MA's), (44, 23036), (56, 23123), (57, 23126), (78, 23258), (100, 23357), (114, 23414), (125, 23483), (131, 23513), (134, 23534), (144, 23573),

Gene: Frokostdame\_14 Start: 8673, Stop: 9311, Start Num: 21

Candidate Starts for Frokostdame\_14:

(1, 8058), (2, 8316), (Start: 20 @8670 has 2 MA's), (Start: 21 @8673 has 39 MA's), (46, 8778), (69, 8931), (83, 9006), (89, 9030), (104, 9078), (121, 9174), (138, 9258), (148, 9294),

Gene: Fury\_44 Start: 22072, Stop: 22755, Start Num: 13

Candidate Starts for Fury\_44:

(Start: 13 @22072 has 100 MA's), (57, 22273), (68, 22354), (77, 22399), (78, 22405), (79, 22417), (100, 22504), (114, 22561), (125, 22630), (134, 22681), (140, 22711), (144, 22720),

Gene: GMA4\_13 Start: 8955, Stop: 9626, Start Num: 13

Candidate Starts for GMA4\_13:



(6, 8925), (9, 8940), (Start: 13 @8955 has 100 MA's), (25, 9000), (42, 9060), (90, 9342), (125, 9513), (126, 9519),

Gene: GRU1\_25 Start: 14660, Stop: 15343, Start Num: 13

Candidate Starts for GRU1\_25:

(Start: 13 @14660 has 100 MA's), (57, 14861), (78, 14993), (100, 15092), (109, 15131), (114, 15149), (125, 15218), (134, 15269), (144, 15308),

Gene: GTE5\_26 Start: 15663, Stop: 16346, Start Num: 13

Candidate Starts for GTE5\_26:

(Start: 13 @15663 has 100 MA's), (57, 15864), (78, 15996), (100, 16095), (109, 16134), (114, 16152), (125, 16221), (134, 16272), (144, 16311),

Gene: GTE8\_24 Start: 15678, Stop: 16361, Start Num: 13

Candidate Starts for GTE8\_24:

(Start: 13 @15678 has 100 MA's), (Start: 21 @15696 has 39 MA's), (78, 16011), (83, 16038), (100, 16110), (114, 16167), (125, 16236), (131, 16266), (132, 16278), (134, 16287), (144, 16326),

Gene: Gambino\_16 Start: 9023, Stop: 9661, Start Num: 21

Candidate Starts for Gambino\_16:

(Start: 20 @9020 has 2 MA's), (Start: 21 @9023 has 39 MA's), (45, 9113), (46, 9128), (56, 9194), (61, 9230), (69, 9281), (83, 9356), (89, 9380), (104, 9428), (116, 9485), (121, 9524), (138, 9608), (148, 9644),

Gene: Gattaca\_44 Start: 18223, Stop: 18888, Start Num: 16

Candidate Starts for Gattaca\_44:

(Start: 16 @18223 has 17 MA's), (33, 18289), (53, 18382), (56, 18409), (68, 18493), (81, 18565), (115, 18712), (116, 18718), (120, 18745), (121, 18757),

Gene: Geeche\_41 Start: 17733, Stop: 18398, Start Num: 13

Candidate Starts for Geeche\_41:

(Start: 13 @17733 has 100 MA's), (39, 17823), (105, 18180), (132, 18333),

Gene: Goib\_18 Start: 10694, Stop: 11284, Start Num: 26

Candidate Starts for Goib\_18:

(Start: 26 @10694 has 11 MA's), (35, 10727), (44, 10760), (46, 10778), (59, 10856), (106, 11090), (107, 11093), (113, 11120), (125, 11192),

Gene: GoodLuckBabe\_16 Start: 9206, Stop: 9874, Start Num: 13

Candidate Starts for GoodLuckBabe\_16:

(Start: 13 @9206 has 100 MA's), (60, 9428), (71, 9494), (83, 9560), (95, 9614), (132, 9800),

Gene: GoongGoong\_44 Start: 18263, Stop: 18928, Start Num: 16

Candidate Starts for GoongGoong\_44:

(Start: 16 @18263 has 17 MA's), (33, 18329), (53, 18422), (56, 18449), (68, 18533), (81, 18605), (115, 18752), (116, 18758), (120, 18785), (121, 18797),

Gene: GrootJr\_37 Start: 21777, Stop: 22460, Start Num: 13

Candidate Starts for GrootJr\_37:

(Start: 13 @21777 has 100 MA's), (Start: 21 @21795 has 39 MA's), (44, 21888), (56, 21975), (57, 21978), (78, 22110), (100, 22209), (114, 22266), (125, 22335), (131, 22365), (134, 22386), (144, 22425),

Gene: Gspu1\_15 Start: 9141, Stop: 9716, Start Num: 25

Candidate Starts for Gspu1\_15:

(18, 9105), (25, 9141), (35, 9174), (39, 9186), (41, 9192), (44, 9207), (46, 9225), (72, 9381), (73, 9384), (90, 9468), (99, 9504), (106, 9525), (108, 9537),

Gene: Guacamole\_14 Start: 8683, Stop: 9321, Start Num: 21

Candidate Starts for Guacamole\_14:

(Start: 20 @8680 has 2 MA's), (Start: 21 @8683 has 39 MA's), (45, 8773), (46, 8788), (69, 8941), (83, 9016), (89, 9040), (104, 9088), (116, 9145), (121, 9184), (138, 9268), (148, 9304),

Gene: Guinevere\_16 Start: 9237, Stop: 9905, Start Num: 13

Candidate Starts for Guinevere\_16:

(Start: 13 @9237 has 100 MA's), (30, 9306), (60, 9459), (71, 9525), (95, 9645), (122, 9777), (132, 9831),

Gene: Gusanita\_14 Start: 9128, Stop: 9796, Start Num: 13

Candidate Starts for Gusanita\_14:

(Start: 13 @9128 has 100 MA's), (47, 9263), (60, 9350), (71, 9416), (95, 9536), (130, 9707), (132, 9722),

Gene: GuyFagieri\_39 Start: 23053, Stop: 23721, Start Num: 13

Candidate Starts for GuyFagieri\_39:

(Start: 13 @23053 has 100 MA's), (36, 23134), (39, 23143), (60, 23275), (78, 23377), (79, 23389), (100, 23476), (114, 23533), (125, 23602), (126, 23608), (129, 23620), (144, 23692),

Gene: Halloweekend\_14 Start: 8878, Stop: 9546, Start Num: 13

Candidate Starts for Halloweekend\_14:

(Start: 13 @8878 has 100 MA's), (60, 9100), (71, 9166), (95, 9286), (122, 9418), (132, 9472),

Gene: Hitter\_14 Start: 8679, Stop: 9317, Start Num: 21

Candidate Starts for Hitter\_14:

(Start: 20 @8676 has 2 MA's), (Start: 21 @8679 has 39 MA's), (45, 8769), (46, 8784), (56, 8850), (69, 8937), (83, 9012), (89, 9036), (104, 9084), (116, 9141), (121, 9180), (138, 9264), (148, 9300),

Gene: HubbaBubba\_33 Start: 18243, Stop: 18923, Start Num: 13

Candidate Starts for HubbaBubba\_33:

(Start: 13 @18243 has 100 MA's), (56, 18438), (68, 18522), (78, 18573), (83, 18600), (100, 18672), (114, 18729), (125, 18798), (134, 18849), (144, 18888),

Gene: Huffy\_19 Start: 10919, Stop: 11509, Start Num: 26

Candidate Starts for Huffy\_19:

(Start: 26 @10919 has 11 MA's), (35, 10952), (44, 10985), (46, 11003), (79, 11204), (106, 11315), (107, 11318), (113, 11345), (125, 11417),

Gene: Huphleuff\_47 Start: 18848, Stop: 19513, Start Num: 16

Candidate Starts for Huphleuff\_47:

(Start: 16 @18848 has 17 MA's), (33, 18914), (53, 19007), (56, 19034), (68, 19118), (81, 19190), (115, 19337), (116, 19343), (120, 19370), (121, 19382),

Gene: IDyn\_36 Start: 19639, Stop: 20319, Start Num: 13

Candidate Starts for IDyn\_36:

(Start: 13 @19639 has 100 MA's), (56, 19834), (68, 19918), (78, 19969), (100, 20068), (114, 20125), (125, 20194), (134, 20245), (144, 20284),

Gene: Ichiang\_14 Start: 8893, Stop: 9561, Start Num: 13

Candidate Starts for Ichiang\_14:

(Start: 13 @8893 has 100 MA's), (30, 8962), (60, 9115), (71, 9181), (95, 9301), (132, 9487),

Gene: IsHungry\_16 Start: 9202, Stop: 9870, Start Num: 13

Candidate Starts for IsHungry\_16:

(Start: 13 @9202 has 100 MA's), (47, 9337), (60, 9424), (71, 9490), (95, 9610), (130, 9781), (132, 9796),

Gene: Jalammah\_15 Start: 8950, Stop: 9588, Start Num: 21

Candidate Starts for Jalammah\_15:

(Start: 20 @8947 has 2 MA's), (Start: 21 @8950 has 39 MA's), (45, 9040), (46, 9055), (56, 9121), (69, 9208), (83, 9283), (89, 9307), (104, 9355), (116, 9412), (121, 9451), (138, 9535), (148, 9571),

Gene: JanetJ\_13 Start: 8928, Stop: 9581, Start Num: 13

Candidate Starts for JanetJ\_13:

(Start: 13 @8928 has 100 MA's), (14, 8931), (51, 9081), (54, 9093), (73, 9219), (77, 9243), (78, 9249), (116, 9417), (141, 9555),

Gene: JasperJr\_14 Start: 8683, Stop: 9321, Start Num: 21

Candidate Starts for JasperJr\_14:

(Start: 20 @8680 has 2 MA's), (Start: 21 @8683 has 39 MA's), (45, 8773), (46, 8788), (69, 8941), (83, 9016), (89, 9040), (104, 9088), (116, 9145), (121, 9184), (138, 9268), (148, 9304),

Gene: Jifall16\_34 Start: 22046, Stop: 22729, Start Num: 13

Candidate Starts for Jifall16\_34:

(Start: 13 @22046 has 100 MA's), (Start: 21 @22064 has 39 MA's), (44, 22157), (56, 22244), (57, 22247), (78, 22379), (100, 22478), (114, 22535), (125, 22604), (131, 22634), (134, 22655), (144, 22694),

Gene: JoieB\_46 Start: 19067, Stop: 19732, Start Num: 16

Candidate Starts for JoieB\_46:

(Start: 16 @19067 has 17 MA's), (33, 19133), (53, 19226), (56, 19253), (68, 19337), (81, 19409), (115, 19556), (116, 19562), (120, 19589), (121, 19601),

Gene: JonJames\_41 Start: 21700, Stop: 22365, Start Num: 13

Candidate Starts for JonJames\_41:

(Start: 13 @21700 has 100 MA's), (40, 21793), (53, 21862), (83, 22051), (90, 22078), (129, 22267),

Gene: JuJu\_14 Start: 8607, Stop: 9245, Start Num: 21

Candidate Starts for JuJu\_14:

(Start: 20 @8604 has 2 MA's), (Start: 21 @8607 has 39 MA's), (45, 8697), (46, 8712), (69, 8865), (83, 8940), (89, 8964), (104, 9012), (116, 9069), (121, 9108), (138, 9192), (148, 9228),

Gene: Julie\_16 Start: 9465, Stop: 10133, Start Num: 13

Candidate Starts for Julie\_16:

(Start: 13 @9465 has 100 MA's), (47, 9600), (60, 9687), (71, 9753), (95, 9873), (130, 10044),

Gene: Kabluna\_38 Start: 21100, Stop: 21783, Start Num: 13

Candidate Starts for Kabluna\_38:

(Start: 13 @21100 has 100 MA's), (57, 21301), (62, 21349), (78, 21433), (100, 21532), (114, 21589), (125, 21658), (144, 21748),

Gene: KappaFarmDelta\_14 Start: 8832, Stop: 9470, Start Num: 21

Candidate Starts for KappaFarmDelta\_14:

(Start: 20 @8829 has 2 MA's), (Start: 21 @8832 has 39 MA's), (45, 8922), (46, 8937), (56, 9003), (61, 9039), (83, 9165), (89, 9189), (104, 9237), (116, 9294), (121, 9333), (138, 9417), (148, 9453),

Gene: KidneyBean\_35 Start: 22194, Stop: 22877, Start Num: 13

Candidate Starts for KidneyBean\_35:

(Start: 13 @22194 has 100 MA's), (Start: 21 @22212 has 39 MA's), (44, 22305), (57, 22395), (78, 22527), (100, 22626), (114, 22683), (125, 22752), (131, 22782), (134, 22803), (144, 22842),

Gene: Kihatsu\_17 Start: 9559, Stop: 10227, Start Num: 13

Candidate Starts for Kihatsu\_17:

(Start: 13 @9559 has 100 MA's), (71, 9847), (95, 9967), (122, 10099), (132, 10153),

Gene: Kimchi1738\_23 Start: 15559, Stop: 16221, Start Num: 13

Candidate Starts for Kimchi1738\_23:

(Start: 13 @15559 has 100 MA's), (Start: 21 @15577 has 39 MA's), (36, 15640), (38, 15646), (78, 15880), (100, 15976), (114, 16033), (116, 16048), (144, 16192),

Gene: Kumotta\_13 Start: 8849, Stop: 9499, Start Num: 13

Candidate Starts for Kumotta\_13:

(Start: 13 @8849 has 100 MA's), (29, 8909), (34, 8921), (51, 8999), (66, 9107), (73, 9137), (77, 9161), (80, 9185), (83, 9194), (111, 9308), (141, 9473),

Gene: Kurt\_35 Start: 22434, Stop: 23117, Start Num: 13

Candidate Starts for Kurt\_35:

(Start: 13 @22434 has 100 MA's), (Start: 21 @22452 has 39 MA's), (44, 22545), (56, 22632), (57, 22635), (78, 22767), (100, 22866), (114, 22923), (125, 22992), (131, 23022), (134, 23043), (144, 23082),

Gene: Lenoxika\_16 Start: 9239, Stop: 9907, Start Num: 13

Candidate Starts for Lenoxika\_16:

(Start: 13 @9239 has 100 MA's), (30, 9308), (60, 9461), (71, 9527), (95, 9647), (122, 9779), (132, 9833),

Gene: Lilbit\_46 Start: 19044, Stop: 19709, Start Num: 16

Candidate Starts for Lilbit\_46:

(Start: 16 @19044 has 17 MA's), (33, 19110), (53, 19203), (56, 19230), (68, 19314), (81, 19386), (115, 19533), (116, 19539), (120, 19566), (121, 19578),

Gene: LittleLaf\_45 Start: 18773, Stop: 19438, Start Num: 16

Candidate Starts for LittleLaf\_45:

(Start: 16 @18773 has 17 MA's), (33, 18839), (53, 18932), (56, 18959), (68, 19043), (81, 19115), (115, 19262), (116, 19268), (120, 19295), (121, 19307),

Gene: Lollipop1437\_40 Start: 23011, Stop: 23694, Start Num: 13

Candidate Starts for Lollipop1437\_40:

(Start: 13 @23011 has 100 MA's), (57, 23212), (78, 23344), (83, 23371), (100, 23443), (114, 23500), (125, 23569), (134, 23620), (144, 23659),

Gene: Lozinak\_42 Start: 17914, Stop: 18579, Start Num: 13

Candidate Starts for Lozinak\_42:

(Start: 13 @17914 has 100 MA's), (39, 18004), (105, 18361), (132, 18514),

Gene: Lysidious\_14 Start: 8679, Stop: 9317, Start Num: 21

Candidate Starts for Lysidious\_14:

(Start: 20 @8676 has 2 MA's), (Start: 21 @8679 has 39 MA's), (45, 8769), (46, 8784), (56, 8850), (69, 8937), (83, 9012), (89, 9036), (104, 9084), (116, 9141), (121, 9180), (138, 9264), (148, 9300),

Gene: MacGully\_43 Start: 23224, Stop: 23904, Start Num: 13

Candidate Starts for MacGully\_43:

(Start: 13 @23224 has 100 MA's), (Start: 24 @23263 has 1 MA's), (36, 23305), (60, 23449), (78, 23551), (79, 23563), (83, 23578), (100, 23650), (114, 23707), (119, 23746), (125, 23776), (129, 23794), (130, 23803), (132, 23818), (144, 23866), (146, 23878),

Gene: Maja\_12 Start: 8474, Stop: 9121, Start Num: 13

Candidate Starts for Maja\_12:

(Start: 13 @8474 has 100 MA's), (14, 8477), (29, 8534), (36, 8555), (44, 8585), (53, 8630), (73, 8762), (77, 8786), (95, 8870), (141, 9098),

Gene: Malachai\_14 Start: 8682, Stop: 9320, Start Num: 21

Candidate Starts for Malachai\_14:

(Start: 20 @8679 has 2 MA's), (Start: 21 @8682 has 39 MA's), (45, 8772), (46, 8787), (56, 8853), (83, 9015), (89, 9039), (104, 9087), (116, 9144), (121, 9183), (138, 9267), (148, 9303),

Gene: MargaretKali\_13 Start: 8484, Stop: 9134, Start Num: 13

Candidate Starts for MargaretKali\_13:

(Start: 13 @8484 has 100 MA's), (48, 8613), (50, 8619), (54, 8646), (70, 8760), (73, 8772), (77, 8796), (80, 8820), (83, 8829), (111, 8943), (122, 9012), (126, 9030), (137, 9093), (141, 9108),

Gene: Marietta\_37 Start: 19554, Stop: 20234, Start Num: 13

Candidate Starts for Marietta\_37:

(3, 19380), (Start: 13 @19554 has 100 MA's), (56, 19752), (78, 19887), (100, 19986), (109, 20025), (114, 20043), (123, 20103), (125, 20112), (134, 20163), (144, 20202), (146, 20214),

Gene: Marvin\_43 Start: 19043, Stop: 19708, Start Num: 16

Candidate Starts for Marvin\_43:

(Start: 16 @19043 has 17 MA's), (33, 19109), (53, 19202), (56, 19229), (68, 19313), (81, 19385), (115, 19532), (116, 19538), (120, 19565), (121, 19577),

Gene: Maselop\_39 Start: 23248, Stop: 23916, Start Num: 13

Candidate Starts for Maselop\_39:

(Start: 13 @23248 has 100 MA's), (36, 23329), (47, 23386), (60, 23470), (78, 23572), (79, 23584), (100, 23671), (114, 23728), (125, 23797), (126, 23803), (129, 23815), (142, 23881), (144, 23887),

Gene: Melba\_14 Start: 8679, Stop: 9317, Start Num: 21

Candidate Starts for Melba\_14:

(Start: 20 @8676 has 2 MA's), (Start: 21 @8679 has 39 MA's), (45, 8769), (46, 8784), (69, 8937), (83, 9012), (89, 9036), (104, 9084), (116, 9141), (121, 9180), (138, 9264), (148, 9300),

Gene: Mellie\_13 Start: 8419, Stop: 9057, Start Num: 21

Candidate Starts for Mellie\_13:

(Start: 20 @8416 has 2 MA's), (Start: 21 @8419 has 39 MA's), (45, 8509), (46, 8524), (56, 8590), (69, 8677), (83, 8752), (89, 8776), (104, 8824), (116, 8881), (121, 8920), (138, 9004), (148, 9040),

Gene: MerCougar\_36 Start: 22307, Stop: 22990, Start Num: 13

Candidate Starts for MerCougar\_36:

(Start: 13 @22307 has 100 MA's), (57, 22508), (78, 22640), (100, 22739), (103, 22748), (114, 22796), (125, 22865), (144, 22955),

Gene: MicyPS\_12 Start: 8715, Stop: 9389, Start Num: 13

Candidate Starts for MicyPS\_12:

(Start: 13 @8715 has 100 MA's), (51, 8886), (56, 8919), (58, 8937), (61, 8955), (69, 9006), (70, 9012), (73, 9024), (82, 9081), (87, 9099), (88, 9108), (96, 9132), (100, 9147), (101, 9150), (106, 9168), (125, 9273), (128, 9288),

Gene: MintFen\_14 Start: 8679, Stop: 9317, Start Num: 21

Candidate Starts for MintFen\_14:

(Start: 20 @8676 has 2 MA's), (Start: 21 @8679 has 39 MA's), (45, 8769), (46, 8784), (69, 8937), (83, 9012), (89, 9036), (104, 9084), (116, 9141), (121, 9180), (138, 9264), (148, 9300),

Gene: Miskis\_40 Start: 17677, Stop: 18342, Start Num: 13

Candidate Starts for Miskis\_40:

(Start: 13 @17677 has 100 MA's), (39, 17767), (105, 18124),

Gene: MissRona\_16 Start: 9023, Stop: 9661, Start Num: 21

Candidate Starts for MissRona\_16:

(Start: 20 @9020 has 2 MA's), (Start: 21 @9023 has 39 MA's), (45, 9113), (46, 9128), (56, 9194), (61, 9230), (69, 9281), (83, 9356), (89, 9380), (104, 9428), (116, 9485), (121, 9524), (138, 9608), (148, 9644),

Gene: ModicumRichard\_13 Start: 8905, Stop: 9573, Start Num: 12

Candidate Starts for ModicumRichard\_13:

(Start: 12 @8905 has 5 MA's), (94, 9307), (114, 9388), (122, 9445), (137, 9526), (144, 9547),

Gene: Mollymur\_25 Start: 16148, Stop: 16804, Start Num: 13

Candidate Starts for Mollymur\_25:

(Start: 13 @16148 has 100 MA's), (28, 16202), (31, 16214), (55, 16313), (90, 16520), (96, 16550), (97, 16553),

Gene: Morgana\_13 Start: 8909, Stop: 9580, Start Num: 12

Candidate Starts for Morgana\_13:

(Start: 12 @8909 has 5 MA's), (94, 9311), (114, 9392), (122, 9449), (137, 9530), (144, 9551),

Gene: MosMoris\_43 Start: 18223, Stop: 18888, Start Num: 16

Candidate Starts for MosMoris\_43:

(Start: 16 @18223 has 17 MA's), (33, 18289), (53, 18382), (56, 18409), (68, 18493), (81, 18565), (115, 18712), (116, 18718), (120, 18745), (121, 18757),

Gene: MrSmee\_12 Start: 7019, Stop: 7681, Start Num: 13

Candidate Starts for MrSmee\_12:

(Start: 13 @7019 has 100 MA's), (30, 7088), (36, 7106), (38, 7112), (60, 7241), (70, 7301), (76, 7337), (83, 7373), (86, 7385), (95, 7424), (115, 7508),

Gene: Murp\_14 Start: 8672, Stop: 9310, Start Num: 21

Candidate Starts for Murp\_14:

(Start: 20 @8669 has 2 MA's), (Start: 21 @8672 has 39 MA's), (45, 8762), (46, 8777), (56, 8843), (61, 8879), (69, 8930), (83, 9005), (89, 9029), (116, 9134), (121, 9173), (138, 9257), (148, 9293),

Gene: NadineRae\_35 Start: 18802, Stop: 19482, Start Num: 13

Candidate Starts for NadineRae\_35:

(Start: 13 @18802 has 100 MA's), (56, 18997), (68, 19081), (78, 19132), (100, 19231), (114, 19288), (125, 19357), (134, 19408), (144, 19447),

Gene: Nandita\_16 Start: 9237, Stop: 9905, Start Num: 13

Candidate Starts for Nandita\_16:

(Start: 13 @9237 has 100 MA's), (30, 9306), (60, 9459), (71, 9525), (95, 9645), (122, 9777), (132, 9831),

Gene: NatB6\_35 Start: 21443, Stop: 22126, Start Num: 13

Candidate Starts for NatB6\_35:

(Start: 13 @21443 has 100 MA's), (Start: 21 @21461 has 39 MA's), (44, 21554), (56, 21641), (57, 21644), (78, 21776), (100, 21875), (114, 21932), (125, 22001), (131, 22031), (134, 22052), (144, 22091),

Gene: NoSwimming\_14 Start: 10095, Stop: 10754, Start Num: 13

Candidate Starts for NoSwimming\_14:

(Start: 13 @10095 has 100 MA's), (14, 10098), (29, 10155), (54, 10260), (73, 10386), (77, 10410), (78, 10416), (139, 10716), (141, 10722), (145, 10740),

Gene: Norvs\_43 Start: 17916, Stop: 18581, Start Num: 13

Candidate Starts for Norvs\_43:

(Start: 13 @17916 has 100 MA's), (39, 18006), (105, 18363), (132, 18516),

Gene: NosilaM\_38 Start: 21997, Stop: 22680, Start Num: 13

Candidate Starts for NosilaM\_38:

(Start: 13 @21997 has 100 MA's), (57, 22198), (62, 22246), (78, 22330), (100, 22429), (114, 22486), (125, 22555), (144, 22645),

Gene: NovumRegina\_35 Start: 21776, Stop: 22459, Start Num: 13

Candidate Starts for NovumRegina\_35:

(Start: 13 @21776 has 100 MA's), (Start: 21 @21794 has 39 MA's), (44, 21887), (56, 21974), (57, 21977), (78, 22109), (100, 22208), (114, 22265), (125, 22334), (131, 22364), (134, 22385), (144, 22424),

Gene: ObLaDi\_13 Start: 8905, Stop: 9573, Start Num: 12

Candidate Starts for ObLaDi\_13:

(Start: 12 @8905 has 5 MA's), (94, 9307), (114, 9388), (122, 9445), (137, 9526), (144, 9547),

Gene: Obliviate\_13 Start: 8445, Stop: 9086, Start Num: 20

Candidate Starts for Obliviate\_13:

(Start: 20 @8445 has 2 MA's), (Start: 21 @8448 has 39 MA's), (45, 8538), (46, 8553), (56, 8619), (69, 8706), (83, 8781), (89, 8805), (104, 8853), (116, 8910), (121, 8949), (138, 9033), (148, 9069),

Gene: OneUp\_36 Start: 15613, Stop: 16278, Start Num: 13

Candidate Starts for OneUp\_36:

(8, 15595), (Start: 13 @15613 has 100 MA's), (60, 15844), (70, 15904), (72, 15913), (96, 16030),

Gene: Outis\_36 Start: 22001, Stop: 22684, Start Num: 13

Candidate Starts for Outis\_36:

(Start: 13 @22001 has 100 MA's), (57, 22202), (78, 22334), (100, 22433), (103, 22442), (114, 22490), (125, 22559), (144, 22649),

Gene: P1201\_38 Start: 22813, Stop: 23490, Start Num: 13

Candidate Starts for P1201\_38:

(Start: 13 @22813 has 100 MA's), (43, 22921), (47, 22942), (56, 22999), (64, 23065), (72, 23101), (91, 23188), (114, 23287), (125, 23356), (144, 23446),

Gene: PCoral7\_14 Start: 8656, Stop: 9306, Start Num: 21

Candidate Starts for PCoral7\_14:

(Start: 10 @8626 has 1 MA's), (Start: 20 @8653 has 2 MA's), (Start: 21 @8656 has 39 MA's), (45, 8746), (46, 8761), (61, 8863), (68, 8911), (83, 8989), (89, 9013), (98, 9043), (104, 9061), (121, 9157), (138, 9241),

Gene: PSonyx\_12 Start: 8868, Stop: 9539, Start Num: 13

Candidate Starts for PSonyx\_12:

(Start: 13 @8868 has 100 MA's), (51, 9039), (56, 9072), (58, 9090), (61, 9108), (69, 9159), (70, 9165), (73, 9177), (82, 9234), (87, 9252), (88, 9261), (96, 9285), (100, 9300), (125, 9426), (128, 9441),

Gene: Patio\_38 Start: 22247, Stop: 22930, Start Num: 13

Candidate Starts for Patio\_38:

(Start: 13 @22247 has 100 MA's), (57, 22448), (78, 22580), (83, 22607), (100, 22679), (114, 22736), (125, 22805), (134, 22856), (144, 22895),

Gene: PeteyPab\_22 Start: 15926, Stop: 16588, Start Num: 13

Candidate Starts for PeteyPab\_22:

(Start: 13 @15926 has 100 MA's), (Start: 21 @15944 has 39 MA's), (36, 16007), (38, 16013), (78, 16247), (100, 16343), (114, 16400), (116, 16415), (144, 16559),

Gene: Petra\_16 Start: 9059, Stop: 9697, Start Num: 21

Candidate Starts for Petra\_16:

(Start: 20 @9056 has 2 MA's), (Start: 21 @9059 has 39 MA's), (45, 9149), (46, 9164), (56, 9230), (69, 9317), (83, 9392), (89, 9416), (104, 9464), (116, 9521), (121, 9560), (138, 9644), (148, 9680),

Gene: PhinkBoden\_42 Start: 18297, Stop: 18962, Start Num: 13

Candidate Starts for PhinkBoden\_42:

(Start: 13 @18297 has 100 MA's), (39, 18387), (105, 18744), (132, 18897),

Gene: Phomeo\_34 Start: 22069, Stop: 22752, Start Num: 13

Candidate Starts for Phomeo\_34:

(Start: 13 @22069 has 100 MA's), (Start: 21 @22087 has 39 MA's), (44, 22180), (56, 22267), (57, 22270), (78, 22402), (100, 22501), (114, 22558), (125, 22627), (131, 22657), (134, 22678), (144, 22717),

Gene: PhrostedPhlake\_15 Start: 9037, Stop: 9675, Start Num: 21

Candidate Starts for PhrostedPhlake\_15:

(Start: 20 @9034 has 2 MA's), (Start: 21 @9037 has 39 MA's), (45, 9127), (46, 9142), (56, 9208), (69, 9295), (83, 9370), (89, 9394), (104, 9442), (116, 9499), (121, 9538), (138, 9622), (148, 9658),

Gene: Pigu\_12 Start: 7560, Stop: 8207, Start Num: 13

Candidate Starts for Pigu\_12:

(Start: 13 @7560 has 100 MA's), (14, 7563), (29, 7620), (44, 7671), (49, 7692), (68, 7827), (73, 7848), (77, 7872), (83, 7905), (100, 7974), (141, 8184),



Gene: Pipp\_14 Start: 8651, Stop: 9292, Start Num: 20

Candidate Starts for Pipp\_14:

(Start: 20 @8651 has 2 MA's), (Start: 21 @8654 has 39 MA's), (45, 8744), (46, 8759), (83, 8987), (89, 9011), (104, 9059), (116, 9116), (121, 9155), (138, 9239), (148, 9275),

Gene: Pleakley\_44 Start: 22073, Stop: 22756, Start Num: 13

Candidate Starts for Pleakley\_44:

(Start: 13 @22073 has 100 MA's), (57, 22274), (68, 22355), (77, 22400), (78, 22406), (79, 22418), (100, 22505), (114, 22562), (125, 22631), (134, 22682), (140, 22712), (144, 22721),

Gene: Poise\_45 Start: 18361, Stop: 19026, Start Num: 16

Candidate Starts for Poise\_45:

(Start: 16 @18361 has 17 MA's), (33, 18427), (53, 18520), (56, 18547), (68, 18631), (81, 18703), (115, 18850), (116, 18856), (120, 18883), (121, 18895),

Gene: Polyuki\_39 Start: 23240, Stop: 23908, Start Num: 13

Candidate Starts for Polyuki\_39:

(Start: 13 @23240 has 100 MA's), (36, 23321), (47, 23378), (60, 23462), (78, 23564), (79, 23576), (100, 23663), (114, 23720), (125, 23789), (126, 23795), (129, 23807), (142, 23873), (144, 23879),

Gene: Popper\_14 Start: 8768, Stop: 9433, Start Num: 13

Candidate Starts for Popper\_14:

(Start: 13 @8768 has 100 MA's), (60, 8990), (67, 9038), (70, 9050), (71, 9056), (76, 9086), (95, 9176), (110, 9239), (116, 9266), (132, 9362),

Gene: PotatoChip\_23 Start: 15928, Stop: 16590, Start Num: 13

Candidate Starts for PotatoChip\_23:

(Start: 13 @15928 has 100 MA's), (Start: 21 @15946 has 39 MA's), (36, 16009), (38, 16015), (78, 16249), (100, 16345), (114, 16402), (116, 16417), (144, 16561),

Gene: PrairieDogTown\_19 Start: 9148, Stop: 9810, Start Num: 13

Candidate Starts for PrairieDogTown\_19:

(Start: 13 @9148 has 100 MA's), (29, 9214), (48, 9286), (54, 9319), (73, 9445), (77, 9469), (141, 9781),

Gene: PrincePatrick\_14 Start: 8714, Stop: 9367, Start Num: 21

Candidate Starts for PrincePatrick\_14:

(Start: 10 @8684 has 1 MA's), (Start: 20 @8711 has 2 MA's), (Start: 21 @8714 has 39 MA's), (45, 8804), (46, 8819), (61, 8921), (68, 8969), (83, 9047), (89, 9071), (98, 9101), (104, 9119), (121, 9215), (138, 9299),

Gene: Pringar\_45 Start: 18673, Stop: 19338, Start Num: 16

Candidate Starts for Pringar\_45:

(Start: 16 @18673 has 17 MA's), (33, 18739), (53, 18832), (56, 18859), (68, 18943), (81, 19015), (115, 19162), (116, 19168), (120, 19195), (121, 19207),

Gene: QuinnAvery\_16 Start: 9252, Stop: 9920, Start Num: 13

Candidate Starts for QuinnAvery\_16:

(Start: 13 @9252 has 100 MA's), (71, 9540), (95, 9660), (122, 9792), (132, 9846),

Gene: Raela\_45 Start: 18916, Stop: 19581, Start Num: 16

Candidate Starts for Raela\_45:

(Start: 16 @18916 has 17 MA's), (33, 18982), (53, 19075), (56, 19102), (68, 19186), (81, 19258), (115, 19405), (116, 19411), (120, 19438), (121, 19450),

Gene: Raqqa\_13 Start: 8165, Stop: 8830, Start Num: 13

Candidate Starts for Raqqa\_13:

(Start: 13 @8165 has 100 MA's), (32, 8240), (38, 8258), (47, 8300), (58, 8372), (60, 8387), (71, 8453), (74, 8462), (76, 8483), (102, 8597), (115, 8657),

Gene: RedRaider\_42 Start: 24251, Stop: 24934, Start Num: 13

Candidate Starts for RedRaider\_42:

(Start: 13 @24251 has 100 MA's), (57, 24452), (78, 24584), (83, 24611), (100, 24683), (114, 24740), (125, 24809), (134, 24860), (144, 24899),

Gene: RedRaider77\_45 Start: 18817, Stop: 19482, Start Num: 16

Candidate Starts for RedRaider77\_45:

(Start: 16 @18817 has 17 MA's), (33, 18883), (53, 18976), (56, 19003), (68, 19087), (81, 19159), (115, 19306), (116, 19312), (120, 19339), (121, 19351),

Gene: Ryan\_16 Start: 9383, Stop: 10051, Start Num: 13

Candidate Starts for Ryan\_16:

(Start: 13 @9383 has 100 MA's), (60, 9605), (71, 9671), (95, 9791), (122, 9923), (132, 9977),

Gene: SPB78\_13 Start: 8500, Stop: 9165, Start Num: 11

Candidate Starts for SPB78\_13:

(11, 8500), (17, 8518), (28, 8566), (30, 8575), (51, 8659), (59, 8713), (68, 8773), (112, 8977), (125, 9055),

Gene: Samba\_14 Start: 8787, Stop: 9425, Start Num: 21

Candidate Starts for Samba\_14:

(Start: 20 @8784 has 2 MA's), (Start: 21 @8787 has 39 MA's), (45, 8877), (46, 8892), (83, 9120), (89, 9144), (104, 9192), (116, 9249), (121, 9288), (138, 9372), (148, 9408),

Gene: Samy\_17 Start: 9940, Stop: 10539, Start Num: 24

Candidate Starts for Samy\_17:

(15, 9904), (Start: 24 @9940 has 1 MA's), (30, 9964), (42, 10006), (65, 10156), (114, 10366), (122, 10423), (124, 10429), (125, 10435), (126, 10441), (134, 10477), (143, 10510),

Gene: Sarge\_12 Start: 7918, Stop: 8571, Start Num: 13

Candidate Starts for Sarge\_12:

(Start: 13 @7918 has 100 MA's), (29, 7978), (54, 8083), (66, 8179), (68, 8188), (73, 8209), (77, 8233), (83, 8266), (141, 8545),

Gene: Schism\_16 Start: 9237, Stop: 9905, Start Num: 13

Candidate Starts for Schism\_16:

(Start: 13 @9237 has 100 MA's), (30, 9306), (60, 9459), (71, 9525), (95, 9645), (122, 9777), (132, 9831),

Gene: Schmidt\_15 Start: 9115, Stop: 9729, Start Num: 26

Candidate Starts for Schmidt\_15:

(4, 8911), (Start: 26 @9115 has 11 MA's), (41, 9166), (44, 9181), (46, 9199), (51, 9223), (61, 9289), (68, 9337), (85, 9421), (99, 9487), (107, 9511),

Gene: Scotia\_14 Start: 10101, Stop: 10754, Start Num: 13

Candidate Starts for Scotia\_14:

(Start: 13 @10101 has 100 MA's), (14, 10104), (29, 10161), (54, 10266), (73, 10392), (77, 10416), (78, 10422), (141, 10728),

Gene: Scuba\_44 Start: 22163, Stop: 22846, Start Num: 13

Candidate Starts for Scuba\_44:

(Start: 13 @22163 has 100 MA's), (57, 22364), (68, 22445), (77, 22490), (78, 22496), (79, 22508), (100, 22595), (114, 22652), (125, 22721), (134, 22772), (140, 22802), (144, 22811),

Gene: Shoya\_11 Start: 7554, Stop: 8207, Start Num: 13

Candidate Starts for Shoya\_11:

(Start: 13 @7554 has 100 MA's), (29, 7614), (54, 7719), (66, 7815), (68, 7824), (73, 7845), (77, 7869), (83, 7902), (141, 8181),

Gene: Skitty\_13 Start: 7019, Stop: 7681, Start Num: 13

Candidate Starts for Skitty\_13:

(Start: 13 @7019 has 100 MA's), (30, 7088), (36, 7106), (38, 7112), (60, 7241), (70, 7301), (76, 7337), (83, 7373), (86, 7385), (95, 7424), (115, 7508),

Gene: Skysand\_37 Start: 22464, Stop: 23147, Start Num: 13

Candidate Starts for Skysand\_37:

(Start: 13 @22464 has 100 MA's), (57, 22665), (78, 22797), (83, 22824), (100, 22896), (114, 22953), (125, 23022), (134, 23073), (144, 23112),

Gene: Smoothie\_43 Start: 17914, Stop: 18579, Start Num: 13

Candidate Starts for Smoothie\_43:

(Start: 13 @17914 has 100 MA's), (39, 18004), (105, 18361), (132, 18514),

Gene: Sparky\_11 Start: 8045, Stop: 8707, Start Num: 19

Candidate Starts for Sparky\_11:

(Start: 19 @8045 has 2 MA's), (23, 8066), (52, 8195), (58, 8243), (63, 8285), (69, 8312), (72, 8327), (101, 8459), (116, 8528), (144, 8678),

Gene: SpeedDemon\_250 Start: 15649, Stop: 16305, Start Num: 13

Candidate Starts for SpeedDemon\_250:

(5, 15592), (Start: 13 @15649 has 100 MA's), (27, 15700), (31, 15715), (83, 15994),

Gene: Splinter\_17 Start: 10694, Stop: 11284, Start Num: 26

Candidate Starts for Splinter\_17:

(Start: 26 @10694 has 11 MA's), (35, 10727), (44, 10760), (46, 10778), (59, 10856), (106, 11090), (107, 11093), (113, 11120), (125, 11192),

Gene: StarStruck\_36 Start: 22001, Stop: 22684, Start Num: 13

Candidate Starts for StarStruck\_36:

(Start: 13 @22001 has 100 MA's), (57, 22202), (78, 22334), (100, 22433), (103, 22442), (114, 22490), (125, 22559), (144, 22649),

Gene: Stickynote\_25 Start: 16738, Stop: 17400, Start Num: 13

Candidate Starts for Stickynote\_25:

(Start: 13 @16738 has 100 MA's), (Start: 21 @16756 has 39 MA's), (36, 16819), (38, 16825), (78, 17059), (100, 17155), (114, 17212), (116, 17227), (144, 17371),

Gene: Sukkupi\_37 Start: 21116, Stop: 21796, Start Num: 13

Candidate Starts for Sukkupi\_37:

(Start: 13 @21116 has 100 MA's), (56, 21311), (68, 21395), (78, 21446), (100, 21545), (114, 21602), (125, 21671), (134, 21722), (144, 21761),

Gene: SuperSulley\_36 Start: 22185, Stop: 22868, Start Num: 13

Candidate Starts for SuperSulley\_36:

(Start: 13 @22185 has 100 MA's), (57, 22386), (78, 22518), (100, 22617), (103, 22626), (114, 22674), (125, 22743), (144, 22833),

Gene: TZGordon\_19 Start: 10836, Stop: 11426, Start Num: 26

Candidate Starts for TZGordon\_19:

(Start: 26 @10836 has 11 MA's), (35, 10869), (44, 10902), (46, 10920), (79, 11121), (106, 11232), (107, 11235), (113, 11262), (125, 11334),

Gene: Tesla\_44 Start: 18666, Stop: 19331, Start Num: 16

Candidate Starts for Tesla\_44:

(Start: 16 @18666 has 17 MA's), (33, 18732), (53, 18825), (56, 18852), (68, 18936), (81, 19008), (115, 19155), (116, 19161), (120, 19188), (121, 19200),

Gene: TinaLin\_20 Start: 11401, Stop: 11997, Start Num: 26

Candidate Starts for TinaLin\_20:

(Start: 26 @11401 has 11 MA's), (46, 11485), (51, 11509), (59, 11563), (79, 11686), (106, 11797), (107, 11800), (108, 11809), (113, 11827), (118, 11866), (130, 11917),

Gene: Toast\_14 Start: 8626, Stop: 9306, Start Num: 10

Candidate Starts for Toast\_14:

(Start: 10 @8626 has 1 MA's), (Start: 20 @8653 has 2 MA's), (Start: 21 @8656 has 39 MA's), (45, 8746), (46, 8761), (61, 8863), (68, 8911), (83, 8989), (89, 9013), (98, 9043), (104, 9061), (121, 9157), (138, 9241),

Gene: Toniann\_42 Start: 17859, Stop: 18524, Start Num: 13

Candidate Starts for Toniann\_42:

(Start: 13 @17859 has 100 MA's), (39, 17949), (105, 18306), (132, 18459),

Gene: Towmatter\_23 Start: 13548, Stop: 14204, Start Num: 13

Candidate Starts for Towmatter\_23:

(5, 13491), (Start: 13 @13548 has 100 MA's), (22, 13569), (27, 13599), (70, 13824), (92, 13926), (117, 14046), (132, 14133), (133, 14136), (134, 14142),

Gene: Tracker\_35 Start: 21197, Stop: 21880, Start Num: 13

Candidate Starts for Tracker\_35:

(Start: 13 @21197 has 100 MA's), (Start: 21 @21215 has 39 MA's), (44, 21308), (56, 21395), (57, 21398), (78, 21530), (100, 21629), (114, 21686), (125, 21755), (131, 21785), (134, 21806), (144, 21845),

Gene: Turuncu\_39 Start: 22468, Stop: 23151, Start Num: 13

Candidate Starts for Turuncu\_39:

(Start: 13 @22468 has 100 MA's), (57, 22669), (78, 22801), (100, 22900), (109, 22939), (114, 22957), (125, 23026), (134, 23077), (144, 23116),

Gene: UmaThurman\_14 Start: 8786, Stop: 9424, Start Num: 21

Candidate Starts for UmaThurman\_14:

(Start: 20 @8783 has 2 MA's), (Start: 21 @8786 has 39 MA's), (45, 8876), (46, 8891), (69, 9044), (83, 9119), (89, 9143), (104, 9191), (116, 9248), (121, 9287), (138, 9371), (148, 9407),

Gene: Utz\_14 Start: 8653, Stop: 9291, Start Num: 21

Candidate Starts for Utz\_14:

(Start: 20 @8650 has 2 MA's), (Start: 21 @8653 has 39 MA's), (45, 8743), (46, 8758), (69, 8911), (83, 8986), (89, 9010), (104, 9058), (116, 9115), (121, 9154), (138, 9238), (148, 9274),

Gene: VanLee\_14 Start: 8706, Stop: 9605, Start Num: 12

Candidate Starts for VanLee\_14:

(Start: 12 @8706 has 5 MA's), (37, 8796), (47, 8841), (49, 8850), (114, 9183), (147, 9357), (150, 9480), (151, 9573),

Gene: VasuNzinga\_45 Start: 18250, Stop: 18915, Start Num: 16

Candidate Starts for VasuNzinga\_45:

(Start: 16 @18250 has 17 MA's), (33, 18316), (53, 18409), (56, 18436), (68, 18520), (81, 18592), (115, 18739), (116, 18745), (120, 18772), (121, 18784),

Gene: Vendetta\_17 Start: 10694, Stop: 11284, Start Num: 26

Candidate Starts for Vendetta\_17:

(Start: 26 @10694 has 11 MA's), (35, 10727), (44, 10760), (46, 10778), (59, 10856), (106, 11090), (107, 11093), (113, 11120), (125, 11192),

Gene: Walrus\_15 Start: 8881, Stop: 9519, Start Num: 21

Candidate Starts for Walrus\_15:

(Start: 20 @8878 has 2 MA's), (Start: 21 @8881 has 39 MA's), (45, 8971), (46, 8986), (56, 9052), (69, 9139), (83, 9214), (89, 9238), (104, 9286), (116, 9343), (121, 9382), (138, 9466), (148, 9502),

Gene: Wheezy\_35 Start: 21402, Stop: 22085, Start Num: 13

Candidate Starts for Wheezy\_35:

(Start: 13 @21402 has 100 MA's), (Start: 21 @21420 has 39 MA's), (44, 21513), (56, 21600), (57, 21603), (78, 21735), (100, 21834), (114, 21891), (125, 21960), (131, 21990), (134, 22011), (144, 22050),

Gene: WhoseManz\_37 Start: 19168, Stop: 19848, Start Num: 13

Candidate Starts for WhoseManz\_37:

(Start: 13 @19168 has 100 MA's), (56, 19363), (68, 19447), (78, 19498), (83, 19525), (100, 19597), (114, 19654), (125, 19723), (134, 19774), (144, 19813),

Gene: William\_14 Start: 8602, Stop: 9252, Start Num: 21

Candidate Starts for William\_14:

(Start: 10 @8572 has 1 MA's), (Start: 20 @8599 has 2 MA's), (Start: 21 @8602 has 39 MA's), (45, 8692), (46, 8707), (61, 8809), (68, 8857), (83, 8935), (89, 8959), (98, 8989), (104, 9007), (121, 9103), (138, 9187),

Gene: WilliamBoone\_42 Start: 17223, Stop: 17888, Start Num: 13

Candidate Starts for WilliamBoone\_42:

(Start: 13 @17223 has 100 MA's), (72, 17523), (83, 17583), (105, 17670),

Gene: Wisp\_13 Start: 8419, Stop: 9057, Start Num: 21

Candidate Starts for Wisp\_13:

(Start: 20 @8416 has 2 MA's), (Start: 21 @8419 has 39 MA's), (45, 8509), (46, 8524), (56, 8590), (69, 8677), (83, 8752), (89, 8776), (104, 8824), (116, 8881), (121, 8920), (138, 9004), (148, 9040),

Gene: Wocket\_15 Start: 8904, Stop: 9542, Start Num: 21

Candidate Starts for Wocket\_15:

(Start: 20 @8901 has 2 MA's), (Start: 21 @8904 has 39 MA's), (45, 8994), (46, 9009), (56, 9075), (75, 9195), (83, 9237), (89, 9261), (104, 9309), (121, 9405), (138, 9489), (148, 9525),

Gene: Yndexa\_37 Start: 21116, Stop: 21796, Start Num: 13

Candidate Starts for Yndexa\_37:

(Start: 13 @21116 has 100 MA's), (56, 21311), (68, 21395), (78, 21446), (100, 21545), (114, 21602), (125, 21671), (134, 21722), (144, 21761),

Gene: Yvonnetastic\_39 Start: 19249, Stop: 19914, Start Num: 13

Candidate Starts for Yvonnetastic\_39:

(Start: 13 @19249 has 100 MA's), (40, 19342), (53, 19411), (83, 19600), (90, 19627), (129, 19816),

Gene: Zaheer\_16 Start: 9472, Stop: 10140, Start Num: 13

Candidate Starts for Zaheer\_16:

(Start: 13 @9472 has 100 MA's), (30, 9541), (60, 9694), (71, 9760), (95, 9880), (132, 10066),

Gene: Zarbodnamra\_14 Start: 8678, Stop: 9316, Start Num: 21

Candidate Starts for Zarbodnamra\_14:

(Start: 20 @8675 has 2 MA's), (Start: 21 @8678 has 39 MA's), (45, 8768), (46, 8783), (69, 8936), (83, 9011), (89, 9035), (104, 9083), (116, 9140), (121, 9179), (138, 9263), (148, 9299),

Gene: ZiggyZoo\_13 Start: 8448, Stop: 9086, Start Num: 21

Candidate Starts for ZiggyZoo\_13:

(Start: 20 @8445 has 2 MA's), (Start: 21 @8448 has 39 MA's), (45, 8538), (46, 8553), (56, 8619), (69, 8706), (83, 8781), (89, 8805), (104, 8853), (116, 8910), (121, 8949), (138, 9033), (148, 9069),

Gene: Zion\_23 Start: 15926, Stop: 16588, Start Num: 13

Candidate Starts for Zion\_23:

(Start: 13 @15926 has 100 MA's), (Start: 21 @15944 has 39 MA's), (36, 16007), (38, 16013), (78, 16247), (100, 16343), (114, 16400), (116, 16415), (144, 16559),

Gene: Zucker\_14 Start: 8546, Stop: 9211, Start Num: 13

Candidate Starts for Zucker\_14:

(Start: 13 @8546 has 100 MA's), (Start: 24 @8591 has 1 MA's), (32, 8621), (54, 8714), (55, 8717), (59, 8756), (66, 8807), (91, 8927), (132, 9137), (138, 9167),