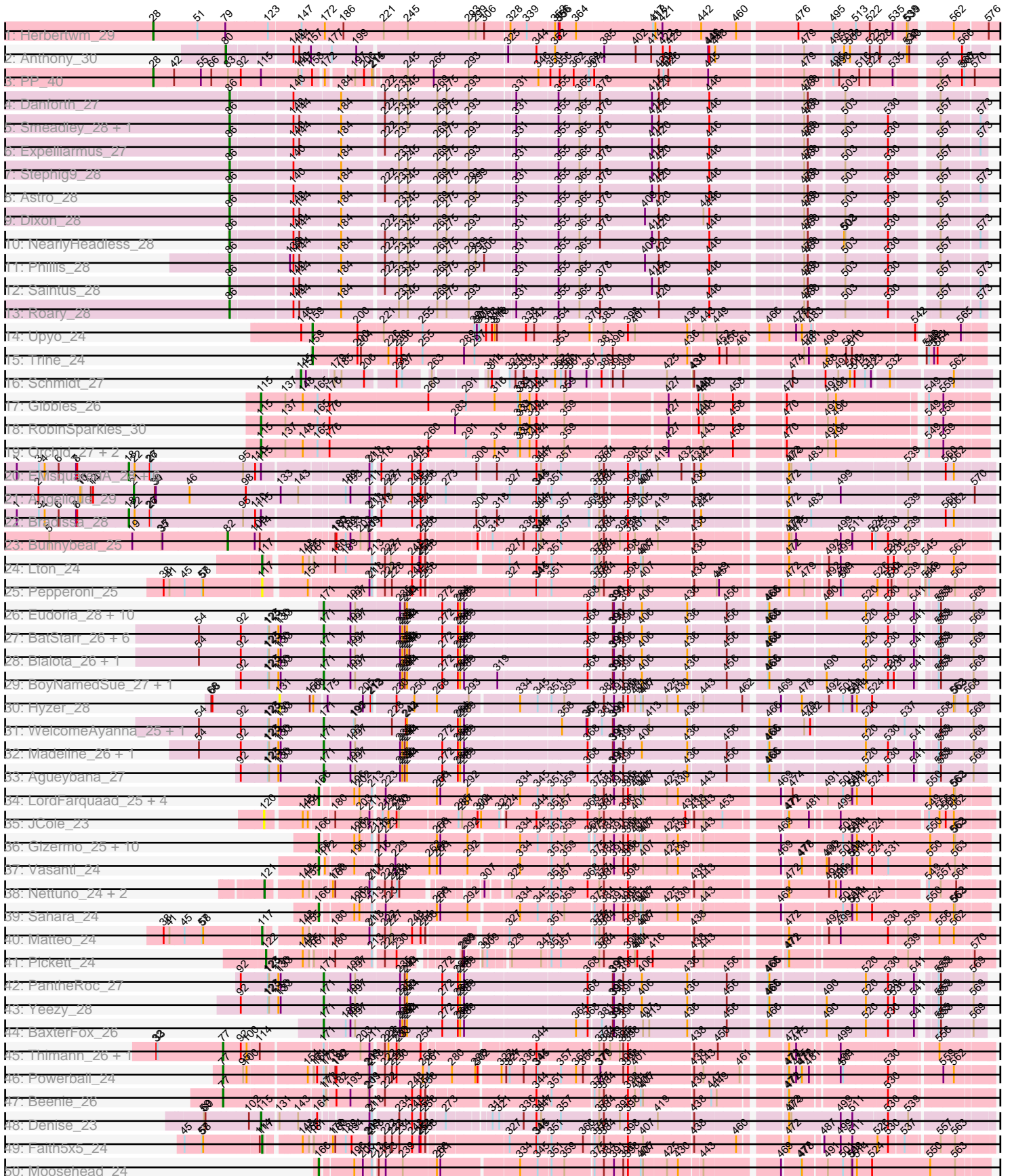


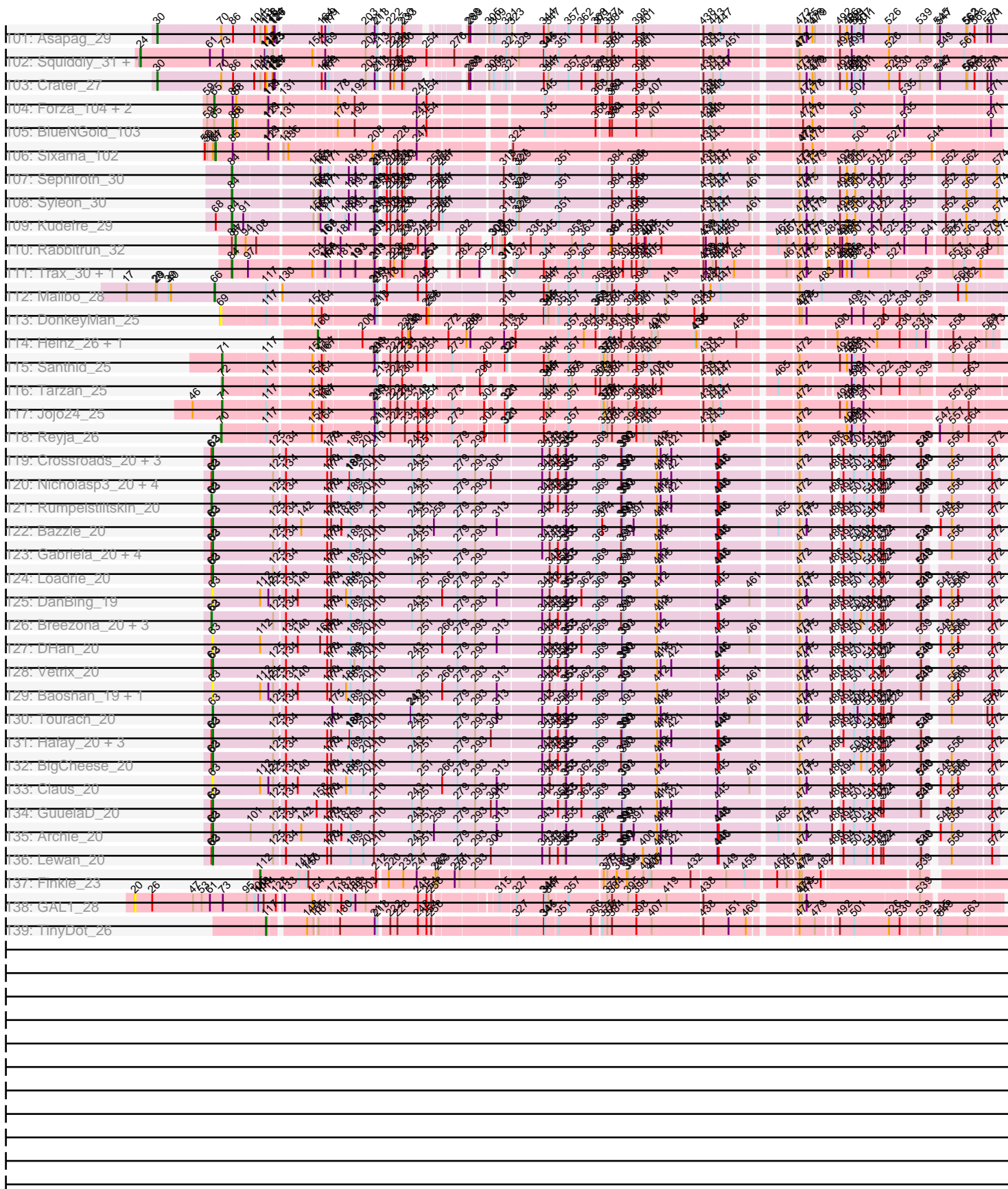
Pham 195393



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The table consists of 100 rows, each representing a different ID. The IDs are listed on the left side of the table, such as "51: OneDirection\_23", "52: Sidious\_27", "53: Wizard\_33 + 10", etc., up to "100: LinnMcQueen\_24". Each row contains a sequence of numbers and symbols. The symbols are primarily red and green vertical bars, which appear to be markers or indicators. Some numbers are also highlighted with red or green boxes. The overall layout is a dense grid of data points across the entire page.

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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

## Pham 195393 Report

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

Pham number 195393 has 260 members, 26 are drafts.

Phages represented in each track:

- Track 1 : Herbertwm\_29
- Track 2 : Anthony\_30
- Track 3 : PP\_40
- Track 4 : Danforth\_27
- Track 5 : Smeadley\_28, Groundhog\_27
- Track 6 : Expelliarmus\_27
- Track 7 : Stephig9\_28
- Track 8 : Astro\_28
- Track 9 : Dixon\_28
- Track 10 : NearlyHeadless\_28
- Track 11 : Phillis\_28
- Track 12 : Saintus\_28
- Track 13 : Roary\_28
- Track 14 : Upyo\_24
- Track 15 : Trine\_24
- Track 16 : Schmidt\_27
- Track 17 : Gibbles\_26
- Track 18 : RobinSparkles\_30
- Track 19 : Orchid\_27, Kampe\_27, PatrickStar\_27
- Track 20 : EMSquaredA\_28, Pollux\_28, BritBrat\_28, Floral\_28, Marteena\_28, EnalisNailo\_28, Lilas\_28
- Track 21 : Angelique\_29
- Track 22 : Bradissa\_28
- Track 23 : Bunnybear\_25
- Track 24 : Lton\_24
- Track 25 : Pepperoni\_25
- Track 26 : Eudoria\_28, Polly\_25, Suscepit\_28, Zameen\_28, Antonio\_28, Neobush\_28, Maridalia\_27, Trumpet\_28, Tayonia\_28, Manasvini\_28, Kita\_28
- Track 27 : BatStarr\_26, Nymphadora\_26, TimTam\_26, Bosnia\_26, Herod\_26, Hugley\_26, Eviarto\_26
- Track 28 : Bialota\_26, Zirinka\_26
- Track 29 : BoyNamedSue\_27, AlumE\_27
- Track 30 : Hyzer\_28
- Track 31 : WelcomeAyanna\_25, ThankyouJordi\_25
- Track 32 : Madeline\_26, Ohgeesy\_26
- Track 33 : Agueybana\_27
- Track 34 : LordFarquaad\_25, Attis\_25, Yeet412\_25, Bjaner7\_25, SoilAssassin\_25

- Track 35 : JCole\_23
- Track 36 : Gizermo\_25, Haley23\_25, GemG\_25, Savage\_25, Clap\_25, Cynthia\_25, Ebert\_25, Sproutie\_25, Mocha12\_25, Whiteclaw\_25, TuertoX\_25
- Track 37 : Vasanti\_24
- Track 38 : Nettuno\_24, Lamberg\_24, EdnaMode\_24
- Track 39 : Sahara\_24
- Track 40 : Matteo\_24
- Track 41 : Pickett\_24
- Track 42 : PantheRoc\_27
- Track 43 : Yeezy\_28
- Track 44 : BaxterFox\_26
- Track 45 : Thimann\_26, Suerte\_24
- Track 46 : Powerball\_24
- Track 47 : Beenie\_26
- Track 48 : Denise\_23
- Track 49 : Faith5x5\_24
- Track 50 : Moosehead\_24
- Track 51 : OneDirection\_23
- Track 52 : Sidious\_27
- Track 53 : Wizard\_33, SmokingBunny\_33, Gezellig\_34, PullumCavea\_33, Jambalaya\_33, KimmyK\_35, Phlop\_33, Valary\_36, Nubi\_33, Togo\_33, Savbucketdawg\_33
- Track 54 : Fireball\_34, TillyBobJoe\_33
- Track 55 : Halo3\_34, Evamon\_33, Salvador\_33
- Track 56 : Mutzi\_35
- Track 57 : Yvonnetastic\_53
- Track 58 : JonJames\_55
- Track 59 : ChadMasterC\_37, Kewpiedoll\_36, Stultus\_35
- Track 60 : LilHam\_34, Ribeye\_37, Baddon\_36, Derg\_34, StorminNorm\_36, Kwobi\_37, Tycho\_36, SchottB\_35
- Track 61 : Bizzy\_37, Saronaya\_36, Flatwoods\_37, Tangerine\_36, Kroos\_37, Gustavo\_36
- Track 62 : Brandonk123\_39
- Track 63 : Lennon\_38, Sitar\_38
- Track 64 : McKinley\_40, Vivi2\_40, Tangent\_38
- Track 65 : Geodirt\_35, Sanjuju\_35
- Track 66 : Barsten\_37
- Track 67 : RiverRaider\_37
- Track 68 : Gaea\_36
- Track 69 : BobBob\_35, Rofo\_38
- Track 70 : Fitzgerald\_35
- Track 71 : Nordenberg\_32, Love\_41
- Track 72 : Bibwit\_37, Galadriel\_38, Kamashten\_36, Thing3\_36
- Track 73 : YorkOnyx\_37
- Track 74 : JKSyngboy\_34
- Track 75 : Sedona\_38
- Track 76 : Ashertheman\_37
- Track 77 : Charming\_38
- Track 78 : Paries\_40
- Track 79 : Ailee\_35
- Track 80 : Shivanishola\_38
- Track 81 : Jabberwocky\_35
- Track 82 : Angelicage\_36, Affeca\_36

- Track 83 : Keitabear\_38
- Track 84 : Baumdotcom\_36
- Track 85 : Fosterous\_36
- Track 86 : MoontowerMania\_36
- Track 87 : Camerico\_31
- Track 88 : LilyPad\_26
- Track 89 : LittleFella\_27
- Track 90 : Morkie\_25, PhorbesPhlower\_25
- Track 91 : Lucky10\_25
- Track 92 : GodonK\_92
- Track 93 : Phendrix\_89
- Track 94 : Birdsong\_28, BearBQ\_28, MortyNRick\_28, Kuwabara\_28
- Track 95 : Ecliptus\_32
- Track 96 : ODay\_33
- Track 97 : Whitney\_30, Kamaru\_29, Getalong\_30, Budski\_29, Holliday\_29
- Track 98 : Periwinkle\_31, Phistory\_30, Apricot\_28, Horus\_29, Frickyeah\_28, Leroy\_29
- Track 99 : Phabuloso\_28, Lutum\_29, Kenna\_28
- Track 100 : LitninMcQueen\_28
- Track 101 : Asapag\_29
- Track 102 : Squiddly\_31, Spooky\_29
- Track 103 : Crater\_27
- Track 104 : Forza\_104, Boopy\_104, Mareelih\_102
- Track 105 : BlueNGold\_103
- Track 106 : Sixama\_102
- Track 107 : Sephiroth\_30
- Track 108 : Syleon\_30
- Track 109 : Kudrefre\_29
- Track 110 : Rabbitrun\_32
- Track 111 : Trax\_30, Neville\_30
- Track 112 : Malibo\_28
- Track 113 : DonkeyMan\_25
- Track 114 : Heinz\_26, Hibiscus\_25
- Track 115 : Santhid\_25
- Track 116 : Tarzan\_25
- Track 117 : Jojo24\_25
- Track 118 : Reyja\_26
- Track 119 : Crossroads\_20, Zakai\_20, MkaliMitinis3\_20, Finemlucis\_20
- Track 120 : Nicholasp3\_20, LilDestine\_20, Wilder\_20, Kahlid\_20, Gardann\_20
- Track 121 : Rumpelstiltskin\_20
- Track 122 : Bazzle\_20
- Track 123 : Gabriela\_20, Netyap\_20, BobsGarage\_20, Miley16\_20, DrSeegs\_20
- Track 124 : Loadrie\_20
- Track 125 : DanBing\_19
- Track 126 : Breezona\_20, Winky\_20, Faith1\_20, Itos\_20
- Track 127 : DHan\_20
- Track 128 : Vetric\_20
- Track 129 : Baoshan\_19, ZhongYanYuan\_19
- Track 130 : Tourach\_20
- Track 131 : Hafay\_20, Soap141\_20, Wigglewiggles\_20, Sarshaun\_20
- Track 132 : BigCheese\_20
- Track 133 : Claus\_20
- Track 134 : GuuelaD\_20

- Track 135 : Archie\_20
- Track 136 : Lewan\_20
- Track 137 : Finkle\_23
- Track 138 : GAL1\_28
- Track 139 : TinyDot\_26

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

The start number called the most often in the published annotations is 171, it was called in 29 of the 234 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agueybana\_27, AlumE\_27, Antonio\_28, BatStarr\_26, BaxterFox\_26, Bialota\_26, Bosnia\_26, BoyNamedSue\_27, Eudoria\_28, Eviarto\_26, Herod\_26, Hugley\_26, Kita\_28, Madeline\_26, Manasvini\_28, Maridalia\_27, Neobush\_28, Nymphadora\_26, Ohgeesy\_26, PantheRoc\_27, Polly\_25, Suscepit\_28, Tayonia\_28, ThankyouJordi\_25, TimTam\_26, Trumpet\_28, WelcomeAyanna\_25, Yeezy\_28, Zameen\_28, Zirinka\_26,

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

- Apricot\_28, Asapag\_29, Beenie\_26, Budski\_29, Crater\_27, Frickyeah\_28, Getalong\_30, Holliday\_29, Horus\_29, JonJames\_55, Kamaru\_29, Kenna\_28, Kudrefre\_29, Leroy\_29, LitninMcQueen\_28, Lutum\_29, Neville\_30, Periwinkle\_31, Phabuloso\_28, Phistory\_30, Powerball\_24, Sephiroth\_30, Suerte\_24, Syleon\_30, Thimann\_26, Trax\_30, Whitney\_30, Yvonnetastic\_53,

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

- Affeca\_36, Ailee\_35, Angelicage\_36, Angelique\_29, Anthony\_30, Archie\_20, Ashertheman\_37, Astro\_28, Attis\_25, Baddon\_36, Baoshan\_19, Barsten\_37, Baumdotcom\_36, Bazzle\_20, BearBQ\_28, Bibwit\_37, BigCheese\_20, Birdsong\_28, Bizzy\_37, Bjaner7\_25, BlueNGold\_103, BobBob\_35, BobsGarage\_20, Boopy\_104, Bradissa\_28, Brandonk123\_39, Breezona\_20, BritBrat\_28, Bunnybear\_25, Camerico\_31, ChadMasterC\_37, Charming\_38, Clap\_25, Claus\_20, Crossroads\_20, Cynthia\_25, DHan\_20, DanBing\_19, Danforth\_27, Denise\_23, Derg\_34, Dixon\_28, DonkeyMan\_25, DrSeegs\_20, EMSquaredA\_28, Ebert\_25, Ecliptus\_32, EdnaMode\_24, EnalisNailo\_28, Evamon\_33, Expelliarmus\_27, Faith1\_20, Faith5x5\_24, Finemlucis\_20, Finkle\_23, Fireball\_34, Fitzgerald\_35, Flatwoods\_37, Floral\_28, Forza\_104, Fosterous\_36, GAL1\_28, Gabriela\_20, Gaea\_36, Galadriel\_38, Gardann\_20, GemG\_25, Geodirt\_35, Gezellig\_34, Gibbles\_26, Gizermo\_25, GodonK\_92, Groundhog\_27, Gustavo\_36, GuuelaD\_20, Hafay\_20, Haley23\_25, Halo3\_34, Heinz\_26, Herbertwm\_29, Hibiscus\_25, Hyzer\_28, Itos\_20, JCole\_23, JKSyngboy\_34, Jabberwocky\_35, Jambalaya\_33, Jojo24\_25, Kahlid\_20, Kamashten\_36, Kampe\_27, Keitabear\_38, Kewpiedoll\_36, KimmyK\_35, Kroos\_37, Kuwabara\_28, Kwobi\_37, Lamberg\_24, Lennon\_38, Lewan\_20, LilDestine\_20, LilHam\_34, Lilas\_28, LilyPad\_26, LittleFella\_27, Loadrie\_20, LordFarquaad\_25, Love\_41, Lton\_24, Lucky10\_25, Malibo\_28, Mareelih\_102, Marteena\_28, Matteo\_24, McKinley\_40, Miley16\_20, MkaliMitinis3\_20, Mocha12\_25, MoontowerMania\_36, Moosehead\_24, Morkie\_25, MortyNRick\_28, Mutzi\_35, NearlyHeadless\_28, Nettuno\_24, Netyap\_20, Nicholasp3\_20, Nordenberg\_32, Nubi\_33, ODay\_33, OneDirection\_23, Orchid\_27, PP\_40, Paries\_40, PatrickStar\_27, Pepperoni\_25,

Phendrix\_89, Phillis\_28, Phlop\_33, PhorbesPhlower\_25, Pickett\_24, Pollux\_28, PullumCavea\_33, Rabbitrun\_32, Reyja\_26, Ribeye\_37, RiverRaider\_37, Roary\_28, RobinSparkles\_30, Rofo\_38, Rumpelstiltskin\_20, Sahara\_24, Saintus\_28, Salvador\_33, Sanjuju\_35, Santhid\_25, Saronaya\_36, Sarshaun\_20, Savage\_25, Savbucketdawg\_33, Schmidt\_27, SchottB\_35, Sedona\_38, Shivanishola\_38, Sidious\_27, Sitar\_38, Sixama\_102, Smeadley\_28, SmokingBunny\_33, Soap141\_20, SoilAssassin\_25, Spooky\_29, Sproutie\_25, Squiddly\_31, Stephig9\_28, StorminNorm\_36, Stultus\_35, Tangent\_38, Tangerine\_36, Tarzan\_25, Thing3\_36, TillyBobJoe\_33, TinyDot\_26, Togo\_33, Tourach\_20, Trine\_24, TuertoX\_25, Tycho\_36, Upyo\_24, Valary\_36, Vasanti\_24, Vetrix\_20, Vivi2\_40, Whiteclaw\_25, Wigglewiggles\_20, Wilder\_20, Winky\_20, Wizard\_33, Yeet412\_25, YorkOnyx\_37, Zakai\_20, ZhongYanYuan\_19,

### Summary by start number:

#### Start 18:

- Found in 8 of 260 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 8 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bradissa\_28 (CY1), BritBrat\_28 (CY2), EMSquaredA\_28 (CY1), EnalisNailo\_28 (CY1), Floral\_28 (CY1), Lilas\_28 (CY1), Marteena\_28 (CY1), Pollux\_28 (CY1),

#### Start 20:

- Found in 1 of 260 ( 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: GAL1\_28 (singleton),

#### Start 21:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angelique\_29 (CY1),

#### Start 23:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mutzi\_35 (DC1),

#### Start 24:

- Found in 2 of 260 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Spooky\_29 (DN2), Squiddly\_31 (DN2),

#### Start 25:

- Found in 16 of 260 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 15 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Evamon\_33 (DC1), Fireball\_34 (DC1), Gezellig\_34 (DC1), Halo3\_34 (DC1), Jambalaya\_33 (DC1), KimmyK\_35 (DC1),



Nubi\_33 (DC1), Phlop\_33 (DC1), PullumCavea\_33 (DC1), Salvador\_33 (DC1), Savbucketdawg\_33 (DC1), SmokingBunny\_33 (DC1), TillyBobJoe\_33 (DC1), Togo\_33 (DC1), Valary\_36 (DC1), Wizard\_33 (DC1),

Start 26:

- Found in 32 of 260 ( 12.3% ) of genes in pham
- Manual Annotations of this start: 22 of 234
- Called 71.9% of time when present
- Phage (with cluster) where this start called: Affeca\_36 (DE1), Ailee\_35 (DE1), Angelicage\_36 (DE1), Bibwit\_37 (DE1), BobBob\_35 (DE1), Brandonk123\_39 (DE1), Charming\_38 (DE1), Fosterous\_36 (DE1), Galadriel\_38 (DE1), Kamashten\_36 (DE1), Keitabear\_38 (DE1), Lennon\_38 (DE1), Love\_41 (DE1), McKinley\_40 (DE1), Nordenberg\_32 (DE1), Paries\_40 (DE1), Rofo\_38 (DE1), Sedona\_38 (DE1), Shivanishola\_38 (DE1), Sitar\_38 (DE1), Tangent\_38 (DE1), Thing3\_36 (DE1), Vivi2\_40 (DE1),

Start 28:

- Found in 3 of 260 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 234
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Herbertwm\_29 (A2), PP\_40 (A7),

Start 30:

- Found in 24 of 260 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 21 of 234
- Called 95.8% of time when present
- Phage (with cluster) where this start called: Apricot\_28 (DN3), Asapag\_29 (DN1), BearBQ\_28 (DN), Birdsong\_28 (DN), Budski\_29 (DN), Crater\_27 (DN3), Ecliptus\_32 (DN), Frickyeh\_28 (DN1), Getalong\_30 (DN1), Holliday\_29 (DN1), Horus\_29 (DN1), Kamaru\_29 (DN1), Kenna\_28 (DN1), Kuwabara\_28 (DN4), Leroy\_29 (DN1), LitninMcQueen\_28 (DN1), Lutum\_29 (DN1), MortyNRick\_28 (DN), ODay\_33 (DN), Periwinkle\_31 (DN1), Phabuloso\_28 (DN1), Phistory\_30 (DN1), Whitney\_30 (DN1),

Start 36:

- Found in 3 of 260 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 3 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lucky10\_25 (DH), Morkie\_25 (DH), PhorbesPhlower\_25 (DH),

Start 46:

- Found in 4 of 260 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 234
- Called 50.0% of time when present
- Phage (with cluster) where this start called: JonJames\_55 (DD), Yvonnetastic\_53 (DD),

Start 52:

- Found in 4 of 260 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 234
- Called 50.0% of time when present
- Phage (with cluster) where this start called: LilyPad\_26 (DG1), LittleFella\_27 (DG2),

Start 62:

- Found in 30 of 260 ( 11.5% ) of genes in pham
- Manual Annotations of this start: 5 of 234
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Breezona\_20 (L2), Faith1\_20 (L2), Itos\_20 (L2), Rumpelstiltskin\_20 (L2), Winky\_20 (L2),

Start 63:

- Found in 36 of 260 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 23 of 234
- Called 86.1% of time when present
- Phage (with cluster) where this start called: Archie\_20 (L2), Baoshan\_19 (L2), Bazzle\_20 (L2), BigCheese\_20 (L2), BobsGarage\_20 (L2), Claus\_20 (L2), Crossroads\_20 (L2), DHan\_20 (L2), DanBing\_19 (L2), DrSeegs\_20 (L2), Finemlucis\_20 (L2), Gabriela\_20 (L2), Gardann\_20 (L2), GuuelaD\_20 (L2), Hafay\_20 (L2), Kahlid\_20 (L2), Lewan\_20 (L2), LilDestine\_20 (L2), Loadrie\_20 (L2), Miley16\_20 (L2), MkaliMitinis3\_20 (L2), Netyap\_20 (L2), Nicholasp3\_20 (L2), Sarshaun\_20 (L2), Soap141\_20 (L2), Tourach\_20 (L2), Vetrix\_20 (L2), Wigglewiggles\_20 (L2), Wilder\_20 (L2), Zakai\_20 (L2), ZhongYanYuan\_19 (L2),

Start 65:

- Found in 6 of 260 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 5 of 234
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Boopy\_104 (DS), Forza\_104 (DS), GodonK\_92 (DK), Mareelih\_102 (DS), Phendrix\_89 (DK),

Start 66:

- Found in 4 of 260 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Malibo\_28 (DW),

Start 67:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sixama\_102 (DS),

Start 69:

- Found in 1 of 260 ( 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: DonkeyMan\_25 (DY),

Start 70:

- Found in 20 of 260 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 5.0% of time when present
- Phage (with cluster) where this start called: Reyja\_26 (DY),

Start 71:

- Found in 2 of 260 ( 0.8% ) of genes in pham

- Manual Annotations of this start: 2 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jojo24\_25 (DY), Santhid\_25 (DY),

#### Start 72:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tarzan\_25 (DY),

#### Start 76:

- Found in 29 of 260 ( 11.2% ) of genes in pham
- Manual Annotations of this start: 22 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ashertheman\_37 (DE1), Baddon\_36 (DE1), Barsten\_37 (DE1), Baumdotcom\_36 (DE1), Bizzy\_37 (DE1), ChadMasterC\_37 (DE1), Derg\_34 (DE1), Fitzgerald\_35 (DE1), Flatwoods\_37 (DE1), Gaea\_36 (DE1), Geodirt\_35 (DE1), Gustavo\_36 (DE1), JKSyngboy\_34 (DE1), Jabberwocky\_35 (DE1), Kewpiedoll\_36 (DE1), Kroos\_37 (DE1), Kwobi\_37 (DE1), LilHam\_34 (DE1), MoontowerMania\_36 (DE1), Ribeye\_37 (DE1), RiverRaider\_37 (DE1), Sanjuju\_35 (DE1), Saronaya\_36 (DE1), SchottB\_35 (DE1), StorminNorm\_36 (DE1), Stultus\_35 (DE1), Tangerine\_36 (DE1), Tycho\_36 (DE1), YorkOnyx\_37 (DE1),

#### Start 77:

- Found in 4 of 260 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 4 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beenie\_26 (CZ4), Powerball\_24 (CZ4), Suerte\_24 (CZ4), Thimann\_26 (CZ4),

#### Start 80:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anthony\_30 (A20),

#### Start 82:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bunnybear\_25 (CZ),

#### Start 84:

- Found in 6 of 260 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 5 of 234
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Kudrefre\_29 (DU1), Neville\_30 (DU2), Sephiroth\_30 (DU1), Syleon\_30 (DU1), Trax\_30 (DU2),

#### Start 85:

- Found in 30 of 260 ( 11.5% ) of genes in pham
- Manual Annotations of this start: 1 of 234

- Called 3.3% of time when present
- Phage (with cluster) where this start called: BlueNGold\_103 (DS),

#### Start 86:

- Found in 28 of 260 ( 10.8% ) of genes in pham
- Manual Annotations of this start: 11 of 234
- Called 39.3% of time when present
- Phage (with cluster) where this start called: Astro\_28 (A8), Danforth\_27 (A8), Dixon\_28 (A8), Expelliarmus\_27 (A8), Groundhog\_27 (A8), NearlyHeadless\_28 (A8), Phillis\_28 (A8), Roary\_28 (A8), Saintus\_28 (A8), Smeadley\_28 (A8), Stephig9\_28 (A8),

#### Start 87:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rabbitrun\_32 (DU2),

#### Start 112:

- Found in 28 of 260 ( 10.8% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 3.6% of time when present
- Phage (with cluster) where this start called: Finkle\_23 (singleton),

#### Start 115:

- Found in 19 of 260 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 6 of 234
- Called 31.6% of time when present
- Phage (with cluster) where this start called: Denise\_23 (CZ5), Gibbles\_26 (CX), Kampe\_27 (CX), Orchid\_27 (CX), PatrickStar\_27 (CX), RobinSparkles\_30 (CX),

#### Start 117:

- Found in 14 of 260 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 5 of 234
- Called 42.9% of time when present
- Phage (with cluster) where this start called: Faith5x5\_24 (CZ6), Lton\_24 (CZ), Matteo\_24 (CZ2), OneDirection\_23 (CZ6), Pepperoni\_25 (CZ), TinyDot\_26 (singleton),

#### Start 120:

- Found in 1 of 260 ( 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: JCole\_23 (CZ2),

#### Start 121:

- Found in 30 of 260 ( 11.5% ) of genes in pham
- Manual Annotations of this start: 3 of 234
- Called 10.0% of time when present
- Phage (with cluster) where this start called: EdnaMode\_24 (CZ2), Lamberg\_24 (CZ2), Nettuno\_24 (CZ2),

#### Start 122:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pickett\_24 (CZ2),

#### Start 131:

- Found in 26 of 260 ( 10.0% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Hyzer\_28 (CZ1), Sidious\_27 (CZ7),

#### Start 145:

- Found in 4 of 260 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Schmidt\_27 (CU4),

#### Start 159:

- Found in 2 of 260 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Trine\_24 (CD), Upyo\_24 (CD),

#### Start 160:

- Found in 3 of 260 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Heinz\_26 (DY), Hibiscus\_25 (DY),

#### Start 166:

- Found in 19 of 260 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 19 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Attis\_25 (CZ2), Bjanes7\_25 (CZ2), Clap\_25 (CZ2), Cynthia\_25 (CZ2), Ebert\_25 (CZ2), GemG\_25 (CZ2), Gizermo\_25 (CZ2), Haley23\_25 (CZ2), LordFarquaad\_25 (CZ2), Mocha12\_25 (CZ2), Moosehead\_24 (CZ6), Sahara\_24 (CZ2), Savage\_25 (CZ2), SoilAssassin\_25 (CZ2), Sproutie\_25 (CZ2), TuertoX\_25 (CZ2), Vasanti\_24 (CZ2), Whiteclaw\_25 (CZ2), Yeet412\_25 (CZ2),

#### Start 168:

- Found in 1 of 260 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Camerico\_31 (DF),

#### Start 171:

- Found in 58 of 260 ( 22.3% ) of genes in pham
- Manual Annotations of this start: 29 of 234
- Called 51.7% of time when present
- Phage (with cluster) where this start called: Agueybana\_27 (CZ1), AlumE\_27 (CZ1), Antonio\_28 (CZ1), BatStarr\_26 (CZ1), BaxterFox\_26 (CZ3), Bialota\_26 (CZ1), Bosnia\_26 (CZ1), BoyNamedSue\_27 (CZ1), Eudoria\_28 (CZ1), Eviarto\_26 (CZ1),

Herod\_26 (CZ1), Hugley\_26 (CZ1), Kita\_28 (CZ1), Madeline\_26 (CZ1), Manasvini\_28 (CZ1), Maridalia\_27 (CZ1), Neobush\_28 (CZ1), Nymphadora\_26 (CZ1), Ohgeesy\_26 (CZ), PantheRoc\_27 (CZ3), Polly\_25 (CZ1), Suscepit\_28 (CZ1), Tayonia\_28 (CZ1), ThankyouJordi\_25 (CZ1), TimTam\_26 (CZ1), Trumpet\_28 (CZ1), WelcomeAyanna\_25 (CZ1), Yeezy\_28 (CZ3), Zameen\_28 (CZ1), Zirinka\_26 (CZ1),

### **Summary by clusters:**

There are 37 clusters represented in this pham: DN, singleton, DK, DH, CZ2, CZ3, DD, CZ1, CZ6, CZ7, CZ4, CZ5, DY, DW, DS, CU4, DN4, DF, A2, DN1, DN3, DN2, DU1, DU2, CY2, CY1, A7, CD, DG2, CZ, CX, L2, A8, DC1, A20, DE1, DG1,

Info for manual annotations of cluster A2:

- Start number 28 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A20:

- Start number 80 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A7:

- Start number 28 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A8:

- Start number 86 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster CD:

- Start number 159 was manually annotated 2 times for cluster CD.

Info for manual annotations of cluster CU4:

- Start number 145 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster CX:

- Start number 115 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster CY1:

- Start number 18 was manually annotated 7 times for cluster CY1.
- Start number 21 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 18 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CZ:

- Start number 82 was manually annotated 1 time for cluster CZ.
- Start number 117 was manually annotated 1 time for cluster CZ.
- Start number 171 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 171 was manually annotated 25 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 117 was manually annotated 1 time for cluster CZ2.
- Start number 121 was manually annotated 3 times for cluster CZ2.
- Start number 122 was manually annotated 1 time for cluster CZ2.
- Start number 166 was manually annotated 18 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 171 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 77 was manually annotated 4 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 115 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 117 was manually annotated 2 times for cluster CZ6.
- Start number 166 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster CZ7:

- Start number 131 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DC1:

- Start number 23 was manually annotated 1 time for cluster DC1.
- Start number 25 was manually annotated 15 times for cluster DC1.

Info for manual annotations of cluster DD:

- Start number 46 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DE1:

- Start number 26 was manually annotated 22 times for cluster DE1.
- Start number 76 was manually annotated 22 times for cluster DE1.

Info for manual annotations of cluster DF:

- Start number 168 was manually annotated 1 time for cluster DF.

Info for manual annotations of cluster DG1:

- Start number 52 was manually annotated 1 time for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 52 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DH:

- Start number 36 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DK:

- Start number 65 was manually annotated 2 times for cluster DK.

Info for manual annotations of cluster DN:

- Start number 30 was manually annotated 5 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 30 was manually annotated 13 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 24 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 30 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 30 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DS:

- Start number 65 was manually annotated 3 times for cluster DS.
- Start number 67 was manually annotated 1 time for cluster DS.
- Start number 85 was manually annotated 1 time for cluster DS.

Info for manual annotations of cluster DU1:

- Start number 84 was manually annotated 3 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 84 was manually annotated 2 times for cluster DU2.
- Start number 87 was manually annotated 1 time for cluster DU2.

Info for manual annotations of cluster DW:

- Start number 66 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster DY:

- Start number 70 was manually annotated 1 time for cluster DY.
- Start number 71 was manually annotated 2 times for cluster DY.
- Start number 72 was manually annotated 1 time for cluster DY.
- Start number 160 was manually annotated 1 time for cluster DY.

Info for manual annotations of cluster L2:

- Start number 62 was manually annotated 5 times for cluster L2.
- Start number 63 was manually annotated 23 times for cluster L2.

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

Gene: Affeca\_36 Start: 33574, Stop: 35496, Start Num: 26

Candidate Starts for Affeca\_36:

(Start: 26 @33574 has 22 MA's), (58, 33709), (61, 33718), (73, 33751), (Start: 85 @33775 has 1 MA's), (Start: 112 @33844 has 1 MA's), (138, 33919), (211, 34111), (213, 34117), (222, 34138), (228, 34156), (230, 34168), (254, 34228), (276, 34282), (321, 34396), (344, 34483), (357, 34537), (368, 34603), (377, 34633), (384, 34645), (396, 34690), (398, 34702), (401, 34720), (410, 34747), (431, 34825), (438, 34852), (443, 34876), (465, 34999), (471, 35041), (492, 35125), (499, 35155), (526, 35236), (533, 35266), (545, 35338), (549, 35347),

Gene: Agueybana\_27 Start: 22803, Stop: 24308, Start Num: 171

Candidate Starts for Agueybana\_27:

(92, 22596), (123, 22665), (125, 22668), (130, 22692), (133, 22698), (Start: 171 @22803 has 29 MA's), (193, 22872), (197, 22884), (235, 22995), (238, 23001), (240, 23007), (244, 23013), (272, 23100), (284, 23136), (286, 23142), (289, 23151), (368, 23445), (390, 23499), (391, 23502), (396, 23523), (436, 23673), (456, 23757), (465, 23838), (466, 23841), (520, 24060), (530, 24108), (541, 24168), (555, 24201), (558, 24207), (569, 24279),

Gene: Ailee\_35 Start: 33459, Stop: 35381, Start Num: 26

Candidate Starts for Ailee\_35:



(Start: 26 @33459 has 22 MA's), (58, 33594), (73, 33636), (Start: 85 @33660 has 1 MA's), (138, 33804), (211, 33996), (213, 34002), (222, 34023), (228, 34041), (230, 34053), (254, 34113), (276, 34167), (321, 34281), (344, 34368), (357, 34422), (366, 34476), (368, 34488), (377, 34518), (384, 34530), (396, 34575), (398, 34587), (401, 34605), (410, 34632), (431, 34710), (438, 34737), (443, 34761), (465, 34884), (471, 34926), (492, 35010), (499, 35040), (526, 35121), (533, 35151), (545, 35223), (549, 35232),

Gene: AlumE\_27 Start: 22802, Stop: 24307, Start Num: 171

Candidate Starts for AlumE\_27:

(92, 22595), (123, 22664), (125, 22667), (130, 22691), (133, 22697), (Start: 171 @22802 has 29 MA's), (193, 22871), (197, 22883), (235, 22994), (238, 23000), (240, 23006), (244, 23012), (272, 23099), (284, 23135), (286, 23141), (289, 23150), (319, 23234), (368, 23444), (390, 23498), (391, 23501), (396, 23522), (406, 23567), (436, 23672), (456, 23756), (465, 23837), (466, 23840), (490, 23963), (520, 24059), (530, 24107), (536, 24122), (541, 24167), (555, 24200), (558, 24206), (569, 24278),

Gene: Angelicage\_36 Start: 33992, Stop: 35914, Start Num: 26

Candidate Starts for Angelicage\_36:

(Start: 26 @33992 has 22 MA's), (58, 34127), (61, 34136), (73, 34169), (Start: 85 @34193 has 1 MA's), (Start: 112 @34262 has 1 MA's), (138, 34337), (211, 34529), (213, 34535), (222, 34556), (228, 34574), (230, 34586), (254, 34646), (276, 34700), (321, 34814), (344, 34901), (357, 34955), (368, 35021), (377, 35051), (384, 35063), (396, 35108), (398, 35120), (401, 35138), (410, 35165), (431, 35243), (438, 35270), (443, 35294), (465, 35417), (471, 35459), (492, 35543), (499, 35573), (526, 35654), (533, 35684), (545, 35756), (549, 35765),

Gene: Angelique\_29 Start: 23414, Stop: 25348, Start Num: 21

Candidate Starts for Angelique\_29:

(2, 23168), (10, 23276), (11, 23279), (12, 23303), (14, 23309), (Start: 21 @23414 has 1 MA's), (Start: 30 @23468 has 21 MA's), (31, 23471), (Start: 46 @23558 has 2 MA's), (98, 23699), (133, 23777), (143, 23816), (189, 23918), (193, 23930), (211, 23975), (222, 24002), (227, 24017), (248, 24071), (254, 24092), (258, 24104), (273, 24140), (327, 24269), (344, 24335), (345, 24338), (351, 24368), (375, 24467), (377, 24479), (384, 24491), (398, 24548), (405, 24581), (407, 24587), (438, 24698), (472, 24890), (499, 25001), (570, 25301),

Gene: Anthony\_30 Start: 21219, Stop: 22928, Start Num: 80

Candidate Starts for Anthony\_30:

(Start: 80 @21219 has 1 MA's), (140, 21366), (144, 21381), (157, 21408), (177, 21456), (199, 21513), (325, 21867), (344, 21930), (352, 21966), (385, 22080), (402, 22158), (414, 22197), (422, 22224), (428, 22242), (445, 22332), (446, 22335), (448, 22350), (479, 22536), (495, 22596), (502, 22623), (508, 22638), (522, 22683), (528, 22701), (538, 22764), (540, 22770), (566, 22872),

Gene: Antonio\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Antonio\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: Apricot\_28 Start: 21679, Stop: 23514, Start Num: 30

Candidate Starts for Apricot\_28:

(Start: 30 @21679 has 21 MA's), (Start: 70 @21841 has 1 MA's), (Start: 86 @21871 has 11 MA's), (104, 21925), (113, 21940), (116, 21952), (118, 21955), (124, 21970), (126, 21973), (127, 21976), (164, 22066), (169, 22075), (Start: 171 @22078 has 29 MA's), (203, 22165), (211, 22186), (213,

22192), (222, 22213), (226, 22222), (230, 22243), (233, 22249), (288, 22351), (289, 22354), (305, 22384), (309, 22396), (321, 22420), (323, 22429), (344, 22495), (347, 22507), (357, 22549), (362, 22582), (368, 22615), (371, 22621), (377, 22645), (384, 22657), (398, 22714), (401, 22732), (438, 22864), (443, 22888), (447, 22906), (472, 23059), (475, 23074), (478, 23089), (479, 23095), (492, 23140), (496, 23158), (499, 23170), (501, 23176), (507, 23188), (511, 23197), (526, 23251), (539, 23320), (545, 23353), (547, 23359), (562, 23422), (563, 23425), (566, 23443), (570, 23464), (571, 23473),

Gene: Archie\_20 Start: 19444, Stop: 21240, Start Num: 63

Candidate Starts for Archie\_20:

(Start: 62 @19441 has 5 MA's), (Start: 63 @19444 has 23 MA's), (101, 19540), (125, 19597), (134, 19621), (142, 19657), (170, 19717), (174, 19726), (182, 19750), (189, 19771), (210, 19828), (243, 19921), (251, 19945), (259, 19975), (279, 20029), (293, 20074), (313, 20125), (343, 20230), (355, 20284), (369, 20362), (374, 20371), (390, 20419), (391, 20422), (393, 20425), (397, 20449), (412, 20509), (415, 20518), (445, 20656), (446, 20659), (465, 20788), (472, 20827), (475, 20842), (486, 20902), (494, 20911), (501, 20938), (513, 20971), (518, 20986), (548, 21112), (556, 21136), (572, 21223),

Gene: Asapag\_29 Start: 22121, Stop: 23956, Start Num: 30

Candidate Starts for Asapag\_29:

(Start: 30 @22121 has 21 MA's), (Start: 70 @22283 has 1 MA's), (Start: 86 @22313 has 11 MA's), (104, 22367), (113, 22382), (116, 22394), (118, 22397), (124, 22412), (126, 22415), (127, 22418), (164, 22508), (169, 22517), (Start: 171 @22520 has 29 MA's), (203, 22607), (211, 22628), (213, 22634), (222, 22655), (230, 22685), (233, 22691), (288, 22793), (289, 22796), (305, 22826), (309, 22838), (321, 22862), (323, 22871), (344, 22937), (347, 22949), (357, 22991), (362, 23024), (368, 23057), (371, 23063), (377, 23087), (384, 23099), (398, 23156), (401, 23174), (438, 23306), (443, 23330), (447, 23348), (472, 23501), (475, 23516), (478, 23531), (479, 23537), (492, 23582), (496, 23600), (499, 23612), (501, 23618), (507, 23630), (511, 23639), (526, 23693), (539, 23762), (545, 23795), (547, 23801), (562, 23864), (563, 23867), (566, 23885), (570, 23906), (571, 23915),

Gene: Ashertheman\_37 Start: 32252, Stop: 33973, Start Num: 76

Candidate Starts for Ashertheman\_37:

(Start: 76 @32252 has 22 MA's), (133, 32387), (150, 32444), (153, 32453), (182, 32522), (274, 32783), (290, 32822), (312, 32882), (326, 32927), (341, 32987), (373, 33122), (376, 33128), (390, 33170), (395, 33185), (399, 33221), (408, 33242), (435, 33338), (436, 33341), (456, 33425), (461, 33458), (465, 33503), (466, 33506), (472, 33542), (479, 33578), (481, 33590), (493, 33626), (521, 33716),

Gene: Astro\_28 Start: 21515, Stop: 23236, Start Num: 86

Candidate Starts for Astro\_28:

(Start: 86 @21515 has 11 MA's), (140, 21659), (184, 21773), (222, 21863), (233, 21899), (245, 21920), (269, 21992), (275, 22016), (293, 22070), (299, 22088), (331, 22172), (355, 22268), (365, 22322), (378, 22370), (415, 22499), (420, 22517), (446, 22643), (479, 22847), (480, 22856), (503, 22937), (530, 23033), (557, 23132), (573, 23219),

Gene: Attis\_25 Start: 20498, Stop: 22021, Start Num: 166

Candidate Starts for Attis\_25:

(Start: 166 @20498 has 19 MA's), (196, 20570), (202, 20582), (213, 20609), (223, 20633), (268, 20753), (271, 20762), (292, 20828), (334, 20942), (345, 20984), (351, 21014), (359, 21044), (375, 21110), (384, 21134), (391, 21158), (396, 21176), (398, 21188), (401, 21206), (405, 21221), (407, 21227), (425, 21278), (430, 21305), (443, 21356), (469, 21524), (474, 21545), (491, 21623), (501, 21662), (509, 21683), (511, 21686), (514, 21698), (524, 21737), (550, 21884), (562, 21944), (563, 21947),

Gene: Baddon\_36 Start: 33049, Stop: 34770, Start Num: 76

Candidate Starts for Baddon\_36:

(Start: 76 @33049 has 22 MA's), (127, 33172), (133, 33184), (153, 33250), (182, 33319), (193, 33355), (274, 33580), (290, 33619), (312, 33679), (326, 33724), (341, 33784), (373, 33919), (376, 33925), (390, 33967), (395, 33982), (399, 34018), (408, 34039), (436, 34138), (456, 34222), (461, 34255), (465, 34300), (466, 34303), (472, 34339), (479, 34375), (481, 34387), (493, 34423), (503, 34459), (521, 34513),

Gene: Baoshan\_19 Start: 19053, Stop: 20849, Start Num: 63

Candidate Starts for Baoshan\_19:

(Start: 63 @19053 has 23 MA's), (Start: 112 @19173 has 1 MA's), (Start: 121 @19194 has 3 MA's), (125, 19206), (134, 19230), (140, 19257), (170, 19326), (174, 19335), (184, 19368), (189, 19380), (201, 19410), (210, 19437), (251, 19554), (266, 19602), (279, 19638), (293, 19683), (313, 19734), (343, 19839), (348, 19857), (353, 19890), (355, 19893), (362, 19932), (369, 19971), (391, 20031), (393, 20034), (412, 20118), (445, 20265), (461, 20343), (472, 20436), (475, 20451), (486, 20511), (494, 20520), (501, 20547), (518, 20595), (522, 20610), (539, 20694), (540, 20697), (556, 20745), (560, 20760), (572, 20832),

Gene: Barsten\_37 Start: 32600, Stop: 34321, Start Num: 76

Candidate Starts for Barsten\_37:

(Start: 76 @32600 has 22 MA's), (133, 32735), (136, 32744), (143, 32777), (153, 32801), (182, 32870), (190, 32900), (207, 32945), (274, 33131), (290, 33170), (293, 33179), (318, 33251), (326, 33275), (345, 33347), (364, 33434), (373, 33470), (376, 33476), (390, 33518), (395, 33533), (396, 33542), (436, 33689), (456, 33773), (461, 33806), (466, 33854), (478, 33920), (479, 33926), (481, 33938), (492, 33968), (493, 33974), (503, 34010), (507, 34019), (521, 34064),

Gene: BatStarr\_26 Start: 22926, Stop: 24431, Start Num: 171

Candidate Starts for BatStarr\_26:

(54, 22611), (92, 22719), (123, 22788), (125, 22791), (130, 22815), (133, 22821), (Start: 171 @22926 has 29 MA's), (193, 22995), (197, 23007), (235, 23118), (238, 23124), (240, 23130), (244, 23136), (272, 23223), (284, 23259), (286, 23265), (289, 23274), (368, 23568), (390, 23622), (391, 23625), (396, 23646), (406, 23691), (436, 23796), (456, 23880), (465, 23961), (466, 23964), (520, 24183), (530, 24231), (541, 24291), (555, 24324), (558, 24330), (569, 24402),

Gene: Baumdotcom\_36 Start: 31904, Stop: 33625, Start Num: 76

Candidate Starts for Baumdotcom\_36:

(Start: 76 @31904 has 22 MA's), (127, 32027), (133, 32039), (153, 32105), (182, 32174), (274, 32435), (278, 32444), (290, 32474), (312, 32534), (326, 32579), (341, 32639), (373, 32774), (376, 32780), (390, 32822), (395, 32837), (399, 32873), (408, 32894), (436, 32993), (456, 33077), (461, 33110), (465, 33155), (466, 33158), (472, 33194), (479, 33230), (481, 33242), (493, 33278), (521, 33368),

Gene: BaxterFox\_26 Start: 22126, Stop: 23631, Start Num: 171

Candidate Starts for BaxterFox\_26:

(Start: 171 @22126 has 29 MA's), (189, 22183), (193, 22195), (197, 22207), (235, 22318), (238, 22324), (240, 22330), (244, 22336), (272, 22423), (284, 22459), (286, 22465), (289, 22474), (364, 22738), (368, 22768), (381, 22795), (390, 22822), (391, 22825), (396, 22846), (407, 22894), (413, 22906), (436, 22996), (456, 23080), (466, 23164), (490, 23287), (520, 23383), (530, 23431), (541, 23491), (555, 23524), (558, 23530), (569, 23602),

Gene: Bazzle\_20 Start: 19193, Stop: 20989, Start Num: 63

Candidate Starts for Bazzle\_20:

(Start: 62 @19190 has 5 MA's), (Start: 63 @19193 has 23 MA's), (125, 19346), (134, 19370), (142, 19406), (170, 19466), (174, 19475), (182, 19499), (189, 19520), (210, 19577), (243, 19670), (251, 19694), (259, 19724), (279, 19778), (293, 19823), (313, 19874), (343, 19979), (355, 20033), (369, 20111), (374, 20120), (390, 20168), (391, 20171), (393, 20174), (397, 20198), (412, 20258), (415, 20267), (445, 20405), (446, 20408), (465, 20537), (472, 20576), (475, 20591), (486, 20651), (494, 20660), (501, 20687), (513, 20720), (518, 20735), (548, 20861), (556, 20885), (572, 20972),

Gene: BearBQ\_28 Start: 22958, Stop: 24742, Start Num: 30

Candidate Starts for BearBQ\_28:

(Start: 30 @22958 has 21 MA's), (34, 22973), (43, 23000), (48, 23030), (73, 23102), (78, 23114), (107, 23177), (113, 23189), (132, 23231), (149, 23270), (152, 23279), (189, 23357), (211, 23414), (213, 23420), (222, 23441), (226, 23450), (230, 23471), (233, 23477), (288, 23579), (289, 23582), (305, 23612), (309, 23624), (321, 23648), (323, 23657), (344, 23723), (347, 23735), (357, 23777), (362, 23810), (368, 23843), (371, 23849), (377, 23873), (384, 23885), (398, 23942), (401, 23960), (438, 24092), (443, 24116), (447, 24134), (472, 24287), (475, 24302), (478, 24317), (479, 24323), (492, 24368), (496, 24386), (499, 24398), (501, 24404), (507, 24416), (511, 24425), (526, 24479), (539, 24548), (545, 24581), (547, 24587), (562, 24650), (563, 24653), (566, 24671), (570, 24692), (571, 24701),

Gene: Beenie\_26 Start: 22391, Stop: 24076, Start Num: 77

Candidate Starts for Beenie\_26:

(Start: 77 @22391 has 4 MA's), (Start: 171 @22601 has 29 MA's), (173, 22607), (182, 22628), (193, 22664), (209, 22706), (211, 22709), (222, 22736), (248, 22805), (254, 22826), (258, 22838), (344, 23066), (351, 23099), (375, 23198), (377, 23210), (384, 23222), (398, 23279), (401, 23297), (405, 23312), (407, 23318), (438, 23429), (447, 23471), (449, 23480), (471, 23618), (472, 23621), (530, 23843),

Gene: Bialota\_26 Start: 22938, Stop: 24443, Start Num: 171

Candidate Starts for Bialota\_26:

(54, 22623), (92, 22731), (123, 22800), (125, 22803), (130, 22827), (133, 22833), (Start: 171 @22938 has 29 MA's), (193, 23007), (197, 23019), (235, 23130), (238, 23136), (240, 23142), (244, 23148), (246, 23154), (272, 23235), (284, 23271), (286, 23277), (289, 23286), (368, 23580), (390, 23634), (391, 23637), (396, 23658), (406, 23703), (436, 23808), (456, 23892), (465, 23973), (466, 23976), (520, 24195), (530, 24243), (541, 24303), (555, 24336), (558, 24342), (569, 24414),

Gene: Bibwit\_37 Start: 33393, Stop: 35315, Start Num: 26

Candidate Starts for Bibwit\_37:

(Start: 26 @33393 has 22 MA's), (58, 33528), (61, 33537), (73, 33570), (Start: 85 @33594 has 1 MA's), (Start: 112 @33663 has 1 MA's), (138, 33738), (211, 33930), (213, 33936), (222, 33957), (228, 33975), (230, 33987), (254, 34047), (276, 34101), (321, 34215), (344, 34302), (357, 34356), (366, 34410), (368, 34422), (377, 34452), (384, 34464), (396, 34509), (398, 34521), (401, 34539), (410, 34566), (431, 34644), (438, 34671), (443, 34695), (465, 34818), (471, 34860), (492, 34944), (499, 34974), (511, 35001), (526, 35055), (533, 35085), (545, 35157), (549, 35166),

Gene: BigCheese\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for BigCheese\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: Birdsong\_28 Start: 21851, Stop: 23635, Start Num: 30

Candidate Starts for Birdsong\_28:

(Start: 30 @21851 has 21 MA's), (34, 21866), (43, 21893), (48, 21923), (73, 21995), (78, 22007), (107, 22070), (113, 22082), (132, 22124), (149, 22163), (152, 22172), (189, 22250), (211, 22307), (213, 22313), (222, 22334), (226, 22343), (230, 22364), (233, 22370), (288, 22472), (289, 22475), (305, 22505), (309, 22517), (321, 22541), (323, 22550), (344, 22616), (347, 22628), (357, 22670), (362, 22703), (368, 22736), (371, 22742), (377, 22766), (384, 22778), (398, 22835), (401, 22853), (438, 22985), (443, 23009), (447, 23027), (472, 23180), (475, 23195), (478, 23210), (479, 23216), (492, 23261), (496, 23279), (499, 23291), (501, 23297), (507, 23309), (511, 23318), (526, 23372), (539, 23441), (545, 23474), (547, 23480), (562, 23543), (563, 23546), (566, 23564), (570, 23585), (571, 23594),

Gene: Bizzy\_37 Start: 32196, Stop: 33917, Start Num: 76

Candidate Starts for Bizzy\_37:

(Start: 76 @32196 has 22 MA's), (127, 32319), (133, 32331), (153, 32397), (182, 32466), (193, 32502), (207, 32541), (274, 32727), (290, 32766), (312, 32826), (326, 32871), (341, 32931), (373, 33066), (376, 33072), (390, 33114), (395, 33129), (399, 33165), (408, 33186), (436, 33285), (456, 33369), (461, 33402), (465, 33447), (466, 33450), (472, 33486), (479, 33522), (481, 33534), (493, 33570), (503, 33606), (521, 33660),

Gene: Bjaner7\_25 Start: 20498, Stop: 22021, Start Num: 166

Candidate Starts for Bjaner7\_25:

(Start: 166 @20498 has 19 MA's), (196, 20570), (202, 20582), (213, 20609), (223, 20633), (268, 20753), (271, 20762), (292, 20828), (334, 20942), (345, 20984), (351, 21014), (359, 21044), (375, 21110), (384, 21134), (391, 21158), (396, 21176), (398, 21188), (401, 21206), (405, 21221), (407, 21227), (425, 21278), (430, 21305), (443, 21356), (469, 21524), (474, 21545), (491, 21623), (501, 21662), (509, 21683), (511, 21686), (514, 21698), (524, 21737), (550, 21884), (562, 21944), (563, 21947),

Gene: BlueNGold\_103 Start: 62535, Stop: 64172, Start Num: 85

Candidate Starts for BlueNGold\_103:

(59, 62475), (Start: 65 @62493 has 5 MA's), (Start: 85 @62535 has 1 MA's), (88, 62544), (119, 62610), (Start: 121 @62613 has 3 MA's), (Start: 131 @62634 has 1 MA's), (178, 62745), (192, 62787), (247, 62925), (254, 62949), (345, 63195), (368, 63312), (380, 63339), (384, 63345), (398, 63399), (407, 63438), (438, 63549), (441, 63564), (443, 63573), (474, 63744), (478, 63765), (501, 63858), (535, 63966), (571, 64143),

Gene: BobBob\_35 Start: 32673, Stop: 34526, Start Num: 26

Candidate Starts for BobBob\_35:

(Start: 26 @32673 has 22 MA's), (58, 32808), (61, 32817), (73, 32850), (Start: 85 @32874 has 1 MA's), (Start: 112 @32943 has 1 MA's), (123, 32973), (138, 33018), (211, 33210), (213, 33216), (222, 33237), (228, 33255), (230, 33267), (254, 33327), (299, 33393), (344, 33513), (351, 33546), (368, 33633), (377, 33663), (384, 33675), (396, 33720), (398, 33732), (401, 33750), (405, 33765), (416, 33789), (431, 33855), (438, 33882), (443, 33906), (465, 34029), (471, 34071), (492, 34155), (499, 34185), (511, 34212), (526, 34266), (533, 34296), (545, 34368), (549, 34377),

Gene: BobsGarage\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for BobsGarage\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522,

20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: Boopy\_104 Start: 62505, Stop: 64184, Start Num: 65

Candidate Starts for Boopy\_104:

(59, 62487), (Start: 65 @62505 has 5 MA's), (Start: 85 @62547 has 1 MA's), (88, 62556), (119, 62622), (Start: 121 @62625 has 3 MA's), (Start: 131 @62646 has 1 MA's), (178, 62757), (192, 62799), (247, 62937), (254, 62961), (345, 63207), (368, 63324), (380, 63351), (384, 63357), (398, 63411), (407, 63450), (438, 63561), (441, 63576), (443, 63585), (474, 63756), (478, 63777), (501, 63870), (535, 63978), (571, 64155),

Gene: Bosnia\_26 Start: 22926, Stop: 24431, Start Num: 171

Candidate Starts for Bosnia\_26:

(54, 22611), (92, 22719), (123, 22788), (125, 22791), (130, 22815), (133, 22821), (Start: 171 @22926 has 29 MA's), (193, 22995), (197, 23007), (235, 23118), (238, 23124), (240, 23130), (244, 23136), (272, 23223), (284, 23259), (286, 23265), (289, 23274), (368, 23568), (390, 23622), (391, 23625), (396, 23646), (406, 23691), (436, 23796), (456, 23880), (465, 23961), (466, 23964), (520, 24183), (530, 24231), (541, 24291), (555, 24324), (558, 24330), (569, 24402),

Gene: BoyNamedSue\_27 Start: 22802, Stop: 24307, Start Num: 171

Candidate Starts for BoyNamedSue\_27:

(92, 22595), (123, 22664), (125, 22667), (130, 22691), (133, 22697), (Start: 171 @22802 has 29 MA's), (193, 22871), (197, 22883), (235, 22994), (238, 23000), (240, 23006), (244, 23012), (272, 23099), (284, 23135), (286, 23141), (289, 23150), (319, 23234), (368, 23444), (390, 23498), (391, 23501), (396, 23522), (406, 23567), (436, 23672), (456, 23756), (465, 23837), (466, 23840), (490, 23963), (520, 24059), (530, 24107), (536, 24122), (541, 24167), (555, 24200), (558, 24206), (569, 24278),

Gene: Bradissa\_28 Start: 22770, Stop: 24722, Start Num: 18

Candidate Starts for Bradissa\_28:

(1, 22482), (3, 22539), (4, 22554), (6, 22590), (7, 22635), (8, 22638), (Start: 18 @22770 has 8 MA's), (22, 22785), (Start: 26 @22824 has 22 MA's), (27, 22827), (95, 23055), (110, 23082), (Start: 115 @23097 has 6 MA's), (211, 23331), (213, 23337), (218, 23349), (248, 23427), (254, 23448), (300, 23568), (318, 23610), (344, 23703), (347, 23715), (357, 23757), (369, 23829), (377, 23847), (384, 23859), (398, 23916), (405, 23949), (419, 23982), (438, 24066), (442, 24084), (472, 24258), (483, 24312), (539, 24534), (560, 24615), (562, 24636),

Gene: Brandonk123\_39 Start: 33739, Stop: 35661, Start Num: 26

Candidate Starts for Brandonk123\_39:

(Start: 26 @33739 has 22 MA's), (58, 33874), (61, 33883), (73, 33916), (Start: 85 @33940 has 1 MA's), (Start: 112 @34009 has 1 MA's), (123, 34039), (138, 34084), (211, 34276), (213, 34282), (222, 34303), (228, 34321), (230, 34333), (254, 34393), (276, 34447), (321, 34561), (344, 34648), (357, 34702), (366, 34756), (368, 34768), (377, 34798), (384, 34810), (396, 34855), (398, 34867), (401, 34885), (410, 34912), (431, 34990), (438, 35017), (443, 35041), (465, 35164), (471, 35206), (492, 35290), (499, 35320), (511, 35347), (526, 35401), (533, 35431), (545, 35503), (549, 35512),

Gene: Breezona\_20 Start: 19225, Stop: 21024, Start Num: 62

Candidate Starts for Breezona\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: BritBrat\_28 Start: 22623, Stop: 24575, Start Num: 18

Candidate Starts for BritBrat\_28:

(1, 22335), (3, 22392), (4, 22407), (6, 22443), (7, 22488), (8, 22491), (Start: 18 @22623 has 8 MA's), (22, 22638), (Start: 26 @22677 has 22 MA's), (27, 22680), (95, 22908), (110, 22935), (Start: 115 @22950 has 6 MA's), (211, 23184), (213, 23190), (218, 23202), (248, 23280), (254, 23301), (300, 23421), (318, 23463), (344, 23556), (347, 23568), (357, 23610), (377, 23700), (384, 23712), (398, 23769), (405, 23802), (419, 23835), (432, 23895), (438, 23919), (442, 23937), (472, 24111), (473, 24117), (483, 24165), (539, 24387), (560, 24468), (562, 24489),

Gene: Budski\_29 Start: 22226, Stop: 24061, Start Num: 30

Candidate Starts for Budski\_29:

(Start: 30 @22226 has 21 MA's), (Start: 70 @22388 has 1 MA's), (Start: 86 @22418 has 11 MA's), (104, 22472), (113, 22487), (116, 22499), (118, 22502), (124, 22517), (126, 22520), (127, 22523), (164, 22613), (169, 22622), (Start: 171 @22625 has 29 MA's), (203, 22712), (211, 22733), (213, 22739), (222, 22760), (226, 22769), (230, 22790), (233, 22796), (288, 22898), (289, 22901), (305, 22931), (309, 22943), (321, 22967), (344, 23042), (347, 23054), (357, 23096), (362, 23129), (368, 23162), (371, 23168), (377, 23192), (384, 23204), (398, 23261), (401, 23279), (438, 23411), (443, 23435), (447, 23453), (472, 23606), (475, 23621), (477, 23633), (478, 23636), (479, 23642), (492, 23687), (496, 23705), (499, 23717), (501, 23723), (507, 23735), (511, 23744), (526, 23798), (539, 23867), (545, 23900), (547, 23906), (562, 23969), (563, 23972), (566, 23990), (570, 24011), (571, 24020),

Gene: Bunnybear\_25 Start: 23020, Stop: 24708, Start Num: 82

Candidate Starts for Bunnybear\_25:

(5, 22567), (19, 22780), (35, 22852), (37, 22855), (Start: 82 @23020 has 1 MA's), (109, 23089), (114, 23101), (180, 23254), (182, 23257), (189, 23281), (193, 23293), (203, 23317), (209, 23335), (211, 23338), (254, 23455), (258, 23467), (302, 23569), (315, 23593), (336, 23665), (344, 23695), (345, 23698), (347, 23707), (357, 23755), (377, 23845), (384, 23857), (395, 23893), (398, 23914), (401, 23932), (419, 23980), (438, 24064), (472, 24256), (473, 24262), (475, 24271), (499, 24382), (511, 24409), (524, 24457), (525, 24460), (530, 24487), (539, 24532),

Gene: Camerico\_31 Start: 38003, Stop: 39535, Start Num: 168

Candidate Starts for Camerico\_31:

(Start: 168 @38003 has 1 MA's), (225, 38162), (230, 38186), (267, 38288), (294, 38372), (332, 38495), (335, 38510), (336, 38513), (351, 38579), (376, 38681), (377, 38690), (380, 38696), (404, 38777), (441, 38921), (457, 38999), (475, 39122), (496, 39212), (522, 39299), (560, 39440), (561, 39455),

Gene: ChadMasterC\_37 Start: 33999, Stop: 35720, Start Num: 76

Candidate Starts for ChadMasterC\_37:

(Start: 76 @33999 has 22 MA's), (133, 34134), (136, 34143), (143, 34176), (153, 34200), (182, 34269), (207, 34344), (274, 34530), (290, 34569), (293, 34578), (297, 34593), (318, 34650), (326, 34674), (345, 34746), (364, 34833), (373, 34869), (376, 34875), (390, 34917), (395, 34932), (396, 34941), (436, 35088), (456, 35172), (461, 35205), (466, 35253), (478, 35319), (479, 35325), (481, 35337), (492, 35367), (493, 35373), (503, 35409), (507, 35418), (521, 35463),

Gene: Charming\_38 Start: 33240, Stop: 35162, Start Num: 26

Candidate Starts for Charming\_38:

(Start: 26 @33240 has 22 MA's), (58, 33375), (73, 33417), (Start: 85 @33441 has 1 MA's), (Start: 112 @33510 has 1 MA's), (123, 33540), (138, 33585), (211, 33777), (213, 33783), (222, 33804), (228, 33822), (230, 33834), (254, 33894), (276, 33948), (321, 34062), (344, 34149), (357, 34203), (368, 34269), (377, 34299), (384, 34311), (396, 34356), (398, 34368), (401, 34386), (410, 34413), (431,

34491), (438, 34518), (443, 34542), (465, 34665), (471, 34707), (492, 34791), (499, 34821), (511, 34848), (526, 34902), (533, 34932), (545, 35004), (549, 35013),

Gene: Clap\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Clap\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: Claus\_20 Start: 19209, Stop: 21005, Start Num: 63

Candidate Starts for Claus\_20:

(Start: 63 @19209 has 23 MA's), (Start: 112 @19329 has 1 MA's), (Start: 121 @19350 has 3 MA's), (125, 19362), (134, 19386), (140, 19413), (170, 19482), (174, 19491), (184, 19524), (189, 19536), (201, 19566), (210, 19593), (251, 19710), (266, 19758), (279, 19794), (293, 19839), (313, 19890), (343, 19995), (348, 20013), (353, 20046), (355, 20049), (362, 20088), (369, 20127), (391, 20187), (393, 20190), (412, 20274), (445, 20421), (461, 20499), (472, 20592), (475, 20607), (486, 20667), (494, 20676), (518, 20751), (522, 20766), (539, 20850), (540, 20853), (548, 20877), (556, 20901), (560, 20916), (572, 20988),

Gene: Crater\_27 Start: 21679, Stop: 23514, Start Num: 30

Candidate Starts for Crater\_27:

(Start: 30 @21679 has 21 MA's), (Start: 70 @21841 has 1 MA's), (Start: 86 @21871 has 11 MA's), (104, 21925), (113, 21940), (116, 21952), (118, 21955), (124, 21970), (126, 21973), (127, 21976), (164, 22066), (169, 22075), (Start: 171 @22078 has 29 MA's), (203, 22165), (211, 22186), (213, 22192), (222, 22213), (226, 22222), (230, 22243), (233, 22249), (288, 22351), (289, 22354), (305, 22384), (309, 22396), (321, 22420), (344, 22495), (347, 22507), (357, 22549), (362, 22582), (368, 22615), (371, 22621), (377, 22645), (384, 22657), (398, 22714), (401, 22732), (438, 22864), (443, 22888), (447, 22906), (472, 23059), (475, 23074), (478, 23089), (479, 23095), (492, 23140), (496, 23158), (499, 23170), (501, 23176), (507, 23188), (511, 23197), (526, 23251), (530, 23275), (539, 23320), (545, 23353), (547, 23359), (562, 23422), (563, 23425), (566, 23443), (570, 23464), (571, 23473),

Gene: Crossroads\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for Crossroads\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (391, 20206), (393, 20209), (412, 20293), (415, 20302), (421, 20329), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: Cynthia\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Cynthia\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),



Gene: DHan\_20 Start: 19145, Stop: 20941, Start Num: 63

Candidate Starts for DHan\_20:

(Start: 63 @19145 has 23 MA's), (Start: 112 @19265 has 1 MA's), (134, 19322), (140, 19349), (162, 19406), (170, 19418), (174, 19427), (189, 19472), (201, 19502), (210, 19529), (251, 19646), (266, 19694), (279, 19730), (293, 19775), (313, 19826), (343, 19931), (348, 19949), (353, 19982), (355, 19985), (362, 20024), (369, 20063), (391, 20123), (393, 20126), (412, 20210), (445, 20357), (461, 20435), (472, 20528), (475, 20543), (486, 20603), (494, 20612), (501, 20639), (518, 20687), (522, 20702), (539, 20786), (548, 20813), (556, 20837), (560, 20852), (572, 20924),

Gene: DanBing\_19 Start: 19049, Stop: 20845, Start Num: 63

Candidate Starts for DanBing\_19:

(Start: 63 @19049 has 23 MA's), (Start: 112 @19169 has 1 MA's), (Start: 121 @19190 has 3 MA's), (125, 19202), (134, 19226), (140, 19253), (170, 19322), (174, 19331), (184, 19364), (189, 19376), (201, 19406), (210, 19433), (251, 19550), (266, 19598), (279, 19634), (293, 19679), (313, 19730), (343, 19835), (348, 19853), (353, 19886), (355, 19889), (362, 19928), (369, 19967), (391, 20027), (393, 20030), (412, 20114), (445, 20261), (461, 20339), (472, 20432), (475, 20447), (486, 20507), (494, 20516), (501, 20543), (518, 20591), (522, 20606), (539, 20690), (540, 20693), (548, 20717), (556, 20741), (560, 20756), (572, 20828),

Gene: Danforth\_27 Start: 21490, Stop: 23211, Start Num: 86

Candidate Starts for Danforth\_27:

(Start: 86 @21490 has 11 MA's), (140, 21634), (184, 21748), (222, 21838), (233, 21874), (245, 21895), (269, 21967), (275, 21991), (293, 22045), (331, 22147), (355, 22243), (365, 22297), (378, 22345), (415, 22474), (420, 22492), (446, 22618), (479, 22822), (480, 22831), (503, 22912), (557, 23107),

Gene: Denise\_23 Start: 19509, Stop: 21110, Start Num: 115

Candidate Starts for Denise\_23:

(59, 19368), (60, 19371), (102, 19479), (Start: 115 @19509 has 6 MA's), (Start: 131 @19542 has 1 MA's), (143, 19581), (164, 19620), (211, 19728), (213, 19734), (234, 19791), (248, 19824), (254, 19845), (258, 19857), (273, 19893), (315, 19983), (321, 19998), (336, 20055), (344, 20085), (347, 20097), (357, 20145), (377, 20235), (384, 20247), (395, 20283), (398, 20304), (419, 20370), (438, 20454), (472, 20646), (473, 20652), (499, 20772), (511, 20799), (530, 20877), (539, 20922),

Gene: Derg\_34 Start: 31792, Stop: 33513, Start Num: 76

Candidate Starts for Derg\_34:

(Start: 76 @31792 has 22 MA's), (127, 31915), (133, 31927), (153, 31993), (182, 32062), (193, 32098), (274, 32323), (290, 32362), (312, 32422), (326, 32467), (341, 32527), (373, 32662), (376, 32668), (390, 32710), (395, 32725), (399, 32761), (408, 32782), (436, 32881), (456, 32965), (461, 32998), (465, 33043), (466, 33046), (472, 33082), (479, 33118), (481, 33130), (493, 33166), (503, 33202), (521, 33256),

Gene: Dixon\_28 Start: 21509, Stop: 23230, Start Num: 86

Candidate Starts for Dixon\_28:

(Start: 86 @21509 has 11 MA's), (140, 21653), (144, 21668), (184, 21767), (233, 21893), (245, 21914), (269, 21986), (275, 22010), (293, 22064), (331, 22166), (355, 22262), (365, 22316), (378, 22364), (409, 22475), (420, 22511), (443, 22622), (446, 22637), (479, 22841), (480, 22850), (503, 22931), (530, 23027), (557, 23126),

Gene: DonkeyMan\_25 Start: 19656, Stop: 21356, Start Num: 69

Candidate Starts for DonkeyMan\_25:

(69, 19656), (Start: 117 @19755 has 5 MA's), (154, 19851), (164, 19866), (211, 19986), (213, 19992), (254, 20103), (256, 20109), (318, 20262), (344, 20355), (345, 20358), (347, 20367), (351, 20388),

(357, 20409), (368, 20478), (369, 20481), (377, 20499), (384, 20511), (395, 20547), (398, 20568), (401, 20586), (419, 20634), (434, 20703), (438, 20718), (472, 20910), (473, 20916), (475, 20925), (499, 21036), (511, 21063), (524, 21111), (530, 21141), (539, 21186),

Gene: DrSeegs\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for DrSeegs\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: EMSquaredA\_28 Start: 22623, Stop: 24575, Start Num: 18

Candidate Starts for EMSquaredA\_28:

(1, 22335), (3, 22392), (4, 22407), (6, 22443), (7, 22488), (8, 22491), (Start: 18 @22623 has 8 MA's), (22, 22638), (Start: 26 @22677 has 22 MA's), (27, 22680), (95, 22908), (110, 22935), (Start: 115 @22950 has 6 MA's), (211, 23184), (213, 23190), (218, 23202), (248, 23280), (254, 23301), (300, 23421), (318, 23463), (344, 23556), (347, 23568), (357, 23610), (377, 23700), (384, 23712), (398, 23769), (405, 23802), (419, 23835), (432, 23895), (438, 23919), (442, 23937), (472, 24111), (473, 24117), (483, 24165), (539, 24387), (560, 24468), (562, 24489),

Gene: Ebert\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Ebert\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: Ecliptus\_32 Start: 23700, Stop: 25484, Start Num: 30

Candidate Starts for Ecliptus\_32:

(Start: 30 @23700 has 21 MA's), (34, 23715), (43, 23742), (48, 23772), (73, 23844), (78, 23856), (107, 23919), (113, 23931), (132, 23973), (149, 24012), (152, 24021), (189, 24099), (211, 24156), (213, 24162), (222, 24183), (226, 24192), (230, 24213), (233, 24219), (288, 24321), (289, 24324), (305, 24354), (309, 24366), (321, 24390), (344, 24465), (347, 24477), (357, 24519), (362, 24552), (368, 24585), (371, 24591), (377, 24615), (384, 24627), (398, 24684), (401, 24702), (438, 24834), (443, 24858), (447, 24876), (472, 25029), (475, 25044), (478, 25059), (479, 25065), (492, 25110), (496, 25128), (499, 25140), (501, 25146), (507, 25158), (511, 25167), (526, 25221), (539, 25290), (545, 25323), (547, 25329), (562, 25392), (563, 25395), (566, 25413), (570, 25434), (571, 25443),

Gene: EdnaMode\_24 Start: 19408, Stop: 20961, Start Num: 121

Candidate Starts for EdnaMode\_24:

(Start: 121 @19408 has 3 MA's), (148, 19477), (155, 19492), (178, 19534), (180, 19540), (211, 19624), (213, 19630), (222, 19651), (228, 19669), (231, 19681), (234, 19687), (307, 19843), (329, 19885), (351, 19978), (357, 19999), (368, 20065), (377, 20095), (384, 20107), (398, 20164), (438, 20314), (443, 20338), (472, 20506), (492, 20605), (496, 20623), (499, 20635), (549, 20812), (557, 20839), (564, 20878),

Gene: EnalisNailo\_28 Start: 22772, Stop: 24724, Start Num: 18

Candidate Starts for EnalisNailo\_28:

(1, 22484), (3, 22541), (4, 22556), (6, 22592), (7, 22637), (8, 22640), (Start: 18 @22772 has 8 MA's), (22, 22787), (Start: 26 @22826 has 22 MA's), (27, 22829), (95, 23057), (110, 23084), (Start: 115 @23099 has 6 MA's), (211, 23333), (213, 23339), (218, 23351), (248, 23429), (254, 23450), (300, 23570), (318, 23612), (344, 23705), (347, 23717), (357, 23759), (377, 23849), (384, 23861), (398, 23918), (405, 23951), (419, 23984), (432, 24044), (438, 24068), (442, 24086), (472, 24260), (473, 24266), (483, 24314), (539, 24536), (560, 24617), (562, 24638),

Gene: Eudoria\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Eudoria\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: Evamon\_33 Start: 28220, Stop: 30142, Start Num: 25

Candidate Starts for Evamon\_33:

(Start: 25 @28220 has 15 MA's), (50, 28343), (58, 28364), (75, 28412), (Start: 121 @28520 has 3 MA's), (Start: 131 @28541 has 1 MA's), (164, 28622), (180, 28658), (182, 28661), (209, 28739), (211, 28742), (213, 28748), (222, 28769), (230, 28799), (233, 28805), (285, 28940), (315, 29027), (318, 29036), (321, 29042), (324, 29048), (351, 29156), (357, 29177), (371, 29249), (377, 29273), (384, 29285), (398, 29342), (438, 29492), (443, 29516), (472, 29684), (475, 29699), (499, 29795), (530, 29906), (537, 29942),

Gene: Eviarto\_26 Start: 22926, Stop: 24431, Start Num: 171

Candidate Starts for Eviarto\_26:

(54, 22611), (92, 22719), (123, 22788), (125, 22791), (130, 22815), (133, 22821), (Start: 171 @22926 has 29 MA's), (193, 22995), (197, 23007), (235, 23118), (238, 23124), (240, 23130), (244, 23136), (272, 23223), (284, 23259), (286, 23265), (289, 23274), (368, 23568), (390, 23622), (391, 23625), (396, 23646), (406, 23691), (436, 23796), (456, 23880), (465, 23961), (466, 23964), (520, 24183), (530, 24231), (541, 24291), (555, 24324), (558, 24330), (569, 24402),

Gene: Expelliarmus\_27 Start: 21476, Stop: 23197, Start Num: 86

Candidate Starts for Expelliarmus\_27:

(Start: 86 @21476 has 11 MA's), (140, 21620), (144, 21635), (184, 21734), (222, 21824), (233, 21860), (269, 21953), (275, 21977), (293, 22031), (331, 22133), (355, 22229), (365, 22283), (378, 22331), (415, 22460), (420, 22478), (446, 22604), (479, 22808), (480, 22817), (503, 22898), (530, 22994), (557, 23093), (573, 23180),

Gene: Faith1\_20 Start: 19225, Stop: 21024, Start Num: 62

Candidate Starts for Faith1\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: Faith5x5\_24 Start: 19344, Stop: 20945, Start Num: 117

Candidate Starts for Faith5x5\_24:

(45, 19161), (57, 19206), (58, 19209), (114, 19341), (Start: 117 @19344 has 5 MA's), (148, 19416), (155, 19431), (161, 19437), (178, 19473), (180, 19479), (189, 19506), (194, 19521), (209, 19560), (211, 19563), (213, 19569), (222, 19590), (228, 19608), (234, 19626), (248, 19659), (253, 19677), (254, 19680), (258, 19692), (327, 19878), (344, 19944), (345, 19947), (351, 19977), (366, 20055),

(375, 20076), (377, 20088), (384, 20100), (398, 20157), (407, 20196), (438, 20307), (460, 20403), (472, 20499), (487, 20568), (499, 20610), (511, 20637), (526, 20691), (530, 20715), (537, 20751), (557, 20823), (563, 20859),

Gene: Finemlucis\_20 Start: 19236, Stop: 21032, Start Num: 63

Candidate Starts for Finemlucis\_20:

(Start: 62 @19233 has 5 MA's), (Start: 63 @19236 has 23 MA's), (125, 19389), (134, 19413), (170, 19509), (174, 19518), (189, 19563), (201, 19593), (210, 19620), (243, 19713), (251, 19737), (279, 19821), (293, 19866), (343, 20022), (348, 20040), (350, 20055), (353, 20073), (355, 20076), (369, 20154), (390, 20211), (391, 20214), (393, 20217), (412, 20301), (415, 20310), (421, 20337), (445, 20448), (446, 20451), (472, 20619), (486, 20694), (494, 20703), (501, 20730), (513, 20763), (518, 20778), (522, 20793), (524, 20799), (539, 20877), (540, 20880), (556, 20928), (572, 21015),

Gene: Finkle\_23 Start: 19627, Stop: 21318, Start Num: 112

Candidate Starts for Finkle\_23:

(Start: 112 @19627 has 1 MA's), (141, 19726), (147, 19744), (150, 19750), (212, 19909), (220, 19930), (232, 19963), (247, 19996), (262, 20038), (263, 20044), (277, 20080), (281, 20092), (293, 20131), (376, 20422), (377, 20431), (388, 20455), (394, 20473), (395, 20476), (401, 20512), (405, 20527), (407, 20533), (432, 20632), (449, 20707), (459, 20752), (464, 20818), (467, 20842), (472, 20866), (473, 20872), (482, 20917), (539, 21133),

Gene: Fireball\_34 Start: 28343, Stop: 30265, Start Num: 25

Candidate Starts for Fireball\_34:

(Start: 25 @28343 has 15 MA's), (50, 28466), (58, 28487), (75, 28535), (Start: 121 @28643 has 3 MA's), (Start: 131 @28664 has 1 MA's), (164, 28745), (180, 28781), (182, 28784), (209, 28862), (211, 28865), (213, 28871), (222, 28892), (230, 28922), (233, 28928), (285, 29063), (315, 29150), (318, 29159), (321, 29165), (324, 29171), (344, 29246), (351, 29279), (357, 29300), (371, 29372), (377, 29396), (384, 29408), (398, 29465), (438, 29615), (443, 29639), (472, 29807), (475, 29822), (499, 29918), (530, 30029), (537, 30065),

Gene: Fitzgerald\_35 Start: 33217, Stop: 34938, Start Num: 76

Candidate Starts for Fitzgerald\_35:

(Start: 76 @33217 has 22 MA's), (133, 33352), (136, 33361), (143, 33394), (153, 33418), (182, 33487), (274, 33748), (290, 33787), (293, 33796), (297, 33811), (318, 33868), (326, 33892), (345, 33964), (364, 34051), (373, 34087), (376, 34093), (390, 34135), (395, 34150), (396, 34159), (436, 34306), (456, 34390), (461, 34423), (466, 34471), (478, 34537), (479, 34543), (481, 34555), (492, 34585), (493, 34591), (503, 34627), (507, 34636), (521, 34681),

Gene: Flatwoods\_37 Start: 32153, Stop: 33874, Start Num: 76

Candidate Starts for Flatwoods\_37:

(Start: 76 @32153 has 22 MA's), (127, 32276), (133, 32288), (153, 32354), (182, 32423), (193, 32459), (207, 32498), (274, 32684), (290, 32723), (312, 32783), (326, 32828), (341, 32888), (373, 33023), (376, 33029), (390, 33071), (395, 33086), (399, 33122), (408, 33143), (436, 33242), (456, 33326), (461, 33359), (465, 33404), (466, 33407), (472, 33443), (479, 33479), (481, 33491), (493, 33527), (503, 33563), (521, 33617),

Gene: Floral\_28 Start: 22623, Stop: 24575, Start Num: 18

Candidate Starts for Floral\_28:

(1, 22335), (3, 22392), (4, 22407), (6, 22443), (7, 22488), (8, 22491), (Start: 18 @22623 has 8 MA's), (22, 22638), (Start: 26 @22677 has 22 MA's), (27, 22680), (95, 22908), (110, 22935), (Start: 115 @22950 has 6 MA's), (211, 23184), (213, 23190), (218, 23202), (248, 23280), (254, 23301), (300, 23421), (318, 23463), (344, 23556), (347, 23568), (357, 23610), (377, 23700), (384, 23712), (398, 23769), (405, 23802), (419, 23835), (432, 23895), (438, 23919), (442, 23937), (472, 24111), (473,

24117), (483, 24165), (539, 24387), (560, 24468), (562, 24489),

Gene: Forza\_104 Start: 62421, Stop: 64100, Start Num: 65

Candidate Starts for Forza\_104:

(59, 62403), (Start: 65 @62421 has 5 MA's), (Start: 85 @62463 has 1 MA's), (88, 62472), (119, 62538), (Start: 121 @62541 has 3 MA's), (Start: 131 @62562 has 1 MA's), (178, 62673), (192, 62715), (247, 62853), (254, 62877), (345, 63123), (368, 63240), (380, 63267), (384, 63273), (398, 63327), (407, 63366), (438, 63477), (441, 63492), (443, 63501), (474, 63672), (478, 63693), (501, 63786), (535, 63894), (571, 64071),

Gene: Fosterous\_36 Start: 33665, Stop: 35518, Start Num: 26

Candidate Starts for Fosterous\_36:

(Start: 26 @33665 has 22 MA's), (58, 33800), (61, 33809), (73, 33842), (Start: 85 @33866 has 1 MA's), (Start: 112 @33935 has 1 MA's), (138, 34010), (211, 34202), (213, 34208), (222, 34229), (228, 34247), (230, 34259), (254, 34319), (310, 34400), (344, 34505), (345, 34508), (351, 34538), (366, 34613), (368, 34625), (377, 34655), (384, 34667), (396, 34712), (398, 34724), (401, 34742), (410, 34769), (431, 34847), (438, 34874), (443, 34898), (465, 35021), (471, 35063), (492, 35147), (499, 35177), (511, 35204), (526, 35258), (533, 35288), (545, 35360), (549, 35369),

Gene: Frickyeah\_28 Start: 21884, Stop: 23719, Start Num: 30

Candidate Starts for Frickyeah\_28:

(Start: 30 @21884 has 21 MA's), (Start: 70 @22046 has 1 MA's), (Start: 86 @22076 has 11 MA's), (104, 22130), (113, 22145), (116, 22157), (118, 22160), (124, 22175), (126, 22178), (127, 22181), (164, 22271), (169, 22280), (Start: 171 @22283 has 29 MA's), (203, 22370), (211, 22391), (213, 22397), (222, 22418), (226, 22427), (230, 22448), (233, 22454), (288, 22556), (289, 22559), (305, 22589), (309, 22601), (321, 22625), (323, 22634), (344, 22700), (347, 22712), (357, 22754), (362, 22787), (368, 22820), (371, 22826), (377, 22850), (384, 22862), (398, 22919), (401, 22937), (438, 23069), (443, 23093), (447, 23111), (472, 23264), (475, 23279), (478, 23294), (479, 23300), (492, 23345), (496, 23363), (499, 23375), (501, 23381), (507, 23393), (511, 23402), (526, 23456), (539, 23525), (545, 23558), (547, 23564), (562, 23627), (563, 23630), (566, 23648), (570, 23669), (571, 23678),

Gene: GAL1\_28 Start: 22722, Stop: 24629, Start Num: 20

Candidate Starts for GAL1\_28:

(20, 22722), (Start: 26 @22764 has 22 MA's), (47, 22866), (53, 22887), (61, 22908), (73, 22941), (95, 22995), (105, 23013), (109, 23022), (111, 23025), (114, 23034), (128, 23061), (133, 23073), (154, 23136), (173, 23169), (182, 23190), (189, 23214), (193, 23226), (203, 23250), (248, 23367), (254, 23388), (258, 23400), (315, 23526), (327, 23562), (344, 23628), (345, 23631), (347, 23640), (357, 23682), (377, 23772), (384, 23784), (395, 23820), (398, 23841), (419, 23907), (438, 23991), (472, 24183), (473, 24189), (475, 24198), (539, 24459),

Gene: Gabriela\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for Gabriela\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: Gaea\_36 Start: 31801, Stop: 33522, Start Num: 76

Candidate Starts for Gaea\_36:

(Start: 76 @31801 has 22 MA's), (127, 31924), (133, 31936), (153, 32002), (182, 32071), (193, 32107), (274, 32332), (290, 32371), (312, 32431), (326, 32476), (341, 32536), (373, 32671), (376, 32677), (390, 32719), (395, 32734), (399, 32770), (408, 32791), (436, 32890), (456, 32974), (461, 33007), (466, 33055), (472, 33091), (479, 33127), (481, 33139), (485, 33154), (493, 33175), (521, 33265),

Gene: Galadriel\_38 Start: 34154, Stop: 36079, Start Num: 26

Candidate Starts for Galadriel\_38:

(Start: 26 @34154 has 22 MA's), (58, 34289), (61, 34298), (73, 34331), (Start: 85 @34355 has 1 MA's), (Start: 112 @34424 has 1 MA's), (138, 34499), (211, 34691), (213, 34697), (222, 34718), (228, 34736), (230, 34748), (254, 34808), (276, 34862), (321, 34979), (344, 35066), (357, 35120), (366, 35174), (368, 35186), (377, 35216), (384, 35228), (396, 35273), (398, 35285), (401, 35303), (410, 35330), (431, 35408), (438, 35435), (443, 35459), (465, 35582), (471, 35624), (492, 35708), (499, 35738), (511, 35765), (526, 35819), (533, 35849), (545, 35921), (549, 35930),

Gene: Gardann\_20 Start: 19233, Stop: 21029, Start Num: 63

Candidate Starts for Gardann\_20:

(Start: 62 @19230 has 5 MA's), (Start: 63 @19233 has 23 MA's), (125, 19386), (134, 19410), (170, 19506), (174, 19515), (188, 19557), (189, 19560), (201, 19590), (210, 19617), (243, 19710), (251, 19734), (279, 19818), (293, 19863), (306, 19899), (343, 20019), (348, 20037), (350, 20052), (353, 20070), (355, 20073), (369, 20151), (390, 20208), (391, 20211), (393, 20214), (412, 20298), (415, 20307), (421, 20334), (445, 20445), (446, 20448), (472, 20616), (486, 20691), (494, 20700), (501, 20727), (513, 20760), (518, 20775), (522, 20790), (524, 20796), (539, 20874), (540, 20877), (556, 20925), (572, 21012),

Gene: GemG\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for GemG\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: Geodirt\_35 Start: 33142, Stop: 34863, Start Num: 76

Candidate Starts for Geodirt\_35:

(Start: 76 @33142 has 22 MA's), (133, 33277), (136, 33286), (143, 33319), (153, 33343), (182, 33412), (207, 33487), (274, 33673), (290, 33712), (293, 33721), (318, 33793), (326, 33817), (345, 33889), (364, 33976), (373, 34012), (376, 34018), (390, 34060), (395, 34075), (396, 34084), (436, 34231), (456, 34315), (461, 34348), (466, 34396), (478, 34462), (479, 34468), (481, 34480), (492, 34510), (493, 34516), (503, 34552), (507, 34561), (521, 34606),

Gene: Getalong\_30 Start: 22921, Stop: 24756, Start Num: 30

Candidate Starts for Getalong\_30:

(Start: 30 @22921 has 21 MA's), (Start: 70 @23083 has 1 MA's), (Start: 86 @23113 has 11 MA's), (104, 23167), (113, 23182), (116, 23194), (118, 23197), (124, 23212), (126, 23215), (127, 23218), (164, 23308), (169, 23317), (Start: 171 @23320 has 29 MA's), (203, 23407), (211, 23428), (213, 23434), (222, 23455), (226, 23464), (230, 23485), (233, 23491), (288, 23593), (289, 23596), (305, 23626), (309, 23638), (321, 23662), (344, 23737), (347, 23749), (357, 23791), (362, 23824), (368, 23857), (371, 23863), (377, 23887), (384, 23899), (398, 23956), (401, 23974), (438, 24106), (443, 24130), (447, 24148), (472, 24301), (475, 24316), (477, 24328), (478, 24331), (479, 24337), (492, 24382), (496, 24400), (499, 24412), (501, 24418), (507, 24430), (511, 24439), (526, 24493), (539, 24562), (545, 24595), (547, 24601), (562, 24664), (563, 24667), (566, 24685), (570, 24706), (571,

24715),

Gene: Gezellig\_34 Start: 28352, Stop: 30274, Start Num: 25

Candidate Starts for Gezellig\_34:

(Start: 25 @28352 has 15 MA's), (50, 28475), (58, 28496), (75, 28544), (Start: 121 @28652 has 3 MA's), (Start: 131 @28673 has 1 MA's), (164, 28754), (180, 28790), (182, 28793), (209, 28871), (211, 28874), (213, 28880), (222, 28901), (230, 28931), (233, 28937), (285, 29072), (315, 29159), (318, 29168), (321, 29174), (324, 29180), (344, 29255), (351, 29288), (357, 29309), (371, 29381), (377, 29405), (384, 29417), (398, 29474), (438, 29624), (443, 29648), (472, 29816), (475, 29831), (499, 29927), (530, 30038), (537, 30074),

Gene: Gibbles\_26 Start: 31491, Stop: 33176, Start Num: 115

Candidate Starts for Gibbles\_26:

(Start: 115 @31491 has 6 MA's), (137, 31554), (148, 31599), (165, 31635), (176, 31665), (260, 31914), (291, 32007), (316, 32076), (333, 32133), (334, 32139), (340, 32160), (344, 32178), (359, 32241), (427, 32469), (440, 32538), (441, 32541), (443, 32550), (458, 32616), (470, 32727), (491, 32820), (496, 32841), (549, 33039), (559, 33072),

Gene: Gizermo\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Gizermo\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: GodonK\_92 Start: 54828, Stop: 56522, Start Num: 65

Candidate Starts for GodonK\_92:

(Start: 65 @54828 has 5 MA's), (Start: 70 @54846 has 1 MA's), (74, 54852), (Start: 115 @54942 has 6 MA's), (119, 54948), (Start: 121 @54951 has 3 MA's), (Start: 131 @54972 has 1 MA's), (192, 55125), (194, 55128), (209, 55167), (247, 55263), (248, 55266), (258, 55299), (298, 55404), (324, 55455), (344, 55530), (357, 55584), (363, 55620), (376, 55662), (380, 55677), (438, 55887), (443, 55911), (465, 56043), (478, 56115), (500, 56205), (511, 56229), (513, 56238), (515, 56244), (519, 56262), (535, 56313),

Gene: Groundhog\_27 Start: 21477, Stop: 23198, Start Num: 86

Candidate Starts for Groundhog\_27:

(Start: 86 @21477 has 11 MA's), (140, 21621), (144, 21636), (184, 21735), (222, 21825), (233, 21861), (245, 21882), (269, 21954), (275, 21978), (293, 22032), (331, 22134), (355, 22230), (365, 22284), (378, 22332), (415, 22461), (420, 22479), (446, 22605), (479, 22809), (480, 22818), (503, 22899), (530, 22995), (557, 23094), (573, 23181),

Gene: Gustavo\_36 Start: 31956, Stop: 33677, Start Num: 76

Candidate Starts for Gustavo\_36:

(Start: 76 @31956 has 22 MA's), (127, 32079), (133, 32091), (153, 32157), (182, 32226), (193, 32262), (207, 32301), (274, 32487), (290, 32526), (312, 32586), (326, 32631), (341, 32691), (373, 32826), (376, 32832), (390, 32874), (395, 32889), (399, 32925), (408, 32946), (436, 33045), (456, 33129), (461, 33162), (465, 33207), (466, 33210), (472, 33246), (479, 33282), (481, 33294), (493, 33330), (503, 33366), (521, 33420),

Gene: GuuelaD\_20 Start: 19262, Stop: 21058, Start Num: 63

Candidate Starts for GuuelaD\_20:

(Start: 62 @19259 has 5 MA's), (Start: 63 @19262 has 23 MA's), (125, 19415), (134, 19439), (158, 19514), (170, 19535), (174, 19544), (210, 19646), (243, 19739), (251, 19763), (279, 19847), (293, 19892), (306, 19928), (313, 19943), (343, 20048), (350, 20081), (353, 20099), (355, 20102), (362, 20141), (369, 20180), (391, 20240), (393, 20243), (412, 20327), (415, 20336), (421, 20363), (445, 20474), (472, 20645), (486, 20720), (494, 20729), (501, 20756), (513, 20789), (518, 20804), (522, 20819), (524, 20825), (539, 20903), (540, 20906), (556, 20954), (572, 21041),

Gene: Hafay\_20 Start: 19261, Stop: 21057, Start Num: 63

Candidate Starts for Hafay\_20:

(Start: 62 @19258 has 5 MA's), (Start: 63 @19261 has 23 MA's), (125, 19414), (134, 19438), (170, 19534), (174, 19543), (188, 19585), (189, 19588), (201, 19618), (210, 19645), (243, 19738), (251, 19762), (279, 19846), (293, 19891), (306, 19927), (343, 20047), (348, 20065), (350, 20080), (353, 20098), (355, 20101), (369, 20179), (390, 20236), (391, 20239), (393, 20242), (412, 20326), (415, 20335), (421, 20362), (445, 20473), (446, 20476), (472, 20644), (486, 20719), (494, 20728), (501, 20755), (513, 20788), (518, 20803), (522, 20818), (524, 20824), (539, 20902), (540, 20905), (572, 21040),

Gene: Haley23\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Haley23\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: Halo3\_34 Start: 28645, Stop: 30567, Start Num: 25

Candidate Starts for Halo3\_34:

(Start: 25 @28645 has 15 MA's), (50, 28768), (58, 28789), (75, 28837), (Start: 121 @28945 has 3 MA's), (Start: 131 @28966 has 1 MA's), (164, 29047), (180, 29083), (182, 29086), (209, 29164), (211, 29167), (213, 29173), (222, 29194), (230, 29224), (233, 29230), (285, 29365), (315, 29452), (318, 29461), (321, 29467), (324, 29473), (351, 29581), (357, 29602), (371, 29674), (377, 29698), (384, 29710), (398, 29767), (438, 29917), (443, 29941), (472, 30109), (475, 30124), (499, 30220), (530, 30331), (537, 30367),

Gene: Heinz\_26 Start: 19746, Stop: 21263, Start Num: 160

Candidate Starts for Heinz\_26:

(Start: 160 @19746 has 1 MA's), (200, 19845), (230, 19941), (238, 19956), (240, 19962), (272, 20055), (286, 20097), (289, 20106), (319, 20190), (326, 20211), (357, 20331), (364, 20370), (368, 20400), (381, 20427), (390, 20454), (396, 20478), (407, 20526), (411, 20535), (413, 20538), (435, 20625), (436, 20628), (456, 20712), (490, 20919), (520, 21015), (530, 21063), (537, 21099), (541, 21123), (558, 21162), (569, 21234), (573, 21249),

Gene: Herbertwm\_29 Start: 21904, Stop: 23925, Start Num: 28

Candidate Starts for Herbertwm\_29:

(Start: 28 @21904 has 2 MA's), (51, 22018), (79, 22090), (123, 22192), (147, 22273), (172, 22330), (186, 22378), (221, 22480), (245, 22540), (293, 22690), (299, 22708), (306, 22726), (328, 22783), (339, 22822), (352, 22885), (355, 22891), (356, 22894), (364, 22936), (417, 23122), (418, 23128), (421, 23146), (442, 23239), (460, 23323), (476, 23467), (495, 23557), (513, 23614), (522, 23650), (535, 23698), (538, 23728), (539, 23731), (562, 23818), (576, 23893),

Gene: Herod\_26 Start: 22926, Stop: 24431, Start Num: 171

Candidate Starts for Herod\_26:



(54, 22611), (92, 22719), (123, 22788), (125, 22791), (130, 22815), (133, 22821), (Start: 171 @22926 has 29 MA's), (193, 22995), (197, 23007), (235, 23118), (238, 23124), (240, 23130), (244, 23136), (272, 23223), (284, 23259), (286, 23265), (289, 23274), (368, 23568), (390, 23622), (391, 23625), (396, 23646), (406, 23691), (436, 23796), (456, 23880), (465, 23961), (466, 23964), (520, 24183), (530, 24231), (541, 24291), (555, 24324), (558, 24330), (569, 24402),

Gene: Hibiscus\_25 Start: 19694, Stop: 21211, Start Num: 160

Candidate Starts for Hibiscus\_25:

(Start: 160 @19694 has 1 MA's), (200, 19793), (230, 19889), (238, 19904), (240, 19910), (272, 20003), (286, 20045), (289, 20054), (319, 20138), (326, 20159), (357, 20279), (364, 20318), (368, 20348), (381, 20375), (390, 20402), (396, 20426), (407, 20474), (411, 20483), (413, 20486), (435, 20573), (436, 20576), (456, 20660), (490, 20867), (520, 20963), (530, 21011), (537, 21047), (541, 21071), (558, 21110), (569, 21182), (573, 21197),

Gene: Holliday\_29 Start: 22226, Stop: 24061, Start Num: 30

Candidate Starts for Holliday\_29:

(Start: 30 @22226 has 21 MA's), (Start: 70 @22388 has 1 MA's), (Start: 86 @22418 has 11 MA's), (104, 22472), (113, 22487), (116, 22499), (118, 22502), (124, 22517), (126, 22520), (127, 22523), (164, 22613), (169, 22622), (Start: 171 @22625 has 29 MA's), (203, 22712), (211, 22733), (213, 22739), (222, 22760), (226, 22769), (230, 22790), (233, 22796), (288, 22898), (289, 22901), (305, 22931), (309, 22943), (321, 22967), (344, 23042), (347, 23054), (357, 23096), (362, 23129), (368, 23162), (371, 23168), (377, 23192), (384, 23204), (398, 23261), (401, 23279), (438, 23411), (443, 23435), (447, 23453), (472, 23606), (475, 23621), (477, 23633), (478, 23636), (479, 23642), (492, 23687), (496, 23705), (499, 23717), (501, 23723), (507, 23735), (511, 23744), (526, 23798), (539, 23867), (545, 23900), (547, 23906), (562, 23969), (563, 23972), (566, 23990), (570, 24011), (571, 24020),

Gene: Horus\_29 Start: 22143, Stop: 23978, Start Num: 30

Candidate Starts for Horus\_29:

(Start: 30 @22143 has 21 MA's), (Start: 70 @22305 has 1 MA's), (Start: 86 @22335 has 11 MA's), (104, 22389), (113, 22404), (116, 22416), (118, 22419), (124, 22434), (126, 22437), (127, 22440), (164, 22530), (169, 22539), (Start: 171 @22542 has 29 MA's), (203, 22629), (211, 22650), (213, 22656), (222, 22677), (226, 22686), (230, 22707), (233, 22713), (288, 22815), (289, 22818), (305, 22848), (309, 22860), (321, 22884), (323, 22893), (344, 22959), (347, 22971), (357, 23013), (362, 23046), (368, 23079), (371, 23085), (377, 23109), (384, 23121), (398, 23178), (401, 23196), (438, 23328), (443, 23352), (447, 23370), (472, 23523), (475, 23538), (478, 23553), (479, 23559), (492, 23604), (496, 23622), (499, 23634), (501, 23640), (507, 23652), (511, 23661), (526, 23715), (539, 23784), (545, 23817), (547, 23823), (562, 23886), (563, 23889), (566, 23907), (570, 23928), (571, 23937),

Gene: Hugley\_26 Start: 22926, Stop: 24431, Start Num: 171

Candidate Starts for Hugley\_26:

(54, 22611), (92, 22719), (123, 22788), (125, 22791), (130, 22815), (133, 22821), (Start: 171 @22926 has 29 MA's), (193, 22995), (197, 23007), (235, 23118), (238, 23124), (240, 23130), (244, 23136), (272, 23223), (284, 23259), (286, 23265), (289, 23274), (368, 23568), (390, 23622), (391, 23625), (396, 23646), (406, 23691), (436, 23796), (456, 23880), (465, 23961), (466, 23964), (520, 24183), (530, 24231), (541, 24291), (555, 24324), (558, 24330), (569, 24402),

Gene: Hyzer\_28 Start: 23631, Stop: 25250, Start Num: 131

Candidate Starts for Hyzer\_28:

(Start: 66 @23460 has 1 MA's), (68, 23463), (Start: 131 @23631 has 1 MA's), (156, 23709), (Start: 160 @23712 has 1 MA's), (175, 23739), (205, 23823), (212, 23838), (213, 23841), (230, 23892), (250, 23937), (268, 23985), (293, 24063), (334, 24174), (345, 24216), (351, 24246), (359, 24276), (384,

24366), (391, 24390), (396, 24408), (398, 24420), (401, 24438), (405, 24453), (407, 24459), (425, 24510), (430, 24537), (443, 24588), (462, 24678), (469, 24756), (478, 24798), (492, 24858), (501, 24894), (509, 24915), (511, 24918), (514, 24930), (524, 24969), (562, 25176), (563, 25179), (568, 25203),

Gene: Itos\_20 Start: 19225, Stop: 21024, Start Num: 62

Candidate Starts for Itos\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: JCole\_23 Start: 19364, Stop: 20980, Start Num: 120

Candidate Starts for JCole\_23:

(120, 19364), (148, 19436), (154, 19448), (180, 19496), (203, 19559), (211, 19580), (219, 19601), (226, 19616), (230, 19637), (233, 19643), (285, 19778), (287, 19787), (302, 19826), (304, 19835), (321, 19880), (324, 19886), (344, 19961), (351, 19994), (357, 20015), (368, 20081), (377, 20111), (384, 20123), (396, 20168), (401, 20198), (434, 20315), (438, 20330), (443, 20354), (453, 20396), (471, 20522), (472, 20525), (481, 20573), (499, 20636), (549, 20831), (556, 20855), (560, 20870), (562, 20891),

Gene: JKSyngboy\_34 Start: 32531, Stop: 34252, Start Num: 76

Candidate Starts for JKSyngboy\_34:

(Start: 76 @32531 has 22 MA's), (127, 32654), (133, 32666), (153, 32732), (182, 32801), (193, 32837), (274, 33062), (290, 33101), (312, 33161), (326, 33206), (341, 33266), (367, 33392), (373, 33401), (376, 33407), (390, 33449), (395, 33464), (396, 33473), (399, 33500), (408, 33521), (436, 33620), (456, 33704), (479, 33857), (481, 33869), (485, 33884), (493, 33905), (521, 33995), (539, 34088),

Gene: Jabberwocky\_35 Start: 33678, Stop: 35399, Start Num: 76

Candidate Starts for Jabberwocky\_35:

(Start: 76 @33678 has 22 MA's), (133, 33813), (143, 33855), (153, 33879), (207, 34023), (274, 34209), (290, 34248), (293, 34257), (318, 34329), (326, 34353), (345, 34425), (364, 34512), (373, 34548), (376, 34554), (390, 34596), (395, 34611), (396, 34620), (436, 34767), (456, 34851), (461, 34884), (466, 34932), (478, 34998), (479, 35004), (481, 35016), (492, 35046), (493, 35052), (503, 35088), (507, 35097), (521, 35142),

Gene: Jambalaya\_33 Start: 27999, Stop: 29921, Start Num: 25

Candidate Starts for Jambalaya\_33:

(Start: 25 @27999 has 15 MA's), (50, 28122), (58, 28143), (75, 28191), (Start: 121 @28299 has 3 MA's), (Start: 131 @28320 has 1 MA's), (164, 28401), (180, 28437), (182, 28440), (209, 28518), (211, 28521), (213, 28527), (222, 28548), (230, 28578), (233, 28584), (285, 28719), (315, 28806), (318, 28815), (321, 28821), (324, 28827), (344, 28902), (351, 28935), (357, 28956), (371, 29028), (377, 29052), (384, 29064), (398, 29121), (438, 29271), (443, 29295), (472, 29463), (475, 29478), (499, 29574), (530, 29685), (537, 29721),

Gene: Jojo24\_25 Start: 19691, Stop: 21388, Start Num: 71

Candidate Starts for Jojo24\_25:

(Start: 46 @19616 has 2 MA's), (Start: 71 @19691 has 2 MA's), (Start: 117 @19790 has 5 MA's), (154, 19886), (164, 19901), (167, 19907), (209, 20018), (211, 20021), (213, 20027), (222, 20048), (228, 20066), (234, 20084), (248, 20117), (254, 20138), (273, 20186), (302, 20255), (320, 20291),

(321, 20294), (344, 20375), (347, 20387), (357, 20429), (375, 20510), (376, 20513), (377, 20522), (384, 20534), (395, 20570), (398, 20591), (401, 20609), (405, 20624), (438, 20741), (443, 20765), (447, 20783), (472, 20936), (492, 21035), (496, 21053), (499, 21065), (511, 21092), (557, 21269), (564, 21308),

Gene: JonJames\_55 Start: 39392, Stop: 41158, Start Num: 46

Candidate Starts for JonJames\_55:

(Start: 46 @39392 has 2 MA's), (Start: 52 @39413 has 2 MA's), (Start: 171 @39707 has 29 MA's), (178, 39725), (182, 39734), (191, 39767), (222, 39851), (257, 39950), (318, 40097), (327, 40118), (344, 40184), (349, 40202), (359, 40247), (398, 40391), (407, 40430), (438, 40541), (463, 40667), (478, 40763), (487, 40805), (490, 40811), (501, 40853), (502, 40856),

Gene: Kahlid\_20 Start: 19233, Stop: 21029, Start Num: 63

Candidate Starts for Kahlid\_20:

(Start: 62 @19230 has 5 MA's), (Start: 63 @19233 has 23 MA's), (125, 19386), (134, 19410), (170, 19506), (174, 19515), (188, 19557), (189, 19560), (201, 19590), (210, 19617), (243, 19710), (251, 19734), (279, 19818), (293, 19863), (306, 19899), (343, 20019), (348, 20037), (350, 20052), (353, 20070), (355, 20073), (369, 20151), (390, 20208), (391, 20211), (393, 20214), (412, 20298), (415, 20307), (421, 20334), (445, 20445), (446, 20448), (472, 20616), (486, 20691), (494, 20700), (501, 20727), (513, 20760), (518, 20775), (522, 20790), (524, 20796), (539, 20874), (540, 20877), (556, 20925), (572, 21012),

Gene: Kamaru\_29 Start: 22226, Stop: 24061, Start Num: 30

Candidate Starts for Kamaru\_29:

(Start: 30 @22226 has 21 MA's), (Start: 70 @22388 has 1 MA's), (Start: 86 @22418 has 11 MA's), (104, 22472), (113, 22487), (116, 22499), (118, 22502), (124, 22517), (126, 22520), (127, 22523), (164, 22613), (169, 22622), (Start: 171 @22625 has 29 MA's), (203, 22712), (211, 22733), (213, 22739), (222, 22760), (226, 22769), (230, 22790), (233, 22796), (288, 22898), (289, 22901), (305, 22931), (309, 22943), (321, 22967), (344, 23042), (347, 23054), (357, 23096), (362, 23129), (368, 23162), (371, 23168), (377, 23192), (384, 23204), (398, 23261), (401, 23279), (438, 23411), (443, 23435), (447, 23453), (472, 23606), (475, 23621), (477, 23633), (478, 23636), (479, 23642), (492, 23687), (496, 23705), (499, 23717), (501, 23723), (507, 23735), (511, 23744), (526, 23798), (539, 23867), (545, 23900), (547, 23906), (562, 23969), (563, 23972), (566, 23990), (570, 24011), (571, 24020),

Gene: Kamashten\_36 Start: 33130, Stop: 35052, Start Num: 26

Candidate Starts for Kamashten\_36:

(Start: 26 @33130 has 22 MA's), (58, 33265), (61, 33274), (73, 33307), (Start: 85 @33331 has 1 MA's), (Start: 112 @33400 has 1 MA's), (138, 33475), (211, 33667), (213, 33673), (222, 33694), (228, 33712), (230, 33724), (254, 33784), (276, 33838), (321, 33952), (344, 34039), (357, 34093), (366, 34147), (368, 34159), (377, 34189), (384, 34201), (396, 34246), (398, 34258), (401, 34276), (410, 34303), (431, 34381), (438, 34408), (443, 34432), (465, 34555), (471, 34597), (492, 34681), (499, 34711), (511, 34738), (526, 34792), (533, 34822), (545, 34894), (549, 34903),

Gene: Kampe\_27 Start: 31352, Stop: 33037, Start Num: 115

Candidate Starts for Kampe\_27:

(Start: 115 @31352 has 6 MA's), (137, 31415), (148, 31460), (165, 31496), (176, 31526), (260, 31775), (291, 31868), (316, 31937), (333, 31994), (334, 32000), (340, 32021), (344, 32039), (359, 32102), (427, 32330), (443, 32411), (458, 32477), (470, 32588), (491, 32681), (496, 32702), (549, 32900), (559, 32933),

Gene: Keitabear\_38 Start: 35100, Stop: 37022, Start Num: 26

Candidate Starts for Keitabear\_38:

(Start: 26 @35100 has 22 MA's), (58, 35235), (73, 35277), (Start: 85 @35301 has 1 MA's), (Start: 112 @35370 has 1 MA's), (138, 35445), (211, 35637), (213, 35643), (222, 35664), (228, 35682), (230, 35694), (254, 35754), (276, 35808), (321, 35922), (344, 36009), (357, 36063), (368, 36129), (377, 36159), (384, 36171), (396, 36216), (398, 36228), (401, 36246), (410, 36273), (431, 36351), (438, 36378), (443, 36402), (465, 36525), (471, 36567), (492, 36651), (499, 36681), (526, 36762), (533, 36792), (545, 36864), (549, 36873),

Gene: Kenna\_28 Start: 22119, Stop: 23954, Start Num: 30

Candidate Starts for Kenna\_28:

(Start: 30 @22119 has 21 MA's), (Start: 70 @22281 has 1 MA's), (Start: 86 @22311 has 11 MA's), (104, 22365), (113, 22380), (116, 22392), (118, 22395), (124, 22410), (126, 22413), (127, 22416), (164, 22506), (169, 22515), (Start: 171 @22518 has 29 MA's), (203, 22605), (211, 22626), (213, 22632), (222, 22653), (226, 22662), (230, 22683), (233, 22689), (288, 22791), (289, 22794), (305, 22824), (309, 22836), (321, 22860), (344, 22935), (347, 22947), (357, 22989), (362, 23022), (368, 23055), (371, 23061), (377, 23085), (384, 23097), (398, 23154), (401, 23172), (438, 23304), (443, 23328), (447, 23346), (472, 23499), (475, 23514), (478, 23529), (479, 23535), (492, 23580), (496, 23598), (499, 23610), (501, 23616), (507, 23628), (511, 23637), (526, 23691), (539, 23760), (545, 23793), (547, 23799), (562, 23862), (563, 23865), (566, 23883), (570, 23904), (571, 23913),

Gene: Kewpiedoll\_36 Start: 32537, Stop: 34258, Start Num: 76

Candidate Starts for Kewpiedoll\_36:

(Start: 76 @32537 has 22 MA's), (133, 32672), (136, 32681), (143, 32714), (153, 32738), (182, 32807), (207, 32882), (274, 33068), (290, 33107), (293, 33116), (297, 33131), (318, 33188), (326, 33212), (345, 33284), (364, 33371), (373, 33407), (376, 33413), (390, 33455), (395, 33470), (396, 33479), (436, 33626), (456, 33710), (461, 33743), (466, 33791), (478, 33857), (479, 33863), (481, 33875), (492, 33905), (493, 33911), (503, 33947), (507, 33956), (521, 34001),

Gene: KimmyK\_35 Start: 28934, Stop: 30856, Start Num: 25

Candidate Starts for KimmyK\_35:

(Start: 25 @28934 has 15 MA's), (50, 29057), (58, 29078), (75, 29126), (Start: 121 @29234 has 3 MA's), (Start: 131 @29255 has 1 MA's), (164, 29336), (180, 29372), (182, 29375), (209, 29453), (211, 29456), (213, 29462), (222, 29483), (230, 29513), (233, 29519), (285, 29654), (315, 29741), (318, 29750), (321, 29756), (324, 29762), (344, 29837), (351, 29870), (357, 29891), (371, 29963), (377, 29987), (384, 29999), (398, 30056), (438, 30206), (443, 30230), (472, 30398), (475, 30413), (499, 30509), (530, 30620), (537, 30656),

Gene: Kita\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Kita\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: Kroos\_37 Start: 32709, Stop: 34430, Start Num: 76

Candidate Starts for Kroos\_37:

(Start: 76 @32709 has 22 MA's), (127, 32832), (133, 32844), (153, 32910), (182, 32979), (193, 33015), (207, 33054), (274, 33240), (290, 33279), (312, 33339), (326, 33384), (341, 33444), (373, 33579), (376, 33585), (390, 33627), (395, 33642), (399, 33678), (408, 33699), (436, 33798), (456, 33882), (461, 33915), (465, 33960), (466, 33963), (472, 33999), (479, 34035), (481, 34047), (493, 34083), (503, 34119), (521, 34173),

Gene: Kudfre\_29 Start: 24004, Stop: 25656, Start Num: 84

Candidate Starts for Kudfre\_29:

(68, 23965), (Start: 84 @24004 has 5 MA's), (91, 24025), (155, 24178), (161, 24184), (163, 24187), (Start: 171 @24202 has 29 MA's), (183, 24235), (187, 24244), (193, 24256), (209, 24298), (211, 24301), (213, 24307), (218, 24319), (222, 24328), (228, 24346), (230, 24358), (233, 24364), (258, 24430), (264, 24445), (267, 24451), (318, 24586), (327, 24613), (329, 24619), (351, 24712), (384, 24832), (396, 24874), (398, 24886), (438, 25036), (443, 25060), (447, 25078), (461, 25141), (472, 25228), (475, 25243), (479, 25264), (492, 25309), (496, 25327), (502, 25348), (517, 25390), (522, 25414), (535, 25462), (552, 25537), (562, 25588), (574, 25651),

Gene: Kuwabara\_28 Start: 21545, Stop: 23329, Start Num: 30

Candidate Starts for Kuwabara\_28:

(Start: 30 @21545 has 21 MA's), (34, 21560), (43, 21587), (48, 21617), (73, 21689), (78, 21701), (107, 21764), (113, 21776), (132, 21818), (149, 21857), (152, 21866), (189, 21944), (211, 22001), (213, 22007), (222, 22028), (226, 22037), (230, 22058), (233, 22064), (288, 22166), (289, 22169), (305, 22199), (309, 22211), (321, 22235), (323, 22244), (344, 22310), (347, 22322), (357, 22364), (362, 22397), (368, 22430), (371, 22436), (377, 22460), (384, 22472), (398, 22529), (401, 22547), (438, 22679), (443, 22703), (447, 22721), (472, 22874), (475, 22889), (478, 22904), (479, 22910), (492, 22955), (496, 22973), (499, 22985), (501, 22991), (507, 23003), (511, 23012), (526, 23066), (539, 23135), (545, 23168), (547, 23174), (562, 23237), (563, 23240), (566, 23258), (570, 23279), (571, 23288),

Gene: Kwobi\_37 Start: 32695, Stop: 34416, Start Num: 76

Candidate Starts for Kwobi\_37:

(Start: 76 @32695 has 22 MA's), (127, 32818), (133, 32830), (153, 32896), (182, 32965), (193, 33001), (274, 33226), (290, 33265), (312, 33325), (326, 33370), (341, 33430), (373, 33565), (376, 33571), (390, 33613), (395, 33628), (399, 33664), (408, 33685), (436, 33784), (456, 33868), (461, 33901), (465, 33946), (466, 33949), (472, 33985), (479, 34021), (481, 34033), (493, 34069), (503, 34105), (521, 34159),

Gene: Lamberg\_24 Start: 19408, Stop: 20961, Start Num: 121

Candidate Starts for Lamberg\_24:

(Start: 121 @19408 has 3 MA's), (148, 19477), (155, 19492), (178, 19534), (180, 19540), (211, 19624), (213, 19630), (222, 19651), (228, 19669), (231, 19681), (234, 19687), (307, 19843), (329, 19885), (351, 19978), (357, 19999), (368, 20065), (377, 20095), (384, 20107), (398, 20164), (438, 20314), (443, 20338), (472, 20506), (492, 20605), (496, 20623), (499, 20635), (549, 20812), (557, 20839), (564, 20878),

Gene: Lennon\_38 Start: 34887, Stop: 36809, Start Num: 26

Candidate Starts for Lennon\_38:

(Start: 26 @34887 has 22 MA's), (58, 35022), (61, 35031), (73, 35064), (Start: 85 @35088 has 1 MA's), (Start: 112 @35157 has 1 MA's), (138, 35232), (211, 35424), (213, 35430), (222, 35451), (228, 35469), (230, 35481), (254, 35541), (276, 35595), (321, 35709), (344, 35796), (357, 35850), (366, 35904), (368, 35916), (377, 35946), (384, 35958), (396, 36003), (398, 36015), (401, 36033), (410, 36060), (431, 36138), (438, 36165), (443, 36189), (465, 36312), (471, 36354), (492, 36438), (499, 36468), (526, 36549), (533, 36579), (545, 36651), (549, 36660),

Gene: Leroy\_29 Start: 22144, Stop: 23979, Start Num: 30

Candidate Starts for Leroy\_29:

(Start: 30 @22144 has 21 MA's), (Start: 70 @22306 has 1 MA's), (Start: 86 @22336 has 11 MA's), (104, 22390), (113, 22405), (116, 22417), (118, 22420), (124, 22435), (126, 22438), (127, 22441), (164, 22531), (169, 22540), (Start: 171 @22543 has 29 MA's), (203, 22630), (211, 22651), (213, 22657), (222, 22678), (226, 22687), (230, 22708), (233, 22714), (288, 22816), (289, 22819), (305, 22849), (309, 22861), (321, 22885), (323, 22894), (344, 22960), (347, 22972), (357, 23014), (362, 23047), (368, 23080), (371, 23086), (377, 23110), (384, 23122), (398, 23179), (401, 23197), (438,

23329), (443, 23353), (447, 23371), (472, 23524), (475, 23539), (478, 23554), (479, 23560), (492, 23605), (496, 23623), (499, 23635), (501, 23641), (507, 23653), (511, 23662), (526, 23716), (539, 23785), (545, 23818), (547, 23824), (562, 23887), (563, 23890), (566, 23908), (570, 23929), (571, 23938),

Gene: Lewan\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for Lewan\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (306, 19894), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (391, 20206), (393, 20209), (400, 20257), (412, 20293), (415, 20302), (421, 20329), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: LilDestine\_20 Start: 19227, Stop: 21023, Start Num: 63

Candidate Starts for LilDestine\_20:

(Start: 62 @19224 has 5 MA's), (Start: 63 @19227 has 23 MA's), (125, 19380), (134, 19404), (170, 19500), (174, 19509), (188, 19551), (189, 19554), (201, 19584), (210, 19611), (243, 19704), (251, 19728), (279, 19812), (293, 19857), (306, 19893), (343, 20013), (348, 20031), (350, 20046), (353, 20064), (355, 20067), (369, 20145), (390, 20202), (391, 20205), (393, 20208), (412, 20292), (415, 20301), (421, 20328), (445, 20439), (446, 20442), (472, 20610), (486, 20685), (494, 20694), (501, 20721), (513, 20754), (518, 20769), (522, 20784), (524, 20790), (539, 20868), (540, 20871), (556, 20919), (572, 21006),

Gene: LilHam\_34 Start: 31298, Stop: 33019, Start Num: 76

Candidate Starts for LilHam\_34:

(Start: 76 @31298 has 22 MA's), (127, 31421), (133, 31433), (153, 31499), (182, 31568), (193, 31604), (274, 31829), (290, 31868), (312, 31928), (326, 31973), (341, 32033), (373, 32168), (376, 32174), (390, 32216), (395, 32231), (399, 32267), (408, 32288), (436, 32387), (456, 32471), (461, 32504), (465, 32549), (466, 32552), (472, 32588), (479, 32624), (481, 32636), (493, 32672), (503, 32708), (521, 32762),

Gene: Lilas\_28 Start: 22772, Stop: 24724, Start Num: 18

Candidate Starts for Lilas\_28:

(1, 22484), (3, 22541), (4, 22556), (6, 22592), (7, 22637), (8, 22640), (Start: 18 @22772 has 8 MA's), (22, 22787), (Start: 26 @22826 has 22 MA's), (27, 22829), (95, 23057), (110, 23084), (Start: 115 @23099 has 6 MA's), (211, 23333), (213, 23339), (218, 23351), (248, 23429), (254, 23450), (300, 23570), (318, 23612), (344, 23705), (347, 23717), (357, 23759), (377, 23849), (384, 23861), (398, 23918), (405, 23951), (419, 23984), (432, 24044), (438, 24068), (442, 24086), (472, 24260), (473, 24266), (483, 24314), (539, 24536), (560, 24617), (562, 24638),

Gene: LilyPad\_26 Start: 21924, Stop: 23648, Start Num: 52

Candidate Starts for LilyPad\_26:

(Start: 52 @21924 has 2 MA's), (81, 21999), (Start: 85 @22005 has 1 MA's), (88, 22014), (103, 22056), (147, 22188), (178, 22266), (180, 22272), (191, 22308), (224, 22392), (252, 22467), (258, 22488), (270, 22512), (288, 22566), (317, 22620), (337, 22674), (341, 22683), (342, 22686), (386, 22821), (387, 22824), (405, 22908), (421, 22959), (423, 22962), (429, 22980), (433, 23016), (444, 23055), (461, 23133), (478, 23247), (489, 23292), (506, 23346), (513, 23355), (515, 23361), (543, 23505), (551, 23523),

Gene: LitninMcQueen\_28 Start: 21875, Stop: 23710, Start Num: 30

Candidate Starts for LitninMcQueen\_28:

(Start: 30 @21875 has 21 MA's), (Start: 70 @22037 has 1 MA's), (Start: 86 @22067 has 11 MA's), (104, 22121), (113, 22136), (116, 22148), (118, 22151), (124, 22166), (126, 22169), (127, 22172), (164, 22262), (169, 22271), (Start: 171 @22274 has 29 MA's), (203, 22361), (211, 22382), (213, 22388), (222, 22409), (226, 22418), (230, 22439), (233, 22445), (288, 22547), (289, 22550), (305, 22580), (309, 22592), (321, 22616), (344, 22691), (347, 22703), (357, 22745), (362, 22778), (368, 22811), (371, 22817), (377, 22841), (384, 22853), (398, 22910), (401, 22928), (438, 23060), (443, 23084), (447, 23102), (472, 23255), (475, 23270), (477, 23282), (478, 23285), (479, 23291), (492, 23336), (496, 23354), (499, 23366), (501, 23372), (507, 23384), (511, 23393), (526, 23447), (530, 23471), (545, 23549), (547, 23555), (562, 23618), (563, 23621), (566, 23639), (570, 23660), (571, 23669),

Gene: LittleFella\_27 Start: 23800, Stop: 25635, Start Num: 52

Candidate Starts for LittleFella\_27:

(Start: 52 @23800 has 2 MA's), (81, 23875), (Start: 85 @23881 has 1 MA's), (88, 23890), (99, 23923), (103, 23932), (129, 23998), (178, 24130), (180, 24136), (191, 24172), (217, 24238), (224, 24256), (268, 24370), (292, 24445), (293, 24448), (334, 24559), (359, 24661), (376, 24730), (380, 24745), (384, 24751), (391, 24775), (407, 24844), (425, 24895), (433, 24940), (443, 24973), (468, 25153), (482, 25225), (529, 25408), (539, 25468),

Gene: Loadrie\_20 Start: 19260, Stop: 21056, Start Num: 63

Candidate Starts for Loadrie\_20:

(Start: 62 @19257 has 5 MA's), (Start: 63 @19260 has 23 MA's), (125, 19413), (134, 19437), (170, 19533), (174, 19542), (189, 19587), (201, 19617), (210, 19644), (243, 19737), (251, 19761), (279, 19845), (293, 19890), (348, 20064), (350, 20079), (353, 20097), (355, 20100), (369, 20178), (390, 20235), (393, 20241), (412, 20325), (415, 20334), (445, 20472), (446, 20475), (472, 20643), (486, 20718), (494, 20727), (501, 20754), (513, 20787), (518, 20802), (522, 20817), (524, 20823), (539, 20901), (540, 20904), (572, 21039),

Gene: LordFarquaad\_25 Start: 20498, Stop: 22021, Start Num: 166

Candidate Starts for LordFarquaad\_25:

(Start: 166 @20498 has 19 MA's), (196, 20570), (202, 20582), (213, 20609), (223, 20633), (268, 20753), (271, 20762), (292, 20828), (334, 20942), (345, 20984), (351, 21014), (359, 21044), (375, 21110), (384, 21134), (391, 21158), (396, 21176), (398, 21188), (401, 21206), (405, 21221), (407, 21227), (425, 21278), (430, 21305), (443, 21356), (469, 21524), (474, 21545), (491, 21623), (501, 21662), (509, 21683), (511, 21686), (514, 21698), (524, 21737), (550, 21884), (562, 21944), (563, 21947),

Gene: Love\_41 Start: 34670, Stop: 36595, Start Num: 26

Candidate Starts for Love\_41:

(Start: 26 @34670 has 22 MA's), (58, 34805), (61, 34814), (73, 34847), (Start: 85 @34871 has 1 MA's), (Start: 112 @34940 has 1 MA's), (138, 35015), (211, 35207), (213, 35213), (222, 35234), (228, 35252), (230, 35264), (254, 35324), (276, 35378), (321, 35495), (344, 35582), (357, 35636), (368, 35702), (377, 35732), (384, 35744), (396, 35789), (398, 35801), (401, 35819), (410, 35846), (431, 35924), (438, 35951), (443, 35975), (465, 36098), (471, 36140), (492, 36224), (499, 36254), (511, 36281), (526, 36335), (533, 36365), (545, 36437), (549, 36446),

Gene: Lton\_24 Start: 19437, Stop: 21029, Start Num: 117

Candidate Starts for Lton\_24:

(Start: 117 @19437 has 5 MA's), (148, 19506), (155, 19521), (161, 19527), (180, 19569), (189, 19596), (213, 19659), (222, 19680), (227, 19695), (248, 19749), (253, 19767), (254, 19770), (258, 19782), (327, 19947), (344, 20013), (351, 20046), (375, 20145), (377, 20157), (384, 20169), (398, 20226), (405, 20259), (407, 20265), (438, 20376), (472, 20571), (492, 20652), (499, 20682), (530, 20793), (536, 20808), (539, 20838), (545, 20871), (562, 20940),

Gene: Lucky10\_25 Start: 20304, Stop: 22139, Start Num: 36

Candidate Starts for Lucky10\_25:

(9, 20088), (13, 20124), (15, 20169), (16, 20184), (Start: 36 @20304 has 3 MA's), (44, 20361), (73, 20448), (78, 20460), (90, 20493), (93, 20499), (107, 20523), (113, 20535), (135, 20580), (Start: 145 @20610 has 1 MA's), (149, 20616), (152, 20625), (169, 20649), (184, 20691), (211, 20760), (213, 20766), (222, 20787), (228, 20805), (230, 20817), (233, 20823), (254, 20877), (344, 21132), (345, 21135), (357, 21186), (363, 21222), (368, 21252), (371, 21258), (377, 21282), (384, 21294), (398, 21351), (401, 21369), (438, 21501), (439, 21507), (443, 21525), (472, 21693), (492, 21774), (503, 21816), (511, 21831), (530, 21912), (537, 21948), (561, 22047),

Gene: Lutum\_29 Start: 22119, Stop: 23954, Start Num: 30

Candidate Starts for Lutum\_29:

(Start: 30 @22119 has 21 MA's), (Start: 70 @22281 has 1 MA's), (Start: 86 @22311 has 11 MA's), (104, 22365), (113, 22380), (116, 22392), (118, 22395), (124, 22410), (126, 22413), (127, 22416), (164, 22506), (169, 22515), (Start: 171 @22518 has 29 MA's), (203, 22605), (211, 22626), (213, 22632), (222, 22653), (226, 22662), (230, 22683), (233, 22689), (288, 22791), (289, 22794), (305, 22824), (309, 22836), (321, 22860), (344, 22935), (347, 22947), (357, 22989), (362, 23022), (368, 23055), (371, 23061), (377, 23085), (384, 23097), (398, 23154), (401, 23172), (438, 23304), (443, 23328), (447, 23346), (472, 23499), (475, 23514), (478, 23529), (479, 23535), (492, 23580), (496, 23598), (499, 23610), (501, 23616), (507, 23628), (511, 23637), (526, 23691), (539, 23760), (545, 23793), (547, 23799), (562, 23862), (563, 23865), (566, 23883), (570, 23904), (571, 23913),

Gene: Madeline\_26 Start: 23224, Stop: 24729, Start Num: 171

Candidate Starts for Madeline\_26:

(54, 22909), (92, 23017), (123, 23086), (125, 23089), (130, 23113), (133, 23119), (Start: 171 @23224 has 29 MA's), (193, 23293), (197, 23305), (235, 23416), (238, 23422), (240, 23428), (244, 23434), (272, 23521), (284, 23557), (286, 23563), (289, 23572), (368, 23866), (390, 23920), (391, 23923), (396, 23944), (406, 23989), (436, 24094), (456, 24178), (465, 24259), (466, 24262), (520, 24481), (530, 24529), (541, 24589), (555, 24622), (558, 24628), (569, 24700),

Gene: Malibo\_28 Start: 21996, Stop: 23735, Start Num: 66

Candidate Starts for Malibo\_28:

(17, 21789), (Start: 28 @21858 has 2 MA's), (29, 21861), (39, 21885), (40, 21891), (Start: 66 @21996 has 1 MA's), (Start: 117 @22107 has 5 MA's), (130, 22134), (209, 22335), (211, 22338), (213, 22344), (218, 22356), (248, 22434), (254, 22455), (318, 22617), (344, 22710), (347, 22722), (357, 22770), (369, 22842), (377, 22860), (384, 22872), (398, 22929), (419, 22995), (438, 23079), (442, 23097), (447, 23121), (472, 23271), (483, 23325), (539, 23547), (560, 23628), (562, 23649),

Gene: Manasvini\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Manasvini\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: Mareelih\_102 Start: 61923, Stop: 63602, Start Num: 65

Candidate Starts for Mareelih\_102:

(59, 61905), (Start: 65 @61923 has 5 MA's), (Start: 85 @61965 has 1 MA's), (88, 61974), (119, 62040), (Start: 121 @62043 has 3 MA's), (Start: 131 @62064 has 1 MA's), (178, 62175), (192, 62217), (247, 62355), (254, 62379), (345, 62625), (368, 62742), (380, 62769), (384, 62775), (398, 62829), (407, 62868), (438, 62979), (441, 62994), (443, 63003), (474, 63174), (478, 63195), (501, 63288), (535, 63396), (571, 63573),



Gene: Maridalia\_27 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Maridalia\_27:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: Marteena\_28 Start: 22623, Stop: 24575, Start Num: 18

Candidate Starts for Marteena\_28:

(1, 22335), (3, 22392), (4, 22407), (6, 22443), (7, 22488), (8, 22491), (Start: 18 @22623 has 8 MA's), (22, 22638), (Start: 26 @22677 has 22 MA's), (27, 22680), (95, 22908), (110, 22935), (Start: 115 @22950 has 6 MA's), (211, 23184), (213, 23190), (218, 23202), (248, 23280), (254, 23301), (300, 23421), (318, 23463), (344, 23556), (347, 23568), (357, 23610), (377, 23700), (384, 23712), (398, 23769), (405, 23802), (419, 23835), (432, 23895), (438, 23919), (442, 23937), (472, 24111), (473, 24117), (483, 24165), (539, 24387), (560, 24468), (562, 24489),

Gene: Matteo\_24 Start: 19369, Stop: 20961, Start Num: 117

Candidate Starts for Matteo\_24:

(38, 19135), (41, 19150), (45, 19186), (57, 19231), (58, 19234), (Start: 117 @19369 has 5 MA's), (148, 19438), (155, 19453), (180, 19501), (211, 19585), (213, 19591), (222, 19612), (227, 19627), (248, 19681), (254, 19702), (258, 19714), (327, 19879), (351, 19978), (375, 20077), (377, 20089), (384, 20101), (398, 20158), (405, 20191), (407, 20197), (438, 20308), (472, 20503), (492, 20584), (499, 20614), (530, 20725), (539, 20770), (556, 20836), (562, 20872),

Gene: McKinley\_40 Start: 34696, Stop: 36618, Start Num: 26

Candidate Starts for McKinley\_40:

(Start: 26 @34696 has 22 MA's), (58, 34831), (61, 34840), (73, 34873), (Start: 85 @34897 has 1 MA's), (Start: 112 @34966 has 1 MA's), (123, 34996), (138, 35041), (211, 35233), (213, 35239), (222, 35260), (228, 35278), (230, 35290), (254, 35350), (276, 35404), (321, 35518), (344, 35605), (357, 35659), (368, 35725), (377, 35755), (384, 35767), (396, 35812), (398, 35824), (401, 35842), (410, 35869), (431, 35947), (438, 35974), (443, 35998), (465, 36121), (471, 36163), (492, 36247), (499, 36277), (511, 36304), (526, 36358), (533, 36388), (545, 36460), (549, 36469),

Gene: Miley16\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for Miley16\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: MkaliMitinis3\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for MkaliMitinis3\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (391, 20206), (393, 20209), (412, 20293), (415, 20302), (421, 20329), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: Mocha12\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Mocha12\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: MoontowerMania\_36 Start: 32904, Stop: 34625, Start Num: 76

Candidate Starts for MoontowerMania\_36:

(Start: 76 @32904 has 22 MA's), (133, 33039), (136, 33048), (143, 33081), (153, 33105), (182, 33174), (190, 33204), (207, 33249), (274, 33435), (290, 33474), (293, 33483), (297, 33498), (318, 33555), (326, 33579), (345, 33651), (364, 33738), (373, 33774), (376, 33780), (390, 33822), (395, 33837), (435, 33990), (436, 33993), (442, 34020), (456, 34077), (461, 34110), (466, 34158), (478, 34224), (479, 34230), (481, 34242), (492, 34272), (493, 34278), (503, 34314), (507, 34323), (521, 34368), (549, 34497),

Gene: Moosehead\_24 Start: 19352, Stop: 20872, Start Num: 166

Candidate Starts for Moosehead\_24:

(Start: 166 @19352 has 19 MA's), (196, 19421), (205, 19442), (213, 19460), (216, 19466), (223, 19484), (239, 19526), (268, 19604), (271, 19613), (334, 19793), (345, 19835), (351, 19865), (359, 19895), (375, 19961), (384, 19985), (391, 20009), (396, 20027), (398, 20039), (405, 20072), (407, 20078), (425, 20129), (430, 20156), (443, 20207), (469, 20375), (477, 20414), (478, 20417), (491, 20474), (501, 20513), (509, 20534), (511, 20537), (514, 20549), (524, 20588), (550, 20735), (563, 20798),

Gene: Morkie\_25 Start: 20143, Stop: 21978, Start Num: 36

Candidate Starts for Morkie\_25:

(Start: 36 @20143 has 3 MA's), (73, 20287), (78, 20299), (90, 20332), (93, 20338), (107, 20362), (113, 20374), (135, 20419), (Start: 145 @20449 has 1 MA's), (149, 20455), (211, 20599), (213, 20605), (228, 20644), (230, 20656), (233, 20662), (254, 20716), (344, 20971), (345, 20974), (357, 21025), (363, 21061), (368, 21091), (371, 21097), (377, 21121), (384, 21133), (398, 21190), (401, 21208), (438, 21340), (439, 21346), (443, 21364), (472, 21532), (492, 21613), (503, 21655), (511, 21670), (530, 21751), (537, 21787), (561, 21886),

Gene: MortyNRick\_28 Start: 21851, Stop: 23635, Start Num: 30

Candidate Starts for MortyNRick\_28:

(Start: 30 @21851 has 21 MA's), (34, 21866), (43, 21893), (48, 21923), (73, 21995), (78, 22007), (107, 22070), (113, 22082), (132, 22124), (149, 22163), (152, 22172), (189, 22250), (211, 22307), (213, 22313), (222, 22334), (226, 22343), (230, 22364), (233, 22370), (288, 22472), (289, 22475), (305, 22505), (309, 22517), (321, 22541), (323, 22550), (344, 22616), (347, 22628), (357, 22670), (362, 22703), (368, 22736), (371, 22742), (377, 22766), (384, 22778), (398, 22835), (401, 22853), (438, 22985), (443, 23009), (447, 23027), (472, 23180), (475, 23195), (478, 23210), (479, 23216), (492, 23261), (496, 23279), (499, 23291), (501, 23297), (507, 23309), (511, 23318), (526, 23372), (539, 23441), (545, 23474), (547, 23480), (562, 23543), (563, 23546), (566, 23564), (570, 23585), (571, 23594),

Gene: Mutzi\_35 Start: 28649, Stop: 30571, Start Num: 23

Candidate Starts for Mutzi\_35:

(Start: 23 @28649 has 1 MA's), (44, 28772), (49, 28793), (68, 28841), (90, 28895), (106, 28916), (126, 28958), (154, 29039), (209, 29171), (211, 29174), (248, 29270), (254, 29291), (318, 29453), (344, 29546), (347, 29558), (357, 29606), (377, 29696), (384, 29708), (398, 29765), (401, 29783), (419, 29831), (438, 29915), (442, 29933), (453, 29981), (455, 29987), (472, 30107), (473, 30113), (530,

30338), (539, 30383), (560, 30464), (562, 30485),

Gene: NearlyHeadless\_28 Start: 21529, Stop: 23250, Start Num: 86

Candidate Starts for NearlyHeadless\_28:

(Start: 86 @21529 has 11 MA's), (140, 21673), (144, 21688), (184, 21787), (222, 21877), (233, 21913), (245, 21934), (269, 22006), (275, 22030), (293, 22084), (331, 22186), (355, 22282), (365, 22336), (378, 22384), (415, 22513), (420, 22531), (446, 22657), (479, 22861), (480, 22870), (502, 22948), (503, 22951), (530, 23047), (557, 23146), (573, 23233),

Gene: Neobush\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Neobush\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: Nettuno\_24 Start: 19408, Stop: 20961, Start Num: 121

Candidate Starts for Nettuno\_24:

(Start: 121 @19408 has 3 MA's), (148, 19477), (155, 19492), (178, 19534), (180, 19540), (211, 19624), (213, 19630), (222, 19651), (228, 19669), (231, 19681), (234, 19687), (307, 19843), (329, 19885), (351, 19978), (357, 19999), (368, 20065), (377, 20095), (384, 20107), (398, 20164), (438, 20314), (443, 20338), (472, 20506), (492, 20605), (496, 20623), (499, 20635), (549, 20812), (557, 20839), (564, 20878),

Gene: Netyap\_20 Start: 19228, Stop: 21024, Start Num: 63

Candidate Starts for Netyap\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: Neville\_30 Start: 25504, Stop: 27090, Start Num: 84

Candidate Starts for Neville\_30:

(Start: 84 @25504 has 5 MA's), (97, 25540), (154, 25684), (167, 25705), (169, 25708), (Start: 171 @25711 has 29 MA's), (181, 25735), (191, 25765), (193, 25768), (209, 25810), (211, 25813), (222, 25840), (226, 25849), (230, 25870), (233, 25876), (253, 25927), (254, 25930), (282, 25951), (295, 25993), (317, 26014), (318, 26017), (327, 26029), (344, 26095), (357, 26149), (363, 26185), (384, 26248), (392, 26272), (396, 26290), (398, 26302), (401, 26320), (405, 26335), (438, 26452), (439, 26458), (443, 26476), (444, 26482), (447, 26494), (454, 26521), (467, 26620), (472, 26644), (475, 26659), (484, 26698), (492, 26725), (493, 26731), (496, 26743), (499, 26755), (501, 26761), (514, 26797), (527, 26851), (557, 26980), (561, 27007), (568, 27040),

Gene: Nicholasp3\_20 Start: 19233, Stop: 21029, Start Num: 63

Candidate Starts for Nicholasp3\_20:

(Start: 62 @19230 has 5 MA's), (Start: 63 @19233 has 23 MA's), (125, 19386), (134, 19410), (170, 19506), (174, 19515), (188, 19557), (189, 19560), (201, 19590), (210, 19617), (243, 19710), (251, 19734), (279, 19818), (293, 19863), (306, 19899), (343, 20019), (348, 20037), (350, 20052), (353, 20070), (355, 20073), (369, 20151), (390, 20208), (391, 20211), (393, 20214), (412, 20298), (415, 20307), (421, 20334), (445, 20445), (446, 20448), (472, 20616), (486, 20691), (494, 20700), (501, 20727), (513, 20760), (518, 20775), (522, 20790), (524, 20796), (539, 20874), (540, 20877), (556, 20925), (572, 21012),

Gene: Nordenberg\_32 Start: 32866, Stop: 34788, Start Num: 26

Candidate Starts for Nordenberg\_32:

(Start: 26 @32866 has 22 MA's), (58, 33001), (61, 33010), (73, 33043), (Start: 85 @33067 has 1 MA's), (Start: 112 @33136 has 1 MA's), (138, 33211), (211, 33403), (213, 33409), (222, 33430), (228, 33448), (230, 33460), (254, 33520), (276, 33574), (321, 33688), (344, 33775), (357, 33829), (368, 33895), (377, 33925), (384, 33937), (396, 33982), (398, 33994), (401, 34012), (410, 34039), (431, 34117), (438, 34144), (443, 34168), (465, 34291), (471, 34333), (492, 34417), (499, 34447), (511, 34474), (526, 34528), (533, 34558), (545, 34630), (549, 34639),

Gene: Nubi\_33 Start: 28222, Stop: 30144, Start Num: 25

Candidate Starts for Nubi\_33:

(Start: 25 @28222 has 15 MA's), (50, 28345), (58, 28366), (75, 28414), (Start: 121 @28522 has 3 MA's), (Start: 131 @28543 has 1 MA's), (164, 28624), (180, 28660), (182, 28663), (209, 28741), (211, 28744), (213, 28750), (222, 28771), (230, 28801), (233, 28807), (285, 28942), (315, 29029), (318, 29038), (321, 29044), (324, 29050), (344, 29125), (351, 29158), (357, 29179), (371, 29251), (377, 29275), (384, 29287), (398, 29344), (438, 29494), (443, 29518), (472, 29686), (475, 29701), (499, 29797), (530, 29908), (537, 29944),

Gene: Nymphadora\_26 Start: 22926, Stop: 24431, Start Num: 171

Candidate Starts for Nymphadora\_26:

(54, 22611), (92, 22719), (123, 22788), (125, 22791), (130, 22815), (133, 22821), (Start: 171 @22926 has 29 MA's), (193, 22995), (197, 23007), (235, 23118), (238, 23124), (240, 23130), (244, 23136), (272, 23223), (284, 23259), (286, 23265), (289, 23274), (368, 23568), (390, 23622), (391, 23625), (396, 23646), (406, 23691), (436, 23796), (456, 23880), (465, 23961), (466, 23964), (520, 24183), (530, 24231), (541, 24291), (555, 24324), (558, 24330), (569, 24402),

Gene: ODay\_33 Start: 23997, Stop: 25781, Start Num: 30

Candidate Starts for ODay\_33:

(Start: 30 @23997 has 21 MA's), (48, 24069), (73, 24141), (78, 24153), (96, 24198), (113, 24228), (132, 24270), (135, 24273), (149, 24309), (152, 24318), (164, 24333), (169, 24342), (189, 24396), (203, 24432), (211, 24453), (213, 24459), (222, 24480), (226, 24489), (230, 24510), (233, 24516), (288, 24618), (289, 24621), (305, 24651), (309, 24663), (321, 24687), (344, 24762), (347, 24774), (357, 24816), (362, 24849), (368, 24882), (371, 24888), (377, 24912), (384, 24924), (398, 24981), (401, 24999), (438, 25131), (443, 25155), (447, 25173), (472, 25326), (475, 25341), (478, 25356), (479, 25362), (492, 25407), (496, 25425), (499, 25437), (501, 25443), (507, 25455), (511, 25464), (526, 25518), (530, 25542), (539, 25587), (545, 25620), (547, 25626), (562, 25689), (563, 25692), (566, 25710), (570, 25731), (571, 25740),

Gene: Ohgeesy\_26 Start: 22549, Stop: 24054, Start Num: 171

Candidate Starts for Ohgeesy\_26:

(54, 22234), (92, 22342), (123, 22411), (125, 22414), (130, 22438), (133, 22444), (Start: 171 @22549 has 29 MA's), (193, 22618), (197, 22630), (235, 22741), (238, 22747), (240, 22753), (244, 22759), (272, 22846), (284, 22882), (286, 22888), (289, 22897), (368, 23191), (390, 23245), (391, 23248), (396, 23269), (406, 23314), (436, 23419), (456, 23503), (465, 23584), (466, 23587), (520, 23806), (530, 23854), (541, 23914), (555, 23947), (558, 23953), (569, 24025),

Gene: OneDirection\_23 Start: 19380, Stop: 20984, Start Num: 117

Candidate Starts for OneDirection\_23:

(Start: 117 @19380 has 5 MA's), (148, 19449), (155, 19464), (180, 19512), (213, 19602), (222, 19623), (228, 19641), (248, 19692), (254, 19713), (258, 19725), (327, 19911), (344, 19977), (345, 19980), (351, 20010), (375, 20109), (377, 20121), (384, 20133), (398, 20190), (407, 20229), (438, 20340), (449, 20391), (451, 20397), (472, 20532), (479, 20568), (492, 20613), (499, 20643), (501,

20649), (526, 20724), (530, 20748), (539, 20793), (545, 20826), (549, 20835), (563, 20898),

Gene: Orchid\_27 Start: 31352, Stop: 33037, Start Num: 115

Candidate Starts for Orchid\_27:

(Start: 115 @31352 has 6 MA's), (137, 31415), (148, 31460), (165, 31496), (176, 31526), (260, 31775), (291, 31868), (316, 31937), (333, 31994), (334, 32000), (340, 32021), (344, 32039), (359, 32102), (427, 32330), (443, 32411), (458, 32477), (470, 32588), (491, 32681), (496, 32702), (549, 32900), (559, 32933),

Gene: PP\_40 Start: 28396, Stop: 30327, Start Num: 28

Candidate Starts for PP\_40:

(Start: 28 @28396 has 2 MA's), (42, 28447), (55, 28516), (Start: 66 @28543 has 1 MA's), (83, 28585), (92, 28618), (Start: 115 @28666 has 6 MA's), (143, 28756), (147, 28765), (158, 28792), (172, 28813), (197, 28864), (206, 28885), (214, 28906), (215, 28909), (245, 28972), (265, 29038), (293, 29122), (346, 29281), (350, 29305), (356, 29326), (362, 29359), (369, 29398), (374, 29407), (420, 29569), (423, 29581), (426, 29593), (445, 29689), (479, 29893), (495, 29956), (498, 29971), (516, 30022), (522, 30043), (535, 30091), (557, 30178), (566, 30232), (567, 30238), (570, 30265),

Gene: PantheRoc\_27 Start: 22121, Stop: 23626, Start Num: 171

Candidate Starts for PantheRoc\_27:

(92, 21914), (123, 21983), (125, 21986), (130, 22010), (133, 22016), (Start: 171 @22121 has 29 MA's), (193, 22190), (197, 22202), (235, 22313), (240, 22325), (244, 22331), (272, 22418), (284, 22454), (286, 22460), (289, 22469), (368, 22763), (390, 22817), (391, 22820), (396, 22841), (406, 22886), (436, 22991), (456, 23075), (465, 23156), (466, 23159), (520, 23378), (530, 23426), (541, 23486), (555, 23519), (558, 23525), (569, 23597),

Gene: Paries\_40 Start: 34332, Stop: 36257, Start Num: 26

Candidate Starts for Paries\_40:

(Start: 26 @34332 has 22 MA's), (58, 34467), (61, 34476), (73, 34509), (Start: 85 @34533 has 1 MA's), (Start: 112 @34602 has 1 MA's), (138, 34677), (211, 34869), (213, 34875), (222, 34896), (228, 34914), (230, 34926), (254, 34986), (276, 35040), (321, 35157), (344, 35244), (357, 35298), (366, 35352), (368, 35364), (377, 35394), (384, 35406), (396, 35451), (398, 35463), (401, 35481), (410, 35508), (431, 35586), (438, 35613), (443, 35637), (465, 35760), (471, 35802), (492, 35886), (499, 35916), (511, 35943), (526, 35997), (533, 36027), (545, 36099), (549, 36108),

Gene: PatrickStar\_27 Start: 31352, Stop: 33037, Start Num: 115

Candidate Starts for PatrickStar\_27:

(Start: 115 @31352 has 6 MA's), (137, 31415), (148, 31460), (165, 31496), (176, 31526), (260, 31775), (291, 31868), (316, 31937), (333, 31994), (334, 32000), (340, 32021), (344, 32039), (359, 32102), (427, 32330), (443, 32411), (458, 32477), (470, 32588), (491, 32681), (496, 32702), (549, 32900), (559, 32933),

Gene: Pepperoni\_25 Start: 20244, Stop: 21851, Start Num: 117

Candidate Starts for Pepperoni\_25:

(38, 20010), (41, 20025), (45, 20061), (57, 20106), (58, 20109), (Start: 117 @20244 has 5 MA's), (154, 20331), (211, 20463), (213, 20469), (222, 20490), (228, 20508), (248, 20559), (254, 20580), (258, 20592), (327, 20778), (344, 20844), (345, 20847), (351, 20877), (375, 20976), (377, 20988), (384, 21000), (398, 21057), (407, 21096), (438, 21207), (449, 21258), (451, 21264), (472, 21399), (479, 21435), (492, 21480), (499, 21510), (501, 21516), (526, 21591), (530, 21615), (534, 21624), (539, 21660), (545, 21693), (549, 21702), (563, 21765),

Gene: Periwinkle\_31 Start: 22588, Stop: 24423, Start Num: 30

Candidate Starts for Periwinkle\_31:

(Start: 30 @22588 has 21 MA's), (Start: 70 @22750 has 1 MA's), (Start: 86 @22780 has 11 MA's), (104, 22834), (113, 22849), (116, 22861), (118, 22864), (124, 22879), (126, 22882), (127, 22885), (164, 22975), (169, 22984), (Start: 171 @22987 has 29 MA's), (203, 23074), (211, 23095), (213, 23101), (222, 23122), (226, 23131), (230, 23152), (233, 23158), (288, 23260), (289, 23263), (305, 23293), (309, 23305), (321, 23329), (323, 23338), (344, 23404), (347, 23416), (357, 23458), (362, 23491), (368, 23524), (371, 23530), (377, 23554), (384, 23566), (398, 23623), (401, 23641), (438, 23773), (443, 23797), (447, 23815), (472, 23968), (475, 23983), (478, 23998), (479, 24004), (492, 24049), (496, 24067), (499, 24079), (501, 24085), (507, 24097), (511, 24106), (526, 24160), (539, 24229), (545, 24262), (547, 24268), (562, 24331), (563, 24334), (566, 24352), (570, 24373), (571, 24382),

Gene: Phabuloso\_28 Start: 21875, Stop: 23710, Start Num: 30

Candidate Starts for Phabuloso\_28:

(Start: 30 @21875 has 21 MA's), (Start: 70 @22037 has 1 MA's), (Start: 86 @22067 has 11 MA's), (104, 22121), (113, 22136), (116, 22148), (118, 22151), (124, 22166), (126, 22169), (127, 22172), (164, 22262), (169, 22271), (Start: 171 @22274 has 29 MA's), (203, 22361), (211, 22382), (213, 22388), (222, 22409), (226, 22418), (230, 22439), (233, 22445), (288, 22547), (289, 22550), (305, 22580), (309, 22592), (321, 22616), (344, 22691), (347, 22703), (357, 22745), (362, 22778), (368, 22811), (371, 22817), (377, 22841), (384, 22853), (398, 22910), (401, 22928), (438, 23060), (443, 23084), (447, 23102), (472, 23255), (475, 23270), (478, 23285), (479, 23291), (492, 23336), (496, 23354), (499, 23366), (501, 23372), (507, 23384), (511, 23393), (526, 23447), (539, 23516), (545, 23549), (547, 23555), (562, 23618), (563, 23621), (566, 23639), (570, 23660), (571, 23669),

Gene: Phendrix\_89 Start: 54539, Stop: 56233, Start Num: 65

Candidate Starts for Phendrix\_89:

(Start: 65 @54539 has 5 MA's), (Start: 70 @54557 has 1 MA's), (74, 54563), (Start: 115 @54653 has 6 MA's), (119, 54659), (Start: 121 @54662 has 3 MA's), (Start: 131 @54683 has 1 MA's), (192, 54836), (194, 54839), (209, 54878), (247, 54974), (248, 54977), (258, 55010), (298, 55115), (324, 55166), (344, 55241), (357, 55295), (363, 55331), (376, 55373), (380, 55388), (438, 55598), (443, 55622), (465, 55754), (478, 55826), (481, 55844), (500, 55916), (513, 55949), (515, 55955), (519, 55973),

Gene: Phillis\_28 Start: 21576, Stop: 23297, Start Num: 86

Candidate Starts for Phillis\_28:

(Start: 86 @21576 has 11 MA's), (139, 21711), (140, 21720), (144, 21735), (184, 21834), (222, 21924), (233, 21960), (245, 21981), (269, 22053), (275, 22077), (293, 22131), (299, 22149), (306, 22167), (331, 22233), (355, 22329), (365, 22383), (409, 22542), (420, 22578), (446, 22704), (479, 22908), (480, 22917), (503, 22998), (530, 23094), (557, 23193),

Gene: Phistory\_30 Start: 22909, Stop: 24744, Start Num: 30

Candidate Starts for Phistory\_30:

(Start: 30 @22909 has 21 MA's), (Start: 70 @23071 has 1 MA's), (Start: 86 @23101 has 11 MA's), (104, 23155), (113, 23170), (116, 23182), (118, 23185), (124, 23200), (126, 23203), (127, 23206), (164, 23296), (169, 23305), (Start: 171 @23308 has 29 MA's), (203, 23395), (211, 23416), (213, 23422), (222, 23443), (226, 23452), (230, 23473), (233, 23479), (288, 23581), (289, 23584), (305, 23614), (309, 23626), (321, 23650), (323, 23659), (344, 23725), (347, 23737), (357, 23779), (362, 23812), (368, 23845), (371, 23851), (377, 23875), (384, 23887), (398, 23944), (401, 23962), (438, 24094), (443, 24118), (447, 24136), (472, 24289), (475, 24304), (478, 24319), (479, 24325), (492, 24370), (496, 24388), (499, 24400), (501, 24406), (507, 24418), (511, 24427), (526, 24481), (539, 24550), (545, 24583), (547, 24589), (562, 24652), (563, 24655), (566, 24673), (570, 24694), (571, 24703),

Gene: Phlop\_33 Start: 28304, Stop: 30226, Start Num: 25

Candidate Starts for Phlop\_33:

(Start: 25 @28304 has 15 MA's), (50, 28427), (58, 28448), (75, 28496), (Start: 121 @28604 has 3 MA's), (Start: 131 @28625 has 1 MA's), (164, 28706), (180, 28742), (182, 28745), (209, 28823), (211, 28826), (213, 28832), (222, 28853), (230, 28883), (233, 28889), (285, 29024), (315, 29111), (318, 29120), (321, 29126), (324, 29132), (344, 29207), (351, 29240), (357, 29261), (371, 29333), (377, 29357), (384, 29369), (398, 29426), (438, 29576), (443, 29600), (472, 29768), (475, 29783), (499, 29879), (530, 29990), (537, 30026),

Gene: PhorbesPhlower\_25 Start: 20143, Stop: 21978, Start Num: 36

Candidate Starts for PhorbesPhlower\_25:

(Start: 36 @20143 has 3 MA's), (73, 20287), (78, 20299), (90, 20332), (93, 20338), (107, 20362), (113, 20374), (135, 20419), (Start: 145 @20449 has 1 MA's), (149, 20455), (211, 20599), (213, 20605), (228, 20644), (230, 20656), (233, 20662), (254, 20716), (344, 20971), (345, 20974), (357, 21025), (363, 21061), (368, 21091), (371, 21097), (377, 21121), (384, 21133), (398, 21190), (401, 21208), (438, 21340), (439, 21346), (443, 21364), (472, 21532), (492, 21613), (503, 21655), (511, 21670), (530, 21751), (537, 21787), (561, 21886),

Gene: Pickett\_24 Start: 19332, Stop: 20870, Start Num: 122

Candidate Starts for Pickett\_24:

(Start: 122 @19332 has 1 MA's), (148, 19401), (155, 19416), (161, 19422), (180, 19464), (213, 19554), (222, 19575), (230, 19605), (288, 19713), (289, 19716), (305, 19746), (309, 19758), (329, 19797), (347, 19869), (351, 19890), (357, 19911), (377, 20007), (384, 20019), (398, 20076), (401, 20094), (404, 20100), (416, 20133), (438, 20226), (443, 20250), (471, 20415), (472, 20418), (539, 20679), (570, 20823),

Gene: Pollux\_28 Start: 22623, Stop: 24575, Start Num: 18

Candidate Starts for Pollux\_28:

(1, 22335), (3, 22392), (4, 22407), (6, 22443), (7, 22488), (8, 22491), (Start: 18 @22623 has 8 MA's), (22, 22638), (Start: 26 @22677 has 22 MA's), (27, 22680), (95, 22908), (110, 22935), (Start: 115 @22950 has 6 MA's), (211, 23184), (213, 23190), (218, 23202), (248, 23280), (254, 23301), (300, 23421), (318, 23463), (344, 23556), (347, 23568), (357, 23610), (377, 23700), (384, 23712), (398, 23769), (405, 23802), (419, 23835), (432, 23895), (438, 23919), (442, 23937), (472, 24111), (473, 24117), (483, 24165), (539, 24387), (560, 24468), (562, 24489),

Gene: Polly\_25 Start: 22366, Stop: 23871, Start Num: 171

Candidate Starts for Polly\_25:

(Start: 171 @22366 has 29 MA's), (193, 22435), (197, 22447), (235, 22558), (240, 22570), (244, 22576), (272, 22663), (284, 22699), (286, 22705), (289, 22714), (368, 23008), (390, 23062), (391, 23065), (396, 23086), (406, 23131), (436, 23236), (456, 23320), (465, 23401), (466, 23404), (490, 23527), (520, 23623), (530, 23671), (541, 23731), (555, 23764), (558, 23770), (569, 23842),

Gene: Powerball\_24 Start: 20546, Stop: 22255, Start Num: 77

Candidate Starts for Powerball\_24:

(Start: 77 @20546 has 4 MA's), (95, 20594), (100, 20603), (154, 20729), (161, 20738), (164, 20744), (Start: 171 @20756 has 29 MA's), (173, 20762), (180, 20780), (182, 20783), (209, 20861), (211, 20864), (213, 20870), (222, 20891), (228, 20909), (230, 20921), (256, 20987), (261, 21002), (280, 21059), (298, 21113), (302, 21119), (322, 21170), (324, 21176), (327, 21185), (336, 21221), (344, 21251), (345, 21254), (357, 21305), (364, 21341), (366, 21359), (377, 21392), (379, 21395), (396, 21449), (398, 21461), (401, 21479), (438, 21611), (443, 21635), (461, 21716), (471, 21800), (472, 21803), (475, 21818), (477, 21830), (478, 21833), (481, 21851), (499, 21914), (501, 21920), (530, 22022), (559, 22136), (562, 22163),

Gene: PullumCavea\_33 Start: 28304, Stop: 30226, Start Num: 25

Candidate Starts for PullumCavea\_33:

(Start: 25 @28304 has 15 MA's), (50, 28427), (58, 28448), (75, 28496), (Start: 121 @28604 has 3 MA's), (Start: 131 @28625 has 1 MA's), (164, 28706), (180, 28742), (182, 28745), (209, 28823), (211, 28826), (213, 28832), (222, 28853), (230, 28883), (233, 28889), (285, 29024), (315, 29111), (318, 29120), (321, 29126), (324, 29132), (344, 29207), (351, 29240), (357, 29261), (371, 29333), (377, 29357), (384, 29369), (398, 29426), (438, 29576), (443, 29600), (472, 29768), (475, 29783), (499, 29879), (530, 29990), (537, 30026),

Gene: Rabbitrun\_32 Start: 25825, Stop: 27402, Start Num: 87

Candidate Starts for Rabbitrun\_32:

(Start: 84 @25816 has 5 MA's), (Start: 87 @25825 has 1 MA's), (94, 25846), (108, 25873), (167, 26017), (169, 26020), (181, 26044), (209, 26119), (211, 26122), (222, 26149), (230, 26179), (233, 26185), (248, 26218), (253, 26236), (282, 26266), (308, 26314), (309, 26317), (317, 26332), (320, 26338), (336, 26383), (345, 26416), (359, 26476), (363, 26503), (382, 26563), (384, 26566), (396, 26608), (398, 26620), (403, 26641), (404, 26644), (405, 26653), (416, 26677), (438, 26770), (439, 26776), (444, 26800), (447, 26812), (450, 26824), (465, 26917), (467, 26938), (472, 26962), (475, 26977), (479, 26998), (484, 27016), (492, 27043), (493, 27049), (496, 27061), (501, 27079), (517, 27124), (525, 27163), (535, 27196), (541, 27244), (552, 27277), (557, 27295), (563, 27331), (570, 27367), (575, 27391),

Gene: Reyja\_26 Start: 19864, Stop: 21561, Start Num: 70

Candidate Starts for Reyja\_26:

(Start: 70 @19864 has 1 MA's), (Start: 117 @19963 has 5 MA's), (154, 20059), (164, 20074), (211, 20194), (213, 20200), (222, 20221), (234, 20257), (248, 20290), (254, 20311), (273, 20359), (302, 20428), (320, 20464), (321, 20467), (344, 20548), (357, 20602), (375, 20683), (377, 20695), (384, 20707), (395, 20743), (398, 20764), (401, 20782), (405, 20797), (438, 20914), (443, 20938), (472, 21109), (496, 21226), (499, 21238), (501, 21244), (511, 21265), (547, 21412), (557, 21442), (564, 21481),

Gene: Ribeye\_37 Start: 33113, Stop: 34834, Start Num: 76

Candidate Starts for Ribeye\_37:

(Start: 76 @33113 has 22 MA's), (127, 33236), (133, 33248), (153, 33314), (182, 33383), (193, 33419), (274, 33644), (290, 33683), (312, 33743), (326, 33788), (341, 33848), (373, 33983), (376, 33989), (390, 34031), (395, 34046), (399, 34082), (408, 34103), (436, 34202), (456, 34286), (461, 34319), (465, 34364), (466, 34367), (472, 34403), (479, 34439), (481, 34451), (493, 34487), (503, 34523), (521, 34577),

Gene: RiverRaider\_37 Start: 31407, Stop: 33125, Start Num: 76

Candidate Starts for RiverRaider\_37:

(Start: 76 @31407 has 22 MA's), (133, 31542), (153, 31608), (182, 31677), (193, 31713), (207, 31752), (249, 31866), (274, 31938), (290, 31977), (293, 31986), (316, 32052), (318, 32058), (368, 32271), (373, 32277), (376, 32283), (390, 32325), (395, 32340), (396, 32349), (436, 32493), (442, 32520), (456, 32577), (463, 32634), (465, 32655), (472, 32694), (479, 32730), (481, 32742), (485, 32757), (492, 32772), (521, 32868),

Gene: Roary\_28 Start: 21475, Stop: 23196, Start Num: 86

Candidate Starts for Roary\_28:

(Start: 86 @21475 has 11 MA's), (140, 21619), (144, 21634), (184, 21733), (233, 21859), (245, 21880), (269, 21952), (275, 21976), (293, 22030), (331, 22132), (355, 22228), (365, 22282), (378, 22330), (420, 22477), (446, 22603), (479, 22807), (480, 22816), (503, 22897), (530, 22993), (557, 23092), (573, 23179),

Gene: RobinSparkles\_30 Start: 32266, Stop: 33954, Start Num: 115



Candidate Starts for RobinSparkles\_30:

(Start: 115 @32266 has 6 MA's), (137, 32329), (165, 32410), (176, 32440), (283, 32755), (333, 32911), (334, 32917), (340, 32938), (344, 32956), (359, 33019), (427, 33247), (440, 33316), (443, 33328), (458, 33394), (470, 33505), (491, 33598), (496, 33619), (549, 33817), (559, 33850),

Gene: Rofo\_38 Start: 33730, Stop: 35583, Start Num: 26

Candidate Starts for Rofo\_38:

(Start: 26 @33730 has 22 MA's), (58, 33865), (61, 33874), (73, 33907), (Start: 85 @33931 has 1 MA's), (Start: 112 @34000 has 1 MA's), (123, 34030), (138, 34075), (211, 34267), (213, 34273), (222, 34294), (228, 34312), (230, 34324), (254, 34384), (299, 34450), (344, 34570), (351, 34603), (368, 34690), (377, 34720), (384, 34732), (396, 34777), (398, 34789), (401, 34807), (405, 34822), (416, 34846), (431, 34912), (438, 34939), (443, 34963), (465, 35086), (471, 35128), (492, 35212), (499, 35242), (511, 35269), (526, 35323), (533, 35353), (545, 35425), (549, 35434),

Gene: Rumpelstiltskin\_20 Start: 19231, Stop: 21030, Start Num: 62

Candidate Starts for Rumpelstiltskin\_20:

(Start: 62 @19231 has 5 MA's), (Start: 63 @19234 has 23 MA's), (125, 19387), (134, 19411), (170, 19507), (174, 19516), (189, 19561), (201, 19591), (210, 19618), (243, 19711), (251, 19735), (279, 19819), (293, 19864), (343, 20020), (348, 20038), (350, 20053), (353, 20071), (355, 20074), (369, 20152), (390, 20209), (391, 20212), (393, 20215), (412, 20299), (415, 20308), (421, 20335), (445, 20446), (446, 20449), (472, 20617), (486, 20692), (494, 20701), (501, 20728), (513, 20761), (518, 20776), (522, 20791), (524, 20797), (539, 20875), (540, 20878), (556, 20926), (572, 21013),

Gene: Sahara\_24 Start: 20177, Stop: 21700, Start Num: 166

Candidate Starts for Sahara\_24:

(Start: 166 @20177 has 19 MA's), (196, 20249), (202, 20261), (213, 20288), (223, 20312), (268, 20432), (271, 20441), (292, 20507), (334, 20621), (345, 20663), (351, 20693), (359, 20723), (375, 20789), (384, 20813), (391, 20837), (396, 20855), (398, 20867), (401, 20885), (405, 20900), (407, 20906), (425, 20957), (430, 20984), (443, 21035), (469, 21203), (501, 21341), (509, 21362), (511, 21365), (514, 21377), (524, 21416), (550, 21563), (562, 21623), (563, 21626),

Gene: Saintus\_28 Start: 21494, Stop: 23215, Start Num: 86

Candidate Starts for Saintus\_28:

(Start: 86 @21494 has 11 MA's), (140, 21638), (144, 21653), (184, 21752), (222, 21842), (233, 21878), (245, 21899), (269, 21971), (275, 21995), (293, 22049), (331, 22151), (355, 22247), (365, 22301), (378, 22349), (415, 22478), (420, 22496), (446, 22622), (479, 22826), (480, 22835), (503, 22916), (530, 23012), (557, 23111), (573, 23198),

Gene: Salvador\_33 Start: 28218, Stop: 30140, Start Num: 25

Candidate Starts for Salvador\_33:

(Start: 25 @28218 has 15 MA's), (50, 28341), (58, 28362), (75, 28410), (Start: 121 @28518 has 3 MA's), (Start: 131 @28539 has 1 MA's), (164, 28620), (180, 28656), (182, 28659), (209, 28737), (211, 28740), (213, 28746), (222, 28767), (230, 28797), (233, 28803), (285, 28938), (315, 29025), (318, 29034), (321, 29040), (324, 29046), (351, 29154), (357, 29175), (371, 29247), (377, 29271), (384, 29283), (398, 29340), (438, 29490), (443, 29514), (472, 29682), (475, 29697), (499, 29793), (530, 29904), (537, 29940),

Gene: Sanjuju\_35 Start: 33293, Stop: 35014, Start Num: 76

Candidate Starts for Sanjuju\_35:

(Start: 76 @33293 has 22 MA's), (133, 33428), (136, 33437), (143, 33470), (153, 33494), (182, 33563), (207, 33638), (274, 33824), (290, 33863), (293, 33872), (318, 33944), (326, 33968), (345, 34040), (364, 34127), (373, 34163), (376, 34169), (390, 34211), (395, 34226), (396, 34235), (436, 34382), (456, 34466), (461, 34499), (466, 34547), (478, 34613), (479, 34619), (481, 34631), (492,

34661), (493, 34667), (503, 34703), (507, 34712), (521, 34757),

Gene: Santhid\_25 Start: 19699, Stop: 21399, Start Num: 71

Candidate Starts for Santhid\_25:

(Start: 71 @19699 has 2 MA's), (Start: 117 @19798 has 5 MA's), (154, 19894), (164, 19909), (167, 19915), (209, 20026), (211, 20029), (213, 20035), (222, 20056), (228, 20074), (234, 20092), (248, 20125), (254, 20146), (273, 20194), (302, 20263), (320, 20299), (321, 20302), (344, 20383), (347, 20395), (357, 20437), (375, 20518), (376, 20521), (377, 20530), (384, 20542), (395, 20578), (398, 20599), (401, 20617), (405, 20632), (438, 20749), (443, 20773), (472, 20944), (492, 21043), (496, 21061), (499, 21073), (501, 21079), (511, 21100), (557, 21277), (564, 21316),

Gene: Saronaya\_36 Start: 31956, Stop: 33677, Start Num: 76

Candidate Starts for Saronaya\_36:

(Start: 76 @31956 has 22 MA's), (127, 32079), (133, 32091), (153, 32157), (182, 32226), (193, 32262), (207, 32301), (274, 32487), (290, 32526), (312, 32586), (326, 32631), (341, 32691), (373, 32826), (376, 32832), (390, 32874), (395, 32889), (399, 32925), (408, 32946), (436, 33045), (456, 33129), (461, 33162), (465, 33207), (466, 33210), (472, 33246), (479, 33282), (481, 33294), (493, 33330), (503, 33366), (521, 33420),

Gene: Sarshaun\_20 Start: 19261, Stop: 21057, Start Num: 63

Candidate Starts for Sarshaun\_20:

(Start: 62 @19258 has 5 MA's), (Start: 63 @19261 has 23 MA's), (125, 19414), (134, 19438), (170, 19534), (174, 19543), (188, 19585), (189, 19588), (201, 19618), (210, 19645), (243, 19738), (251, 19762), (279, 19846), (293, 19891), (306, 19927), (343, 20047), (348, 20065), (350, 20080), (353, 20098), (355, 20101), (369, 20179), (390, 20236), (391, 20239), (393, 20242), (412, 20326), (415, 20335), (421, 20362), (445, 20473), (446, 20476), (472, 20644), (486, 20719), (494, 20728), (501, 20755), (513, 20788), (518, 20803), (522, 20818), (524, 20824), (539, 20902), (540, 20905), (572, 21040),

Gene: Savage\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Savage\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: Savbucketdawg\_33 Start: 27999, Stop: 29921, Start Num: 25

Candidate Starts for Savbucketdawg\_33:

(Start: 25 @27999 has 15 MA's), (50, 28122), (58, 28143), (75, 28191), (Start: 121 @28299 has 3 MA's), (Start: 131 @28320 has 1 MA's), (164, 28401), (180, 28437), (182, 28440), (209, 28518), (211, 28521), (213, 28527), (222, 28548), (230, 28578), (233, 28584), (285, 28719), (315, 28806), (318, 28815), (321, 28821), (324, 28827), (344, 28902), (351, 28935), (357, 28956), (371, 29028), (377, 29052), (384, 29064), (398, 29121), (438, 29271), (443, 29295), (472, 29463), (475, 29478), (499, 29574), (530, 29685), (537, 29721),

Gene: Schmidt\_27 Start: 20153, Stop: 21607, Start Num: 145

Candidate Starts for Schmidt\_27:

(Start: 145 @20153 has 1 MA's), (151, 20165), (179, 20222), (185, 20240), (206, 20294), (230, 20360), (237, 20369), (263, 20420), (311, 20525), (314, 20534), (327, 20552), (330, 20567), (336, 20588), (344, 20618), (352, 20660), (357, 20672), (360, 20684), (361, 20693), (367, 20732), (380, 20762), (390, 20783), (396, 20807), (425, 20906), (437, 20963), (438, 20966), (474, 21170), (488,

21242), (497, 21275), (508, 21302), (512, 21314), (519, 21338), (523, 21353), (532, 21386), (562, 21524),

Gene: SchottB\_35 Start: 32971, Stop: 34692, Start Num: 76

Candidate Starts for SchottB\_35:

(Start: 76 @32971 has 22 MA's), (127, 33094), (133, 33106), (153, 33172), (182, 33241), (193, 33277), (274, 33502), (290, 33541), (312, 33601), (326, 33646), (341, 33706), (373, 33841), (376, 33847), (390, 33889), (395, 33904), (399, 33940), (408, 33961), (436, 34060), (456, 34144), (461, 34177), (465, 34222), (466, 34225), (472, 34261), (479, 34297), (481, 34309), (493, 34345), (503, 34381), (521, 34435),

Gene: Sedona\_38 Start: 34836, Stop: 36758, Start Num: 26

Candidate Starts for Sedona\_38:

(Start: 26 @34836 has 22 MA's), (58, 34971), (61, 34980), (73, 35013), (Start: 85 @35037 has 1 MA's), (Start: 112 @35106 has 1 MA's), (138, 35181), (211, 35373), (213, 35379), (222, 35400), (228, 35418), (230, 35430), (254, 35490), (276, 35544), (321, 35658), (344, 35745), (357, 35799), (368, 35865), (377, 35895), (384, 35907), (396, 35952), (398, 35964), (401, 35982), (410, 36009), (431, 36087), (438, 36114), (443, 36138), (465, 36261), (471, 36303), (492, 36387), (499, 36417), (511, 36444), (526, 36498), (533, 36528), (545, 36600), (549, 36609),

Gene: Sephiroth\_30 Start: 24175, Stop: 25827, Start Num: 84

Candidate Starts for Sephiroth\_30:

(Start: 84 @24175 has 5 MA's), (155, 24349), (161, 24355), (163, 24358), (Start: 171 @24373 has 29 MA's), (187, 24415), (193, 24427), (209, 24469), (211, 24472), (213, 24478), (218, 24490), (222, 24499), (228, 24517), (230, 24529), (233, 24535), (258, 24601), (264, 24616), (267, 24622), (318, 24757), (327, 24784), (329, 24790), (351, 24883), (384, 25003), (396, 25045), (398, 25057), (438, 25207), (443, 25231), (447, 25249), (461, 25312), (472, 25399), (475, 25414), (479, 25435), (492, 25480), (496, 25498), (502, 25519), (517, 25561), (522, 25585), (535, 25633), (552, 25708), (562, 25759), (574, 25822),

Gene: Shivanishola\_38 Start: 33192, Stop: 35114, Start Num: 26

Candidate Starts for Shivanishola\_38:

(Start: 26 @33192 has 22 MA's), (58, 33327), (61, 33336), (73, 33369), (Start: 85 @33393 has 1 MA's), (Start: 112 @33462 has 1 MA's), (123, 33492), (138, 33537), (211, 33729), (213, 33735), (222, 33756), (228, 33774), (230, 33786), (254, 33846), (276, 33900), (321, 34014), (344, 34101), (357, 34155), (368, 34221), (377, 34251), (384, 34263), (396, 34308), (398, 34320), (401, 34338), (410, 34365), (431, 34443), (438, 34470), (443, 34494), (465, 34617), (471, 34659), (492, 34743), (499, 34773), (526, 34854), (533, 34884), (545, 34956), (549, 34965),

Gene: Sidious\_27 Start: 22956, Stop: 24578, Start Num: 131

Candidate Starts for Sidious\_27:

(Start: 66 @22788 has 1 MA's), (Start: 131 @22956 has 1 MA's), (156, 23034), (198, 23130), (205, 23148), (213, 23166), (224, 23193), (230, 23217), (268, 23310), (334, 23499), (345, 23541), (351, 23571), (359, 23601), (375, 23667), (384, 23691), (391, 23715), (398, 23745), (405, 23778), (407, 23784), (424, 23832), (425, 23835), (430, 23862), (443, 23913), (469, 24081), (478, 24123), (491, 24180), (501, 24219), (509, 24240), (511, 24243), (514, 24255), (524, 24294), (531, 24333), (542, 24402), (563, 24504),

Gene: Sitar\_38 Start: 34887, Stop: 36809, Start Num: 26

Candidate Starts for Sitar\_38:

(Start: 26 @34887 has 22 MA's), (58, 35022), (61, 35031), (73, 35064), (Start: 85 @35088 has 1 MA's), (Start: 112 @35157 has 1 MA's), (138, 35232), (211, 35424), (213, 35430), (222, 35451), (228, 35469), (230, 35481), (254, 35541), (276, 35595), (321, 35709), (344, 35796), (357, 35850), (366,

35904), (368, 35916), (377, 35946), (384, 35958), (396, 36003), (398, 36015), (401, 36033), (410, 36060), (431, 36138), (438, 36165), (443, 36189), (465, 36312), (471, 36354), (492, 36438), (499, 36468), (526, 36549), (533, 36579), (545, 36651), (549, 36660),

Gene: Sixama\_102 Start: 61915, Stop: 63603, Start Num: 67

Candidate Starts for Sixama\_102:

(56, 61888), (59, 61894), (64, 61909), (Start: 67 @61915 has 1 MA's), (Start: 85 @61957 has 1 MA's), (119, 62032), (Start: 121 @62035 has 3 MA's), (Start: 131 @62056 has 1 MA's), (136, 62068), (208, 62248), (228, 62299), (247, 62347), (324, 62539), (438, 62971), (443, 62995), (473, 63175), (474, 63178), (478, 63199), (503, 63298), (527, 63376), (544, 63457),

Gene: Smeadley\_28 Start: 21508, Stop: 23229, Start Num: 86

Candidate Starts for Smeadley\_28:

(Start: 86 @21508 has 11 MA's), (140, 21652), (144, 21667), (184, 21766), (222, 21856), (233, 21892), (245, 21913), (269, 21985), (275, 22009), (293, 22063), (331, 22165), (355, 22261), (365, 22315), (378, 22363), (415, 22492), (420, 22510), (446, 22636), (479, 22840), (480, 22849), (503, 22930), (530, 23026), (557, 23125), (573, 23212),

Gene: SmokingBunny\_33 Start: 28209, Stop: 30131, Start Num: 25

Candidate Starts for SmokingBunny\_33:

(Start: 25 @28209 has 15 MA's), (50, 28332), (58, 28353), (75, 28401), (Start: 121 @28509 has 3 MA's), (Start: 131 @28530 has 1 MA's), (164, 28611), (180, 28647), (182, 28650), (209, 28728), (211, 28731), (213, 28737), (222, 28758), (230, 28788), (233, 28794), (285, 28929), (315, 29016), (318, 29025), (321, 29031), (324, 29037), (344, 29112), (351, 29145), (357, 29166), (371, 29238), (377, 29262), (384, 29274), (398, 29331), (438, 29481), (443, 29505), (472, 29673), (475, 29688), (499, 29784), (530, 29895), (537, 29931),

Gene: Soap141\_20 Start: 19261, Stop: 21057, Start Num: 63

Candidate Starts for Soap141\_20:

(Start: 62 @19258 has 5 MA's), (Start: 63 @19261 has 23 MA's), (125, 19414), (134, 19438), (170, 19534), (174, 19543), (188, 19585), (189, 19588), (201, 19618), (210, 19645), (243, 19738), (251, 19762), (279, 19846), (293, 19891), (306, 19927), (343, 20047), (348, 20065), (350, 20080), (353, 20098), (355, 20101), (369, 20179), (390, 20236), (391, 20239), (393, 20242), (412, 20326), (415, 20335), (421, 20362), (445, 20473), (446, 20476), (472, 20644), (486, 20719), (494, 20728), (501, 20755), (513, 20788), (518, 20803), (522, 20818), (524, 20824), (539, 20902), (540, 20905), (572, 21040),

Gene: SoilAssassin\_25 Start: 20498, Stop: 22021, Start Num: 166

Candidate Starts for SoilAssassin\_25:

(Start: 166 @20498 has 19 MA's), (196, 20570), (202, 20582), (213, 20609), (223, 20633), (268, 20753), (271, 20762), (292, 20828), (334, 20942), (345, 20984), (351, 21014), (359, 21044), (375, 21110), (384, 21134), (391, 21158), (396, 21176), (398, 21188), (401, 21206), (405, 21221), (407, 21227), (425, 21278), (430, 21305), (443, 21356), (469, 21524), (474, 21545), (491, 21623), (501, 21662), (509, 21683), (511, 21686), (514, 21698), (524, 21737), (550, 21884), (562, 21944), (563, 21947),

Gene: Spooky\_29 Start: 22210, Stop: 24102, Start Num: 24

Candidate Starts for Spooky\_29:

(Start: 24 @22210 has 2 MA's), (61, 22372), (73, 22402), (Start: 115 @22483 has 6 MA's), (Start: 117 @22486 has 5 MA's), (123, 22501), (125, 22504), (154, 22582), (169, 22606), (203, 22696), (213, 22723), (222, 22744), (228, 22762), (230, 22774), (254, 22834), (276, 22888), (321, 23002), (329, 23029), (344, 23089), (345, 23092), (351, 23122), (377, 23239), (384, 23251), (398, 23308), (401, 23326), (438, 23458), (443, 23482), (451, 23515), (471, 23647), (472, 23650), (492, 23731), (499,

23761), (526, 23842), (549, 23953), (561, 24007),

Gene: Sproutie\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Sproutie\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: Squiddly\_31 Start: 23622, Stop: 25514, Start Num: 24

Candidate Starts for Squiddly\_31:

(Start: 24 @23622 has 2 MA's), (61, 23784), (73, 23814), (Start: 115 @23895 has 6 MA's), (Start: 117 @23898 has 5 MA's), (123, 23913), (125, 23916), (154, 23994), (169, 24018), (203, 24108), (213, 24135), (222, 24156), (228, 24174), (230, 24186), (254, 24246), (276, 24300), (321, 24414), (329, 24441), (344, 24501), (345, 24504), (351, 24534), (377, 24651), (384, 24663), (398, 24720), (401, 24738), (438, 24870), (443, 24894), (451, 24927), (471, 25059), (472, 25062), (492, 25143), (499, 25173), (526, 25254), (549, 25365), (561, 25419),

Gene: Stephig9\_28 Start: 21490, Stop: 23211, Start Num: 86

Candidate Starts for Stephig9\_28:

(Start: 86 @21490 has 11 MA's), (140, 21634), (184, 21748), (233, 21874), (245, 21895), (269, 21967), (275, 21991), (293, 22045), (331, 22147), (355, 22243), (365, 22297), (378, 22345), (415, 22474), (420, 22492), (446, 22618), (479, 22822), (480, 22831), (503, 22912), (530, 23008), (557, 23107),

Gene: StorminNorm\_36 Start: 31838, Stop: 33559, Start Num: 76

Candidate Starts for StorminNorm\_36:

(Start: 76 @31838 has 22 MA's), (127, 31961), (133, 31973), (153, 32039), (182, 32108), (193, 32144), (274, 32369), (290, 32408), (312, 32468), (326, 32513), (341, 32573), (373, 32708), (376, 32714), (390, 32756), (395, 32771), (399, 32807), (408, 32828), (436, 32927), (456, 33011), (461, 33044), (465, 33089), (466, 33092), (472, 33128), (479, 33164), (481, 33176), (493, 33212), (503, 33248), (521, 33302),

Gene: Stultus\_35 Start: 32209, Stop: 33930, Start Num: 76

Candidate Starts for Stultus\_35:

(Start: 76 @32209 has 22 MA's), (133, 32344), (136, 32353), (143, 32386), (153, 32410), (182, 32479), (207, 32554), (274, 32740), (290, 32779), (293, 32788), (297, 32803), (318, 32860), (326, 32884), (345, 32956), (364, 33043), (373, 33079), (376, 33085), (390, 33127), (395, 33142), (396, 33151), (436, 33298), (456, 33382), (461, 33415), (466, 33463), (478, 33529), (479, 33535), (481, 33547), (492, 33577), (493, 33583), (503, 33619), (507, 33628), (521, 33673),

Gene: Suerte\_24 Start: 21509, Stop: 23182, Start Num: 77

Candidate Starts for Suerte\_24:

(32, 21338), (33, 21341), (Start: 77 @21509 has 4 MA's), (92, 21551), (100, 21566), (114, 21590), (Start: 171 @21719 has 29 MA's), (203, 21806), (211, 21827), (222, 21854), (226, 21863), (230, 21884), (233, 21890), (254, 21944), (344, 22187), (377, 22331), (384, 22343), (389, 22358), (395, 22379), (396, 22388), (398, 22400), (438, 22550), (450, 22604), (472, 22742), (475, 22757), (499, 22853), (556, 23060),

Gene: Suscepit\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Suscepit\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: Syleon\_30 Start: 24097, Stop: 25749, Start Num: 84

Candidate Starts for Syleon\_30:

(Start: 84 @24097 has 5 MA's), (155, 24271), (161, 24277), (163, 24280), (Start: 171 @24295 has 29 MA's), (187, 24337), (193, 24349), (209, 24391), (211, 24394), (213, 24400), (218, 24412), (222, 24421), (228, 24439), (230, 24451), (233, 24457), (258, 24523), (264, 24538), (267, 24544), (318, 24679), (327, 24706), (329, 24712), (351, 24805), (384, 24925), (396, 24967), (398, 24979), (438, 25129), (443, 25153), (447, 25171), (461, 25234), (472, 25321), (475, 25336), (492, 25402), (496, 25420), (502, 25441), (517, 25483), (522, 25507), (535, 25555), (552, 25630), (562, 25681), (574, 25744),

Gene: Tangent\_38 Start: 33252, Stop: 35174, Start Num: 26

Candidate Starts for Tangent\_38:

(Start: 26 @33252 has 22 MA's), (58, 33387), (61, 33396), (73, 33429), (Start: 85 @33453 has 1 MA's), (Start: 112 @33522 has 1 MA's), (123, 33552), (138, 33597), (211, 33789), (213, 33795), (222, 33816), (228, 33834), (230, 33846), (254, 33906), (276, 33960), (321, 34074), (344, 34161), (357, 34215), (368, 34281), (377, 34311), (384, 34323), (396, 34368), (398, 34380), (401, 34398), (410, 34425), (431, 34503), (438, 34530), (443, 34554), (465, 34677), (471, 34719), (492, 34803), (499, 34833), (511, 34860), (526, 34914), (533, 34944), (545, 35016), (549, 35025),

Gene: Tangerine\_36 Start: 31841, Stop: 33562, Start Num: 76

Candidate Starts for Tangerine\_36:

(Start: 76 @31841 has 22 MA's), (127, 31964), (133, 31976), (153, 32042), (182, 32111), (193, 32147), (207, 32186), (274, 32372), (290, 32411), (312, 32471), (326, 32516), (341, 32576), (373, 32711), (376, 32717), (390, 32759), (395, 32774), (399, 32810), (408, 32831), (436, 32930), (456, 33014), (461, 33047), (465, 33092), (466, 33095), (472, 33131), (479, 33167), (481, 33179), (493, 33215), (503, 33251), (521, 33305),

Gene: Tarzan\_25 Start: 19667, Stop: 21313, Start Num: 72

Candidate Starts for Tarzan\_25:

(Start: 72 @19667 has 1 MA's), (Start: 117 @19766 has 5 MA's), (154, 19862), (164, 19877), (213, 20003), (222, 20024), (230, 20054), (296, 20180), (344, 20300), (345, 20303), (347, 20312), (357, 20354), (359, 20363), (368, 20420), (372, 20432), (377, 20450), (384, 20462), (398, 20519), (408, 20561), (416, 20576), (438, 20669), (443, 20693), (447, 20711), (465, 20819), (472, 20864), (499, 20975), (501, 20981), (511, 21002), (522, 21044), (530, 21080), (539, 21125), (563, 21230),

Gene: Tayonia\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Tayonia\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: ThankyouJordi\_25 Start: 22901, Stop: 24409, Start Num: 171

Candidate Starts for ThankyouJordi\_25:

(54, 22586), (92, 22694), (123, 22763), (125, 22766), (130, 22790), (133, 22796), (Start: 171 @22901 has 29 MA's), (195, 22979), (197, 22982), (228, 23072), (242, 23108), (244, 23111), (284, 23234), (286, 23240), (289, 23249), (358, 23480), (367, 23543), (368, 23546), (381, 23573), (390, 23600), (391, 23603), (413, 23684), (436, 23774), (466, 23942), (479, 24017), (482, 24032), (520, 24161),

(537, 24245), (558, 24308), (569, 24380),

Gene: Thimann\_26 Start: 21977, Stop: 23650, Start Num: 77

Candidate Starts for Thimann\_26:

(32, 21806), (33, 21809), (Start: 77 @21977 has 4 MA's), (92, 22019), (100, 22034), (114, 22058), (Start: 171 @22187 has 29 MA's), (203, 22274), (211, 22295), (222, 22322), (226, 22331), (230, 22352), (233, 22358), (254, 22412), (344, 22655), (377, 22799), (384, 22811), (389, 22826), (395, 22847), (396, 22856), (398, 22868), (438, 23018), (450, 23072), (472, 23210), (475, 23225), (499, 23321), (556, 23528),

Gene: Thing3\_36 Start: 33130, Stop: 35052, Start Num: 26

Candidate Starts for Thing3\_36:

(Start: 26 @33130 has 22 MA's), (58, 33265), (61, 33274), (73, 33307), (Start: 85 @33331 has 1 MA's), (Start: 112 @33400 has 1 MA's), (138, 33475), (211, 33667), (213, 33673), (222, 33694), (228, 33712), (230, 33724), (254, 33784), (276, 33838), (321, 33952), (344, 34039), (357, 34093), (366, 34147), (368, 34159), (377, 34189), (384, 34201), (396, 34246), (398, 34258), (401, 34276), (410, 34303), (431, 34381), (438, 34408), (443, 34432), (465, 34555), (471, 34597), (492, 34681), (499, 34711), (511, 34738), (526, 34792), (533, 34822), (545, 34894), (549, 34903),

Gene: TillyBobJoe\_33 Start: 28008, Stop: 29942, Start Num: 25

Candidate Starts for TillyBobJoe\_33:

(Start: 25 @28008 has 15 MA's), (50, 28131), (58, 28152), (75, 28200), (Start: 121 @28308 has 3 MA's), (Start: 131 @28329 has 1 MA's), (164, 28410), (180, 28446), (182, 28449), (209, 28527), (211, 28530), (213, 28536), (222, 28557), (230, 28587), (233, 28593), (285, 28728), (315, 28815), (318, 28824), (321, 28830), (324, 28836), (344, 28911), (351, 28944), (357, 28965), (371, 29037), (377, 29061), (384, 29073), (398, 29130), (438, 29280), (443, 29304), (472, 29472), (475, 29487), (499, 29583), (530, 29694), (537, 29730),

Gene: TimTam\_26 Start: 22926, Stop: 24431, Start Num: 171

Candidate Starts for TimTam\_26:

(54, 22611), (92, 22719), (123, 22788), (125, 22791), (130, 22815), (133, 22821), (Start: 171 @22926 has 29 MA's), (193, 22995), (197, 23007), (235, 23118), (238, 23124), (240, 23130), (244, 23136), (272, 23223), (284, 23259), (286, 23265), (289, 23274), (368, 23568), (390, 23622), (391, 23625), (396, 23646), (406, 23691), (436, 23796), (456, 23880), (465, 23961), (466, 23964), (520, 24183), (530, 24231), (541, 24291), (555, 24324), (558, 24330), (569, 24402),

Gene: TinyDot\_26 Start: 19859, Stop: 21466, Start Num: 117

Candidate Starts for TinyDot\_26:

(Start: 117 @19859 has 5 MA's), (148, 19928), (155, 19943), (161, 19949), (180, 19991), (211, 20075), (213, 20081), (222, 20102), (228, 20120), (248, 20171), (254, 20192), (258, 20204), (327, 20390), (344, 20456), (345, 20459), (351, 20489), (366, 20567), (375, 20588), (377, 20600), (384, 20612), (398, 20669), (407, 20708), (438, 20819), (451, 20876), (460, 20915), (472, 21011), (479, 21047), (492, 21092), (501, 21128), (526, 21203), (530, 21227), (539, 21272), (545, 21305), (549, 21314), (563, 21377),

Gene: Togo\_33 Start: 28209, Stop: 30131, Start Num: 25

Candidate Starts for Togo\_33:

(Start: 25 @28209 has 15 MA's), (50, 28332), (58, 28353), (75, 28401), (Start: 121 @28509 has 3 MA's), (Start: 131 @28530 has 1 MA's), (164, 28611), (180, 28647), (182, 28650), (209, 28728), (211, 28731), (213, 28737), (222, 28758), (230, 28788), (233, 28794), (285, 28929), (315, 29016), (318, 29025), (321, 29031), (324, 29037), (344, 29112), (351, 29145), (357, 29166), (371, 29238), (377, 29262), (384, 29274), (398, 29331), (438, 29481), (443, 29505), (472, 29673), (475, 29688), (499, 29784), (530, 29895), (537, 29931),

Gene: Tourach\_20 Start: 19226, Stop: 21022, Start Num: 63

Candidate Starts for Tourach\_20:

(Start: 63 @19226 has 23 MA's), (125, 19379), (134, 19403), (175, 19511), (189, 19553), (201, 19583), (210, 19610), (241, 19700), (243, 19703), (251, 19727), (279, 19811), (293, 19856), (313, 19907), (343, 20012), (350, 20045), (355, 20066), (369, 20144), (393, 20207), (412, 20291), (415, 20300), (445, 20438), (461, 20516), (472, 20609), (475, 20624), (486, 20684), (494, 20693), (501, 20720), (505, 20729), (513, 20753), (518, 20768), (522, 20783), (524, 20789), (528, 20801), (556, 20918), (570, 20993), (572, 21005),

Gene: Trax\_30 Start: 25810, Stop: 27396, Start Num: 84

Candidate Starts for Trax\_30:

(Start: 84 @25810 has 5 MA's), (97, 25846), (154, 25990), (167, 26011), (169, 26014), (Start: 171 @26017 has 29 MA's), (181, 26041), (191, 26071), (193, 26074), (209, 26116), (211, 26119), (222, 26146), (226, 26155), (230, 26176), (233, 26182), (253, 26233), (254, 26236), (282, 26257), (295, 26299), (317, 26320), (318, 26323), (327, 26335), (344, 26401), (357, 26455), (363, 26491), (384, 26554), (392, 26578), (396, 26596), (398, 26608), (401, 26626), (405, 26641), (438, 26758), (439, 26764), (443, 26782), (444, 26788), (447, 26800), (454, 26827), (467, 26926), (472, 26950), (475, 26965), (484, 27004), (492, 27031), (493, 27037), (496, 27049), (499, 27061), (501, 27067), (514, 27103), (527, 27157), (557, 27286), (561, 27313), (568, 27346),

Gene: Trine\_24 Start: 19054, Stop: 20592, Start Num: 159

Candidate Starts for Trine\_24:

(Start: 159 @19054 has 2 MA's), (200, 19165), (204, 19174), (226, 19240), (230, 19261), (236, 19273), (255, 19327), (289, 19426), (297, 19453), (353, 19648), (381, 19750), (390, 19777), (436, 19951), (452, 20017), (456, 20035), (461, 20068), (479, 20191), (481, 20203), (490, 20239), (504, 20287), (510, 20302), (546, 20455), (549, 20461), (553, 20473), (554, 20482),

Gene: Trumpet\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Trumpet\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: TuertoX\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for TuertoX\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: Tycho\_36 Start: 31930, Stop: 33651, Start Num: 76

Candidate Starts for Tycho\_36:

(Start: 76 @31930 has 22 MA's), (127, 32053), (133, 32065), (153, 32131), (182, 32200), (193, 32236), (274, 32461), (290, 32500), (312, 32560), (326, 32605), (341, 32665), (373, 32800), (376, 32806), (390, 32848), (395, 32863), (399, 32899), (408, 32920), (436, 33019), (456, 33103), (461, 33136), (465, 33181), (466, 33184), (472, 33220), (479, 33256), (481, 33268), (493, 33304), (503, 33340), (521, 33394),

Gene: Upyo\_24 Start: 19301, Stop: 20836, Start Num: 159



Candidate Starts for Upyo\_24:

(146, 19277), (Start: 159 @19301 has 2 MA's), (200, 19412), (221, 19475), (255, 19574), (297, 19700), (301, 19706), (303, 19712), (308, 19730), (314, 19745), (316, 19751), (318, 19757), (338, 19826), (342, 19844), (354, 19898), (370, 19976), (383, 20003), (398, 20063), (401, 20081), (436, 20201), (443, 20234), (449, 20261), (466, 20369), (475, 20426), (478, 20441), (483, 20465), (542, 20699), (565, 20786),

Gene: Valary\_36 Start: 29154, Stop: 31076, Start Num: 25

Candidate Starts for Valary\_36:

(Start: 25 @29154 has 15 MA's), (50, 29277), (58, 29298), (75, 29346), (Start: 121 @29454 has 3 MA's), (Start: 131 @29475 has 1 MA's), (164, 29556), (180, 29592), (182, 29595), (209, 29673), (211, 29676), (213, 29682), (222, 29703), (230, 29733), (233, 29739), (285, 29874), (315, 29961), (318, 29970), (321, 29976), (324, 29982), (344, 30057), (351, 30090), (357, 30111), (371, 30183), (377, 30207), (384, 30219), (398, 30276), (438, 30426), (443, 30450), (472, 30618), (475, 30633), (499, 30729), (530, 30840), (537, 30876),

Gene: Vasanti\_24 Start: 20059, Stop: 21591, Start Num: 166

Candidate Starts for Vasanti\_24:

(Start: 166 @20059 has 19 MA's), (172, 20065), (196, 20131), (216, 20176), (229, 20215), (262, 20296), (268, 20311), (271, 20320), (292, 20386), (334, 20512), (351, 20584), (359, 20614), (375, 20680), (384, 20704), (391, 20728), (396, 20746), (398, 20758), (407, 20797), (425, 20848), (430, 20875), (469, 21094), (477, 21133), (478, 21136), (490, 21190), (492, 21196), (501, 21232), (509, 21253), (511, 21256), (514, 21268), (524, 21307), (531, 21346), (550, 21454), (563, 21517),

Gene: Vetric\_20 Start: 19234, Stop: 21030, Start Num: 63

Candidate Starts for Vetric\_20:

(Start: 62 @19231 has 5 MA's), (Start: 63 @19234 has 23 MA's), (125, 19387), (134, 19411), (170, 19507), (174, 19516), (189, 19561), (191, 19570), (201, 19591), (210, 19618), (243, 19711), (251, 19735), (279, 19819), (293, 19864), (343, 20020), (348, 20038), (350, 20053), (353, 20071), (355, 20074), (369, 20152), (390, 20209), (391, 20212), (393, 20215), (412, 20299), (415, 20308), (421, 20335), (445, 20446), (446, 20449), (472, 20617), (475, 20632), (486, 20692), (494, 20701), (501, 20728), (513, 20761), (518, 20776), (522, 20791), (524, 20797), (539, 20875), (540, 20878), (556, 20926), (572, 21013),

Gene: Vivi2\_40 Start: 34410, Stop: 36332, Start Num: 26

Candidate Starts for Vivi2\_40:

(Start: 26 @34410 has 22 MA's), (58, 34545), (61, 34554), (73, 34587), (Start: 85 @34611 has 1 MA's), (Start: 112 @34680 has 1 MA's), (123, 34710), (138, 34755), (211, 34947), (213, 34953), (222, 34974), (228, 34992), (230, 35004), (254, 35064), (276, 35118), (321, 35232), (344, 35319), (357, 35373), (368, 35439), (377, 35469), (384, 35481), (396, 35526), (398, 35538), (401, 35556), (410, 35583), (431, 35661), (438, 35688), (443, 35712), (465, 35835), (471, 35877), (492, 35961), (499, 35991), (511, 36018), (526, 36072), (533, 36102), (545, 36174), (549, 36183),

Gene: WelcomeAyanna\_25 Start: 22901, Stop: 24409, Start Num: 171

Candidate Starts for WelcomeAyanna\_25:

(54, 22586), (92, 22694), (123, 22763), (125, 22766), (130, 22790), (133, 22796), (Start: 171 @22901 has 29 MA's), (195, 22979), (197, 22982), (228, 23072), (242, 23108), (244, 23111), (284, 23234), (286, 23240), (289, 23249), (358, 23480), (367, 23543), (368, 23546), (381, 23573), (390, 23600), (391, 23603), (413, 23684), (436, 23774), (466, 23942), (479, 24017), (482, 24032), (520, 24161), (537, 24245), (558, 24308), (569, 24380),

Gene: Whiteclaw\_25 Start: 20505, Stop: 22028, Start Num: 166

Candidate Starts for Whiteclaw\_25:

(Start: 166 @20505 has 19 MA's), (196, 20577), (202, 20589), (213, 20616), (216, 20622), (223, 20640), (268, 20760), (271, 20769), (292, 20835), (334, 20949), (345, 20991), (351, 21021), (359, 21051), (369, 21111), (375, 21117), (384, 21141), (391, 21165), (396, 21183), (398, 21195), (401, 21213), (405, 21228), (407, 21234), (425, 21285), (430, 21312), (443, 21363), (469, 21531), (501, 21669), (509, 21690), (511, 21693), (514, 21705), (524, 21744), (550, 21891), (562, 21951), (563, 21954),

Gene: Whitney\_30 Start: 23030, Stop: 24865, Start Num: 30

Candidate Starts for Whitney\_30:

(Start: 30 @23030 has 21 MA's), (Start: 70 @23192 has 1 MA's), (Start: 86 @23222 has 11 MA's), (104, 23276), (113, 23291), (116, 23303), (118, 23306), (124, 23321), (126, 23324), (127, 23327), (164, 23417), (169, 23426), (Start: 171 @23429 has 29 MA's), (203, 23516), (211, 23537), (213, 23543), (222, 23564), (226, 23573), (230, 23594), (233, 23600), (288, 23702), (289, 23705), (305, 23735), (309, 23747), (321, 23771), (344, 23846), (347, 23858), (357, 23900), (362, 23933), (368, 23966), (371, 23972), (377, 23996), (384, 24008), (398, 24065), (401, 24083), (438, 24215), (443, 24239), (447, 24257), (472, 24410), (475, 24425), (477, 24437), (478, 24440), (479, 24446), (492, 24491), (496, 24509), (499, 24521), (501, 24527), (507, 24539), (511, 24548), (526, 24602), (539, 24671), (545, 24704), (547, 24710), (562, 24773), (563, 24776), (566, 24794), (570, 24815), (571, 24824),

Gene: Wigglewigggle\_20 Start: 19260, Stop: 21056, Start Num: 63

Candidate Starts for Wigglewigggle\_20:

(Start: 62 @19257 has 5 MA's), (Start: 63 @19260 has 23 MA's), (125, 19413), (134, 19437), (170, 19533), (174, 19542), (188, 19584), (189, 19587), (201, 19617), (210, 19644), (243, 19737), (251, 19761), (279, 19845), (293, 19890), (306, 19926), (343, 20046), (348, 20064), (350, 20079), (353, 20097), (355, 20100), (369, 20178), (390, 20235), (391, 20238), (393, 20241), (412, 20325), (415, 20334), (421, 20361), (445, 20472), (446, 20475), (472, 20643), (486, 20718), (494, 20727), (501, 20754), (513, 20787), (518, 20802), (522, 20817), (524, 20823), (539, 20901), (540, 20904), (572, 21039),

Gene: Wilder\_20 Start: 19233, Stop: 21029, Start Num: 63

Candidate Starts for Wilder\_20:

(Start: 62 @19230 has 5 MA's), (Start: 63 @19233 has 23 MA's), (125, 19386), (134, 19410), (170, 19506), (174, 19515), (188, 19557), (189, 19560), (201, 19590), (210, 19617), (243, 19710), (251, 19734), (279, 19818), (293, 19863), (306, 19899), (343, 20019), (348, 20037), (350, 20052), (353, 20070), (355, 20073), (369, 20151), (390, 20208), (391, 20211), (393, 20214), (412, 20298), (415, 20307), (421, 20334), (445, 20445), (446, 20448), (472, 20616), (486, 20691), (494, 20700), (501, 20727), (513, 20760), (518, 20775), (522, 20790), (524, 20796), (539, 20874), (540, 20877), (556, 20925), (572, 21012),

Gene: Winky\_20 Start: 19225, Stop: 21024, Start Num: 62

Candidate Starts for Winky\_20:

(Start: 62 @19225 has 5 MA's), (Start: 63 @19228 has 23 MA's), (125, 19381), (134, 19405), (170, 19501), (174, 19510), (189, 19555), (201, 19585), (210, 19612), (243, 19705), (251, 19729), (279, 19813), (293, 19858), (343, 20014), (348, 20032), (350, 20047), (353, 20065), (355, 20068), (369, 20146), (390, 20203), (393, 20209), (412, 20293), (415, 20302), (445, 20440), (446, 20443), (472, 20611), (486, 20686), (494, 20695), (501, 20722), (508, 20740), (513, 20755), (518, 20770), (522, 20785), (524, 20791), (539, 20869), (540, 20872), (556, 20920), (572, 21007),

Gene: Wizard\_33 Start: 28352, Stop: 30274, Start Num: 25

Candidate Starts for Wizard\_33:

(Start: 25 @28352 has 15 MA's), (50, 28475), (58, 28496), (75, 28544), (Start: 121 @28652 has 3 MA's), (Start: 131 @28673 has 1 MA's), (164, 28754), (180, 28790), (182, 28793), (209, 28871), (211,

28874), (213, 28880), (222, 28901), (230, 28931), (233, 28937), (285, 29072), (315, 29159), (318, 29168), (321, 29174), (324, 29180), (344, 29255), (351, 29288), (357, 29309), (371, 29381), (377, 29405), (384, 29417), (398, 29474), (438, 29624), (443, 29648), (472, 29816), (475, 29831), (499, 29927), (530, 30038), (537, 30074),

Gene: Yeet412\_25 Start: 20498, Stop: 22021, Start Num: 166

Candidate Starts for Yeet412\_25:

(Start: 166 @20498 has 19 MA's), (196, 20570), (202, 20582), (213, 20609), (223, 20633), (268, 20753), (271, 20762), (292, 20828), (334, 20942), (345, 20984), (351, 21014), (359, 21044), (375, 21110), (384, 21134), (391, 21158), (396, 21176), (398, 21188), (401, 21206), (405, 21221), (407, 21227), (425, 21278), (430, 21305), (443, 21356), (469, 21524), (474, 21545), (491, 21623), (501, 21662), (509, 21683), (511, 21686), (514, 21698), (524, 21737), (550, 21884), (562, 21944), (563, 21947),

Gene: Yeezy\_28 Start: 22145, Stop: 23650, Start Num: 171

Candidate Starts for Yeezy\_28:

(92, 21938), (123, 22007), (125, 22010), (130, 22034), (133, 22040), (Start: 171 @22145 has 29 MA's), (193, 22214), (197, 22226), (235, 22337), (240, 22349), (244, 22355), (272, 22442), (284, 22478), (286, 22484), (289, 22493), (368, 22787), (390, 22841), (391, 22844), (396, 22865), (406, 22910), (436, 23015), (456, 23099), (465, 23180), (466, 23183), (490, 23306), (520, 23402), (530, 23450), (536, 23465), (541, 23510), (555, 23543), (558, 23549), (569, 23621),

Gene: YorkOnyx\_37 Start: 32189, Stop: 33910, Start Num: 76

Candidate Starts for YorkOnyx\_37:

(Start: 76 @32189 has 22 MA's), (127, 32312), (133, 32324), (153, 32390), (182, 32459), (193, 32495), (207, 32534), (274, 32720), (290, 32759), (312, 32819), (326, 32864), (341, 32924), (373, 33059), (376, 33065), (390, 33107), (395, 33122), (399, 33158), (408, 33179), (436, 33278), (456, 33362), (461, 33395), (465, 33440), (466, 33443), (479, 33515), (481, 33527), (493, 33563), (503, 33599), (521, 33653),

Gene: Yvonnetastic\_53 Start: 36927, Stop: 38693, Start Num: 46

Candidate Starts for Yvonnetastic\_53:

(Start: 46 @36927 has 2 MA's), (Start: 52 @36948 has 2 MA's), (89, 37044), (Start: 171 @37242 has 29 MA's), (178, 37260), (182, 37269), (191, 37302), (222, 37386), (257, 37485), (318, 37632), (327, 37653), (344, 37719), (349, 37737), (359, 37782), (398, 37926), (407, 37965), (438, 38076), (463, 38202), (478, 38298), (487, 38340), (490, 38346), (501, 38388), (502, 38391),

Gene: Zakai\_20 Start: 19222, Stop: 21018, Start Num: 63

Candidate Starts for Zakai\_20:

(Start: 62 @19219 has 5 MA's), (Start: 63 @19222 has 23 MA's), (125, 19375), (134, 19399), (170, 19495), (174, 19504), (189, 19549), (201, 19579), (210, 19606), (243, 19699), (251, 19723), (279, 19807), (293, 19852), (343, 20008), (348, 20026), (350, 20041), (353, 20059), (355, 20062), (369, 20140), (390, 20197), (391, 20200), (393, 20203), (412, 20287), (415, 20296), (421, 20323), (445, 20434), (446, 20437), (472, 20605), (486, 20680), (494, 20689), (501, 20716), (513, 20749), (518, 20764), (522, 20779), (524, 20785), (539, 20863), (540, 20866), (556, 20914), (572, 21001),

Gene: Zameen\_28 Start: 22923, Stop: 24428, Start Num: 171

Candidate Starts for Zameen\_28:

(Start: 171 @22923 has 29 MA's), (193, 22992), (197, 23004), (235, 23115), (240, 23127), (244, 23133), (272, 23220), (284, 23256), (286, 23262), (289, 23271), (368, 23565), (390, 23619), (391, 23622), (396, 23643), (406, 23688), (436, 23793), (456, 23877), (465, 23958), (466, 23961), (490, 24084), (520, 24180), (530, 24228), (541, 24288), (555, 24321), (558, 24327), (569, 24399),

Gene: ZhongYanYuan\_19 Start: 19053, Stop: 20849, Start Num: 63

Candidate Starts for ZhongYanYuan\_19:

(Start: 63 @19053 has 23 MA's), (Start: 112 @19173 has 1 MA's), (Start: 121 @19194 has 3 MA's),  
(125, 19206), (134, 19230), (140, 19257), (170, 19326), (174, 19335), (184, 19368), (189, 19380),  
(201, 19410), (210, 19437), (251, 19554), (266, 19602), (279, 19638), (293, 19683), (313, 19734),  
(343, 19839), (348, 19857), (353, 19890), (355, 19893), (362, 19932), (369, 19971), (391, 20031),  
(393, 20034), (412, 20118), (445, 20265), (461, 20343), (472, 20436), (475, 20451), (486, 20511),  
(494, 20520), (501, 20547), (518, 20595), (522, 20610), (539, 20694), (540, 20697), (556, 20745),  
(560, 20760), (572, 20832),

Gene: Zirinka\_26 Start: 22938, Stop: 24443, Start Num: 171

Candidate Starts for Zirinka\_26:

(54, 22623), (92, 22731), (123, 22800), (125, 22803), (130, 22827), (133, 22833), (Start: 171 @22938  
has 29 MA's), (193, 23007), (197, 23019), (235, 23130), (238, 23136), (240, 23142), (244, 23148),  
(246, 23154), (272, 23235), (284, 23271), (286, 23277), (289, 23286), (368, 23580), (390, 23634),  
(391, 23637), (396, 23658), (406, 23703), (436, 23808), (456, 23892), (465, 23973), (466, 23976),  
(520, 24195), (530, 24243), (541, 24303), (555, 24336), (558, 24342), (569, 24414),