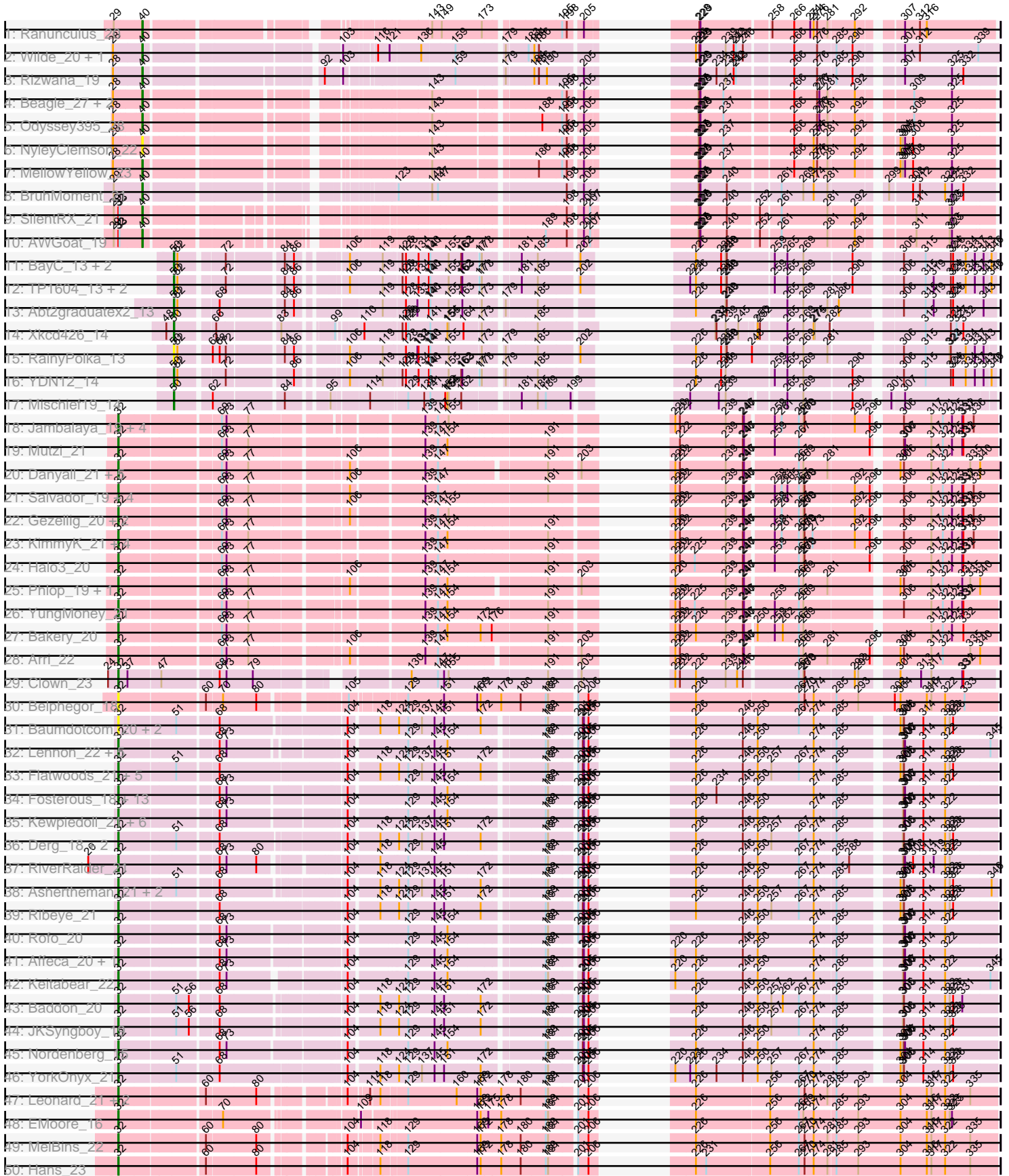
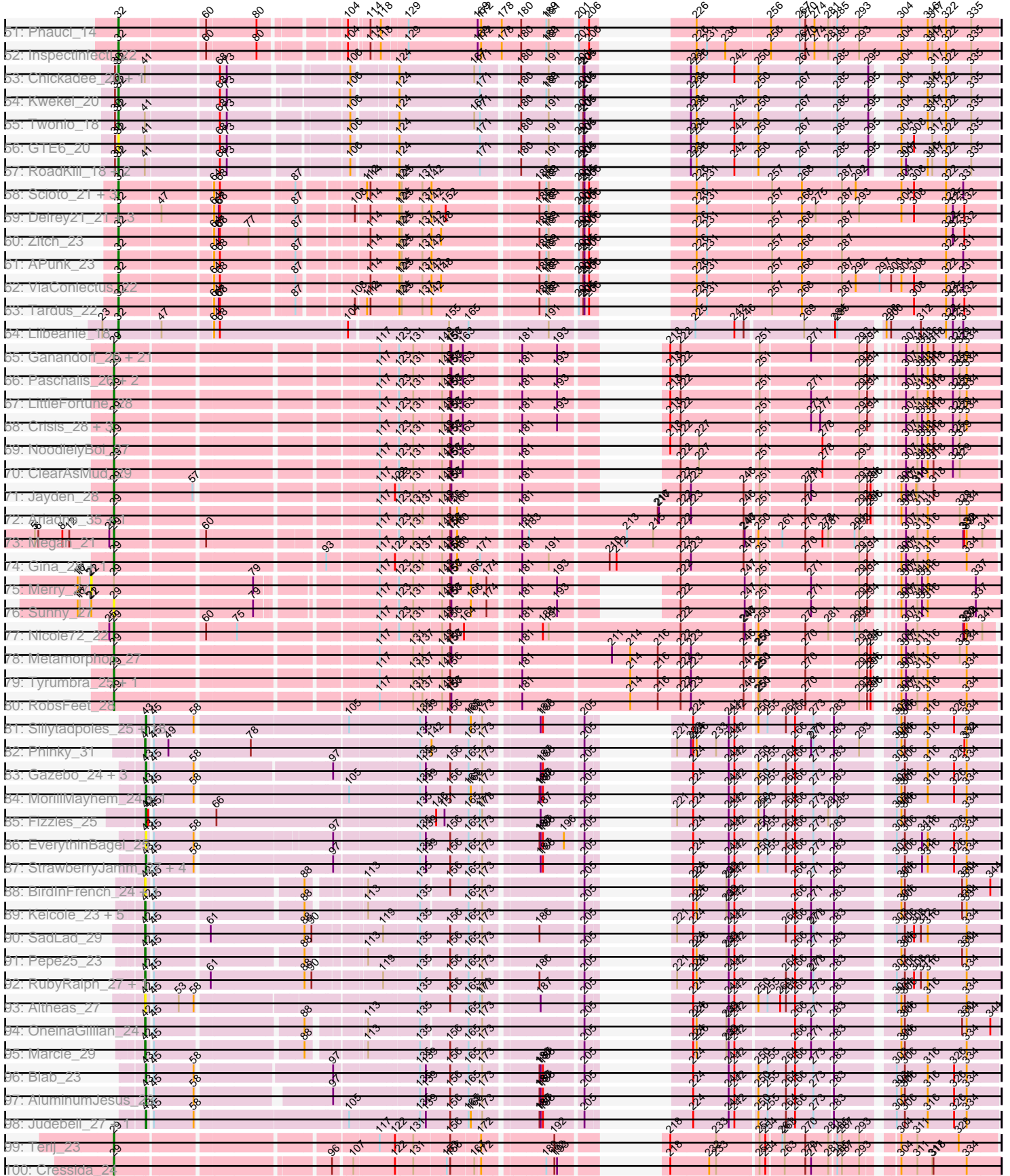
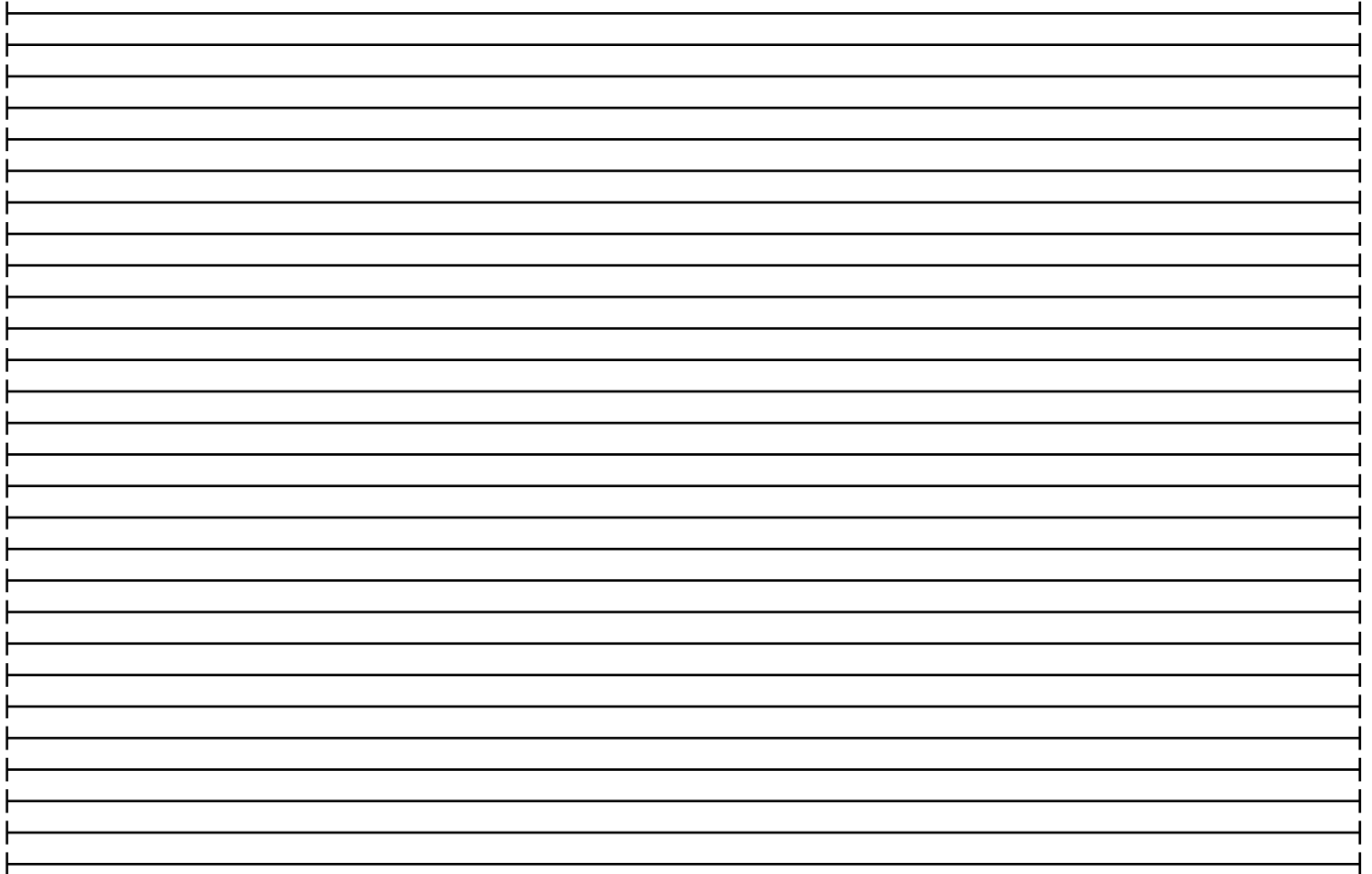
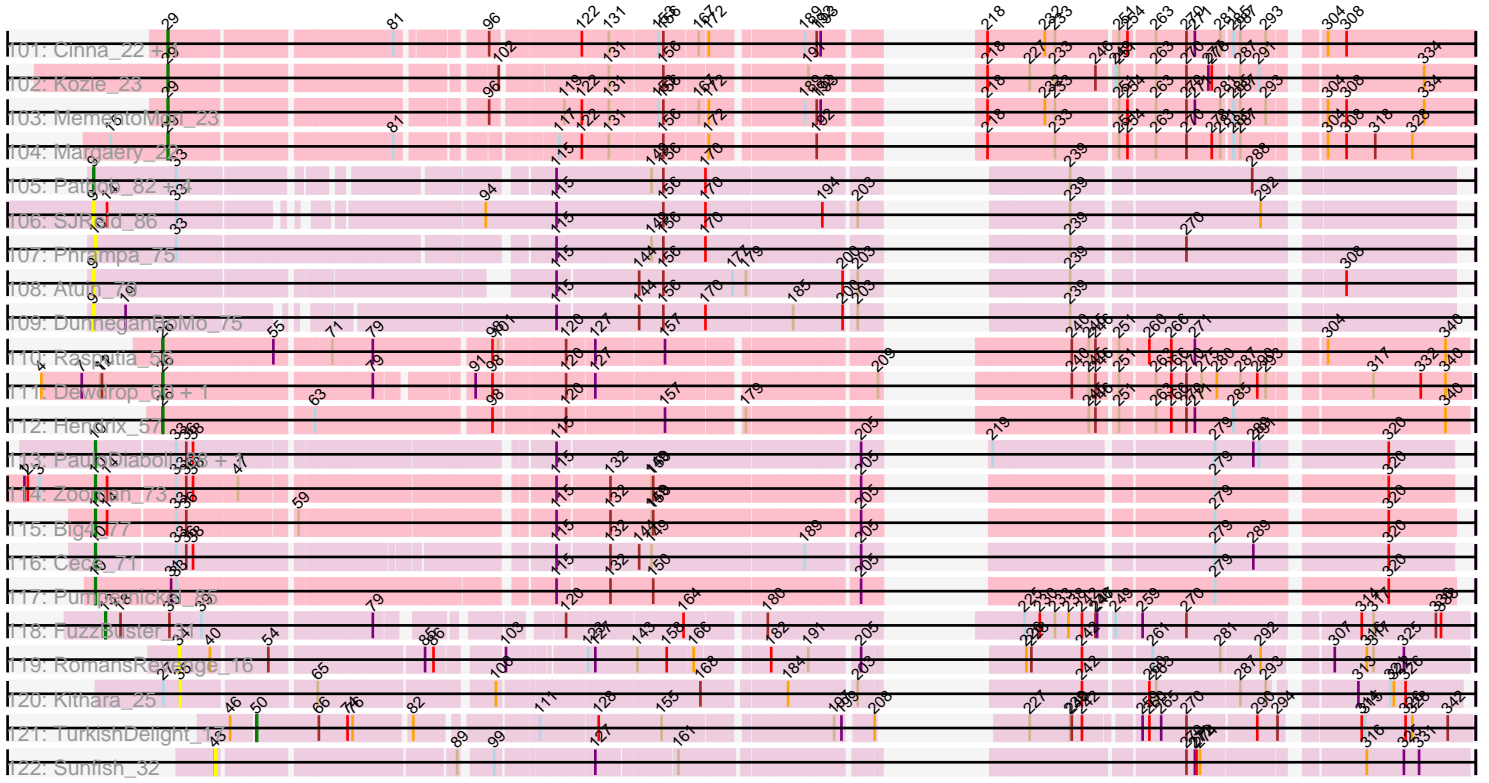


Pham 196256





Pham 196256



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 196256 Report

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

Pham number 196256 has 266 members, 45 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus\_20
- Track 2 : Wilde\_20, Tank\_20
- Track 3 : Rizwana\_19
- Track 4 : Beagle\_27, Pointis\_26, Pureglobe5\_28
- Track 5 : Odyssey395\_28
- Track 6 : NyleyClemson\_22
- Track 7 : MellowYellow\_23
- Track 8 : BruhMoment\_21
- Track 9 : SilentRX\_21
- Track 10 : AWGoat\_19
- Track 11 : BayC\_13, Salete\_13, Maih\_13
- Track 12 : TP1604\_13, BabyGotBac\_13, Asis\_13
- Track 13 : Abt2graduatex2\_13
- Track 14 : Xkcd426\_14
- Track 15 : RainyPolka\_13
- Track 16 : YDN12\_14
- Track 17 : Mischief19\_14
- Track 18 : Jambalaya\_19, TillyBobJoe\_19, Savbucketdawg\_19, Shinji\_19, Portcullis\_19
- Track 19 : Mutzi\_21
- Track 20 : Danyall\_21, VanDeWege\_22, RogerDodger\_22, CoveyB\_22, Twister6\_21, Valary\_22
- Track 21 : Salvador\_19, SmokingBunny\_19, Nubi\_19, Evamon\_19, Togo\_19
- Track 22 : Gezellig\_20, Fireball\_20, Wizard\_19
- Track 23 : KimmyK\_21, PinkCoffee\_21, ClamChowder\_21, Barb\_21, Fugax\_21
- Track 24 : Halo3\_20
- Track 25 : Phlop\_19, PullumCavea\_19
- Track 26 : YungMoney\_21
- Track 27 : Bakery\_20
- Track 28 : Arri\_22
- Track 29 : Clown\_23
- Track 30 : Belphegor\_18
- Track 31 : Baumdotcom\_20, Saronaya\_20, Gustavo\_20
- Track 32 : Lennon\_22, Bibwit\_21, Sedona\_22, Stultus\_20, Sitar\_22, Ailee\_20
- Track 33 : Flatwoods\_21, Gaea\_20, Tycho\_20, Kroos\_21, Kwobi\_21, Bizzy\_21
- Track 34 : Fosterous\_18, Love\_22, MoontowerMania\_19, Brandonk123\_22, Shivanishola\_20, Jabberwocky\_18, Kamashten\_21, BobBob\_18, Sanjuju\_18,

Charming\_18, Tangent\_18, Thing3\_21, Paries\_21, Geodirt\_19

- Track 35 : Kewpiedoll\_21, ChadMasterC\_20, Vivi2\_20, Barsten\_21, Fitzgerald\_18, Galadriel\_22, McKinley\_21
- Track 36 : Derg\_18, LilHam\_18, SchottB\_19
- Track 37 : RiverRaider\_21
- Track 38 : Ashertheman\_21, StorminNorm\_20, Tangerine\_20
- Track 39 : Ribeye\_21
- Track 40 : Rofo\_20
- Track 41 : Affeca\_20, Angelicage\_20
- Track 42 : Keitabear\_22
- Track 43 : Baddon\_20
- Track 44 : JKSyngboy\_19
- Track 45 : Nordenberg\_15
- Track 46 : YorkOnyx\_21
- Track 47 : Leonard\_21, Ali17\_19, Phinally\_21
- Track 48 : EMoore\_16
- Track 49 : MelBins\_22
- Track 50 : Hans\_23
- Track 51 : Phauci\_14
- Track 52 : Inspectinfecti\_22
- Track 53 : Chickadee\_20, Tiamoceli\_21
- Track 54 : Kwekel\_20
- Track 55 : Twonlo\_18
- Track 56 : GTE6\_20
- Track 57 : RoadKill\_18, Dexdert\_21, EdmundFerry\_19
- Track 58 : Scioto\_21, Natkenzie\_21, Sampson\_21, Abblin\_21
- Track 59 : Delrey21\_21, DoctorFroggo\_21, Zipp\_21, Verity\_21
- Track 60 : Zitch\_23
- Track 61 : APunk\_23
- Track 62 : ViaConlectus\_22
- Track 63 : Tardus\_22
- Track 64 : Lilbeanie\_18
- Track 65 : Ganandorf\_26, Quhwah\_30, Jefe\_27, BrazzalePHS\_26, Cranjjs\_28, Jollipop\_27, PiperSansNom\_27, Hermeonysus\_26, Onika\_26, Busephilis\_26, Savannah\_26, Selwyn23\_28, PierreOrion\_27, Pulchra\_28, Antares\_27, Scumberland\_28, Shotgun\_26, CrazyRich\_26, Phorgeous\_26, Honeyfin\_28, Yeti\_27, Piperis\_27
- Track 66 : Paschalis\_26, Ramiel05\_26, Kowalski\_26
- Track 67 : LittleFortune\_28
- Track 68 : Crisis\_28, KaiHaiDragon\_27, EarickHC\_27, Phrancesco\_27
- Track 69 : NoodlelyBoi\_27
- Track 70 : ClearAsMud\_29
- Track 71 : Jayden\_28
- Track 72 : Ariadne\_35, Smarties\_35
- Track 73 : Megan\_21
- Track 74 : Gina\_28, Teamocil\_28
- Track 75 : Merry\_27
- Track 76 : Sunny\_27
- Track 77 : Nicole72\_22
- Track 78 : Metamorphoo\_27
- Track 79 : Tyumbra\_25, Fireman\_27
- Track 80 : RobsFeet\_28

- Track 81 : Sillytadpoles\_25, Statler\_27, Phabia\_25, Zagie\_25, Rowlf\_21, Llemily\_25, Zhafia\_28, Wheelie\_24, Jehoshaphat\_27, Teehee\_26, Nike\_25, DonaldDuck\_25, Viceroy\_24, Squash\_27, Lonelysoil\_24, Quammi\_23, Wayne3\_26, Rudy\_23, Casend\_26
- Track 82 : Phinky\_31
- Track 83 : Gazebo\_24, Mashley\_23, Hyperion\_24, Tissue\_25
- Track 84 : MorillMayhem\_24, BabyDotz\_24
- Track 85 : Fizzles\_25
- Track 86 : EverythinBagel\_25
- Track 87 : StrawberryJamm\_27, Namago\_25, Kyva\_27, Grassboy\_26, SallyK\_26
- Track 88 : BirdInFrench\_24, Wilca\_24
- Track 89 : Kelcole\_23, CandC\_23, RobinRose\_26, Tempo\_24, Romm\_26, Fregley\_25
- Track 90 : SadLad\_29
- Track 91 : Pepe25\_23
- Track 92 : RubyRalph\_27, Fransoyer\_27
- Track 93 : Altheas\_27
- Track 94 : OneinaGillian\_24
- Track 95 : Marcie\_29
- Track 96 : Blab\_23
- Track 97 : AluminumJesus\_23
- Track 98 : Judebell\_27, FrankDeliGuy\_23
- Track 99 : Terij\_23
- Track 100 : Cressida\_24
- Track 101 : Cinna\_22, Matzah\_23
- Track 102 : Kozie\_23
- Track 103 : MementoMori\_23
- Track 104 : Margaery\_22
- Track 105 : Patbob\_82, Bloom\_85, Racecar\_82, Mimi\_88, Talia1610\_81
- Track 106 : SJReid\_86
- Track 107 : Phrampa\_75
- Track 108 : Atuin\_79
- Track 109 : DunneganBoMo\_75
- Track 110 : Rasputia\_56
- Track 111 : Dewdrop\_60, Leaf\_60
- Track 112 : Hendrix\_57
- Track 113 : PauloDiaboli\_88, A3Wally\_88
- Track 114 : Zooman\_73
- Track 115 : Big4\_77
- Track 116 : Cece\_71
- Track 117 : Pumpernickel\_85
- Track 118 : FuzzBuster\_31
- Track 119 : RomansRevenge\_16
- Track 120 : Kithara\_25
- Track 121 : TurkishDelight\_17
- Track 122 : Sunfish\_32

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

The start number called the most often in the published annotations is 32, it was called in 98 of the 221 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- APunk\_23, Abblin\_21, Affeca\_20, Ailee\_20, Ali17\_19, Angelicage\_20, Arri\_22, Ashertheman\_21, Baddon\_20, Bakery\_20, Barb\_21, Barsten\_21, Baumdotcom\_20, Belphegor\_18, Bibwit\_21, Bizzy\_21, BobBob\_18, Brandonk123\_22, ChadMasterC\_20, Charming\_18, Chickadee\_20, ClamChowder\_21, Clown\_23, CoveyB\_22, Danyall\_21, Delrey21\_21, Derg\_18, Dexdert\_21, DoctorFroggo\_21, EMOore\_16, EdmundFerry\_19, Evamon\_19, Fireball\_20, Fitzgerald\_18, Flatwoods\_21, Fosterous\_18, Fugax\_21, GTE6\_20, Gaea\_20, Galadriel\_22, Geodirt\_19, Gezellig\_20, Gustavo\_20, Halo3\_20, Hans\_23, Inspectinfecti\_22, JKSyngboy\_19, Jabberwocky\_18, Jambalaya\_19, Kamashten\_21, Keitabear\_22, Kewpiedoll\_21, KimmyK\_21, Kroos\_21, Kwekel\_20, Kwobi\_21, Lennon\_22, Leonard\_21, LilHam\_18, Lilbeanie\_18, Love\_22, McKinley\_21, MelBins\_22, MoontowerMania\_19, Mutzi\_21, Natkenzie\_21, Nordenberg\_15, Nubi\_19, Paries\_21, Phauci\_14, Phinally\_21, Phlop\_19, PinkCoffee\_21, Portcullis\_19, PullumCavea\_19, Ribeye\_21, RiverRaider\_21, RoadKill\_18, Rofo\_20, RogerDodger\_22, Salvador\_19, Sampson\_21, Sanjuju\_18, Saronaya\_20, Savbucketdawg\_19, SchottB\_19, Scioto\_21, Sedona\_22, Shinji\_19, Shivanishola\_20, Sitar\_22, SmokingBunny\_19, StorminNorm\_20, Stultus\_20, Tangent\_18, Tangerine\_20, Tardus\_22, Thing3\_21, Tiamoceli\_21, TillyBobJoe\_19, Togo\_19, Twister6\_21, Twonlo\_18, Tycho\_20, Valary\_22, VanDeWege\_22, Verity\_21, ViaConlectus\_22, Vivi2\_20, Wizard\_19, YorkOnyx\_21, YungMoney\_21, Zipp\_21, Zitch\_23,

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

- AWGoat\_19, SilentRX\_21,

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

- A3Wally\_88, Abt2graduatex2\_13, Altheas\_27, AluminumJesus\_23, Antares\_27, Ariadne\_35, Asis\_13, Atuin\_79, BabyDotz\_24, BabyGotBac\_13, BayC\_13, Beagle\_27, Big4\_77, BirdInFrench\_24, Blab\_23, Bloom\_85, BrazzalePHS\_26, BruhMoment\_21, Busephilis\_26, CandC\_23, Casend\_26, Cece\_71, Cinna\_22, ClearAsMud\_29, Cranjis\_28, CrazyRich\_26, Cressida\_24, Crisis\_28, Dewdrop\_60, DonaldDuck\_25, DunneganBoMo\_75, EarickHC\_27, EverythinBagel\_25, Fireman\_27, Fizzles\_25, FrankDeliGuy\_23, Fransoyer\_27, Fregley\_25, FuzzBuster\_31, Ganandorf\_26, Gazebo\_24, Gina\_28, Grassboy\_26, Hendrix\_57, Hermeonysus\_26, Honeyfin\_28, Hyperion\_24, Jayden\_28, Jefe\_27, Jehoshaphat\_27, Jollipop\_27, Judebell\_27, KaiHaiDragon\_27, Kelcole\_23, Kithara\_25, Kowalski\_26, Kozie\_23, Kyva\_27, Leaf\_60, LittleFortune\_28, Llemily\_25, Lonelysoil\_24, Maih\_13, Marcie\_29, Margaery\_22, Mashley\_23, Matzah\_23, Megan\_21, MellowYellow\_23, MementoMori\_23, Merry\_27, Metamorphoo\_27, Mimi\_88, Mischief19\_14, MorillMayhem\_24, Namago\_25, Nicole72\_22, Nike\_25, NoodlelyBoi\_27, NyleyClemson\_22, Odyssey395\_28, OneinaGillian\_24, Onika\_26, Paschalis\_26, Patbob\_82, PauloDiaboli\_88, Pepe25\_23, Phabia\_25, Phinky\_31, Phorgeous\_26, Phrampa\_75, Phrancesco\_27, PierreOrion\_27, PiperSansNom\_27, Piperis\_27, Pointis\_26, Pulchra\_28, Pumpernickel\_85, Pureglobe5\_28, Quammi\_23, Quhwah\_30, Racecar\_82, RainyPolka\_13, Ramiel05\_26, Ranunculus\_20, Rasputia\_56, Rizwana\_19, RobinRose\_26, RobsFeet\_28, RomansRevenge\_16, Romm\_26, Rowlf\_21, RubyRalph\_27, Rudy\_23, SJReid\_86, SadLad\_29, Salete\_13, SallyK\_26, Savannah\_26, Scumberland\_28, Selwyn23\_28, Shotgun\_26, Sillytadpoles\_25, Smarties\_35, Squash\_27, Statler\_27, StrawberryJamm\_27, Sunfish\_32, Sunny\_27, TP1604\_13, Talia1610\_81, Tank\_20, Teamocil\_28,

Teehee\_26, Tempo\_24, Terij\_23, Tissue\_25, TurkishDelight\_17, Tyrumbra\_25, Viceroy\_24, Wayne3\_26, Wheelie\_24, Wilca\_24, Wilde\_20, Xkcd426\_14, YDN12\_14, Yeti\_27, Zagie\_25, Zhafia\_28, Zooman\_73,

### Summary by start number:

#### Start 9:

- Found in 8 of 266 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 2 of 221
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Atuin\_79 (FC), Bloom\_85 (FC), DunneganBoMo\_75 (FC), Mimi\_88 (FC), Patbob\_82 (FC), Racecar\_82 (FC), SJReid\_86 (FC), Talia1610\_81 (FC),

#### Start 10:

- Found in 7 of 266 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 6 of 221
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_88 (GD1), Big4\_77 (GD2), Cece\_71 (GD3), PauloDiaboli\_88 (GD1), Phrampa\_75 (FC), Pumpernickel\_85 (GD4), Zooman\_73 (GD2),

#### Start 13:

- Found in 1 of 266 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 221
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FuzzBuster\_31 (singleton),

#### Start 22:

- Found in 2 of 266 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Merry\_27 (EC),

#### Start 26:

- Found in 4 of 266 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 4 of 221
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dewdrop\_60 (GC), Hendrix\_57 (GC), Leaf\_60 (GC), Rasputia\_56 (GC),

#### Start 29:

- Found in 56 of 266 ( 21.1% ) of genes in pham
- Manual Annotations of this start: 49 of 221
- Called 91.1% of time when present
- Phage (with cluster) where this start called: Antares\_27 (EC), Ariadne\_35 (EC), BrazzalePHS\_26 (EC), Busephilis\_26 (EC), Cinna\_22 (EI), ClearAsMud\_29 (EC), Cranjis\_28 (EC), CrazyRich\_26 (EC), Cressida\_24 (EI), Crisis\_28 (EC), EarickHC\_27 (EC), Fireman\_27 (EC), Ganandorf\_26 (EC), Gina\_28 (EC), Hermeonysus\_26 (EC), Honeyfin\_28 (EC), Jayden\_28 (EC), Jefe\_27 (EC), Jollipop\_27 (EC), KaiHaiDragon\_27 (EC), Kowalski\_26 (EC), Kozi\_23 (EI), LittleFortune\_28 (EC), Margaery\_22 (EI), Matzah\_23 (EI), Megan\_21 (EC), MementoMori\_23 (EI), Metamorphoo\_27 (EC), Nicole72\_22 (EC), NoodlelyBoi\_27 (EC), Onika\_26 (EC),



Paschalis\_26 (EC), Phorgeous\_26 (EC), Phrancesco\_27 (EC), PierreOrion\_27 (EC), PiperSansNom\_27 (EC), Piperis\_27 (EC), Pulchra\_28 (EC), Quhwah\_30 (EC), Ramiel05\_26 (EC), RobsFeet\_28 (EC), Savannah\_26 (EC), Scumberland\_28 (EC), Selwyn23\_28 (EC), Shotgun\_26 (EC), Smarties\_35 (EC), Sunny\_27 (EC), Teamocil\_28 (EC), Terij\_23 (EI), Tyrumbra\_25 (EC), Yeti\_27 (EC),

#### Start 32:

- Found in 116 of 266 ( 43.6% ) of genes in pham
- Manual Annotations of this start: 98 of 221
- Called 98.3% of time when present
- Phage (with cluster) where this start called: APunk\_23 (DE4), Abblin\_21 (DE4), Affeca\_20 (DE1), Ailee\_20 (DE1), Ali17\_19 (DE2), Angelicage\_20 (DE1), Arri\_22 (DC1), Ashertheman\_21 (DE1), Baddon\_20 (DE1), Bakery\_20 (DC1), Barb\_21 (DC1), Barsten\_21 (DE1), Baumdotcom\_20 (DE1), Belphegor\_18 (DE), Bibwit\_21 (DE1), Bizzy\_21 (DE1), BobBob\_18 (DE1), Brandonk123\_22 (DE1), ChadMasterC\_20 (DE1), Charming\_18 (DE1), Chickadee\_20 (DE3), ClamChowder\_21 (DC1), Clown\_23 (DC2), CoveyB\_22 (DC1), Danyall\_21 (DC1), Delrey21\_21 (DE4), Derg\_18 (DE1), Dexdert\_21 (DE3), DoctorFroggo\_21 (DE4), EMoore\_16 (DE2), EdmundFerry\_19 (DE3), Evamon\_19 (DC1), Fireball\_20 (DC1), Fitzgerald\_18 (DE1), Flatwoods\_21 (DE1), Fosterous\_18 (DE1), Fugax\_21 (DC1), GTE6\_20 (DE3), Gaea\_20 (DE1), Galadriel\_22 (DE1), Geodirt\_19 (DE1), Gezellig\_20 (DC1), Gustavo\_20 (DE1), Halo3\_20 (DC1), Hans\_23 (DE2), Inspectinfecti\_22 (DE2), JKSyngboy\_19 (DE1), Jabberwocky\_18 (DE1), Jambalaya\_19 (DC1), Kamashten\_21 (DE1), Keitabear\_22 (DE1), Kewpiedoll\_21 (DE1), KimmyK\_21 (DC1), Kroos\_21 (DE1), Kwekel\_20 (DE3), Kwobi\_21 (DE1), Lennon\_22 (DE1), Leonard\_21 (DE2), LilHam\_18 (DE1), Lilbeanie\_18 (DE5), Love\_22 (DE1), McKinley\_21 (DE1), MelBins\_22 (DE2), MoontowerMania\_19 (DE1), Mutzi\_21 (DC1), Natkenzie\_21 (DE4), Nordenberg\_15 (DE1), Nubi\_19 (DC1), Paries\_21 (DE1), Phauci\_14 (DE2), Phinally\_21 (DE2), Phlop\_19 (DC1), PinkCoffee\_21 (DC1), Portcullis\_19 (DC1), PullumCavea\_19 (DC1), Ribeye\_21 (DE1), RiverRaider\_21 (DE1), RoadKill\_18 (DE3), Rofo\_20 (DE1), RogerDodger\_22 (DC1), Salvador\_19 (DC1), Sampson\_21 (DE4), Sanjuju\_18 (DE1), Saronaya\_20 (DE1), Savbucketdawg\_19 (DC1), SchottB\_19 (DE1), Scioto\_21 (DE4), Sedona\_22 (DE1), Shinji\_19 (DC1), Shivanishola\_20 (DE1), Sitar\_22 (DE1), SmokingBunny\_19 (DC1), StorminNorm\_20 (DE1), Stultus\_20 (DE1), Tangent\_18 (DE1), Tangerine\_20 (DE1), Tardus\_22 (DE4), Thing3\_21 (DE1), Tiamoceli\_21 (DE3), TillyBobJoe\_19 (DC1), Togo\_19 (DC1), Twister6\_21 (DC1), Twonlo\_18 (DE3), Tycho\_20 (DE1), Valary\_22 (DC1), VanDeWege\_22 (DC1), Verity\_21 (DE4), ViaConlectus\_22 (DE4), Vivi2\_20 (DE1), Wizard\_19 (DC1), YorkOnyx\_21 (DE1), YungMoney\_21 (DC1), Zipp\_21 (DE4), Zitch\_23 (DE4),

#### Start 34:

- Found in 1 of 266 ( 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: RomansRevenge\_16 (singleton),

#### Start 35:

- Found in 1 of 266 ( 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: Kithara\_25 (singleton),

Start 40:

- Found in 14 of 266 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 12 of 221
- Called 92.9% of time when present
- Phage (with cluster) where this start called: AWGoat\_19 (AP4), Beagle\_27 (AP2), BruhMoment\_21 (AP3), MellowYellow\_23 (AP2), NyleyClemson\_22 (AP2), Odyssey395\_28 (AP2), Pointis\_26 (AP2), Pureglobe5\_28 (AP2), Ranunculus\_20 (AP), Rizwana\_19 (AP1), SilentRX\_21 (AP4), Tank\_20 (AP1), Wilde\_20 (AP1),

Start 42:

- Found in 16 of 266 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 12 of 221
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altheas\_27 (EG), BirdInFrench\_24 (EG), CandC\_23 (EG), Fransoyer\_27 (EG), Fregley\_25 (EG), Kelcole\_23 (EG), Marcie\_29 (EG), OneinaGillian\_24 (EG), Pepe25\_23 (EG), Phinky\_31 (EG), RobinRose\_26 (EG), Romm\_26 (EG), RubyRalph\_27 (EG), SadLad\_29 (EG), Tempo\_24 (EG), Wilca\_24 (EG),

Start 43:

- Found in 37 of 266 ( 13.9% ) of genes in pham
- Manual Annotations of this start: 26 of 221
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AluminumJesus\_23 (EG), BabyDotz\_24 (EG), Blab\_23 (EG), Casend\_26 (EG), DonaldDuck\_25 (EG), EverythinBagel\_25 (EG), Fizzles\_25 (EG), FrankDeliGuy\_23 (EG), Gazebo\_24 (EG), Grassboy\_26 (EG), Hyperion\_24 (EG), Jehoshaphat\_27 (EG), Judebell\_27 (EG), Kyva\_27 (EG), Llemily\_25 (EG), Lonelysoil\_24 (EG), Mashley\_23 (EG), MorillMayhem\_24 (EG), Namago\_25 (EG), Nike\_25 (EG), Phabia\_25 (EG), Quammi\_23 (EG), Rowlf\_21 (EG), Rudy\_23 (EG), SallyK\_26 (EG), Sillytadpoles\_25 (EG), Squash\_27 (EG), Statler\_27 (EG), StrawberryJamm\_27 (EG), Sunfish\_32 (singleton), Teehee\_26 (EG), Tissue\_25 (EG), Viceroy\_24 (EG), Wayne3\_26 (EG), Wheelie\_24 (EG), Zagie\_25 (EG), Zhafia\_28 (EG),

Start 50:

- Found in 12 of 266 ( 4.5% ) of genes in pham
- Manual Annotations of this start: 11 of 221
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abt2graduatex2\_13 (BG), Asis\_13 (BG), BabyGotBac\_13 (BG), BayC\_13 (BG), Maih\_13 (BG), Mischief19\_14 (BG), RainyPolka\_13 (BG), Salete\_13 (BG), TP1604\_13 (BG), TurkishDelight\_17 (singleton), Xkcd426\_14 (BG), YDN12\_14 (BG),

**Summary by clusters:**

There are 24 clusters represented in this pham: GD1, singleton, BG, GD4, AP2, AP3, AP1, GD2, AP4, FC, GD3, DE, EI, EG, EC, AP, GC, DC2, DC1, DE1, DE2, DE3, DE4, DE5,

Info for manual annotations of cluster AP:

- Start number 40 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 40 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 40 was manually annotated 5 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 40 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 40 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster BG:

- Start number 50 was manually annotated 10 times for cluster BG.

Info for manual annotations of cluster DC1:

- Start number 32 was manually annotated 28 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 32 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DE1:

- Start number 32 was manually annotated 44 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 32 was manually annotated 8 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 32 was manually annotated 7 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 32 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 32 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster EC:

- Start number 29 was manually annotated 42 times for cluster EC.

Info for manual annotations of cluster EG:

- Start number 42 was manually annotated 12 times for cluster EG.

- Start number 43 was manually annotated 26 times for cluster EG.

Info for manual annotations of cluster EI:

- Start number 29 was manually annotated 7 times for cluster EI.

Info for manual annotations of cluster FC:

- Start number 9 was manually annotated 2 times for cluster FC.

Info for manual annotations of cluster GC:

- Start number 26 was manually annotated 4 times for cluster GC.

Info for manual annotations of cluster GD1:

- Start number 10 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 10 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 10 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 10 was manually annotated 1 time for cluster GD4.

### **Gene Information:**

Gene: A3Wally\_88 Start: 44936, Stop: 46945, Start Num: 10

Candidate Starts for A3Wally\_88:

(Start: 10 @44936 has 6 MA's), (33, 45071), (36, 45089), (38, 45101), (115, 45644), (205, 46154), (219, 46199), (279, 46565), (289, 46631), (291, 46640), (320, 46835),

Gene: APunk\_23 Start: 16314, Stop: 18233, Start Num: 32

Candidate Starts for APunk\_23:

(Start: 32 @16314 has 98 MA's), (64, 16530), (68, 16545), (87, 16719), (114, 16866), (124, 16935), (125, 16941), (137, 16995), (142, 17019), (186, 17271), (189, 17289), (191, 17295), (201, 17358), (204, 17370), (205, 17373), (206, 17385), (226, 17475), (231, 17502), (257, 17661), (268, 17739), (287, 17835), (322, 18105), (331, 18150),

Gene: AWGoat\_19 Start: 13739, Stop: 15430, Start Num: 40

Candidate Starts for AWGoat\_19:

(Start: 29 @13679 has 49 MA's), (Start: 32 @13691 has 98 MA's), (33, 13694), (Start: 40 @13739 has 12 MA's), (189, 14555), (198, 14609), (205, 14639), (207, 14651), (227, 14735), (228, 14738), (229, 14741), (240, 14810), (252, 14882), (261, 14930), (281, 15047), (292, 15113), (311, 15230), (323, 15317), (325, 15323),

Gene: Abblin\_21 Start: 15527, Stop: 17449, Start Num: 32

Candidate Starts for Abblin\_21:

(Start: 32 @15527 has 98 MA's), (64, 15743), (68, 15758), (87, 15932), (112, 16070), (114, 16079), (124, 16148), (125, 16154), (137, 16208), (142, 16232), (186, 16484), (189, 16502), (191, 16508), (201, 16571), (204, 16583), (205, 16586), (206, 16598), (226, 16688), (231, 16715), (257, 16874), (268, 16952), (287, 17048), (292, 17084), (304, 17204), (308, 17237), (322, 17321), (331, 17366),

Gene: Abt2graduatex2\_13 Start: 13868, Stop: 15571, Start Num: 50

Candidate Starts for Abt2graduatex2\_13:

(Start: 50 @13868 has 11 MA's), (52, 13877), (68, 13964), (84, 14111), (86, 14135), (119, 14318), (128, 14372), (133, 14402), (140, 14432), (141, 14435), (155, 14483), (163, 14519), (173, 14564), (179, 14606), (185, 14675), (226, 14855), (239, 14933), (240, 14936), (265, 15086), (269, 15128), (281, 15188), (286, 15209), (306, 15341), (315, 15398), (319, 15419), (324, 15461), (326, 15467), (343, 15542),

Gene: Affeca\_20 Start: 15348, Stop: 17258, Start Num: 32

Candidate Starts for Affeca\_20:

(Start: 32 @15348 has 98 MA's), (68, 15579), (73, 15597), (104, 15867), (129, 16005), (145, 16074), (154, 16107), (189, 16332), (191, 16338), (204, 16413), (205, 16416), (206, 16428), (220, 16464),

(226, 16515), (246, 16638), (250, 16674), (274, 16818), (285, 16869), (305, 17013), (306, 17016), (307, 17019), (314, 17067), (322, 17124),

Gene: Ailee\_20 Start: 15256, Stop: 17172, Start Num: 32

Candidate Starts for Ailee\_20:

(Start: 32 @15256 has 98 MA's), (68, 15487), (73, 15505), (104, 15781), (129, 15919), (145, 15988), (154, 16021), (189, 16246), (191, 16252), (201, 16315), (204, 16327), (205, 16330), (206, 16342), (226, 16429), (246, 16552), (250, 16588), (274, 16732), (285, 16783), (305, 16927), (306, 16930), (307, 16933), (314, 16981), (322, 17038), (345, 17155),

Gene: Ali17\_19 Start: 14661, Stop: 16580, Start Num: 32

Candidate Starts for Ali17\_19:

(Start: 32 @14661 has 98 MA's), (60, 14862), (80, 14985), (104, 15156), (114, 15201), (118, 15222), (129, 15279), (160, 15405), (169, 15456), (172, 15465), (178, 15516), (180, 15567), (189, 15630), (191, 15636), (201, 15699), (206, 15726), (226, 15813), (256, 15996), (267, 16071), (270, 16086), (274, 16110), (281, 16143), (285, 16161), (293, 16218), (304, 16329), (316, 16398), (317, 16410), (322, 16446), (335, 16512),

Gene: Altheas\_27 Start: 14496, Stop: 16319, Start Num: 42

Candidate Starts for Altheas\_27:

(Start: 42 @14496 has 12 MA's), (45, 14508), (53, 14568), (58, 14607), (135, 15129), (156, 15204), (165, 15252), (171, 15276), (173, 15282), (187, 15399), (205, 15498), (224, 15579), (241, 15672), (242, 15687), (250, 15735), (255, 15759), (260, 15792), (264, 15807), (266, 15831), (273, 15879), (283, 15921), (303, 16056), (304, 16068), (306, 16077), (316, 16137), (334, 16239),

Gene: AluminumJesus\_23 Start: 13874, Stop: 15679, Start Num: 43

Candidate Starts for AluminumJesus\_23:

(Start: 43 @13874 has 26 MA's), (45, 13883), (58, 13982), (97, 14288), (135, 14489), (139, 14504), (156, 14564), (165, 14612), (173, 14642), (186, 14756), (187, 14759), (188, 14765), (205, 14858), (224, 14939), (241, 15032), (242, 15047), (250, 15095), (255, 15119), (264, 15167), (266, 15191), (273, 15239), (283, 15281), (303, 15416), (304, 15428), (306, 15437), (316, 15497), (326, 15566), (334, 15599),

Gene: Angelicage\_20 Start: 15771, Stop: 17681, Start Num: 32

Candidate Starts for Angelicage\_20:

(Start: 32 @15771 has 98 MA's), (68, 16002), (73, 16020), (104, 16290), (129, 16428), (145, 16497), (154, 16530), (189, 16755), (191, 16761), (204, 16836), (205, 16839), (206, 16851), (220, 16887), (226, 16938), (246, 17061), (250, 17097), (274, 17241), (285, 17292), (305, 17436), (306, 17439), (307, 17442), (314, 17490), (322, 17547),

Gene: Antares\_27 Start: 14003, Stop: 15859, Start Num: 29

Candidate Starts for Antares\_27:

(Start: 29 @14003 has 49 MA's), (117, 14579), (123, 14624), (131, 14660), (149, 14729), (156, 14750), (157, 14753), (163, 14783), (181, 14903), (193, 14984), (218, 15098), (222, 15125), (251, 15314), (271, 15440), (293, 15554), (294, 15569), (307, 15617), (311, 15647), (313, 15659), (316, 15674), (318, 15689), (325, 15740), (329, 15758), (334, 15776),

Gene: Ariadne\_35 Start: 15581, Stop: 17596, Start Num: 29

Candidate Starts for Ariadne\_35:

(Start: 29 @15581 has 49 MA's), (117, 16160), (123, 16205), (131, 16241), (137, 16265), (149, 16310), (156, 16331), (160, 16349), (181, 16484), (216, 16814), (217, 16817), (222, 16874), (223, 16898), (246, 17036), (251, 17063), (270, 17174), (293, 17303), (294, 17318), (296, 17327), (304, 17354), (307, 17366), (311, 17396), (316, 17423), (329, 17507), (334, 17525),

Gene: Arri\_22 Start: 12537, Stop: 14423, Start Num: 32

Candidate Starts for Arri\_22:

(Start: 32 @12537 has 98 MA's), (69, 12774), (73, 12786), (77, 12840), (106, 13062), (139, 13224), (147, 13257), (191, 13509), (203, 13581), (220, 13638), (222, 13650), (239, 13767), (246, 13812), (247, 13815), (267, 13938), (269, 13950), (281, 14010), (296, 14112), (304, 14163), (306, 14172), (317, 14244), (321, 14274), (335, 14346), (340, 14370),

Gene: Ashertheman\_21 Start: 14855, Stop: 16762, Start Num: 32

Candidate Starts for Ashertheman\_21:

(Start: 32 @14855 has 98 MA's), (51, 14990), (68, 15086), (104, 15368), (118, 15437), (124, 15485), (129, 15509), (137, 15545), (145, 15578), (151, 15602), (172, 15695), (189, 15836), (191, 15842), (201, 15905), (204, 15917), (205, 15920), (206, 15932), (226, 16019), (246, 16142), (250, 16178), (267, 16283), (274, 16322), (285, 16373), (304, 16511), (305, 16517), (306, 16520), (314, 16571), (322, 16628), (323, 16640), (326, 16649), (346, 16748),

Gene: Asis\_13 Start: 13751, Stop: 15445, Start Num: 50

Candidate Starts for Asis\_13:

(Start: 50 @13751 has 11 MA's), (52, 13760), (72, 13862), (84, 13994), (86, 14018), (106, 14114), (119, 14195), (126, 14240), (128, 14249), (134, 14282), (140, 14309), (141, 14312), (155, 14360), (162, 14393), (163, 14396), (171, 14435), (173, 14441), (181, 14519), (185, 14552), (202, 14642), (223, 14717), (226, 14732), (236, 14798), (239, 14810), (240, 14813), (259, 14930), (265, 14963), (269, 15005), (290, 15122), (306, 15218), (315, 15275), (319, 15296), (324, 15338), (326, 15344), (334, 15377), (337, 15401), (343, 15419), (346, 15434),

Gene: Atuin\_79 Start: 46811, Stop: 48820, Start Num: 9

Candidate Starts for Atuin\_79:

(Start: 9 @46811 has 2 MA's), (115, 47525), (144, 47660), (156, 47702), (177, 47825), (179, 47846), (200, 48011), (203, 48026), (239, 48206), (308, 48632),

Gene: BabyDotz\_24 Start: 14116, Stop: 15948, Start Num: 43

Candidate Starts for BabyDotz\_24:

(Start: 43 @14116 has 26 MA's), (45, 14125), (58, 14224), (105, 14590), (135, 14758), (139, 14773), (156, 14833), (165, 14881), (166, 14887), (173, 14911), (186, 15025), (187, 15028), (188, 15034), (205, 15127), (224, 15208), (241, 15301), (242, 15316), (250, 15364), (255, 15388), (264, 15436), (266, 15460), (273, 15508), (283, 15550), (303, 15685), (304, 15697), (306, 15706), (316, 15766), (326, 15835), (334, 15868),

Gene: BabyGotBac\_13 Start: 13751, Stop: 15445, Start Num: 50

Candidate Starts for BabyGotBac\_13:

(Start: 50 @13751 has 11 MA's), (52, 13760), (72, 13862), (84, 13994), (86, 14018), (106, 14114), (119, 14195), (126, 14240), (128, 14249), (134, 14282), (140, 14309), (141, 14312), (155, 14360), (162, 14393), (163, 14396), (171, 14435), (173, 14441), (181, 14519), (185, 14552), (202, 14642), (223, 14717), (226, 14732), (236, 14798), (239, 14810), (240, 14813), (259, 14930), (265, 14963), (269, 15005), (290, 15122), (306, 15218), (315, 15275), (319, 15296), (324, 15338), (326, 15344), (334, 15377), (337, 15401), (343, 15419), (346, 15434),

Gene: Baddon\_20 Start: 15702, Stop: 17609, Start Num: 32

Candidate Starts for Baddon\_20:

(Start: 32 @15702 has 98 MA's), (51, 15837), (56, 15870), (68, 15933), (104, 16215), (118, 16284), (124, 16332), (129, 16356), (145, 16425), (151, 16449), (172, 16542), (189, 16683), (191, 16689), (201, 16752), (204, 16764), (205, 16767), (206, 16779), (226, 16866), (246, 16989), (250, 17025), (257, 17058), (262, 17088), (267, 17130), (274, 17169), (285, 17220), (305, 17364), (306, 17367),

(314, 17418), (322, 17475), (323, 17487), (326, 17496), (331, 17520),

Gene: Bakery\_20 Start: 11735, Stop: 13636, Start Num: 32

Candidate Starts for Bakery\_20:

(Start: 32 @11735 has 98 MA's), (69, 11972), (73, 11984), (77, 12038), (139, 12425), (147, 12458), (154, 12482), (172, 12563), (176, 12590), (191, 12728), (220, 12857), (222, 12869), (226, 12908), (239, 12986), (246, 13031), (247, 13034), (250, 13055), (259, 13097), (262, 13118), (267, 13160), (269, 13172), (317, 13466), (321, 13496), (325, 13520), (332, 13550),

Gene: Barb\_21 Start: 12512, Stop: 14410, Start Num: 32

Candidate Starts for Barb\_21:

(Start: 32 @12512 has 98 MA's), (69, 12749), (73, 12761), (77, 12815), (139, 13208), (147, 13241), (154, 13265), (191, 13505), (220, 13634), (222, 13646), (239, 13763), (246, 13808), (247, 13811), (259, 13871), (261, 13889), (267, 13934), (269, 13946), (270, 13949), (273, 13970), (292, 14069), (296, 14108), (306, 14168), (317, 14240), (321, 14270), (325, 14294), (331, 14321), (332, 14324), (336, 14351),

Gene: Barsten\_21 Start: 15284, Stop: 17188, Start Num: 32

Candidate Starts for Barsten\_21:

(Start: 32 @15284 has 98 MA's), (68, 15515), (73, 15533), (104, 15800), (129, 15938), (145, 16007), (154, 16040), (189, 16265), (191, 16271), (201, 16334), (204, 16346), (205, 16349), (206, 16361), (226, 16448), (246, 16571), (250, 16607), (274, 16751), (285, 16802), (305, 16946), (306, 16949), (307, 16952), (314, 17000), (322, 17057),

Gene: Baumdotcom\_20 Start: 14471, Stop: 16378, Start Num: 32

Candidate Starts for Baumdotcom\_20:

(Start: 32 @14471 has 98 MA's), (51, 14606), (68, 14702), (104, 14984), (118, 15053), (124, 15101), (129, 15125), (137, 15161), (145, 15194), (151, 15218), (172, 15311), (189, 15452), (191, 15458), (201, 15521), (204, 15533), (205, 15536), (206, 15548), (226, 15635), (246, 15758), (250, 15794), (267, 15899), (274, 15938), (285, 15989), (304, 16127), (305, 16133), (306, 16136), (314, 16187), (322, 16244), (323, 16256), (326, 16265),

Gene: BayC\_13 Start: 13751, Stop: 15445, Start Num: 50

Candidate Starts for BayC\_13:

(Start: 50 @13751 has 11 MA's), (52, 13760), (72, 13862), (84, 13994), (86, 14018), (106, 14114), (119, 14195), (126, 14240), (128, 14249), (134, 14282), (140, 14309), (141, 14312), (155, 14360), (162, 14393), (163, 14396), (171, 14435), (173, 14441), (181, 14519), (185, 14552), (202, 14642), (226, 14732), (236, 14798), (239, 14810), (240, 14813), (259, 14930), (265, 14963), (269, 15005), (290, 15122), (306, 15218), (315, 15275), (324, 15338), (326, 15344), (334, 15377), (337, 15401), (343, 15419), (346, 15434),

Gene: Beagle\_27 Start: 14234, Stop: 15961, Start Num: 40

Candidate Starts for Beagle\_27:

(28, 14171), (Start: 40 @14234 has 12 MA's), (143, 14843), (195, 15131), (198, 15143), (205, 15173), (227, 15269), (228, 15272), (229, 15275), (237, 15335), (266, 15497), (276, 15557), (277, 15563), (281, 15581), (292, 15644), (309, 15755), (325, 15854),

Gene: Belphegor\_18 Start: 13765, Stop: 15693, Start Num: 32

Candidate Starts for Belphegor\_18:

(Start: 32 @13765 has 98 MA's), (60, 13969), (70, 14008), (80, 14092), (105, 14272), (129, 14392), (151, 14485), (169, 14569), (172, 14578), (178, 14629), (180, 14680), (189, 14743), (191, 14749), (201, 14812), (206, 14839), (226, 14926), (267, 15184), (270, 15199), (274, 15223), (285, 15274), (293, 15331), (302, 15427), (304, 15442), (316, 15511), (317, 15523), (322, 15559), (333, 15610),

Gene: Bibwit\_21 Start: 15528, Stop: 17423, Start Num: 32

Candidate Starts for Bibwit\_21:

(Start: 32 @15528 has 98 MA's), (68, 15759), (73, 15777), (104, 16032), (129, 16170), (145, 16239), (154, 16272), (189, 16497), (191, 16503), (201, 16566), (204, 16578), (205, 16581), (206, 16593), (226, 16680), (246, 16803), (250, 16839), (274, 16983), (285, 17034), (305, 17178), (306, 17181), (307, 17184), (314, 17232), (322, 17289), (345, 17406),

Gene: Big4\_77 Start: 43780, Stop: 45789, Start Num: 10

Candidate Starts for Big4\_77:

(Start: 10 @43780 has 6 MA's), (14, 43801), (33, 43915), (36, 43933), (59, 44107), (115, 44488), (132, 44572), (149, 44644), (150, 44647), (205, 44995), (279, 45406), (320, 45676),

Gene: BirdInFrench\_24 Start: 12993, Stop: 14771, Start Num: 42

Candidate Starts for BirdInFrench\_24:

(Start: 42 @12993 has 12 MA's), (45, 13005), (88, 13350), (113, 13464), (135, 13590), (156, 13656), (165, 13704), (173, 13734), (205, 13947), (224, 14028), (226, 14037), (239, 14115), (241, 14121), (242, 14136), (266, 14280), (271, 14322), (283, 14373), (304, 14520), (306, 14529), (330, 14679), (334, 14691), (344, 14751),

Gene: Bizzy\_21 Start: 14750, Stop: 16663, Start Num: 32

Candidate Starts for Bizzy\_21:

(Start: 32 @14750 has 98 MA's), (51, 14885), (68, 14981), (104, 15269), (118, 15338), (124, 15386), (129, 15410), (137, 15446), (145, 15479), (151, 15503), (172, 15596), (189, 15737), (191, 15743), (201, 15806), (204, 15818), (205, 15821), (206, 15833), (226, 15920), (246, 16043), (250, 16079), (257, 16112), (267, 16184), (274, 16223), (285, 16274), (304, 16412), (305, 16418), (306, 16421), (314, 16472), (322, 16529), (323, 16541), (326, 16550),

Gene: Blab\_23 Start: 13751, Stop: 15577, Start Num: 43

Candidate Starts for Blab\_23:

(Start: 43 @13751 has 26 MA's), (45, 13760), (58, 13859), (97, 14186), (135, 14387), (139, 14402), (156, 14462), (165, 14510), (173, 14540), (186, 14654), (187, 14657), (188, 14663), (205, 14756), (224, 14837), (241, 14930), (242, 14945), (250, 14993), (255, 15017), (264, 15065), (266, 15089), (273, 15137), (283, 15179), (303, 15314), (306, 15335), (316, 15395), (326, 15464), (334, 15497),

Gene: Bloom\_85 Start: 48235, Stop: 50229, Start Num: 9

Candidate Starts for Bloom\_85:

(Start: 9 @48235 has 2 MA's), (33, 48379), (115, 48925), (149, 49090), (156, 49111), (170, 49186), (239, 49615), (288, 49912),

Gene: BobBob\_18 Start: 14138, Stop: 16045, Start Num: 32

Candidate Starts for BobBob\_18:

(Start: 32 @14138 has 98 MA's), (68, 14369), (73, 14387), (104, 14654), (129, 14792), (145, 14861), (154, 14894), (189, 15119), (191, 15125), (201, 15188), (204, 15200), (205, 15203), (206, 15215), (226, 15302), (234, 15356), (246, 15425), (250, 15461), (274, 15605), (285, 15656), (305, 15800), (306, 15803), (307, 15806), (314, 15854), (322, 15911),

Gene: Brandonk123\_22 Start: 14830, Stop: 16737, Start Num: 32

Candidate Starts for Brandonk123\_22:

(Start: 32 @14830 has 98 MA's), (68, 15061), (73, 15079), (104, 15346), (129, 15484), (145, 15553), (154, 15586), (189, 15811), (191, 15817), (201, 15880), (204, 15892), (205, 15895), (206, 15907), (226, 15994), (234, 16048), (246, 16117), (250, 16153), (274, 16297), (285, 16348), (305, 16492), (306, 16495), (307, 16498), (314, 16546), (322, 16603),



Gene: BrazzalePHS\_26 Start: 13795, Stop: 15654, Start Num: 29

Candidate Starts for BrazzalePHS\_26:

(Start: 29 @13795 has 49 MA's), (117, 14374), (123, 14419), (131, 14455), (149, 14524), (156, 14545), (157, 14548), (163, 14578), (181, 14698), (193, 14779), (218, 14893), (222, 14920), (251, 15109), (271, 15235), (293, 15349), (294, 15364), (307, 15412), (311, 15442), (313, 15454), (316, 15469), (318, 15484), (325, 15535), (329, 15553), (334, 15571),

Gene: BruhMoment\_21 Start: 13658, Stop: 15379, Start Num: 40

Candidate Starts for BruhMoment\_21:

(Start: 29 @13598 has 49 MA's), (Start: 40 @13658 has 12 MA's), (123, 14171), (143, 14249), (147, 14264), (198, 14558), (205, 14588), (227, 14684), (228, 14687), (229, 14690), (240, 14759), (261, 14879), (269, 14936), (274, 14963), (281, 14996), (299, 15116), (308, 15170), (312, 15188), (322, 15254), (325, 15272), (332, 15302),

Gene: Busephilis\_26 Start: 13734, Stop: 15590, Start Num: 29

Candidate Starts for Busephilis\_26:

(Start: 29 @13734 has 49 MA's), (117, 14310), (123, 14355), (131, 14391), (149, 14460), (156, 14481), (157, 14484), (163, 14514), (181, 14634), (193, 14715), (218, 14829), (222, 14856), (251, 15045), (271, 15171), (293, 15285), (294, 15300), (307, 15348), (311, 15378), (313, 15390), (316, 15405), (318, 15420), (325, 15471), (329, 15489), (334, 15507),

Gene: CandC\_23 Start: 12598, Stop: 14376, Start Num: 42

Candidate Starts for CandC\_23:

(Start: 42 @12598 has 12 MA's), (45, 12610), (88, 12952), (113, 13069), (135, 13195), (165, 13309), (173, 13339), (205, 13552), (224, 13633), (226, 13642), (239, 13720), (241, 13726), (242, 13741), (266, 13885), (271, 13927), (283, 13978), (304, 14125), (306, 14134), (330, 14284), (334, 14296),

Gene: Casend\_26 Start: 14462, Stop: 16294, Start Num: 43

Candidate Starts for Casend\_26:

(Start: 43 @14462 has 26 MA's), (45, 14471), (58, 14570), (105, 14936), (135, 15104), (139, 15119), (156, 15179), (165, 15227), (166, 15233), (173, 15257), (187, 15374), (188, 15380), (205, 15473), (224, 15554), (241, 15647), (242, 15662), (250, 15710), (255, 15734), (264, 15782), (266, 15806), (273, 15854), (283, 15896), (303, 16031), (304, 16043), (306, 16052), (316, 16112), (326, 16181), (334, 16214),

Gene: Cece\_71 Start: 39862, Stop: 41862, Start Num: 10

Candidate Starts for Cece\_71:

(Start: 10 @39862 has 6 MA's), (33, 39997), (36, 40015), (38, 40027), (115, 40564), (132, 40648), (144, 40699), (149, 40720), (189, 40984), (205, 41071), (279, 41482), (289, 41548), (320, 41752),

Gene: ChadMasterC\_20 Start: 15249, Stop: 17144, Start Num: 32

Candidate Starts for ChadMasterC\_20:

(Start: 32 @15249 has 98 MA's), (68, 15480), (73, 15498), (104, 15753), (129, 15891), (145, 15960), (154, 15993), (189, 16218), (191, 16224), (201, 16287), (204, 16299), (205, 16302), (206, 16314), (226, 16401), (246, 16524), (250, 16560), (274, 16704), (285, 16755), (305, 16899), (306, 16902), (307, 16905), (314, 16953), (322, 17010),

Gene: Charming\_18 Start: 14140, Stop: 16047, Start Num: 32

Candidate Starts for Charming\_18:

(Start: 32 @14140 has 98 MA's), (68, 14371), (73, 14389), (104, 14656), (129, 14794), (145, 14863), (154, 14896), (189, 15121), (191, 15127), (201, 15190), (204, 15202), (205, 15205), (206, 15217), (226, 15304), (234, 15358), (246, 15427), (250, 15463), (274, 15607), (285, 15658), (305, 15802),

(306, 15805), (307, 15808), (314, 15856), (322, 15913),

Gene: Chickadee\_20 Start: 13744, Stop: 15633, Start Num: 32

Candidate Starts for Chickadee\_20:

(30, 13735), (Start: 32 @13744 has 98 MA's), (41, 13810), (68, 13978), (73, 13996), (106, 14269), (124, 14365), (167, 14557), (171, 14572), (180, 14650), (191, 14719), (201, 14782), (204, 14794), (205, 14797), (223, 14881), (226, 14896), (242, 14995), (250, 15049), (267, 15154), (285, 15244), (295, 15325), (304, 15382), (317, 15463), (322, 15499), (335, 15565),

Gene: Cinna\_22 Start: 13276, Stop: 15141, Start Num: 29

Candidate Starts for Cinna\_22:

(Start: 29 @13276 has 49 MA's), (81, 13630), (96, 13756), (122, 13894), (131, 13936), (153, 14017), (156, 14026), (167, 14083), (172, 14095), (189, 14227), (192, 14248), (193, 14254), (218, 14368), (232, 14467), (233, 14485), (251, 14584), (254, 14599), (263, 14641), (270, 14695), (271, 14710), (281, 14752), (285, 14767), (287, 14779), (293, 14824), (304, 14887), (308, 14920),

Gene: ClamChowder\_21 Start: 12512, Stop: 14410, Start Num: 32

Candidate Starts for ClamChowder\_21:

(Start: 32 @12512 has 98 MA's), (69, 12749), (73, 12761), (77, 12815), (139, 13208), (147, 13241), (154, 13265), (191, 13505), (220, 13634), (222, 13646), (239, 13763), (246, 13808), (247, 13811), (259, 13871), (261, 13889), (267, 13934), (269, 13946), (270, 13949), (273, 13970), (292, 14069), (296, 14108), (306, 14168), (317, 14240), (321, 14270), (325, 14294), (331, 14321), (332, 14324), (336, 14351),

Gene: ClearAsMud\_29 Start: 14527, Stop: 16377, Start Num: 29

Candidate Starts for ClearAsMud\_29:

(Start: 29 @14527 has 49 MA's), (117, 15103), (123, 15148), (131, 15184), (149, 15253), (156, 15274), (157, 15277), (163, 15307), (181, 15427), (222, 15649), (227, 15694), (251, 15838), (278, 15994), (293, 16078), (307, 16141), (311, 16171), (313, 16183), (316, 16198), (318, 16213), (325, 16264), (329, 16282),

Gene: Clown\_23 Start: 14522, Stop: 16378, Start Num: 32

Candidate Starts for Clown\_23:

(24, 14495), (Start: 32 @14522 has 98 MA's), (37, 14543), (47, 14624), (68, 14756), (73, 14774), (79, 14840), (130, 15146), (147, 15212), (151, 15227), (155, 15239), (191, 15479), (203, 15551), (220, 15608), (222, 15620), (226, 15659), (239, 15737), (244, 15767), (246, 15782), (267, 15908), (269, 15920), (270, 15923), (292, 16043), (293, 16052), (304, 16133), (313, 16187), (317, 16214), (331, 16295), (332, 16298),

Gene: CoveyB\_22 Start: 12369, Stop: 14255, Start Num: 32

Candidate Starts for CoveyB\_22:

(Start: 32 @12369 has 98 MA's), (69, 12606), (73, 12618), (77, 12672), (106, 12894), (139, 13056), (147, 13089), (191, 13341), (203, 13413), (220, 13470), (222, 13482), (239, 13599), (246, 13644), (247, 13647), (267, 13770), (269, 13782), (281, 13842), (304, 13995), (306, 14004), (317, 14076), (321, 14106), (335, 14178), (340, 14202),

Gene: Cranjjs\_28 Start: 13958, Stop: 15814, Start Num: 29

Candidate Starts for Cranjjs\_28:

(Start: 29 @13958 has 49 MA's), (117, 14534), (123, 14579), (131, 14615), (149, 14684), (156, 14705), (157, 14708), (163, 14738), (181, 14858), (193, 14939), (218, 15053), (222, 15080), (251, 15269), (271, 15395), (293, 15509), (294, 15524), (307, 15572), (311, 15602), (313, 15614), (316, 15629), (318, 15644), (325, 15695), (329, 15713), (334, 15731),

Gene: CrazyRich\_26 Start: 13768, Stop: 15624, Start Num: 29

Candidate Starts for CrazyRich\_26:

(Start: 29 @13768 has 49 MA's), (117, 14344), (123, 14389), (131, 14425), (149, 14494), (156, 14515), (157, 14518), (163, 14548), (181, 14668), (193, 14749), (218, 14863), (222, 14890), (251, 15079), (271, 15205), (293, 15319), (294, 15334), (307, 15382), (311, 15412), (313, 15424), (316, 15439), (318, 15454), (325, 15505), (329, 15523), (334, 15541),

Gene: Cressida\_24 Start: 13311, Stop: 15185, Start Num: 29

Candidate Starts for Cressida\_24:

(Start: 29 @13311 has 49 MA's), (96, 13797), (107, 13836), (122, 13935), (131, 13977), (153, 14058), (156, 14067), (167, 14124), (172, 14136), (189, 14268), (192, 14289), (193, 14295), (218, 14409), (232, 14508), (233, 14526), (251, 14625), (254, 14640), (263, 14682), (270, 14736), (271, 14751), (281, 14793), (285, 14808), (287, 14820), (293, 14865), (304, 14928), (311, 14970), (317, 15009), (318, 15012), (334, 15099),

Gene: Crisis\_28 Start: 13753, Stop: 15609, Start Num: 29

Candidate Starts for Crisis\_28:

(Start: 29 @13753 has 49 MA's), (117, 14329), (123, 14374), (131, 14410), (149, 14479), (156, 14500), (157, 14503), (163, 14533), (181, 14653), (193, 14734), (218, 14848), (222, 14875), (251, 15064), (271, 15190), (277, 15214), (293, 15304), (294, 15319), (307, 15367), (311, 15397), (313, 15409), (316, 15424), (318, 15439), (325, 15490), (329, 15508), (334, 15526),

Gene: Danyall\_21 Start: 12369, Stop: 14255, Start Num: 32

Candidate Starts for Danyall\_21:

(Start: 32 @12369 has 98 MA's), (69, 12606), (73, 12618), (77, 12672), (106, 12894), (139, 13056), (147, 13089), (191, 13341), (203, 13413), (220, 13470), (222, 13482), (239, 13599), (246, 13644), (247, 13647), (267, 13770), (269, 13782), (281, 13842), (304, 13995), (306, 14004), (317, 14076), (321, 14106), (335, 14178), (340, 14202),

Gene: Delrey21\_21 Start: 14990, Stop: 16909, Start Num: 32

Candidate Starts for Delrey21\_21:

(Start: 32 @14990 has 98 MA's), (47, 15089), (64, 15206), (67, 15218), (68, 15221), (87, 15395), (108, 15509), (114, 15542), (124, 15608), (125, 15614), (137, 15668), (142, 15692), (152, 15728), (186, 15944), (189, 15962), (191, 15968), (201, 16031), (204, 16043), (205, 16046), (206, 16058), (226, 16148), (231, 16175), (257, 16334), (268, 16412), (275, 16448), (287, 16508), (293, 16553), (304, 16664), (308, 16697), (322, 16781), (325, 16799), (332, 16829),

Gene: Derg\_18 Start: 14345, Stop: 16255, Start Num: 32

Candidate Starts for Derg\_18:

(Start: 32 @14345 has 98 MA's), (51, 14480), (68, 14576), (104, 14861), (118, 14930), (124, 14978), (129, 15002), (137, 15038), (145, 15071), (151, 15095), (172, 15188), (189, 15329), (191, 15335), (201, 15398), (204, 15410), (205, 15413), (206, 15425), (226, 15512), (246, 15635), (250, 15671), (257, 15704), (267, 15776), (274, 15815), (285, 15866), (305, 16010), (306, 16013), (314, 16064), (322, 16121), (323, 16133), (326, 16142),

Gene: Dewdrop\_60 Start: 29654, Stop: 31561, Start Num: 26

Candidate Starts for Dewdrop\_60:

(4, 29438), (7, 29510), (11, 29543), (12, 29546), (Start: 26 @29654 has 4 MA's), (79, 29993), (91, 30131), (98, 30161), (120, 30269), (127, 30314), (209, 30755), (240, 30929), (245, 30959), (246, 30971), (251, 30998), (263, 31055), (266, 31082), (270, 31109), (275, 31136), (280, 31160), (287, 31202), (290, 31232), (293, 31247), (317, 31391), (332, 31475), (340, 31517),

Gene: Dxdert\_21 Start: 14191, Stop: 16077, Start Num: 32

Candidate Starts for DEXDERT\_21:

(30, 14182), (Start: 32 @14191 has 98 MA's), (41, 14257), (68, 14425), (73, 14443), (106, 14713), (124, 14809), (171, 15016), (180, 15094), (191, 15163), (201, 15226), (204, 15238), (205, 15241), (223, 15325), (226, 15340), (242, 15439), (250, 15493), (267, 15598), (285, 15688), (295, 15769), (304, 15826), (307, 15838), (316, 15895), (317, 15907), (322, 15943), (335, 16009),

Gene: DoctorFroggo\_21 Start: 14990, Stop: 16909, Start Num: 32

Candidate Starts for DoctorFroggo\_21:

(Start: 32 @14990 has 98 MA's), (47, 15089), (64, 15206), (67, 15218), (68, 15221), (87, 15395), (108, 15509), (114, 15542), (124, 15608), (125, 15614), (137, 15668), (142, 15692), (152, 15728), (186, 15944), (189, 15962), (191, 15968), (201, 16031), (204, 16043), (205, 16046), (206, 16058), (226, 16148), (231, 16175), (257, 16334), (268, 16412), (275, 16448), (287, 16508), (293, 16553), (304, 16664), (308, 16697), (322, 16781), (325, 16799), (332, 16829),

Gene: DonaldDuck\_25 Start: 13808, Stop: 15640, Start Num: 43

Candidate Starts for DonaldDuck\_25:

(Start: 43 @13808 has 26 MA's), (45, 13817), (58, 13916), (105, 14282), (135, 14450), (139, 14465), (156, 14525), (165, 14573), (166, 14579), (173, 14603), (187, 14720), (188, 14726), (205, 14819), (224, 14900), (241, 14993), (242, 15008), (250, 15056), (255, 15080), (264, 15128), (266, 15152), (273, 15200), (283, 15242), (303, 15377), (304, 15389), (306, 15398), (316, 15458), (326, 15527), (334, 15560),

Gene: DunneganBoMo\_75 Start: 43679, Stop: 45682, Start Num: 9

Candidate Starts for DunneganBoMo\_75:

(Start: 9 @43679 has 2 MA's), (19, 43733), (115, 44387), (144, 44522), (156, 44564), (170, 44639), (185, 44786), (200, 44873), (203, 44888), (239, 45068),

Gene: EMOORE\_16 Start: 13023, Stop: 14942, Start Num: 32

Candidate Starts for EMOORE\_16:

(Start: 32 @13023 has 98 MA's), (70, 13263), (109, 13551), (169, 13818), (172, 13827), (175, 13845), (178, 13878), (189, 13992), (191, 13998), (201, 14061), (206, 14088), (226, 14175), (256, 14358), (267, 14433), (269, 14445), (274, 14472), (285, 14523), (293, 14580), (304, 14691), (316, 14760), (317, 14772), (322, 14808), (323, 14820), (325, 14826),

Gene: EarickHC\_27 Start: 13679, Stop: 15535, Start Num: 29

Candidate Starts for EarickHC\_27:

(Start: 29 @13679 has 49 MA's), (117, 14255), (123, 14300), (131, 14336), (149, 14405), (156, 14426), (157, 14429), (163, 14459), (181, 14579), (193, 14660), (218, 14774), (222, 14801), (251, 14990), (271, 15116), (277, 15140), (293, 15230), (294, 15245), (307, 15293), (311, 15323), (313, 15335), (316, 15350), (318, 15365), (325, 15416), (329, 15434), (334, 15452),

Gene: EdmundFerry\_19 Start: 13775, Stop: 15661, Start Num: 32

Candidate Starts for EdmundFerry\_19:

(30, 13766), (Start: 32 @13775 has 98 MA's), (41, 13841), (68, 14009), (73, 14027), (106, 14297), (124, 14393), (171, 14600), (180, 14678), (191, 14747), (201, 14810), (204, 14822), (205, 14825), (223, 14909), (226, 14924), (242, 15023), (250, 15077), (267, 15182), (285, 15272), (295, 15353), (304, 15410), (307, 15422), (316, 15479), (317, 15491), (322, 15527), (335, 15593),

Gene: Evamon\_19 Start: 11844, Stop: 13742, Start Num: 32

Candidate Starts for Evamon\_19:

(Start: 32 @11844 has 98 MA's), (69, 12081), (73, 12093), (77, 12147), (106, 12378), (139, 12540), (147, 12573), (191, 12837), (220, 12966), (222, 12978), (239, 13095), (246, 13140), (247, 13143), (259, 13203), (261, 13221), (265, 13236), (267, 13266), (269, 13278), (270, 13281), (292, 13401),

(296, 13440), (306, 13500), (317, 13572), (321, 13602), (325, 13626), (331, 13653), (332, 13656), (336, 13683),

Gene: EverythinBagel\_25 Start: 14211, Stop: 16028, Start Num: 43

Candidate Starts for EverythinBagel\_25:

(Start: 43 @14211 has 26 MA's), (45, 14220), (58, 14319), (97, 14637), (135, 14838), (139, 14853), (156, 14913), (165, 14961), (173, 14991), (186, 15105), (187, 15108), (188, 15114), (196, 15168), (205, 15207), (224, 15288), (241, 15381), (242, 15396), (250, 15444), (255, 15468), (264, 15516), (266, 15540), (273, 15588), (283, 15630), (303, 15765), (306, 15786), (313, 15831), (316, 15846), (326, 15915), (334, 15948),

Gene: Fireball\_20 Start: 11982, Stop: 13874, Start Num: 32

Candidate Starts for Fireball\_20:

(Start: 32 @11982 has 98 MA's), (69, 12219), (73, 12231), (77, 12285), (106, 12510), (139, 12672), (147, 12705), (155, 12732), (220, 13098), (222, 13110), (239, 13227), (246, 13272), (247, 13275), (259, 13335), (261, 13353), (267, 13398), (269, 13410), (270, 13413), (292, 13533), (296, 13572), (306, 13632), (317, 13704), (321, 13734), (325, 13758), (331, 13785), (332, 13788), (336, 13815),

Gene: Fireman\_27 Start: 13483, Stop: 15504, Start Num: 29

Candidate Starts for Fireman\_27:

(Start: 29 @13483 has 49 MA's), (117, 14068), (131, 14149), (137, 14173), (149, 14218), (156, 14239), (181, 14392), (214, 14650), (216, 14722), (222, 14782), (223, 14806), (246, 14944), (250, 14968), (251, 14971), (270, 15082), (293, 15211), (294, 15226), (296, 15235), (304, 15262), (307, 15274), (311, 15304), (316, 15331), (334, 15433),

Gene: Fitzgerald\_18 Start: 14566, Stop: 16473, Start Num: 32

Candidate Starts for Fitzgerald\_18:

(Start: 32 @14566 has 98 MA's), (68, 14797), (73, 14815), (104, 15082), (129, 15220), (145, 15289), (154, 15322), (189, 15547), (191, 15553), (201, 15616), (204, 15628), (205, 15631), (206, 15643), (226, 15730), (246, 15853), (250, 15889), (274, 16033), (285, 16084), (305, 16228), (306, 16231), (307, 16234), (314, 16282), (322, 16339),

Gene: Fizzles\_25 Start: 13768, Stop: 15600, Start Num: 43

Candidate Starts for Fizzles\_25:

(Start: 43 @13768 has 26 MA's), (44, 13774), (45, 13777), (66, 13915), (135, 14410), (146, 14449), (151, 14470), (165, 14533), (171, 14557), (173, 14563), (187, 14680), (205, 14779), (221, 14821), (224, 14860), (241, 14953), (242, 14968), (250, 15016), (253, 15031), (264, 15088), (266, 15112), (273, 15160), (281, 15196), (285, 15211), (303, 15337), (304, 15349), (306, 15358), (334, 15520),

Gene: Flatwoods\_21 Start: 14757, Stop: 16682, Start Num: 32

Candidate Starts for Flatwoods\_21:

(Start: 32 @14757 has 98 MA's), (51, 14892), (68, 14988), (104, 15288), (118, 15357), (124, 15405), (129, 15429), (137, 15465), (145, 15498), (151, 15522), (172, 15615), (189, 15756), (191, 15762), (201, 15825), (204, 15837), (205, 15840), (206, 15852), (226, 15939), (246, 16062), (250, 16098), (257, 16131), (267, 16203), (274, 16242), (285, 16293), (304, 16431), (305, 16437), (306, 16440), (314, 16491), (322, 16548), (323, 16560), (326, 16569),

Gene: Fosterous\_18 Start: 15029, Stop: 16936, Start Num: 32

Candidate Starts for Fosterous\_18:

(Start: 32 @15029 has 98 MA's), (68, 15260), (73, 15278), (104, 15545), (129, 15683), (145, 15752), (154, 15785), (189, 16010), (191, 16016), (201, 16079), (204, 16091), (205, 16094), (206, 16106), (226, 16193), (234, 16247), (246, 16316), (250, 16352), (274, 16496), (285, 16547), (305, 16691), (306, 16694), (307, 16697), (314, 16745), (322, 16802),

Gene: FrankDeliGuy\_23 Start: 13770, Stop: 15602, Start Num: 43

Candidate Starts for FrankDeliGuy\_23:

(Start: 43 @13770 has 26 MA's), (45, 13779), (58, 13878), (105, 14244), (135, 14412), (139, 14427), (156, 14487), (165, 14535), (166, 14541), (173, 14565), (186, 14679), (187, 14682), (188, 14688), (205, 14781), (224, 14862), (241, 14955), (242, 14970), (250, 15018), (255, 15042), (264, 15090), (266, 15114), (273, 15162), (283, 15204), (303, 15339), (306, 15360), (316, 15420), (326, 15489), (334, 15522),

Gene: Fransoyer\_27 Start: 13833, Stop: 15662, Start Num: 42

Candidate Starts for Fransoyer\_27:

(Start: 42 @13833 has 12 MA's), (45, 13845), (61, 13974), (88, 14202), (90, 14220), (119, 14379), (135, 14463), (156, 14541), (165, 14589), (173, 14619), (186, 14733), (205, 14835), (221, 14877), (224, 14916), (226, 14925), (241, 15009), (242, 15024), (264, 15144), (266, 15168), (271, 15210), (273, 15216), (283, 15258), (303, 15393), (306, 15414), (308, 15438), (312, 15456), (316, 15474), (334, 15576),

Gene: Fregley\_25 Start: 13171, Stop: 14949, Start Num: 42

Candidate Starts for Fregley\_25:

(Start: 42 @13171 has 12 MA's), (45, 13183), (88, 13525), (113, 13642), (135, 13768), (165, 13882), (173, 13912), (205, 14125), (224, 14206), (226, 14215), (239, 14293), (241, 14299), (242, 14314), (266, 14458), (271, 14500), (283, 14551), (304, 14698), (306, 14707), (330, 14857), (334, 14869),

Gene: Fugax\_21 Start: 12512, Stop: 14410, Start Num: 32

Candidate Starts for Fugax\_21:

(Start: 32 @12512 has 98 MA's), (69, 12749), (73, 12761), (77, 12815), (139, 13208), (147, 13241), (154, 13265), (191, 13505), (220, 13634), (222, 13646), (239, 13763), (246, 13808), (247, 13811), (259, 13871), (261, 13889), (267, 13934), (269, 13946), (270, 13949), (273, 13970), (292, 14069), (296, 14108), (306, 14168), (317, 14240), (321, 14270), (325, 14294), (331, 14321), (332, 14324), (336, 14351),

Gene: FuzzBuster\_31 Start: 13864, Stop: 15825, Start Num: 13

Candidate Starts for FuzzBuster\_31:

(Start: 13 @13864 has 1 MA's), (18, 13891), (30, 13975), (39, 14026), (79, 14296), (120, 14533), (164, 14728), (180, 14842), (225, 15121), (230, 15148), (233, 15175), (238, 15199), (242, 15223), (246, 15247), (247, 15250), (249, 15268), (259, 15307), (270, 15385), (314, 15637), (317, 15658), (336, 15769), (338, 15778),

Gene: GTE6\_20 Start: 14261, Stop: 16150, Start Num: 32

Candidate Starts for GTE6\_20:

(30, 14252), (Start: 32 @14261 has 98 MA's), (41, 14327), (68, 14495), (73, 14513), (106, 14786), (124, 14882), (171, 15089), (180, 15167), (191, 15236), (201, 15299), (204, 15311), (205, 15314), (223, 15398), (226, 15413), (242, 15512), (250, 15566), (267, 15671), (285, 15761), (295, 15842), (304, 15899), (308, 15932), (317, 15980), (322, 16016), (335, 16082),

Gene: Gaea\_20 Start: 14451, Stop: 16370, Start Num: 32

Candidate Starts for Gaea\_20:

(Start: 32 @14451 has 98 MA's), (51, 14586), (68, 14682), (104, 14976), (118, 15045), (124, 15093), (129, 15117), (137, 15153), (145, 15186), (151, 15210), (172, 15303), (189, 15444), (191, 15450), (201, 15513), (204, 15525), (205, 15528), (206, 15540), (226, 15627), (246, 15750), (250, 15786), (257, 15819), (267, 15891), (274, 15930), (285, 15981), (304, 16119), (305, 16125), (306, 16128), (314, 16179), (322, 16236), (323, 16248), (326, 16257),

Gene: Galadriel\_22 Start: 14888, Stop: 16786, Start Num: 32

Candidate Starts for Galadriel\_22:

(Start: 32 @14888 has 98 MA's), (68, 15119), (73, 15137), (104, 15395), (129, 15533), (145, 15602), (154, 15635), (189, 15860), (191, 15866), (201, 15929), (204, 15941), (205, 15944), (206, 15956), (226, 16043), (246, 16166), (250, 16202), (274, 16346), (285, 16397), (305, 16541), (306, 16544), (307, 16547), (314, 16595), (322, 16652),

Gene: Ganandorf\_26 Start: 13815, Stop: 15671, Start Num: 29

Candidate Starts for Ganandorf\_26:

(Start: 29 @13815 has 49 MA's), (117, 14391), (123, 14436), (131, 14472), (149, 14541), (156, 14562), (157, 14565), (163, 14595), (181, 14715), (193, 14796), (218, 14910), (222, 14937), (251, 15126), (271, 15252), (293, 15366), (294, 15381), (307, 15429), (311, 15459), (313, 15471), (316, 15486), (318, 15501), (325, 15552), (329, 15570), (334, 15588),

Gene: Gazebo\_24 Start: 14317, Stop: 16143, Start Num: 43

Candidate Starts for Gazebo\_24:

(Start: 43 @14317 has 26 MA's), (45, 14326), (58, 14425), (97, 14752), (135, 14953), (139, 14968), (156, 15028), (165, 15076), (173, 15106), (187, 15223), (188, 15229), (205, 15322), (224, 15403), (241, 15496), (242, 15511), (250, 15559), (255, 15583), (264, 15631), (266, 15655), (273, 15703), (283, 15745), (303, 15880), (306, 15901), (316, 15961), (326, 16030), (334, 16063),

Gene: Geodirt\_19 Start: 15093, Stop: 17003, Start Num: 32

Candidate Starts for Geodirt\_19:

(Start: 32 @15093 has 98 MA's), (68, 15324), (73, 15342), (104, 15612), (129, 15750), (145, 15819), (154, 15852), (189, 16077), (191, 16083), (201, 16146), (204, 16158), (205, 16161), (206, 16173), (226, 16260), (234, 16314), (246, 16383), (250, 16419), (274, 16563), (285, 16614), (305, 16758), (306, 16761), (307, 16764), (314, 16812), (322, 16869),

Gene: Gezellig\_20 Start: 11982, Stop: 13874, Start Num: 32

Candidate Starts for Gezellig\_20:

(Start: 32 @11982 has 98 MA's), (69, 12219), (73, 12231), (77, 12285), (106, 12510), (139, 12672), (147, 12705), (155, 12732), (220, 13098), (222, 13110), (239, 13227), (246, 13272), (247, 13275), (259, 13335), (261, 13353), (267, 13398), (269, 13410), (270, 13413), (292, 13533), (296, 13572), (306, 13632), (317, 13704), (321, 13734), (325, 13758), (331, 13785), (332, 13788), (336, 13815),

Gene: Gina\_28 Start: 13149, Stop: 15167, Start Num: 29

Candidate Starts for Gina\_28:

(Start: 29 @13149 has 49 MA's), (93, 13617), (117, 13731), (122, 13770), (131, 13812), (137, 13836), (149, 13881), (156, 13902), (157, 13905), (160, 13920), (171, 13974), (181, 14055), (191, 14115), (210, 14259), (212, 14277), (222, 14445), (223, 14469), (246, 14607), (251, 14634), (270, 14745), (293, 14874), (294, 14889), (304, 14925), (307, 14937), (311, 14967), (316, 14994), (334, 15096),

Gene: Grassboy\_26 Start: 14484, Stop: 16316, Start Num: 43

Candidate Starts for Grassboy\_26:

(Start: 43 @14484 has 26 MA's), (45, 14493), (58, 14592), (97, 14925), (135, 15126), (139, 15141), (156, 15201), (165, 15249), (173, 15279), (187, 15396), (188, 15402), (205, 15495), (224, 15576), (241, 15669), (242, 15684), (250, 15732), (255, 15756), (264, 15804), (266, 15828), (273, 15876), (283, 15918), (303, 16053), (306, 16074), (313, 16119), (316, 16134), (326, 16203), (334, 16236),

Gene: Gustavo\_20 Start: 14562, Stop: 16469, Start Num: 32

Candidate Starts for Gustavo\_20:

(Start: 32 @14562 has 98 MA's), (51, 14697), (68, 14793), (104, 15075), (118, 15144), (124, 15192), (129, 15216), (137, 15252), (145, 15285), (151, 15309), (172, 15402), (189, 15543), (191, 15549),

(201, 15612), (204, 15624), (205, 15627), (206, 15639), (226, 15726), (246, 15849), (250, 15885), (267, 15990), (274, 16029), (285, 16080), (304, 16218), (305, 16224), (306, 16227), (314, 16278), (322, 16335), (323, 16347), (326, 16356),

Gene: Halo3\_20 Start: 12297, Stop: 14195, Start Num: 32

Candidate Starts for Halo3\_20:

(Start: 32 @12297 has 98 MA's), (69, 12534), (73, 12546), (77, 12600), (139, 12993), (147, 13026), (191, 13290), (220, 13419), (222, 13431), (225, 13467), (239, 13548), (246, 13593), (247, 13596), (259, 13656), (267, 13719), (269, 13731), (270, 13734), (296, 13893), (306, 13953), (317, 14025), (321, 14055), (325, 14079), (331, 14106), (332, 14109),

Gene: Hans\_23 Start: 15322, Stop: 17238, Start Num: 32

Candidate Starts for Hans\_23:

(Start: 32 @15322 has 98 MA's), (60, 15523), (80, 15646), (104, 15814), (118, 15880), (129, 15937), (169, 16114), (172, 16123), (178, 16174), (180, 16225), (189, 16288), (191, 16294), (201, 16357), (206, 16384), (226, 16471), (231, 16498), (256, 16654), (267, 16729), (270, 16744), (274, 16768), (281, 16801), (285, 16819), (293, 16876), (304, 16987), (316, 17056), (317, 17068), (322, 17104), (335, 17170),

Gene: Hendrix\_57 Start: 29698, Stop: 31632, Start Num: 26

Candidate Starts for Hendrix\_57:

(Start: 26 @29698 has 4 MA's), (63, 29935), (98, 30232), (120, 30343), (157, 30505), (179, 30619), (245, 31033), (246, 31045), (251, 31072), (263, 31129), (266, 31156), (270, 31183), (271, 31198), (285, 31264), (340, 31591),

Gene: Hermeonysus\_26 Start: 13684, Stop: 15543, Start Num: 29

Candidate Starts for Hermeonysus\_26:

(Start: 29 @13684 has 49 MA's), (117, 14263), (123, 14308), (131, 14344), (149, 14413), (156, 14434), (157, 14437), (163, 14467), (181, 14587), (193, 14668), (218, 14782), (222, 14809), (251, 14998), (271, 15124), (293, 15238), (294, 15253), (307, 15301), (311, 15331), (313, 15343), (316, 15358), (318, 15373), (325, 15424), (329, 15442), (334, 15460),

Gene: Honeyfin\_28 Start: 14000, Stop: 15859, Start Num: 29

Candidate Starts for Honeyfin\_28:

(Start: 29 @14000 has 49 MA's), (117, 14579), (123, 14624), (131, 14660), (149, 14729), (156, 14750), (157, 14753), (163, 14783), (181, 14903), (193, 14984), (218, 15098), (222, 15125), (251, 15314), (271, 15440), (293, 15554), (294, 15569), (307, 15617), (311, 15647), (313, 15659), (316, 15674), (318, 15689), (325, 15740), (329, 15758), (334, 15776),

Gene: Hyperion\_24 Start: 14277, Stop: 16103, Start Num: 43

Candidate Starts for Hyperion\_24:

(Start: 43 @14277 has 26 MA's), (45, 14286), (58, 14385), (97, 14712), (135, 14913), (139, 14928), (156, 14988), (165, 15036), (173, 15066), (187, 15183), (188, 15189), (205, 15282), (224, 15363), (241, 15456), (242, 15471), (250, 15519), (255, 15543), (264, 15591), (266, 15615), (273, 15663), (283, 15705), (303, 15840), (306, 15861), (316, 15921), (326, 15990), (334, 16023),

Gene: Inspectinfecti\_22 Start: 15744, Stop: 17663, Start Num: 32

Candidate Starts for Inspectinfecti\_22:

(Start: 32 @15744 has 98 MA's), (60, 15945), (80, 16068), (104, 16239), (114, 16284), (118, 16305), (129, 16362), (169, 16539), (172, 16548), (178, 16599), (180, 16650), (189, 16713), (191, 16719), (201, 16782), (206, 16809), (226, 16896), (231, 16923), (238, 16971), (256, 17079), (267, 17154), (270, 17169), (274, 17193), (281, 17226), (285, 17244), (293, 17301), (304, 17412), (316, 17481), (317, 17493), (322, 17529), (335, 17595),



Gene: JKSyngboy\_19 Start: 15221, Stop: 17128, Start Num: 32

Candidate Starts for JKSyngboy\_19:

(Start: 32 @15221 has 98 MA's), (51, 15356), (56, 15389), (68, 15452), (104, 15734), (118, 15803), (124, 15851), (129, 15875), (145, 15944), (151, 15968), (172, 16061), (189, 16202), (191, 16208), (201, 16271), (204, 16283), (205, 16286), (206, 16298), (226, 16385), (246, 16508), (250, 16544), (257, 16577), (267, 16649), (274, 16688), (285, 16739), (305, 16883), (306, 16886), (314, 16937), (322, 16994), (323, 17006), (326, 17015),

Gene: Jabberwocky\_18 Start: 15000, Stop: 16907, Start Num: 32

Candidate Starts for Jabberwocky\_18:

(Start: 32 @15000 has 98 MA's), (68, 15231), (73, 15249), (104, 15516), (129, 15654), (145, 15723), (154, 15756), (189, 15981), (191, 15987), (201, 16050), (204, 16062), (205, 16065), (206, 16077), (226, 16164), (234, 16218), (246, 16287), (250, 16323), (274, 16467), (285, 16518), (305, 16662), (306, 16665), (307, 16668), (314, 16716), (322, 16773),

Gene: Jambalaya\_19 Start: 11635, Stop: 13521, Start Num: 32

Candidate Starts for Jambalaya\_19:

(Start: 32 @11635 has 98 MA's), (69, 11872), (73, 11884), (77, 11938), (139, 12319), (147, 12352), (155, 12379), (220, 12745), (222, 12757), (239, 12874), (246, 12919), (247, 12922), (259, 12982), (261, 13000), (267, 13045), (269, 13057), (270, 13060), (292, 13180), (296, 13219), (306, 13279), (317, 13351), (321, 13381), (325, 13405), (331, 13432), (332, 13435), (336, 13462),

Gene: Jayden\_28 Start: 13519, Stop: 15375, Start Num: 29

Candidate Starts for Jayden\_28:

(Start: 29 @13519 has 49 MA's), (57, 13699), (117, 14092), (122, 14131), (123, 14137), (131, 14173), (149, 14242), (156, 14263), (157, 14266), (181, 14416), (222, 14638), (223, 14662), (246, 14800), (251, 14827), (270, 14938), (271, 14953), (293, 15067), (294, 15082), (296, 15091), (304, 15118), (307, 15130), (310, 15157), (311, 15160), (318, 15202),

Gene: Jefe\_27 Start: 13737, Stop: 15596, Start Num: 29

Candidate Starts for Jefe\_27:

(Start: 29 @13737 has 49 MA's), (117, 14316), (123, 14361), (131, 14397), (149, 14466), (156, 14487), (157, 14490), (163, 14520), (181, 14640), (193, 14721), (218, 14835), (222, 14862), (251, 15051), (271, 15177), (293, 15291), (294, 15306), (307, 15354), (311, 15384), (313, 15396), (316, 15411), (318, 15426), (325, 15477), (329, 15495), (334, 15513),

Gene: Jehoshaphat\_27 Start: 14727, Stop: 16559, Start Num: 43

Candidate Starts for Jehoshaphat\_27:

(Start: 43 @14727 has 26 MA's), (45, 14736), (58, 14835), (105, 15201), (135, 15369), (139, 15384), (156, 15444), (165, 15492), (166, 15498), (173, 15522), (187, 15639), (188, 15645), (205, 15738), (224, 15819), (241, 15912), (242, 15927), (250, 15975), (255, 15999), (264, 16047), (266, 16071), (273, 16119), (283, 16161), (303, 16296), (304, 16308), (306, 16317), (316, 16377), (326, 16446), (334, 16479),

Gene: Jollipop\_27 Start: 14085, Stop: 15941, Start Num: 29

Candidate Starts for Jollipop\_27:

(Start: 29 @14085 has 49 MA's), (117, 14661), (123, 14706), (131, 14742), (149, 14811), (156, 14832), (157, 14835), (163, 14865), (181, 14985), (193, 15066), (218, 15180), (222, 15207), (251, 15396), (271, 15522), (293, 15636), (294, 15651), (307, 15699), (311, 15729), (313, 15741), (316, 15756), (318, 15771), (325, 15822), (329, 15840), (334, 15858),

Gene: Judebell\_27 Start: 14268, Stop: 16100, Start Num: 43

Candidate Starts for Judebell\_27:

(Start: 43 @14268 has 26 MA's), (45, 14277), (58, 14376), (105, 14742), (135, 14910), (139, 14925), (156, 14985), (165, 15033), (166, 15039), (173, 15063), (186, 15177), (187, 15180), (188, 15186), (205, 15279), (224, 15360), (241, 15453), (242, 15468), (250, 15516), (255, 15540), (264, 15588), (266, 15612), (273, 15660), (283, 15702), (303, 15837), (306, 15858), (316, 15918), (326, 15987), (334, 16020),

Gene: KaiHaiDragon\_27 Start: 13679, Stop: 15535, Start Num: 29

Candidate Starts for KaiHaiDragon\_27:

(Start: 29 @13679 has 49 MA's), (117, 14255), (123, 14300), (131, 14336), (149, 14405), (156, 14426), (157, 14429), (163, 14459), (181, 14579), (193, 14660), (218, 14774), (222, 14801), (251, 14990), (271, 15116), (277, 15140), (293, 15230), (294, 15245), (307, 15293), (311, 15323), (313, 15335), (316, 15350), (318, 15365), (325, 15416), (329, 15434), (334, 15452),

Gene: Kamashten\_21 Start: 15684, Stop: 17591, Start Num: 32

Candidate Starts for Kamashten\_21:

(Start: 32 @15684 has 98 MA's), (68, 15915), (73, 15933), (104, 16200), (129, 16338), (145, 16407), (154, 16440), (189, 16665), (191, 16671), (201, 16734), (204, 16746), (205, 16749), (206, 16761), (226, 16848), (234, 16902), (246, 16971), (250, 17007), (274, 17151), (285, 17202), (305, 17346), (306, 17349), (307, 17352), (314, 17400), (322, 17457),

Gene: Keitabear\_22 Start: 17233, Stop: 19128, Start Num: 32

Candidate Starts for Keitabear\_22:

(Start: 32 @17233 has 98 MA's), (68, 17464), (73, 17482), (104, 17737), (129, 17875), (145, 17944), (154, 17977), (189, 18202), (191, 18208), (204, 18283), (205, 18286), (206, 18298), (220, 18334), (226, 18385), (246, 18508), (250, 18544), (274, 18688), (285, 18739), (305, 18883), (306, 18886), (307, 18889), (314, 18937), (322, 18994), (345, 19111),

Gene: Kelcole\_23 Start: 13023, Stop: 14801, Start Num: 42

Candidate Starts for Kelcole\_23:

(Start: 42 @13023 has 12 MA's), (45, 13035), (88, 13377), (113, 13494), (135, 13620), (165, 13734), (173, 13764), (205, 13977), (224, 14058), (226, 14067), (239, 14145), (241, 14151), (242, 14166), (266, 14310), (271, 14352), (283, 14403), (304, 14550), (306, 14559), (330, 14709), (334, 14721),

Gene: Kewpiedoll\_21 Start: 15069, Stop: 16979, Start Num: 32

Candidate Starts for Kewpiedoll\_21:

(Start: 32 @15069 has 98 MA's), (68, 15300), (73, 15318), (104, 15588), (129, 15726), (145, 15795), (154, 15828), (189, 16053), (191, 16059), (201, 16122), (204, 16134), (205, 16137), (206, 16149), (226, 16236), (246, 16359), (250, 16395), (274, 16539), (285, 16590), (305, 16734), (306, 16737), (307, 16740), (314, 16788), (322, 16845),

Gene: KimmyK\_21 Start: 12512, Stop: 14410, Start Num: 32

Candidate Starts for KimmyK\_21:

(Start: 32 @12512 has 98 MA's), (69, 12749), (73, 12761), (77, 12815), (139, 13208), (147, 13241), (154, 13265), (191, 13505), (220, 13634), (222, 13646), (239, 13763), (246, 13808), (247, 13811), (259, 13871), (261, 13889), (267, 13934), (269, 13946), (270, 13949), (273, 13970), (292, 14069), (296, 14108), (306, 14168), (317, 14240), (321, 14270), (325, 14294), (331, 14321), (332, 14324), (336, 14351),

Gene: Kithara\_25 Start: 14623, Stop: 16431, Start Num: 35

Candidate Starts for Kithara\_25:

(27, 14593), (35, 14623), (65, 14836), (100, 15118), (168, 15439), (184, 15559), (203, 15661), (242, 15850), (260, 15946), (263, 15958), (287, 16096), (293, 16141), (313, 16249), (321, 16306), (322,

16312), (326, 16333),

Gene: Kowalski\_26 Start: 13795, Stop: 15651, Start Num: 29

Candidate Starts for Kowalski\_26:

(Start: 29 @13795 has 49 MA's), (117, 14371), (123, 14416), (131, 14452), (149, 14521), (156, 14542), (157, 14545), (163, 14575), (181, 14695), (193, 14776), (218, 14890), (222, 14917), (251, 15106), (293, 15346), (294, 15361), (307, 15409), (311, 15439), (313, 15451), (316, 15466), (318, 15481), (325, 15532), (329, 15550), (334, 15568),

Gene: Kozie\_23 Start: 13272, Stop: 15131, Start Num: 29

Candidate Starts for Kozie\_23:

(Start: 29 @13272 has 49 MA's), (102, 13767), (131, 13923), (156, 14013), (191, 14220), (218, 14355), (227, 14427), (233, 14472), (246, 14544), (249, 14565), (251, 14571), (263, 14628), (270, 14682), (277, 14721), (278, 14727), (287, 14766), (291, 14799), (334, 15045),

Gene: Kroos\_21 Start: 15314, Stop: 17227, Start Num: 32

Candidate Starts for Kroos\_21:

(Start: 32 @15314 has 98 MA's), (51, 15449), (68, 15545), (104, 15833), (118, 15902), (124, 15950), (129, 15974), (137, 16010), (145, 16043), (151, 16067), (172, 16160), (189, 16301), (191, 16307), (201, 16370), (204, 16382), (205, 16385), (206, 16397), (226, 16484), (246, 16607), (250, 16643), (257, 16676), (267, 16748), (274, 16787), (285, 16838), (304, 16976), (305, 16982), (306, 16985), (314, 17036), (322, 17093), (323, 17105), (326, 17114),

Gene: Kwekel\_20 Start: 13711, Stop: 15594, Start Num: 32

Candidate Starts for Kwekel\_20:

(30, 13702), (Start: 32 @13711 has 98 MA's), (68, 13945), (73, 13963), (106, 14233), (124, 14329), (171, 14536), (180, 14614), (189, 14677), (191, 14683), (201, 14746), (204, 14758), (205, 14761), (223, 14845), (226, 14860), (250, 15013), (267, 15118), (285, 15208), (295, 15289), (304, 15346), (316, 15415), (317, 15427), (322, 15463), (335, 15529),

Gene: Kwobi\_21 Start: 15290, Stop: 17209, Start Num: 32

Candidate Starts for Kwobi\_21:

(Start: 32 @15290 has 98 MA's), (51, 15425), (68, 15521), (104, 15815), (118, 15884), (124, 15932), (129, 15956), (137, 15992), (145, 16025), (151, 16049), (172, 16142), (189, 16283), (191, 16289), (201, 16352), (204, 16364), (205, 16367), (206, 16379), (226, 16466), (246, 16589), (250, 16625), (257, 16658), (267, 16730), (274, 16769), (285, 16820), (304, 16958), (305, 16964), (306, 16967), (314, 17018), (322, 17075), (323, 17087), (326, 17096),

Gene: Kyva\_27 Start: 14519, Stop: 16351, Start Num: 43

Candidate Starts for Kyva\_27:

(Start: 43 @14519 has 26 MA's), (45, 14528), (58, 14627), (97, 14960), (135, 15161), (139, 15176), (156, 15236), (165, 15284), (173, 15314), (187, 15431), (188, 15437), (205, 15530), (224, 15611), (241, 15704), (242, 15719), (250, 15767), (255, 15791), (264, 15839), (266, 15863), (273, 15911), (283, 15953), (303, 16088), (306, 16109), (313, 16154), (316, 16169), (326, 16238), (334, 16271),

Gene: Leaf\_60 Start: 29654, Stop: 31561, Start Num: 26

Candidate Starts for Leaf\_60:

(4, 29438), (7, 29510), (11, 29543), (12, 29546), (Start: 26 @29654 has 4 MA's), (79, 29993), (91, 30131), (98, 30161), (120, 30269), (127, 30314), (209, 30755), (240, 30929), (245, 30959), (246, 30971), (251, 30998), (263, 31055), (266, 31082), (270, 31109), (275, 31136), (280, 31160), (287, 31202), (290, 31232), (293, 31247), (317, 31391), (332, 31475), (340, 31517),

Gene: Lennon\_22 Start: 16336, Stop: 18231, Start Num: 32

Candidate Starts for Lennon\_22:

(Start: 32 @16336 has 98 MA's), (68, 16567), (73, 16585), (104, 16840), (129, 16978), (145, 17047), (154, 17080), (189, 17305), (191, 17311), (201, 17374), (204, 17386), (205, 17389), (206, 17401), (226, 17488), (246, 17611), (250, 17647), (274, 17791), (285, 17842), (305, 17986), (306, 17989), (307, 17992), (314, 18040), (322, 18097), (345, 18214),

Gene: Leonard\_21 Start: 15339, Stop: 17258, Start Num: 32

Candidate Starts for Leonard\_21:

(Start: 32 @15339 has 98 MA's), (60, 15540), (80, 15663), (104, 15834), (114, 15879), (118, 15900), (129, 15957), (160, 16083), (169, 16134), (172, 16143), (178, 16194), (180, 16245), (189, 16308), (191, 16314), (201, 16377), (206, 16404), (226, 16491), (256, 16674), (267, 16749), (270, 16764), (274, 16788), (281, 16821), (285, 16839), (293, 16896), (304, 17007), (316, 17076), (317, 17088), (322, 17124), (335, 17190),

Gene: LilHam\_18 Start: 13869, Stop: 15788, Start Num: 32

Candidate Starts for LilHam\_18:

(Start: 32 @13869 has 98 MA's), (51, 14004), (68, 14100), (104, 14394), (118, 14463), (124, 14511), (129, 14535), (137, 14571), (145, 14604), (151, 14628), (172, 14721), (189, 14862), (191, 14868), (201, 14931), (204, 14943), (205, 14946), (206, 14958), (226, 15045), (246, 15168), (250, 15204), (257, 15237), (267, 15309), (274, 15348), (285, 15399), (305, 15543), (306, 15546), (314, 15597), (322, 15654), (323, 15666), (326, 15675),

Gene: Lilbeanie\_18 Start: 10655, Stop: 12583, Start Num: 32

Candidate Starts for Lilbeanie\_18:

(23, 10613), (Start: 32 @10655 has 98 MA's), (47, 10754), (64, 10871), (68, 10886), (104, 11204), (155, 11441), (165, 11489), (191, 11672), (225, 11846), (242, 11948), (246, 11972), (269, 12107), (284, 12179), (285, 12185), (298, 12287), (300, 12299), (312, 12377), (322, 12443), (325, 12461), (331, 12488),

Gene: LittleFortune\_28 Start: 14042, Stop: 15901, Start Num: 29

Candidate Starts for LittleFortune\_28:

(Start: 29 @14042 has 49 MA's), (117, 14621), (123, 14666), (131, 14702), (149, 14771), (156, 14792), (157, 14795), (163, 14825), (181, 14945), (193, 15026), (218, 15140), (222, 15167), (251, 15356), (271, 15482), (293, 15596), (294, 15611), (307, 15659), (311, 15689), (316, 15716), (318, 15731), (325, 15782), (329, 15800), (334, 15818),

Gene: Llemily\_25 Start: 13503, Stop: 15335, Start Num: 43

Candidate Starts for Llemily\_25:

(Start: 43 @13503 has 26 MA's), (45, 13512), (58, 13611), (105, 13977), (135, 14145), (139, 14160), (156, 14220), (165, 14268), (166, 14274), (173, 14298), (187, 14415), (188, 14421), (205, 14514), (224, 14595), (241, 14688), (242, 14703), (250, 14751), (255, 14775), (264, 14823), (266, 14847), (273, 14895), (283, 14937), (303, 15072), (304, 15084), (306, 15093), (316, 15153), (326, 15222), (334, 15255),

Gene: Lonelysoil\_24 Start: 13748, Stop: 15580, Start Num: 43

Candidate Starts for Lonelysoil\_24:

(Start: 43 @13748 has 26 MA's), (45, 13757), (58, 13856), (105, 14222), (135, 14390), (139, 14405), (156, 14465), (165, 14513), (166, 14519), (173, 14543), (187, 14660), (188, 14666), (205, 14759), (224, 14840), (241, 14933), (242, 14948), (250, 14996), (255, 15020), (264, 15068), (266, 15092), (273, 15140), (283, 15182), (303, 15317), (304, 15329), (306, 15338), (316, 15398), (326, 15467), (334, 15500),

Gene: Love\_22 Start: 15199, Stop: 17106, Start Num: 32

Candidate Starts for Love\_22:

(Start: 32 @15199 has 98 MA's), (68, 15430), (73, 15448), (104, 15715), (129, 15853), (145, 15922), (154, 15955), (189, 16180), (191, 16186), (201, 16249), (204, 16261), (205, 16264), (206, 16276), (226, 16363), (234, 16417), (246, 16486), (250, 16522), (274, 16666), (285, 16717), (305, 16861), (306, 16864), (307, 16867), (314, 16915), (322, 16972),

Gene: Maih\_13 Start: 13750, Stop: 15444, Start Num: 50

Candidate Starts for Maih\_13:

(Start: 50 @13750 has 11 MA's), (52, 13759), (72, 13861), (84, 13993), (86, 14017), (106, 14113), (119, 14194), (126, 14239), (128, 14248), (134, 14281), (140, 14308), (141, 14311), (155, 14359), (162, 14392), (163, 14395), (171, 14434), (173, 14440), (181, 14518), (185, 14551), (202, 14641), (226, 14731), (236, 14797), (239, 14809), (240, 14812), (259, 14929), (265, 14962), (269, 15004), (290, 15121), (306, 15217), (315, 15274), (324, 15337), (326, 15343), (334, 15376), (337, 15400), (343, 15418), (346, 15433),

Gene: Marcie\_29 Start: 13698, Stop: 15482, Start Num: 42

Candidate Starts for Marcie\_29:

(Start: 42 @13698 has 12 MA's), (45, 13710), (88, 14058), (113, 14175), (135, 14301), (156, 14367), (165, 14415), (173, 14445), (205, 14658), (224, 14739), (226, 14748), (239, 14826), (241, 14832), (242, 14847), (266, 14991), (271, 15033), (283, 15084), (304, 15231), (306, 15240), (334, 15402),

Gene: Margaery\_22 Start: 13234, Stop: 15096, Start Num: 29

Candidate Starts for Margaery\_22:

(15, 13135), (Start: 29 @13234 has 49 MA's), (81, 13588), (117, 13807), (122, 13846), (131, 13888), (156, 13978), (172, 14047), (192, 14200), (218, 14320), (233, 14437), (251, 14536), (254, 14551), (263, 14593), (270, 14647), (278, 14692), (281, 14704), (285, 14719), (287, 14731), (304, 14839), (308, 14872), (318, 14923), (328, 14989),

Gene: Mashley\_23 Start: 14088, Stop: 15914, Start Num: 43

Candidate Starts for Mashley\_23:

(Start: 43 @14088 has 26 MA's), (45, 14097), (58, 14196), (97, 14523), (135, 14724), (139, 14739), (156, 14799), (165, 14847), (173, 14877), (187, 14994), (188, 15000), (205, 15093), (224, 15174), (241, 15267), (242, 15282), (250, 15330), (255, 15354), (264, 15402), (266, 15426), (273, 15474), (283, 15516), (303, 15651), (306, 15672), (316, 15732), (326, 15801), (334, 15834),

Gene: Matzah\_23 Start: 13253, Stop: 15118, Start Num: 29

Candidate Starts for Matzah\_23:

(Start: 29 @13253 has 49 MA's), (81, 13607), (96, 13733), (122, 13871), (131, 13913), (153, 13994), (156, 14003), (167, 14060), (172, 14072), (189, 14204), (192, 14225), (193, 14231), (218, 14345), (232, 14444), (233, 14462), (251, 14561), (254, 14576), (263, 14618), (270, 14672), (271, 14687), (281, 14729), (285, 14744), (287, 14756), (293, 14801), (304, 14864), (308, 14897),

Gene: McKinley\_21 Start: 15222, Stop: 17132, Start Num: 32

Candidate Starts for McKinley\_21:

(Start: 32 @15222 has 98 MA's), (68, 15453), (73, 15471), (104, 15741), (129, 15879), (145, 15948), (154, 15981), (189, 16206), (191, 16212), (201, 16275), (204, 16287), (205, 16290), (206, 16302), (226, 16389), (246, 16512), (250, 16548), (274, 16692), (285, 16743), (305, 16887), (306, 16890), (307, 16893), (314, 16941), (322, 16998),

Gene: Megan\_21 Start: 14855, Stop: 16870, Start Num: 29

Candidate Starts for Megan\_21:

(5, 14651), (6, 14660), (8, 14723), (12, 14741), (25, 14843), (Start: 29 @14855 has 49 MA's), (60, 15056), (117, 15434), (123, 15479), (131, 15515), (149, 15584), (156, 15605), (157, 15608), (160,

15623), (181, 15758), (183, 15773), (213, 16007), (215, 16076), (222, 16148), (246, 16310), (247, 16313), (250, 16334), (261, 16388), (270, 16448), (278, 16493), (281, 16505), (291, 16565), (293, 16577), (307, 16640), (311, 16670), (316, 16697), (331, 16790), (332, 16793), (334, 16799), (341, 16838),

Gene: MelBins\_22 Start: 15543, Stop: 17459, Start Num: 32

Candidate Starts for MelBins\_22:

(Start: 32 @15543 has 98 MA's), (60, 15744), (80, 15867), (104, 16035), (118, 16101), (129, 16158), (169, 16335), (172, 16344), (178, 16395), (180, 16446), (189, 16509), (191, 16515), (201, 16578), (206, 16605), (226, 16692), (256, 16875), (267, 16950), (270, 16965), (274, 16989), (281, 17022), (285, 17040), (293, 17097), (304, 17208), (316, 17277), (317, 17289), (322, 17325), (335, 17391),

Gene: MellowYellow\_23 Start: 12969, Stop: 14696, Start Num: 40

Candidate Starts for MellowYellow\_23:

(28, 12906), (Start: 40 @12969 has 12 MA's), (143, 13578), (186, 13806), (195, 13866), (198, 13878), (205, 13908), (227, 14004), (228, 14007), (229, 14010), (237, 14070), (266, 14232), (274, 14283), (276, 14292), (281, 14316), (292, 14379), (304, 14454), (305, 14460), (307, 14466), (308, 14487), (325, 14589),

Gene: MementoMori\_23 Start: 12969, Stop: 14840, Start Num: 29

Candidate Starts for MementoMori\_23:

(Start: 29 @12969 has 49 MA's), (96, 13452), (119, 13560), (122, 13590), (131, 13632), (153, 13713), (156, 13722), (167, 13779), (172, 13791), (189, 13923), (192, 13944), (193, 13950), (218, 14064), (232, 14163), (233, 14181), (251, 14280), (254, 14295), (263, 14337), (270, 14391), (271, 14406), (281, 14448), (285, 14463), (287, 14475), (293, 14520), (304, 14583), (308, 14616), (334, 14754),

Gene: Merry\_27 Start: 13998, Stop: 15890, Start Num: 22

Candidate Starts for Merry\_27:

(16, 13962), (17, 13968), (21, 13995), (22, 13998), (Start: 29 @14052 has 49 MA's), (79, 14373), (117, 14610), (123, 14655), (131, 14691), (149, 14760), (156, 14781), (157, 14784), (166, 14835), (174, 14868), (181, 14934), (193, 15015), (222, 15156), (247, 15321), (251, 15345), (271, 15471), (293, 15585), (294, 15600), (304, 15636), (307, 15648), (311, 15678), (313, 15690), (316, 15705), (337, 15831),

Gene: Metamorphoo\_27 Start: 13469, Stop: 15490, Start Num: 29

Candidate Starts for Metamorphoo\_27:

(Start: 29 @13469 has 49 MA's), (117, 14054), (131, 14135), (137, 14159), (149, 14204), (156, 14225), (157, 14228), (181, 14378), (211, 14588), (214, 14636), (216, 14708), (222, 14768), (223, 14792), (246, 14930), (250, 14954), (251, 14957), (270, 15068), (293, 15197), (294, 15212), (296, 15221), (304, 15248), (307, 15260), (311, 15290), (316, 15317), (329, 15401), (334, 15419),

Gene: Mimi\_88 Start: 47582, Stop: 49576, Start Num: 9

Candidate Starts for Mimi\_88:

(Start: 9 @47582 has 2 MA's), (33, 47726), (115, 48272), (149, 48437), (156, 48458), (170, 48533), (239, 48962), (288, 49259),

Gene: Mischief19\_14 Start: 15652, Stop: 17313, Start Num: 50

Candidate Starts for Mischief19\_14:

(Start: 50 @15652 has 11 MA's), (62, 15730), (84, 15895), (95, 15976), (114, 16060), (129, 16147), (138, 16189), (141, 16204), (152, 16243), (154, 16249), (155, 16252), (162, 16285), (181, 16411), (185, 16444), (189, 16465), (199, 16525), (223, 16609), (235, 16684), (239, 16702), (265, 16837), (269, 16879), (290, 16996), (301, 17065), (307, 17095),

Gene: MoontowerMania\_19 Start: 14205, Stop: 16112, Start Num: 32

Candidate Starts for MoontowerMania\_19:

(Start: 32 @14205 has 98 MA's), (68, 14436), (73, 14454), (104, 14721), (129, 14859), (145, 14928), (154, 14961), (189, 15186), (191, 15192), (201, 15255), (204, 15267), (205, 15270), (206, 15282), (226, 15369), (234, 15423), (246, 15492), (250, 15528), (274, 15672), (285, 15723), (305, 15867), (306, 15870), (307, 15873), (314, 15921), (322, 15978),

Gene: MorillMayhem\_24 Start: 14081, Stop: 15913, Start Num: 43

Candidate Starts for MorillMayhem\_24:

(Start: 43 @14081 has 26 MA's), (45, 14090), (58, 14189), (105, 14555), (135, 14723), (139, 14738), (156, 14798), (165, 14846), (166, 14852), (173, 14876), (186, 14990), (187, 14993), (188, 14999), (205, 15092), (224, 15173), (241, 15266), (242, 15281), (250, 15329), (255, 15353), (264, 15401), (266, 15425), (273, 15473), (283, 15515), (303, 15650), (304, 15662), (306, 15671), (316, 15731), (326, 15800), (334, 15833),

Gene: Mutzi\_21 Start: 12236, Stop: 14134, Start Num: 32

Candidate Starts for Mutzi\_21:

(Start: 32 @12236 has 98 MA's), (69, 12473), (73, 12485), (77, 12539), (139, 12932), (147, 12965), (154, 12989), (191, 13229), (222, 13370), (239, 13487), (246, 13532), (247, 13535), (259, 13595), (267, 13658), (296, 13832), (306, 13892), (307, 13895), (317, 13964), (321, 13994), (325, 14018), (331, 14045), (332, 14048),

Gene: Namago\_25 Start: 13649, Stop: 15481, Start Num: 43

Candidate Starts for Namago\_25:

(Start: 43 @13649 has 26 MA's), (45, 13658), (58, 13757), (97, 14090), (135, 14291), (139, 14306), (156, 14366), (165, 14414), (173, 14444), (187, 14561), (188, 14567), (205, 14660), (224, 14741), (241, 14834), (242, 14849), (250, 14897), (255, 14921), (264, 14969), (266, 14993), (273, 15041), (283, 15083), (303, 15218), (306, 15239), (313, 15284), (316, 15299), (326, 15368), (334, 15401),

Gene: Natkenzie\_21 Start: 15527, Stop: 17449, Start Num: 32

Candidate Starts for Natkenzie\_21:

(Start: 32 @15527 has 98 MA's), (64, 15743), (68, 15758), (87, 15932), (112, 16070), (114, 16079), (124, 16148), (125, 16154), (137, 16208), (142, 16232), (186, 16484), (189, 16502), (191, 16508), (201, 16571), (204, 16583), (205, 16586), (206, 16598), (226, 16688), (231, 16715), (257, 16874), (268, 16952), (287, 17048), (292, 17084), (304, 17204), (308, 17237), (322, 17321), (331, 17366),

Gene: Nicole72\_22 Start: 15232, Stop: 17253, Start Num: 29

Candidate Starts for Nicole72\_22:

(25, 15220), (Start: 29 @15232 has 49 MA's), (60, 15433), (75, 15505), (117, 15817), (123, 15862), (131, 15898), (149, 15967), (156, 15988), (164, 16024), (181, 16141), (188, 16186), (191, 16201), (222, 16531), (246, 16693), (247, 16696), (250, 16717), (270, 16831), (281, 16888), (291, 16948), (293, 16960), (307, 17023), (311, 17053), (331, 17173), (332, 17176), (334, 17182), (341, 17221),

Gene: Nike\_25 Start: 14547, Stop: 16379, Start Num: 43

Candidate Starts for Nike\_25:

(Start: 43 @14547 has 26 MA's), (45, 14556), (58, 14655), (105, 15021), (135, 15189), (139, 15204), (156, 15264), (165, 15312), (166, 15318), (173, 15342), (187, 15459), (188, 15465), (205, 15558), (224, 15639), (241, 15732), (242, 15747), (250, 15795), (255, 15819), (264, 15867), (266, 15891), (273, 15939), (283, 15981), (303, 16116), (304, 16128), (306, 16137), (316, 16197), (326, 16266), (334, 16299),

Gene: NoodlelyBoi\_27 Start: 14134, Stop: 15984, Start Num: 29

Candidate Starts for NoodlelyBoi\_27:

(Start: 29 @14134 has 49 MA's), (117, 14710), (123, 14755), (131, 14791), (149, 14860), (156, 14881), (157, 14884), (163, 14914), (181, 15034), (218, 15229), (222, 15256), (227, 15301), (251, 15445), (278, 15601), (293, 15685), (307, 15748), (311, 15778), (313, 15790), (316, 15805), (318, 15820), (325, 15871), (329, 15889),

Gene: Nordenberg\_15 Start: 13519, Stop: 15426, Start Num: 32

Candidate Starts for Nordenberg\_15:

(Start: 32 @13519 has 98 MA's), (68, 13750), (73, 13768), (104, 14035), (129, 14173), (145, 14242), (154, 14275), (189, 14500), (191, 14506), (201, 14569), (204, 14581), (205, 14584), (206, 14596), (226, 14683), (246, 14806), (250, 14842), (274, 14986), (285, 15037), (304, 15175), (305, 15181), (306, 15184), (307, 15187), (314, 15235), (322, 15292),

Gene: Nubi\_19 Start: 11864, Stop: 13762, Start Num: 32

Candidate Starts for Nubi\_19:

(Start: 32 @11864 has 98 MA's), (69, 12101), (73, 12113), (77, 12167), (106, 12398), (139, 12560), (147, 12593), (191, 12857), (220, 12986), (222, 12998), (239, 13115), (246, 13160), (247, 13163), (259, 13223), (261, 13241), (265, 13256), (267, 13286), (269, 13298), (270, 13301), (292, 13421), (296, 13460), (306, 13520), (317, 13592), (321, 13622), (325, 13646), (331, 13673), (332, 13676), (336, 13703),

Gene: NyleyClemson\_22 Start: 12914, Stop: 14641, Start Num: 40

Candidate Starts for NyleyClemson\_22:

(28, 12851), (Start: 40 @12914 has 12 MA's), (143, 13523), (195, 13811), (198, 13823), (205, 13853), (227, 13949), (228, 13952), (229, 13955), (237, 14015), (266, 14177), (274, 14228), (276, 14237), (281, 14261), (292, 14324), (304, 14399), (305, 14405), (307, 14411), (308, 14432), (325, 14534),

Gene: Odyssey395\_28 Start: 14429, Stop: 16156, Start Num: 40

Candidate Starts for Odyssey395\_28:

(28, 14366), (Start: 40 @14429 has 12 MA's), (143, 15038), (188, 15275), (195, 15326), (198, 15338), (205, 15368), (227, 15464), (228, 15467), (229, 15470), (237, 15530), (266, 15692), (276, 15752), (277, 15758), (281, 15776), (292, 15839), (309, 15950), (325, 16049),

Gene: OneinaGillian\_24 Start: 12673, Stop: 14451, Start Num: 42

Candidate Starts for OneinaGillian\_24:

(Start: 42 @12673 has 12 MA's), (45, 12685), (88, 13027), (113, 13144), (135, 13270), (165, 13384), (173, 13414), (205, 13627), (224, 13708), (226, 13717), (239, 13795), (241, 13801), (242, 13816), (266, 13960), (271, 14002), (283, 14053), (304, 14200), (306, 14209), (330, 14359), (334, 14371), (344, 14431),

Gene: Onika\_26 Start: 13769, Stop: 15625, Start Num: 29

Candidate Starts for Onika\_26:

(Start: 29 @13769 has 49 MA's), (117, 14345), (123, 14390), (131, 14426), (149, 14495), (156, 14516), (157, 14519), (163, 14549), (181, 14669), (193, 14750), (218, 14864), (222, 14891), (251, 15080), (271, 15206), (293, 15320), (294, 15335), (307, 15383), (311, 15413), (313, 15425), (316, 15440), (318, 15455), (325, 15506), (329, 15524), (334, 15542),

Gene: Paries\_21 Start: 14887, Stop: 16794, Start Num: 32

Candidate Starts for Paries\_21:

(Start: 32 @14887 has 98 MA's), (68, 15118), (73, 15136), (104, 15403), (129, 15541), (145, 15610), (154, 15643), (189, 15868), (191, 15874), (201, 15937), (204, 15949), (205, 15952), (206, 15964), (226, 16051), (234, 16105), (246, 16174), (250, 16210), (274, 16354), (285, 16405), (305, 16549), (306, 16552), (307, 16555), (314, 16603), (322, 16660),



Gene: Paschalis\_26 Start: 13783, Stop: 15639, Start Num: 29

Candidate Starts for Paschalis\_26:

(Start: 29 @13783 has 49 MA's), (117, 14359), (123, 14404), (131, 14440), (149, 14509), (156, 14530), (157, 14533), (163, 14563), (181, 14683), (193, 14764), (218, 14878), (222, 14905), (251, 15094), (293, 15334), (294, 15349), (307, 15397), (311, 15427), (313, 15439), (316, 15454), (318, 15469), (325, 15520), (329, 15538), (334, 15556),

Gene: Patbob\_82 Start: 48454, Stop: 50448, Start Num: 9

Candidate Starts for Patbob\_82:

(Start: 9 @48454 has 2 MA's), (33, 48598), (115, 49144), (149, 49309), (156, 49330), (170, 49405), (239, 49834), (288, 50131),

Gene: PauloDiaboli\_88 Start: 44293, Stop: 46302, Start Num: 10

Candidate Starts for PauloDiaboli\_88:

(Start: 10 @44293 has 6 MA's), (33, 44428), (36, 44446), (38, 44458), (115, 45001), (205, 45511), (219, 45556), (279, 45922), (289, 45988), (291, 45997), (320, 46192),

Gene: Pepe25\_23 Start: 13010, Stop: 14788, Start Num: 42

Candidate Starts for Pepe25\_23:

(Start: 42 @13010 has 12 MA's), (45, 13022), (88, 13367), (113, 13481), (135, 13607), (156, 13673), (165, 13721), (173, 13751), (205, 13964), (224, 14045), (226, 14054), (239, 14132), (241, 14138), (242, 14153), (266, 14297), (271, 14339), (283, 14390), (304, 14537), (306, 14546), (330, 14696), (334, 14708),

Gene: Phabia\_25 Start: 13921, Stop: 15753, Start Num: 43

Candidate Starts for Phabia\_25:

(Start: 43 @13921 has 26 MA's), (45, 13930), (58, 14029), (105, 14395), (135, 14563), (139, 14578), (156, 14638), (165, 14686), (166, 14692), (173, 14716), (187, 14833), (188, 14839), (205, 14932), (224, 15013), (241, 15106), (242, 15121), (250, 15169), (255, 15193), (264, 15241), (266, 15265), (273, 15313), (283, 15355), (303, 15490), (304, 15502), (306, 15511), (316, 15571), (326, 15640), (334, 15673),

Gene: Phauci\_14 Start: 11906, Stop: 13825, Start Num: 32

Candidate Starts for Phauci\_14:

(Start: 32 @11906 has 98 MA's), (60, 12107), (80, 12230), (104, 12401), (114, 12446), (118, 12467), (129, 12524), (169, 12701), (172, 12710), (178, 12761), (180, 12812), (189, 12875), (191, 12881), (201, 12944), (206, 12971), (226, 13058), (256, 13241), (267, 13316), (270, 13331), (274, 13355), (281, 13388), (285, 13406), (293, 13463), (304, 13574), (316, 13643), (317, 13655), (322, 13691), (335, 13757),

Gene: Phinally\_21 Start: 15336, Stop: 17255, Start Num: 32

Candidate Starts for Phinally\_21:

(Start: 32 @15336 has 98 MA's), (60, 15537), (80, 15660), (104, 15831), (114, 15876), (118, 15897), (129, 15954), (160, 16080), (169, 16131), (172, 16140), (178, 16191), (180, 16242), (189, 16305), (191, 16311), (201, 16374), (206, 16401), (226, 16488), (256, 16671), (267, 16746), (270, 16761), (274, 16785), (281, 16818), (285, 16836), (293, 16893), (304, 17004), (316, 17073), (317, 17085), (322, 17121), (335, 17187),

Gene: Phinky\_31 Start: 14788, Stop: 16635, Start Num: 42

Candidate Starts for Phinky\_31:

(Start: 42 @14788 has 12 MA's), (45, 14797), (49, 14833), (78, 15022), (135, 15442), (142, 15469), (165, 15565), (173, 15595), (205, 15811), (221, 15853), (223, 15886), (224, 15892), (226, 15901), (233, 15952), (241, 15985), (242, 16000), (266, 16144), (271, 16186), (273, 16192), (283, 16237),

(293, 16303), (303, 16372), (304, 16384), (306, 16393), (316, 16453), (332, 16549), (334, 16555),

Gene: Phlop\_19 Start: 11937, Stop: 13826, Start Num: 32

Candidate Starts for Phlop\_19:

(Start: 32 @11937 has 98 MA's), (69, 12174), (73, 12186), (77, 12240), (106, 12465), (139, 12627), (147, 12660), (154, 12684), (191, 12912), (203, 12984), (220, 13041), (239, 13170), (246, 13215), (247, 13218), (267, 13341), (269, 13353), (281, 13413), (304, 13566), (306, 13575), (317, 13647), (321, 13677), (331, 13728), (335, 13749), (340, 13773),

Gene: Phorgeous\_26 Start: 13636, Stop: 15492, Start Num: 29

Candidate Starts for Phorgeous\_26:

(Start: 29 @13636 has 49 MA's), (117, 14212), (123, 14257), (131, 14293), (149, 14362), (156, 14383), (157, 14386), (163, 14416), (181, 14536), (193, 14617), (218, 14731), (222, 14758), (251, 14947), (271, 15073), (293, 15187), (294, 15202), (307, 15250), (311, 15280), (313, 15292), (316, 15307), (318, 15322), (325, 15373), (329, 15391), (334, 15409),

Gene: Phrampa\_75 Start: 45102, Stop: 47150, Start Num: 10

Candidate Starts for Phrampa\_75:

(Start: 10 @45102 has 6 MA's), (33, 45246), (115, 45846), (149, 46011), (156, 46032), (170, 46107), (239, 46536), (270, 46716),

Gene: Phrancesco\_27 Start: 13914, Stop: 15770, Start Num: 29

Candidate Starts for Phrancesco\_27:

(Start: 29 @13914 has 49 MA's), (117, 14490), (123, 14535), (131, 14571), (149, 14640), (156, 14661), (157, 14664), (163, 14694), (181, 14814), (193, 14895), (218, 15009), (222, 15036), (251, 15225), (271, 15351), (277, 15375), (293, 15465), (294, 15480), (307, 15528), (311, 15558), (313, 15570), (316, 15585), (318, 15600), (325, 15651), (329, 15669), (334, 15687),

Gene: PierreOrion\_27 Start: 13938, Stop: 15794, Start Num: 29

Candidate Starts for PierreOrion\_27:

(Start: 29 @13938 has 49 MA's), (117, 14514), (123, 14559), (131, 14595), (149, 14664), (156, 14685), (157, 14688), (163, 14718), (181, 14838), (193, 14919), (218, 15033), (222, 15060), (251, 15249), (271, 15375), (293, 15489), (294, 15504), (307, 15552), (311, 15582), (313, 15594), (316, 15609), (318, 15624), (325, 15675), (329, 15693), (334, 15711),

Gene: PinkCoffee\_21 Start: 12521, Stop: 14419, Start Num: 32

Candidate Starts for PinkCoffee\_21:

(Start: 32 @12521 has 98 MA's), (69, 12758), (73, 12770), (77, 12824), (139, 13217), (147, 13250), (154, 13274), (191, 13514), (220, 13643), (222, 13655), (239, 13772), (246, 13817), (247, 13820), (259, 13880), (261, 13898), (267, 13943), (269, 13955), (270, 13958), (273, 13979), (292, 14078), (296, 14117), (306, 14177), (317, 14249), (321, 14279), (325, 14303), (331, 14330), (332, 14333), (336, 14360),

Gene: PiperSansNom\_27 Start: 14090, Stop: 15946, Start Num: 29

Candidate Starts for PiperSansNom\_27:

(Start: 29 @14090 has 49 MA's), (117, 14666), (123, 14711), (131, 14747), (149, 14816), (156, 14837), (157, 14840), (163, 14870), (181, 14990), (193, 15071), (218, 15185), (222, 15212), (251, 15401), (271, 15527), (293, 15641), (294, 15656), (307, 15704), (311, 15734), (313, 15746), (316, 15761), (318, 15776), (325, 15827), (329, 15845), (334, 15863),

Gene: Piperis\_27 Start: 13760, Stop: 15616, Start Num: 29

Candidate Starts for Piperis\_27:

(Start: 29 @13760 has 49 MA's), (117, 14336), (123, 14381), (131, 14417), (149, 14486), (156, 14507), (157, 14510), (163, 14540), (181, 14660), (193, 14741), (218, 14855), (222, 14882), (251, 15071), (271, 15197), (293, 15311), (294, 15326), (307, 15374), (311, 15404), (313, 15416), (316, 15431), (318, 15446), (325, 15497), (329, 15515), (334, 15533),

Gene: Pointis\_26 Start: 14433, Stop: 16160, Start Num: 40

Candidate Starts for Pointis\_26:

(28, 14370), (Start: 40 @14433 has 12 MA's), (143, 15042), (195, 15330), (198, 15342), (205, 15372), (227, 15468), (228, 15471), (229, 15474), (237, 15534), (266, 15696), (276, 15756), (277, 15762), (281, 15780), (292, 15843), (309, 15954), (325, 16053),

Gene: Portcullis\_19 Start: 11883, Stop: 13769, Start Num: 32

Candidate Starts for Portcullis\_19:

(Start: 32 @11883 has 98 MA's), (69, 12120), (73, 12132), (77, 12186), (139, 12567), (147, 12600), (155, 12627), (220, 12993), (222, 13005), (239, 13122), (246, 13167), (247, 13170), (259, 13230), (261, 13248), (267, 13293), (269, 13305), (270, 13308), (292, 13428), (296, 13467), (306, 13527), (317, 13599), (321, 13629), (325, 13653), (331, 13680), (332, 13683), (336, 13710),

Gene: Pulchra\_28 Start: 14160, Stop: 16016, Start Num: 29

Candidate Starts for Pulchra\_28:

(Start: 29 @14160 has 49 MA's), (117, 14736), (123, 14781), (131, 14817), (149, 14886), (156, 14907), (157, 14910), (163, 14940), (181, 15060), (193, 15141), (218, 15255), (222, 15282), (251, 15471), (271, 15597), (293, 15711), (294, 15726), (307, 15774), (311, 15804), (313, 15816), (316, 15831), (318, 15846), (325, 15897), (329, 15915), (334, 15933),

Gene: PullumCavea\_19 Start: 11937, Stop: 13826, Start Num: 32

Candidate Starts for PullumCavea\_19:

(Start: 32 @11937 has 98 MA's), (69, 12174), (73, 12186), (77, 12240), (106, 12465), (139, 12627), (147, 12660), (154, 12684), (191, 12912), (203, 12984), (220, 13041), (239, 13170), (246, 13215), (247, 13218), (267, 13341), (269, 13353), (281, 13413), (304, 13566), (306, 13575), (317, 13647), (321, 13677), (331, 13728), (335, 13749), (340, 13773),

Gene: Pumpernickel\_85 Start: 45481, Stop: 47517, Start Num: 10

Candidate Starts for Pumpernickel\_85:

(Start: 10 @45481 has 6 MA's), (31, 45616), (33, 45625), (115, 46213), (132, 46297), (150, 46372), (205, 46717), (279, 47128), (320, 47404),

Gene: Pureglobe5\_28 Start: 14443, Stop: 16170, Start Num: 40

Candidate Starts for Pureglobe5\_28:

(28, 14380), (Start: 40 @14443 has 12 MA's), (143, 15052), (195, 15340), (198, 15352), (205, 15382), (227, 15478), (228, 15481), (229, 15484), (237, 15544), (266, 15706), (276, 15766), (277, 15772), (281, 15790), (292, 15853), (309, 15964), (325, 16063),

Gene: Quammi\_23 Start: 13492, Stop: 15324, Start Num: 43

Candidate Starts for Quammi\_23:

(Start: 43 @13492 has 26 MA's), (45, 13501), (58, 13600), (105, 13966), (135, 14134), (139, 14149), (156, 14209), (165, 14257), (166, 14263), (173, 14287), (187, 14404), (188, 14410), (205, 14503), (224, 14584), (241, 14677), (242, 14692), (250, 14740), (255, 14764), (264, 14812), (266, 14836), (273, 14884), (283, 14926), (303, 15061), (304, 15073), (306, 15082), (316, 15142), (326, 15211), (334, 15244),

Gene: Quhwah\_30 Start: 14383, Stop: 16242, Start Num: 29

Candidate Starts for Quhwah\_30:

(Start: 29 @14383 has 49 MA's), (117, 14962), (123, 15007), (131, 15043), (149, 15112), (156, 15133), (157, 15136), (163, 15166), (181, 15286), (193, 15367), (218, 15481), (222, 15508), (251, 15697), (271, 15823), (293, 15937), (294, 15952), (307, 16000), (311, 16030), (313, 16042), (316, 16057), (318, 16072), (325, 16123), (329, 16141), (334, 16159),

Gene: Racecar\_82 Start: 48235, Stop: 50229, Start Num: 9

Candidate Starts for Racecar\_82:

(Start: 9 @48235 has 2 MA's), (33, 48379), (115, 48925), (149, 49090), (156, 49111), (170, 49186), (239, 49615), (288, 49912),

Gene: RainyPolka\_13 Start: 13679, Stop: 15376, Start Num: 50

Candidate Starts for RainyPolka\_13:

(Start: 50 @13679 has 11 MA's), (52, 13688), (62, 13757), (68, 13775), (72, 13790), (84, 13922), (86, 13946), (106, 14045), (119, 14126), (128, 14180), (133, 14210), (134, 14213), (140, 14240), (141, 14243), (155, 14291), (173, 14372), (179, 14414), (185, 14483), (202, 14573), (226, 14663), (236, 14729), (239, 14741), (240, 14744), (248, 14810), (265, 14894), (269, 14936), (281, 14996), (306, 15149), (315, 15206), (323, 15266), (324, 15269), (334, 15308), (337, 15332), (343, 15350),

Gene: Ramiel05\_26 Start: 13795, Stop: 15651, Start Num: 29

Candidate Starts for Ramiel05\_26:

(Start: 29 @13795 has 49 MA's), (117, 14371), (123, 14416), (131, 14452), (149, 14521), (156, 14542), (157, 14545), (163, 14575), (181, 14695), (193, 14776), (218, 14890), (222, 14917), (251, 15106), (293, 15346), (294, 15361), (307, 15409), (311, 15439), (313, 15451), (316, 15466), (318, 15481), (325, 15532), (329, 15550), (334, 15568),

Gene: Ranunculus\_20 Start: 13327, Stop: 15048, Start Num: 40

Candidate Starts for Ranunculus\_20:

(Start: 29 @13264 has 49 MA's), (Start: 40 @13327 has 12 MA's), (143, 13921), (149, 13942), (173, 14044), (195, 14218), (198, 14230), (205, 14260), (228, 14359), (229, 14362), (258, 14527), (266, 14584), (271, 14626), (274, 14635), (276, 14644), (281, 14668), (292, 14731), (307, 14818), (312, 14857), (316, 14875),

Gene: Rasputia\_56 Start: 29361, Stop: 31292, Start Num: 26

Candidate Starts for Rasputia\_56:

(Start: 26 @29361 has 4 MA's), (55, 29544), (71, 29628), (79, 29697), (98, 29895), (101, 29904), (120, 30003), (127, 30048), (157, 30165), (240, 30663), (245, 30693), (246, 30705), (251, 30732), (260, 30777), (266, 30816), (271, 30858), (304, 31044), (340, 31251),

Gene: Ribeye\_21 Start: 15768, Stop: 17690, Start Num: 32

Candidate Starts for Ribeye\_21:

(Start: 32 @15768 has 98 MA's), (68, 15999), (104, 16296), (118, 16365), (124, 16413), (129, 16437), (145, 16506), (151, 16530), (172, 16623), (189, 16764), (191, 16770), (201, 16833), (204, 16845), (205, 16848), (206, 16860), (226, 16947), (246, 17070), (250, 17106), (257, 17139), (267, 17211), (274, 17250), (285, 17301), (304, 17439), (305, 17445), (306, 17448), (314, 17499), (322, 17556), (323, 17568), (326, 17577),

Gene: RiverRaider\_21 Start: 14172, Stop: 16070, Start Num: 32

Candidate Starts for RiverRaider\_21:

(20, 14094), (Start: 32 @14172 has 98 MA's), (68, 14403), (73, 14421), (80, 14496), (104, 14670), (118, 14751), (129, 14817), (145, 14886), (189, 15144), (191, 15150), (201, 15213), (204, 15225), (205, 15228), (206, 15240), (226, 15327), (246, 15450), (250, 15486), (267, 15591), (274, 15630), (285, 15681), (288, 15714), (305, 15825), (306, 15828), (307, 15831), (308, 15852), (314, 15879), (319, 15906), (322, 15936), (323, 15948),

Gene: Rizwana\_19 Start: 13218, Stop: 14954, Start Num: 40

Candidate Starts for Rizwana\_19:

(28, 13155), (Start: 40 @13218 has 12 MA's), (92, 13608), (103, 13644), (159, 13878), (179, 13986), (184, 14049), (186, 14058), (190, 14079), (205, 14160), (228, 14259), (229, 14262), (234, 14304), (239, 14328), (242, 14349), (243, 14355), (266, 14484), (276, 14544), (285, 14583), (290, 14625), (307, 14718), (325, 14841), (332, 14871),

Gene: RoadKill\_18 Start: 13249, Stop: 15138, Start Num: 32

Candidate Starts for RoadKill\_18:

(30, 13240), (Start: 32 @13249 has 98 MA's), (41, 13315), (68, 13483), (73, 13501), (106, 13774), (124, 13870), (171, 14077), (180, 14155), (191, 14224), (201, 14287), (204, 14299), (205, 14302), (223, 14386), (226, 14401), (242, 14500), (250, 14554), (267, 14659), (285, 14749), (295, 14830), (304, 14887), (307, 14899), (316, 14956), (317, 14968), (322, 15004), (335, 15070),

Gene: RobinRose\_26 Start: 13174, Stop: 14952, Start Num: 42

Candidate Starts for RobinRose\_26:

(Start: 42 @13174 has 12 MA's), (45, 13186), (88, 13528), (113, 13645), (135, 13771), (165, 13885), (173, 13915), (205, 14128), (224, 14209), (226, 14218), (239, 14296), (241, 14302), (242, 14317), (266, 14461), (271, 14503), (283, 14554), (304, 14701), (306, 14710), (330, 14860), (334, 14872),

Gene: RobsFeet\_28 Start: 13750, Stop: 15771, Start Num: 29

Candidate Starts for RobsFeet\_28:

(Start: 29 @13750 has 49 MA's), (117, 14335), (131, 14416), (137, 14440), (149, 14485), (156, 14506), (157, 14509), (181, 14659), (214, 14917), (216, 14989), (222, 15049), (223, 15073), (246, 15211), (250, 15235), (251, 15238), (270, 15349), (293, 15478), (294, 15493), (296, 15502), (304, 15529), (307, 15541), (311, 15571), (316, 15598), (334, 15700),

Gene: Rofo\_20 Start: 15139, Stop: 17046, Start Num: 32

Candidate Starts for Rofo\_20:

(Start: 32 @15139 has 98 MA's), (68, 15370), (73, 15388), (104, 15655), (129, 15793), (145, 15862), (154, 15895), (189, 16120), (191, 16126), (201, 16189), (204, 16201), (205, 16204), (206, 16216), (246, 16426), (250, 16462), (274, 16606), (285, 16657), (305, 16801), (306, 16804), (307, 16807), (314, 16855), (322, 16912),

Gene: RogerDodger\_22 Start: 12733, Stop: 14619, Start Num: 32

Candidate Starts for RogerDodger\_22:

(Start: 32 @12733 has 98 MA's), (69, 12970), (73, 12982), (77, 13036), (106, 13258), (139, 13420), (147, 13453), (191, 13705), (203, 13777), (220, 13834), (222, 13846), (239, 13963), (246, 14008), (247, 14011), (267, 14134), (269, 14146), (281, 14206), (304, 14359), (306, 14368), (317, 14440), (321, 14470), (335, 14542), (340, 14566),

Gene: RomansRevenge\_16 Start: 11444, Stop: 13249, Start Num: 34

Candidate Starts for RomansRevenge\_16:

(34, 11444), (Start: 40 @11492 has 12 MA's), (54, 11582), (85, 11834), (86, 11849), (103, 11942), (123, 12053), (127, 12062), (143, 12131), (158, 12176), (166, 12218), (182, 12323), (191, 12380), (205, 12458), (226, 12548), (228, 12557), (242, 12647), (261, 12749), (281, 12866), (292, 12929), (307, 13013), (316, 13070), (317, 13082), (325, 13136),

Gene: Romm\_26 Start: 13174, Stop: 14952, Start Num: 42

Candidate Starts for Romm\_26:

(Start: 42 @13174 has 12 MA's), (45, 13186), (88, 13528), (113, 13645), (135, 13771), (165, 13885), (173, 13915), (205, 14128), (224, 14209), (226, 14218), (239, 14296), (241, 14302), (242, 14317),

(266, 14461), (271, 14503), (283, 14554), (304, 14701), (306, 14710), (330, 14860), (334, 14872),

Gene: Rowlf\_21 Start: 13250, Stop: 15082, Start Num: 43

Candidate Starts for Rowlf\_21:

(Start: 43 @13250 has 26 MA's), (45, 13259), (58, 13358), (105, 13724), (135, 13892), (139, 13907), (156, 13967), (165, 14015), (166, 14021), (173, 14045), (187, 14162), (188, 14168), (205, 14261), (224, 14342), (241, 14435), (242, 14450), (250, 14498), (255, 14522), (264, 14570), (266, 14594), (273, 14642), (283, 14684), (303, 14819), (304, 14831), (306, 14840), (316, 14900), (326, 14969), (334, 15002),

Gene: RubyRalph\_27 Start: 13767, Stop: 15596, Start Num: 42

Candidate Starts for RubyRalph\_27:

(Start: 42 @13767 has 12 MA's), (45, 13779), (61, 13908), (88, 14136), (90, 14154), (119, 14313), (135, 14397), (156, 14475), (165, 14523), (173, 14553), (186, 14667), (205, 14769), (221, 14811), (224, 14850), (226, 14859), (241, 14943), (242, 14958), (264, 15078), (266, 15102), (271, 15144), (273, 15150), (283, 15192), (303, 15327), (306, 15348), (308, 15372), (312, 15390), (316, 15408), (334, 15510),

Gene: Rudy\_23 Start: 13492, Stop: 15324, Start Num: 43

Candidate Starts for Rudy\_23:

(Start: 43 @13492 has 26 MA's), (45, 13501), (58, 13600), (105, 13966), (135, 14134), (139, 14149), (156, 14209), (165, 14257), (166, 14263), (173, 14287), (187, 14404), (188, 14410), (205, 14503), (224, 14584), (241, 14677), (242, 14692), (250, 14740), (255, 14764), (264, 14812), (266, 14836), (273, 14884), (283, 14926), (303, 15061), (304, 15073), (306, 15082), (316, 15142), (326, 15211), (334, 15244),

Gene: SJReid\_86 Start: 49478, Stop: 51490, Start Num: 9

Candidate Starts for SJReid\_86:

(Start: 9 @49478 has 2 MA's), (14, 49499), (33, 49622), (94, 50066), (115, 50186), (156, 50372), (170, 50447), (194, 50645), (203, 50696), (239, 50876), (292, 51188),

Gene: SadLad\_29 Start: 14704, Stop: 16533, Start Num: 42

Candidate Starts for SadLad\_29:

(Start: 42 @14704 has 12 MA's), (45, 14716), (61, 14845), (88, 15073), (90, 15091), (119, 15250), (135, 15334), (156, 15412), (165, 15460), (173, 15490), (186, 15604), (205, 15706), (221, 15748), (224, 15787), (241, 15880), (242, 15895), (264, 16015), (266, 16039), (271, 16081), (273, 16087), (283, 16129), (303, 16264), (306, 16285), (308, 16309), (312, 16327), (316, 16345), (334, 16447),

Gene: Salete\_13 Start: 13751, Stop: 15445, Start Num: 50

Candidate Starts for Salete\_13:

(Start: 50 @13751 has 11 MA's), (52, 13760), (72, 13862), (84, 13994), (86, 14018), (106, 14114), (119, 14195), (126, 14240), (128, 14249), (134, 14282), (140, 14309), (141, 14312), (155, 14360), (162, 14393), (163, 14396), (171, 14435), (173, 14441), (181, 14519), (185, 14552), (202, 14642), (226, 14732), (236, 14798), (239, 14810), (240, 14813), (259, 14930), (265, 14963), (269, 15005), (290, 15122), (306, 15218), (315, 15275), (324, 15338), (326, 15344), (334, 15377), (337, 15401), (343, 15419), (346, 15434),

Gene: SallyK\_26 Start: 14644, Stop: 16470, Start Num: 43

Candidate Starts for SallyK\_26:

(Start: 43 @14644 has 26 MA's), (45, 14653), (58, 14752), (97, 15079), (135, 15280), (139, 15295), (156, 15355), (165, 15403), (173, 15433), (187, 15550), (188, 15556), (205, 15649), (224, 15730), (241, 15823), (242, 15838), (250, 15886), (255, 15910), (264, 15958), (266, 15982), (273, 16030), (283, 16072), (303, 16207), (306, 16228), (313, 16273), (316, 16288), (326, 16357), (334, 16390),

Gene: Salvador\_19 Start: 11842, Stop: 13740, Start Num: 32

Candidate Starts for Salvador\_19:

(Start: 32 @11842 has 98 MA's), (69, 12079), (73, 12091), (77, 12145), (106, 12376), (139, 12538), (147, 12571), (191, 12835), (220, 12964), (222, 12976), (239, 13093), (246, 13138), (247, 13141), (259, 13201), (261, 13219), (265, 13234), (267, 13264), (269, 13276), (270, 13279), (292, 13399), (296, 13438), (306, 13498), (317, 13570), (321, 13600), (325, 13624), (331, 13651), (332, 13654), (336, 13681),

Gene: Sampson\_21 Start: 15472, Stop: 17394, Start Num: 32

Candidate Starts for Sampson\_21:

(Start: 32 @15472 has 98 MA's), (64, 15688), (68, 15703), (87, 15877), (112, 16015), (114, 16024), (124, 16093), (125, 16099), (137, 16153), (142, 16177), (186, 16429), (189, 16447), (191, 16453), (201, 16516), (204, 16528), (205, 16531), (206, 16543), (226, 16633), (231, 16660), (257, 16819), (268, 16897), (287, 16993), (292, 17029), (304, 17149), (308, 17182), (322, 17266), (331, 17311),

Gene: Sanjuju\_18 Start: 14651, Stop: 16558, Start Num: 32

Candidate Starts for Sanjuju\_18:

(Start: 32 @14651 has 98 MA's), (68, 14882), (73, 14900), (104, 15167), (129, 15305), (145, 15374), (154, 15407), (189, 15632), (191, 15638), (201, 15701), (204, 15713), (205, 15716), (206, 15728), (226, 15815), (234, 15869), (246, 15938), (250, 15974), (274, 16118), (285, 16169), (305, 16313), (306, 16316), (307, 16319), (314, 16367), (322, 16424),

Gene: Saronaya\_20 Start: 14562, Stop: 16469, Start Num: 32

Candidate Starts for Saronaya\_20:

(Start: 32 @14562 has 98 MA's), (51, 14697), (68, 14793), (104, 15075), (118, 15144), (124, 15192), (129, 15216), (137, 15252), (145, 15285), (151, 15309), (172, 15402), (189, 15543), (191, 15549), (201, 15612), (204, 15624), (205, 15627), (206, 15639), (226, 15726), (246, 15849), (250, 15885), (267, 15990), (274, 16029), (285, 16080), (304, 16218), (305, 16224), (306, 16227), (314, 16278), (322, 16335), (323, 16347), (326, 16356),

Gene: Savannah\_26 Start: 13819, Stop: 15678, Start Num: 29

Candidate Starts for Savannah\_26:

(Start: 29 @13819 has 49 MA's), (117, 14398), (123, 14443), (131, 14479), (149, 14548), (156, 14569), (157, 14572), (163, 14602), (181, 14722), (193, 14803), (218, 14917), (222, 14944), (251, 15133), (271, 15259), (293, 15373), (294, 15388), (307, 15436), (311, 15466), (313, 15478), (316, 15493), (318, 15508), (325, 15559), (329, 15577), (334, 15595),

Gene: Savbucketdawg\_19 Start: 11635, Stop: 13521, Start Num: 32

Candidate Starts for Savbucketdawg\_19:

(Start: 32 @11635 has 98 MA's), (69, 11872), (73, 11884), (77, 11938), (139, 12319), (147, 12352), (155, 12379), (220, 12745), (222, 12757), (239, 12874), (246, 12919), (247, 12922), (259, 12982), (261, 13000), (267, 13045), (269, 13057), (270, 13060), (292, 13180), (296, 13219), (306, 13279), (317, 13351), (321, 13381), (325, 13405), (331, 13432), (332, 13435), (336, 13462),

Gene: SchottB\_19 Start: 15551, Stop: 17470, Start Num: 32

Candidate Starts for SchottB\_19:

(Start: 32 @15551 has 98 MA's), (51, 15686), (68, 15782), (104, 16076), (118, 16145), (124, 16193), (129, 16217), (137, 16253), (145, 16286), (151, 16310), (172, 16403), (189, 16544), (191, 16550), (201, 16613), (204, 16625), (205, 16628), (206, 16640), (226, 16727), (246, 16850), (250, 16886), (257, 16919), (267, 16991), (274, 17030), (285, 17081), (305, 17225), (306, 17228), (314, 17279), (322, 17336), (323, 17348), (326, 17357),

Gene: Scioto\_21 Start: 15527, Stop: 17449, Start Num: 32

Candidate Starts for Scioto\_21:

(Start: 32 @15527 has 98 MA's), (64, 15743), (68, 15758), (87, 15932), (112, 16070), (114, 16079), (124, 16148), (125, 16154), (137, 16208), (142, 16232), (186, 16484), (189, 16502), (191, 16508), (201, 16571), (204, 16583), (205, 16586), (206, 16598), (226, 16688), (231, 16715), (257, 16874), (268, 16952), (287, 17048), (292, 17084), (304, 17204), (308, 17237), (322, 17321), (331, 17366),

Gene: Scumberland\_28 Start: 14010, Stop: 15866, Start Num: 29

Candidate Starts for Scumberland\_28:

(Start: 29 @14010 has 49 MA's), (117, 14586), (123, 14631), (131, 14667), (149, 14736), (156, 14757), (157, 14760), (163, 14790), (181, 14910), (193, 14991), (218, 15105), (222, 15132), (251, 15321), (271, 15447), (293, 15561), (294, 15576), (307, 15624), (311, 15654), (313, 15666), (316, 15681), (318, 15696), (325, 15747), (329, 15765), (334, 15783),

Gene: Sedona\_22 Start: 16968, Stop: 18863, Start Num: 32

Candidate Starts for Sedona\_22:

(Start: 32 @16968 has 98 MA's), (68, 17199), (73, 17217), (104, 17472), (129, 17610), (145, 17679), (154, 17712), (189, 17937), (191, 17943), (201, 18006), (204, 18018), (205, 18021), (206, 18033), (226, 18120), (246, 18243), (250, 18279), (274, 18423), (285, 18474), (305, 18618), (306, 18621), (307, 18624), (314, 18672), (322, 18729), (345, 18846),

Gene: Selwyn23\_28 Start: 13988, Stop: 15844, Start Num: 29

Candidate Starts for Selwyn23\_28:

(Start: 29 @13988 has 49 MA's), (117, 14564), (123, 14609), (131, 14645), (149, 14714), (156, 14735), (157, 14738), (163, 14768), (181, 14888), (193, 14969), (218, 15083), (222, 15110), (251, 15299), (271, 15425), (293, 15539), (294, 15554), (307, 15602), (311, 15632), (313, 15644), (316, 15659), (318, 15674), (325, 15725), (329, 15743), (334, 15761),

Gene: Shinji\_19 Start: 11824, Stop: 13710, Start Num: 32

Candidate Starts for Shinji\_19:

(Start: 32 @11824 has 98 MA's), (69, 12061), (73, 12073), (77, 12127), (139, 12508), (147, 12541), (155, 12568), (220, 12934), (222, 12946), (239, 13063), (246, 13108), (247, 13111), (259, 13171), (261, 13189), (267, 13234), (269, 13246), (270, 13249), (292, 13369), (296, 13408), (306, 13468), (317, 13540), (321, 13570), (325, 13594), (331, 13621), (332, 13624), (336, 13651),

Gene: Shivanishola\_20 Start: 14945, Stop: 16852, Start Num: 32

Candidate Starts for Shivanishola\_20:

(Start: 32 @14945 has 98 MA's), (68, 15176), (73, 15194), (104, 15461), (129, 15599), (145, 15668), (154, 15701), (189, 15926), (191, 15932), (201, 15995), (204, 16007), (205, 16010), (206, 16022), (226, 16109), (234, 16163), (246, 16232), (250, 16268), (274, 16412), (285, 16463), (305, 16607), (306, 16610), (307, 16613), (314, 16661), (322, 16718),

Gene: Shotgun\_26 Start: 13617, Stop: 15476, Start Num: 29

Candidate Starts for Shotgun\_26:

(Start: 29 @13617 has 49 MA's), (117, 14196), (123, 14241), (131, 14277), (149, 14346), (156, 14367), (157, 14370), (163, 14400), (181, 14520), (193, 14601), (218, 14715), (222, 14742), (251, 14931), (271, 15057), (293, 15171), (294, 15186), (307, 15234), (311, 15264), (313, 15276), (316, 15291), (318, 15306), (325, 15357), (329, 15375), (334, 15393),

Gene: SilentRX\_21 Start: 13505, Stop: 15193, Start Num: 40

Candidate Starts for SilentRX\_21:

(Start: 29 @13445 has 49 MA's), (Start: 32 @13457 has 98 MA's), (33, 13460), (Start: 40 @13505 has 12 MA's), (198, 14372), (205, 14402), (207, 14414), (227, 14498), (228, 14501), (229, 14504), (240,



14573), (252, 14645), (261, 14693), (281, 14810), (292, 14876), (311, 14993), (323, 15080), (325, 15086),

Gene: Sillytadpoles\_25 Start: 13490, Stop: 15322, Start Num: 43

Candidate Starts for Sillytadpoles\_25:

(Start: 43 @13490 has 26 MA's), (45, 13499), (58, 13598), (105, 13964), (135, 14132), (139, 14147), (156, 14207), (165, 14255), (166, 14261), (173, 14285), (187, 14402), (188, 14408), (205, 14501), (224, 14582), (241, 14675), (242, 14690), (250, 14738), (255, 14762), (264, 14810), (266, 14834), (273, 14882), (283, 14924), (303, 15059), (304, 15071), (306, 15080), (316, 15140), (326, 15209), (334, 15242),

Gene: Sitar\_22 Start: 16336, Stop: 18231, Start Num: 32

Candidate Starts for Sitar\_22:

(Start: 32 @16336 has 98 MA's), (68, 16567), (73, 16585), (104, 16840), (129, 16978), (145, 17047), (154, 17080), (189, 17305), (191, 17311), (201, 17374), (204, 17386), (205, 17389), (206, 17401), (226, 17488), (246, 17611), (250, 17647), (274, 17791), (285, 17842), (305, 17986), (306, 17989), (307, 17992), (314, 18040), (322, 18097), (345, 18214),

Gene: Smarties\_35 Start: 15581, Stop: 17596, Start Num: 29

Candidate Starts for Smarties\_35:

(Start: 29 @15581 has 49 MA's), (117, 16160), (123, 16205), (131, 16241), (137, 16265), (149, 16310), (156, 16331), (160, 16349), (181, 16484), (216, 16814), (217, 16817), (222, 16874), (223, 16898), (246, 17036), (251, 17063), (270, 17174), (293, 17303), (294, 17318), (296, 17327), (304, 17354), (307, 17366), (311, 17396), (316, 17423), (329, 17507), (334, 17525),

Gene: SmokingBunny\_19 Start: 11842, Stop: 13740, Start Num: 32

Candidate Starts for SmokingBunny\_19:

(Start: 32 @11842 has 98 MA's), (69, 12079), (73, 12091), (77, 12145), (106, 12376), (139, 12538), (147, 12571), (191, 12835), (220, 12964), (222, 12976), (239, 13093), (246, 13138), (247, 13141), (259, 13201), (261, 13219), (265, 13234), (267, 13264), (269, 13276), (270, 13279), (292, 13399), (296, 13438), (306, 13498), (317, 13570), (321, 13600), (325, 13624), (331, 13651), (332, 13654), (336, 13681),

Gene: Squash\_27 Start: 14560, Stop: 16392, Start Num: 43

Candidate Starts for Squash\_27:

(Start: 43 @14560 has 26 MA's), (45, 14569), (58, 14668), (105, 15034), (135, 15202), (139, 15217), (156, 15277), (165, 15325), (166, 15331), (173, 15355), (187, 15472), (188, 15478), (205, 15571), (224, 15652), (241, 15745), (242, 15760), (250, 15808), (255, 15832), (264, 15880), (266, 15904), (273, 15952), (283, 15994), (303, 16129), (304, 16141), (306, 16150), (316, 16210), (326, 16279), (334, 16312),

Gene: Statler\_27 Start: 14472, Stop: 16304, Start Num: 43

Candidate Starts for Statler\_27:

(Start: 43 @14472 has 26 MA's), (45, 14481), (58, 14580), (105, 14946), (135, 15114), (139, 15129), (156, 15189), (165, 15237), (166, 15243), (173, 15267), (187, 15384), (188, 15390), (205, 15483), (224, 15564), (241, 15657), (242, 15672), (250, 15720), (255, 15744), (264, 15792), (266, 15816), (273, 15864), (283, 15906), (303, 16041), (304, 16053), (306, 16062), (316, 16122), (326, 16191), (334, 16224),

Gene: StorminNorm\_20 Start: 14442, Stop: 16349, Start Num: 32

Candidate Starts for StorminNorm\_20:

(Start: 32 @14442 has 98 MA's), (51, 14577), (68, 14673), (104, 14955), (118, 15024), (124, 15072), (129, 15096), (137, 15132), (145, 15165), (151, 15189), (172, 15282), (189, 15423), (191, 15429),

(201, 15492), (204, 15504), (205, 15507), (206, 15519), (226, 15606), (246, 15729), (250, 15765), (267, 15870), (274, 15909), (285, 15960), (304, 16098), (305, 16104), (306, 16107), (314, 16158), (322, 16215), (323, 16227), (326, 16236), (346, 16335),

Gene: StrawberryJamm\_27 Start: 13792, Stop: 15624, Start Num: 43

Candidate Starts for StrawberryJamm\_27:

(Start: 43 @13792 has 26 MA's), (45, 13801), (58, 13900), (97, 14233), (135, 14434), (139, 14449), (156, 14509), (165, 14557), (173, 14587), (187, 14704), (188, 14710), (205, 14803), (224, 14884), (241, 14977), (242, 14992), (250, 15040), (255, 15064), (264, 15112), (266, 15136), (273, 15184), (283, 15226), (303, 15361), (306, 15382), (313, 15427), (316, 15442), (326, 15511), (334, 15544),

Gene: Stultus\_20 Start: 14947, Stop: 16842, Start Num: 32

Candidate Starts for Stultus\_20:

(Start: 32 @14947 has 98 MA's), (68, 15178), (73, 15196), (104, 15451), (129, 15589), (145, 15658), (154, 15691), (189, 15916), (191, 15922), (201, 15985), (204, 15997), (205, 16000), (206, 16012), (226, 16099), (246, 16222), (250, 16258), (274, 16402), (285, 16453), (305, 16597), (306, 16600), (307, 16603), (314, 16651), (322, 16708), (345, 16825),

Gene: Sunfish\_32 Start: 15117, Stop: 16874, Start Num: 43

Candidate Starts for Sunfish\_32:

(Start: 43 @15117 has 26 MA's), (89, 15489), (99, 15534), (127, 15681), (161, 15807), (270, 16431), (271, 16446), (272, 16449), (274, 16455), (316, 16695), (325, 16761), (331, 16788),

Gene: Sunny\_27 Start: 14052, Stop: 15890, Start Num: 29

Candidate Starts for Sunny\_27:

(16, 13962), (17, 13968), (21, 13995), (22, 13998), (Start: 29 @14052 has 49 MA's), (79, 14373), (117, 14610), (123, 14655), (131, 14691), (149, 14760), (156, 14781), (157, 14784), (166, 14835), (174, 14868), (181, 14934), (193, 15015), (222, 15156), (247, 15321), (251, 15345), (271, 15471), (293, 15585), (294, 15600), (304, 15636), (307, 15648), (311, 15678), (313, 15690), (316, 15705), (337, 15831),

Gene: TP1604\_13 Start: 13751, Stop: 15445, Start Num: 50

Candidate Starts for TP1604\_13:

(Start: 50 @13751 has 11 MA's), (52, 13760), (72, 13862), (84, 13994), (86, 14018), (106, 14114), (119, 14195), (126, 14240), (128, 14249), (134, 14282), (140, 14309), (141, 14312), (155, 14360), (162, 14393), (163, 14396), (171, 14435), (173, 14441), (181, 14519), (185, 14552), (202, 14642), (223, 14717), (226, 14732), (236, 14798), (239, 14810), (240, 14813), (259, 14930), (265, 14963), (269, 15005), (290, 15122), (306, 15218), (315, 15275), (319, 15296), (324, 15338), (326, 15344), (334, 15377), (337, 15401), (343, 15419), (346, 15434),

Gene: Talia1610\_81 Start: 47600, Stop: 49594, Start Num: 9

Candidate Starts for Talia1610\_81:

(Start: 9 @47600 has 2 MA's), (33, 47744), (115, 48290), (149, 48455), (156, 48476), (170, 48551), (239, 48980), (288, 49277),

Gene: Tangent\_18 Start: 14140, Stop: 16047, Start Num: 32

Candidate Starts for Tangent\_18:

(Start: 32 @14140 has 98 MA's), (68, 14371), (73, 14389), (104, 14656), (129, 14794), (145, 14863), (154, 14896), (189, 15121), (191, 15127), (201, 15190), (204, 15202), (205, 15205), (206, 15217), (226, 15304), (234, 15358), (246, 15427), (250, 15463), (274, 15607), (285, 15658), (305, 15802), (306, 15805), (307, 15808), (314, 15856), (322, 15913),

Gene: Tangerine\_20 Start: 14448, Stop: 16355, Start Num: 32

Candidate Starts for Tangerine\_20:

(Start: 32 @14448 has 98 MA's), (51, 14583), (68, 14679), (104, 14961), (118, 15030), (124, 15078), (129, 15102), (137, 15138), (145, 15171), (151, 15195), (172, 15288), (189, 15429), (191, 15435), (201, 15498), (204, 15510), (205, 15513), (206, 15525), (226, 15612), (246, 15735), (250, 15771), (267, 15876), (274, 15915), (285, 15966), (304, 16104), (305, 16110), (306, 16113), (314, 16164), (322, 16221), (323, 16233), (326, 16242), (346, 16341),

Gene: Tank\_20 Start: 13083, Stop: 14846, Start Num: 40

Candidate Starts for Tank\_20:

(28, 13017), (Start: 40 @13083 has 12 MA's), (103, 13521), (116, 13590), (121, 13614), (136, 13683), (159, 13764), (179, 13872), (183, 13923), (184, 13935), (186, 13944), (226, 14136), (228, 14145), (229, 14148), (239, 14214), (242, 14235), (243, 14241), (246, 14259), (266, 14370), (276, 14430), (285, 14469), (290, 14511), (307, 14604), (312, 14643), (339, 14796),

Gene: Tardus\_22 Start: 14807, Stop: 16726, Start Num: 32

Candidate Starts for Tardus\_22:

(Start: 32 @14807 has 98 MA's), (64, 15023), (67, 15035), (68, 15038), (87, 15212), (108, 15326), (112, 15350), (114, 15359), (124, 15425), (125, 15431), (137, 15485), (142, 15509), (186, 15761), (189, 15779), (191, 15785), (201, 15848), (204, 15860), (205, 15863), (206, 15875), (226, 15965), (231, 15992), (257, 16151), (268, 16229), (287, 16325), (308, 16514), (322, 16598), (325, 16616), (332, 16646),

Gene: Teamocil\_28 Start: 13248, Stop: 15266, Start Num: 29

Candidate Starts for Teamocil\_28:

(Start: 29 @13248 has 49 MA's), (93, 13716), (117, 13830), (122, 13869), (131, 13911), (137, 13935), (149, 13980), (156, 14001), (157, 14004), (160, 14019), (171, 14073), (181, 14154), (191, 14214), (210, 14358), (212, 14376), (222, 14544), (223, 14568), (246, 14706), (251, 14733), (270, 14844), (293, 14973), (294, 14988), (304, 15024), (307, 15036), (311, 15066), (316, 15093), (334, 15195),

Gene: Teehee\_26 Start: 14727, Stop: 16559, Start Num: 43

Candidate Starts for Teehee\_26:

(Start: 43 @14727 has 26 MA's), (45, 14736), (58, 14835), (105, 15201), (135, 15369), (139, 15384), (156, 15444), (165, 15492), (166, 15498), (173, 15522), (187, 15639), (188, 15645), (205, 15738), (224, 15819), (241, 15912), (242, 15927), (250, 15975), (255, 15999), (264, 16047), (266, 16071), (273, 16119), (283, 16161), (303, 16296), (304, 16308), (306, 16317), (316, 16377), (326, 16446), (334, 16479),

Gene: Tempo\_24 Start: 13050, Stop: 14828, Start Num: 42

Candidate Starts for Tempo\_24:

(Start: 42 @13050 has 12 MA's), (45, 13062), (88, 13404), (113, 13521), (135, 13647), (165, 13761), (173, 13791), (205, 14004), (224, 14085), (226, 14094), (239, 14172), (241, 14178), (242, 14193), (266, 14337), (271, 14379), (283, 14430), (304, 14577), (306, 14586), (330, 14736), (334, 14748),

Gene: Terij\_23 Start: 13292, Stop: 15169, Start Num: 29

Candidate Starts for Terij\_23:

(Start: 29 @13292 has 49 MA's), (117, 13889), (122, 13928), (131, 13970), (156, 14060), (172, 14129), (192, 14282), (218, 14402), (233, 14519), (251, 14618), (254, 14633), (261, 14669), (263, 14675), (270, 14729), (281, 14786), (285, 14801), (287, 14813), (293, 14858), (304, 14921), (311, 14963), (328, 15071),

Gene: Thing3\_21 Start: 15684, Stop: 17591, Start Num: 32

Candidate Starts for Thing3\_21:

(Start: 32 @15684 has 98 MA's), (68, 15915), (73, 15933), (104, 16200), (129, 16338), (145, 16407), (154, 16440), (189, 16665), (191, 16671), (201, 16734), (204, 16746), (205, 16749), (206, 16761), (226, 16848), (234, 16902), (246, 16971), (250, 17007), (274, 17151), (285, 17202), (305, 17346), (306, 17349), (307, 17352), (314, 17400), (322, 17457),

Gene: Tiamoceli\_21 Start: 14601, Stop: 16490, Start Num: 32

Candidate Starts for Tiamoceli\_21:

(30, 14592), (Start: 32 @14601 has 98 MA's), (41, 14667), (68, 14835), (73, 14853), (106, 15126), (124, 15222), (167, 15414), (171, 15429), (180, 15507), (191, 15576), (201, 15639), (204, 15651), (205, 15654), (223, 15738), (226, 15753), (242, 15852), (250, 15906), (267, 16011), (285, 16101), (295, 16182), (304, 16239), (317, 16320), (322, 16356), (335, 16422),

Gene: TillyBobJoe\_19 Start: 11638, Stop: 13524, Start Num: 32

Candidate Starts for TillyBobJoe\_19:

(Start: 32 @11638 has 98 MA's), (69, 11875), (73, 11887), (77, 11941), (139, 12322), (147, 12355), (155, 12382), (220, 12748), (222, 12760), (239, 12877), (246, 12922), (247, 12925), (259, 12985), (261, 13003), (267, 13048), (269, 13060), (270, 13063), (292, 13183), (296, 13222), (306, 13282), (317, 13354), (321, 13384), (325, 13408), (331, 13435), (332, 13438), (336, 13465),

Gene: Tissue\_25 Start: 14292, Stop: 16115, Start Num: 43

Candidate Starts for Tissue\_25:

(Start: 43 @14292 has 26 MA's), (45, 14301), (58, 14400), (97, 14724), (135, 14925), (139, 14940), (156, 15000), (165, 15048), (173, 15078), (187, 15195), (188, 15201), (205, 15294), (224, 15375), (241, 15468), (242, 15483), (250, 15531), (255, 15555), (264, 15603), (266, 15627), (273, 15675), (283, 15717), (303, 15852), (306, 15873), (316, 15933), (326, 16002), (334, 16035),

Gene: Togo\_19 Start: 11842, Stop: 13740, Start Num: 32

Candidate Starts for Togo\_19:

(Start: 32 @11842 has 98 MA's), (69, 12079), (73, 12091), (77, 12145), (106, 12376), (139, 12538), (147, 12571), (191, 12835), (220, 12964), (222, 12976), (239, 13093), (246, 13138), (247, 13141), (259, 13201), (261, 13219), (265, 13234), (267, 13264), (269, 13276), (270, 13279), (292, 13399), (296, 13438), (306, 13498), (317, 13570), (321, 13600), (325, 13624), (331, 13651), (332, 13654), (336, 13681),

Gene: TurkishDelight\_17 Start: 12983, Stop: 14710, Start Num: 50

Candidate Starts for TurkishDelight\_17:

(46, 12944), (Start: 50 @12983 has 11 MA's), (66, 13091), (74, 13139), (76, 13148), (82, 13241), (111, 13418), (128, 13514), (155, 13625), (197, 13889), (199, 13898), (208, 13940), (227, 14003), (239, 14075), (240, 14078), (242, 14096), (259, 14177), (260, 14189), (265, 14210), (270, 14255), (290, 14369), (294, 14405), (314, 14516), (315, 14522), (326, 14594), (328, 14606), (342, 14669),

Gene: Twister6\_21 Start: 12280, Stop: 14166, Start Num: 32

Candidate Starts for Twister6\_21:

(Start: 32 @12280 has 98 MA's), (69, 12517), (73, 12529), (77, 12583), (106, 12805), (139, 12967), (147, 13000), (191, 13252), (203, 13324), (220, 13381), (222, 13393), (239, 13510), (246, 13555), (247, 13558), (267, 13681), (269, 13693), (281, 13753), (304, 13906), (306, 13915), (317, 13987), (321, 14017), (335, 14089), (340, 14113),

Gene: Twonlo\_18 Start: 13218, Stop: 15107, Start Num: 32

Candidate Starts for Twonlo\_18:

(30, 13209), (Start: 32 @13218 has 98 MA's), (41, 13284), (68, 13452), (73, 13470), (106, 13743), (124, 13839), (167, 14031), (171, 14046), (180, 14124), (191, 14193), (201, 14256), (204, 14268), (205, 14271), (223, 14355), (226, 14370), (242, 14469), (250, 14523), (267, 14628), (285, 14718),

(295, 14799), (304, 14856), (316, 14925), (317, 14937), (322, 14973), (335, 15039),

Gene: Tycho\_20 Start: 14565, Stop: 16484, Start Num: 32

Candidate Starts for Tycho\_20:

(Start: 32 @14565 has 98 MA's), (51, 14700), (68, 14796), (104, 15090), (118, 15159), (124, 15207), (129, 15231), (137, 15267), (145, 15300), (151, 15324), (172, 15417), (189, 15558), (191, 15564), (201, 15627), (204, 15639), (205, 15642), (206, 15654), (226, 15741), (246, 15864), (250, 15900), (257, 15933), (267, 16005), (274, 16044), (285, 16095), (304, 16233), (305, 16239), (306, 16242), (314, 16293), (322, 16350), (323, 16362), (326, 16371),

Gene: Tyrumbra\_25 Start: 12826, Stop: 14847, Start Num: 29

Candidate Starts for Tyrumbra\_25:

(Start: 29 @12826 has 49 MA's), (117, 13411), (131, 13492), (137, 13516), (149, 13561), (156, 13582), (181, 13735), (214, 13993), (216, 14065), (222, 14125), (223, 14149), (246, 14287), (250, 14311), (251, 14314), (270, 14425), (293, 14554), (294, 14569), (296, 14578), (304, 14605), (307, 14617), (311, 14647), (316, 14674), (334, 14776),

Gene: Valary\_22 Start: 12733, Stop: 14619, Start Num: 32

Candidate Starts for Valary\_22:

(Start: 32 @12733 has 98 MA's), (69, 12970), (73, 12982), (77, 13036), (106, 13258), (139, 13420), (147, 13453), (191, 13705), (203, 13777), (220, 13834), (222, 13846), (239, 13963), (246, 14008), (247, 14011), (267, 14134), (269, 14146), (281, 14206), (304, 14359), (306, 14368), (317, 14440), (321, 14470), (335, 14542), (340, 14566),

Gene: VanDeWege\_22 Start: 12661, Stop: 14547, Start Num: 32

Candidate Starts for VanDeWege\_22:

(Start: 32 @12661 has 98 MA's), (69, 12898), (73, 12910), (77, 12964), (106, 13186), (139, 13348), (147, 13381), (191, 13633), (203, 13705), (220, 13762), (222, 13774), (239, 13891), (246, 13936), (247, 13939), (267, 14062), (269, 14074), (281, 14134), (304, 14287), (306, 14296), (317, 14368), (321, 14398), (335, 14470), (340, 14494),

Gene: Verity\_21 Start: 14990, Stop: 16909, Start Num: 32

Candidate Starts for Verity\_21:

(Start: 32 @14990 has 98 MA's), (47, 15089), (64, 15206), (67, 15218), (68, 15221), (87, 15395), (108, 15509), (114, 15542), (124, 15608), (125, 15614), (137, 15668), (142, 15692), (152, 15728), (186, 15944), (189, 15962), (191, 15968), (201, 16031), (204, 16043), (205, 16046), (206, 16058), (226, 16148), (231, 16175), (257, 16334), (268, 16412), (275, 16448), (287, 16508), (293, 16553), (304, 16664), (308, 16697), (322, 16781), (325, 16799), (332, 16829),

Gene: ViaConlectus\_22 Start: 15542, Stop: 17461, Start Num: 32

Candidate Starts for ViaConlectus\_22:

(Start: 32 @15542 has 98 MA's), (64, 15758), (68, 15773), (87, 15947), (114, 16094), (124, 16160), (125, 16166), (137, 16220), (142, 16244), (148, 16268), (186, 16496), (189, 16514), (191, 16520), (201, 16583), (204, 16595), (205, 16598), (206, 16610), (226, 16700), (231, 16727), (257, 16886), (268, 16964), (287, 17060), (292, 17096), (297, 17159), (300, 17189), (304, 17216), (308, 17249), (322, 17333), (331, 17378),

Gene: Viceroy\_24 Start: 13492, Stop: 15324, Start Num: 43

Candidate Starts for Viceroy\_24:

(Start: 43 @13492 has 26 MA's), (45, 13501), (58, 13600), (105, 13966), (135, 14134), (139, 14149), (156, 14209), (165, 14257), (166, 14263), (173, 14287), (187, 14404), (188, 14410), (205, 14503), (224, 14584), (241, 14677), (242, 14692), (250, 14740), (255, 14764), (264, 14812), (266, 14836), (273, 14884), (283, 14926), (303, 15061), (304, 15073), (306, 15082), (316, 15142), (326, 15211),

(334, 15244),

Gene: Vivi2\_20 Start: 15311, Stop: 17209, Start Num: 32

Candidate Starts for Vivi2\_20:

(Start: 32 @15311 has 98 MA's), (68, 15542), (73, 15560), (104, 15818), (129, 15956), (145, 16025), (154, 16058), (189, 16283), (191, 16289), (201, 16352), (204, 16364), (205, 16367), (206, 16379), (226, 16466), (246, 16589), (250, 16625), (274, 16769), (285, 16820), (305, 16964), (306, 16967), (307, 16970), (314, 17018), (322, 17075),

Gene: Wayne3\_26 Start: 14457, Stop: 16289, Start Num: 43

Candidate Starts for Wayne3\_26:

(Start: 43 @14457 has 26 MA's), (45, 14466), (58, 14565), (105, 14931), (135, 15099), (139, 15114), (156, 15174), (165, 15222), (166, 15228), (173, 15252), (187, 15369), (188, 15375), (205, 15468), (224, 15549), (241, 15642), (242, 15657), (250, 15705), (255, 15729), (264, 15777), (266, 15801), (273, 15849), (283, 15891), (303, 16026), (304, 16038), (306, 16047), (316, 16107), (326, 16176), (334, 16209),

Gene: Wheelie\_24 Start: 13808, Stop: 15640, Start Num: 43

Candidate Starts for Wheelie\_24:

(Start: 43 @13808 has 26 MA's), (45, 13817), (58, 13916), (105, 14282), (135, 14450), (139, 14465), (156, 14525), (165, 14573), (166, 14579), (173, 14603), (187, 14720), (188, 14726), (205, 14819), (224, 14900), (241, 14993), (242, 15008), (250, 15056), (255, 15080), (264, 15128), (266, 15152), (273, 15200), (283, 15242), (303, 15377), (304, 15389), (306, 15398), (316, 15458), (326, 15527), (334, 15560),

Gene: Wilca\_24 Start: 12993, Stop: 14771, Start Num: 42

Candidate Starts for Wilca\_24:

(Start: 42 @12993 has 12 MA's), (45, 13005), (88, 13350), (113, 13464), (135, 13590), (156, 13656), (165, 13704), (173, 13734), (205, 13947), (224, 14028), (226, 14037), (239, 14115), (241, 14121), (242, 14136), (266, 14280), (271, 14322), (283, 14373), (304, 14520), (306, 14529), (330, 14679), (334, 14691), (344, 14751),

Gene: Wilde\_20 Start: 13011, Stop: 14774, Start Num: 40

Candidate Starts for Wilde\_20:

(28, 12945), (Start: 40 @13011 has 12 MA's), (103, 13449), (116, 13518), (121, 13542), (136, 13611), (159, 13692), (179, 13800), (183, 13851), (184, 13863), (186, 13872), (226, 14064), (228, 14073), (229, 14076), (239, 14142), (242, 14163), (243, 14169), (246, 14187), (266, 14298), (276, 14358), (285, 14397), (290, 14439), (307, 14532), (312, 14571), (339, 14724),

Gene: Wizard\_19 Start: 11982, Stop: 13874, Start Num: 32

Candidate Starts for Wizard\_19:

(Start: 32 @11982 has 98 MA's), (69, 12219), (73, 12231), (77, 12285), (106, 12510), (139, 12672), (147, 12705), (155, 12732), (220, 13098), (222, 13110), (239, 13227), (246, 13272), (247, 13275), (259, 13335), (261, 13353), (267, 13398), (269, 13410), (270, 13413), (292, 13533), (296, 13572), (306, 13632), (317, 13704), (321, 13734), (325, 13758), (331, 13785), (332, 13788), (336, 13815),

Gene: Xkcd426\_14 Start: 14736, Stop: 16433, Start Num: 50

Candidate Starts for Xkcd426\_14:

(48, 14721), (Start: 50 @14736 has 11 MA's), (66, 14823), (83, 14970), (99, 15072), (110, 15117), (126, 15210), (128, 15219), (129, 15225), (141, 15282), (154, 15327), (155, 15330), (164, 15369), (173, 15411), (185, 15522), (233, 15771), (234, 15774), (239, 15798), (245, 15831), (250, 15870), (252, 15876), (265, 15939), (269, 15981), (274, 16008), (275, 16011), (282, 16047), (315, 16257), (324, 16320), (327, 16335), (332, 16353),

Gene: YDN12\_14 Start: 13688, Stop: 15382, Start Num: 50

Candidate Starts for YDN12\_14:

(Start: 50 @13688 has 11 MA's), (52, 13697), (72, 13799), (86, 13955), (106, 14051), (119, 14132), (126, 14177), (128, 14186), (134, 14219), (140, 14246), (141, 14249), (155, 14297), (162, 14330), (163, 14333), (171, 14372), (173, 14378), (179, 14420), (185, 14489), (226, 14669), (236, 14735), (239, 14747), (259, 14867), (265, 14900), (269, 14942), (290, 15059), (306, 15155), (315, 15212), (324, 15275), (326, 15281), (334, 15314), (337, 15338), (343, 15356), (346, 15371),

Gene: Yeti\_27 Start: 13790, Stop: 15646, Start Num: 29

Candidate Starts for Yeti\_27:

(Start: 29 @13790 has 49 MA's), (117, 14366), (123, 14411), (131, 14447), (149, 14516), (156, 14537), (157, 14540), (163, 14570), (181, 14690), (193, 14771), (218, 14885), (222, 14912), (251, 15101), (271, 15227), (293, 15341), (294, 15356), (307, 15404), (311, 15434), (313, 15446), (316, 15461), (318, 15476), (325, 15527), (329, 15545), (334, 15563),

Gene: YorkOnyx\_21 Start: 14834, Stop: 16753, Start Num: 32

Candidate Starts for YorkOnyx\_21:

(Start: 32 @14834 has 98 MA's), (51, 14969), (68, 15065), (104, 15359), (118, 15428), (124, 15476), (129, 15500), (137, 15536), (145, 15569), (151, 15593), (172, 15686), (189, 15827), (191, 15833), (201, 15896), (204, 15908), (205, 15911), (206, 15923), (220, 15959), (223, 15995), (226, 16010), (234, 16064), (246, 16133), (250, 16169), (257, 16202), (267, 16274), (274, 16313), (285, 16364), (304, 16502), (305, 16508), (306, 16511), (314, 16562), (322, 16619), (323, 16631), (326, 16640),

Gene: YungMoney\_21 Start: 13292, Stop: 15184, Start Num: 32

Candidate Starts for YungMoney\_21:

(Start: 32 @13292 has 98 MA's), (69, 13529), (73, 13541), (77, 13595), (139, 13982), (147, 14015), (154, 14039), (191, 14279), (220, 14408), (222, 14420), (225, 14456), (239, 14537), (246, 14582), (247, 14585), (259, 14645), (267, 14708), (269, 14720), (306, 14942), (317, 15014), (321, 15044), (325, 15068), (331, 15095), (332, 15098),

Gene: Zagie\_25 Start: 13996, Stop: 15828, Start Num: 43

Candidate Starts for Zagie\_25:

(Start: 43 @13996 has 26 MA's), (45, 14005), (58, 14104), (105, 14470), (135, 14638), (139, 14653), (156, 14713), (165, 14761), (166, 14767), (173, 14791), (187, 14908), (188, 14914), (205, 15007), (224, 15088), (241, 15181), (242, 15196), (250, 15244), (255, 15268), (264, 15316), (266, 15340), (273, 15388), (283, 15430), (303, 15565), (304, 15577), (306, 15586), (316, 15646), (326, 15715), (334, 15748),

Gene: Zhafia\_28 Start: 14319, Stop: 16151, Start Num: 43

Candidate Starts for Zhafia\_28:

(Start: 43 @14319 has 26 MA's), (45, 14328), (58, 14427), (105, 14793), (135, 14961), (139, 14976), (156, 15036), (165, 15084), (166, 15090), (173, 15114), (187, 15231), (188, 15237), (205, 15330), (224, 15411), (241, 15504), (242, 15519), (250, 15567), (255, 15591), (264, 15639), (266, 15663), (273, 15711), (283, 15753), (303, 15888), (304, 15900), (306, 15909), (316, 15969), (326, 16038), (334, 16071),

Gene: Zipp\_21 Start: 15639, Stop: 17558, Start Num: 32

Candidate Starts for Zipp\_21:

(Start: 32 @15639 has 98 MA's), (47, 15738), (64, 15855), (67, 15867), (68, 15870), (87, 16044), (108, 16158), (114, 16191), (124, 16257), (125, 16263), (137, 16317), (142, 16341), (152, 16377), (186, 16593), (189, 16611), (191, 16617), (201, 16680), (204, 16692), (205, 16695), (206, 16707), (226, 16797), (231, 16824), (257, 16983), (268, 17061), (275, 17097), (287, 17157), (293, 17202), (304,

17313), (308, 17346), (322, 17430), (325, 17448), (332, 17478),

Gene: Zitch\_23 Start: 14769, Stop: 16688, Start Num: 32

Candidate Starts for Zitch\_23:

(Start: 32 @14769 has 98 MA's), (64, 14988), (67, 15000), (68, 15003), (77, 15075), (87, 15177), (114, 15324), (124, 15390), (125, 15396), (137, 15450), (142, 15474), (148, 15498), (186, 15726), (189, 15744), (191, 15750), (201, 15813), (204, 15825), (205, 15828), (206, 15840), (226, 15930), (231, 15957), (257, 16116), (268, 16194), (287, 16290), (322, 16560), (325, 16578), (332, 16608),

Gene: Zooman\_73 Start: 42476, Stop: 44485, Start Num: 10

Candidate Starts for Zooman\_73:

(1, 42350), (2, 42356), (3, 42377), (Start: 10 @42476 has 6 MA's), (14, 42497), (33, 42611), (36, 42629), (38, 42641), (47, 42716), (115, 43187), (132, 43271), (149, 43343), (150, 43346), (205, 43694), (279, 44105), (320, 44375),