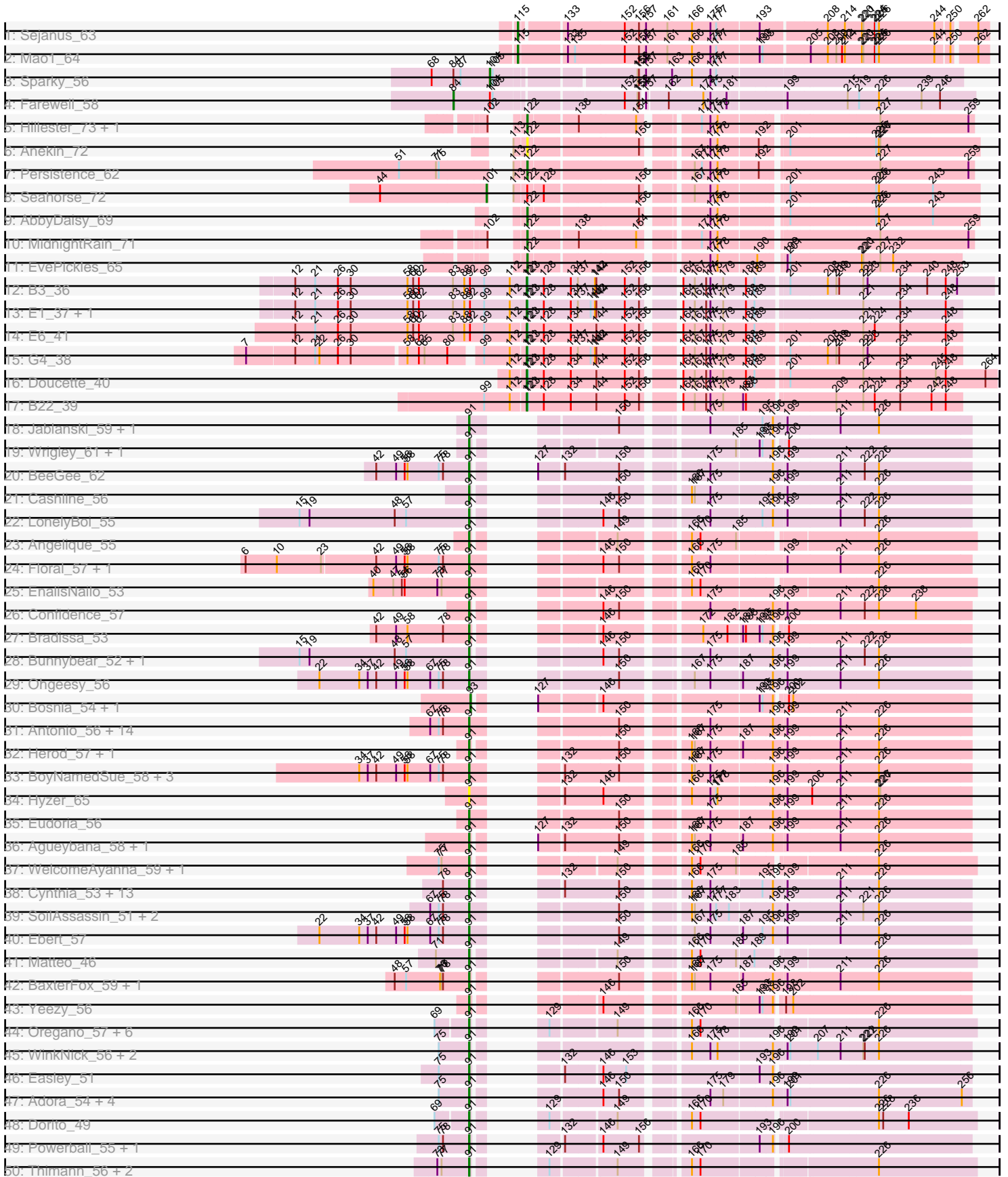
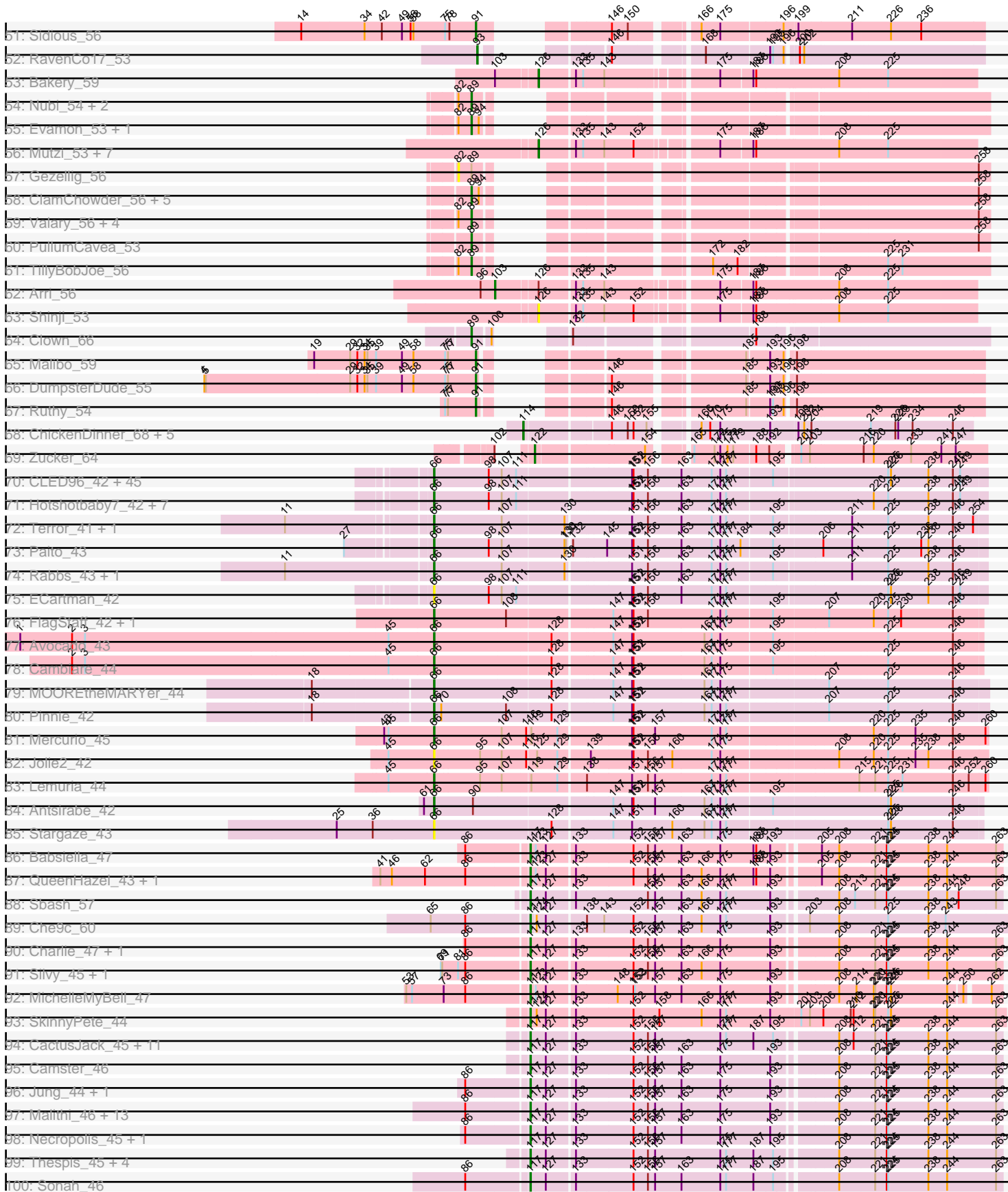


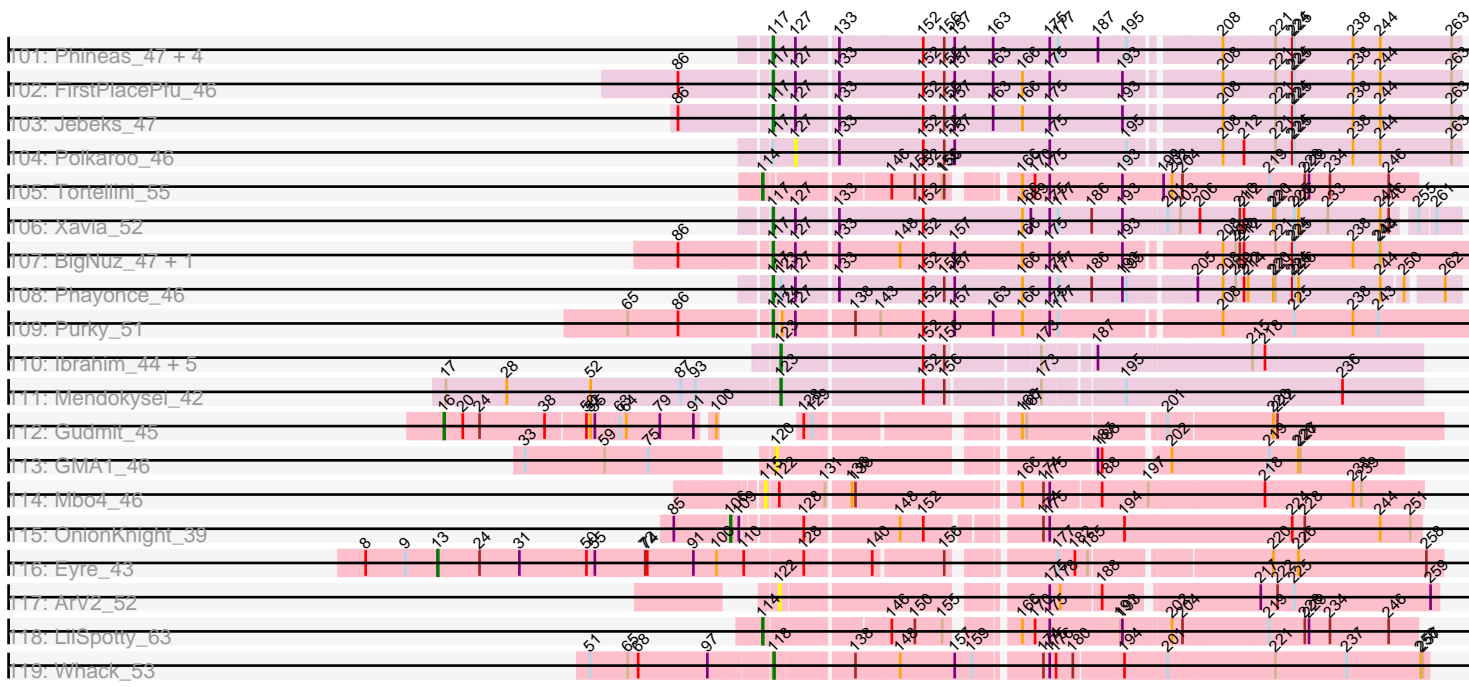
Pham 169648



Pham 169648



Pham 169648



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 169648 Report

This analysis was run 07/09/24 on database version 566.

Pham number 169648 has 299 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Sejanus\_63
- Track 2 : Mao1\_64
- Track 3 : Sparky\_56
- Track 4 : Farewell\_58
- Track 5 : Hillester\_73, RadFad\_73
- Track 6 : Anekin\_72
- Track 7 : Persistence\_62
- Track 8 : Seahorse\_72
- Track 9 : AbbyDaisy\_69
- Track 10 : MidnightRain\_71
- Track 11 : EvePickles\_65
- Track 12 : B3\_36
- Track 13 : E1\_37, Anatole\_37
- Track 14 : E6\_41
- Track 15 : G4\_38
- Track 16 : Doucette\_40
- Track 17 : B22\_39
- Track 18 : Jablanski\_59, Pytheas\_59
- Track 19 : Wrigley\_61, Posh\_59
- Track 20 : BeeGee\_62
- Track 21 : Cashline\_56
- Track 22 : LonelyBoi\_55
- Track 23 : Angelique\_55
- Track 24 : Floral\_57, Pollux\_59
- Track 25 : EnalisNailo\_53
- Track 26 : Confidence\_57
- Track 27 : Bradissa\_53
- Track 28 : Bunnybear\_52, Maridalia\_60
- Track 29 : Ohgeesy\_56
- Track 30 : Bosnia\_54, JCole\_50
- Track 31 : Antonio\_56, Manasvini\_57, Bialota\_54, Kita\_57, Neobush\_56, Polly\_53, Trumpet\_56, EdnaMode\_50, Yeet412\_51, Zirinka\_53, Lilas\_55, Tayonia\_56, Pickett\_49, Zameen\_56, Suscepit\_56
- Track 32 : Herod\_57, Hugley\_55
- Track 33 : BoyNamedSue\_58, EMSquaredA\_56, Marteena\_55, AlumE\_58
- Track 34 : Hyzer\_65
- Track 35 : Eudoria\_56

- Track 36 : Agueybana\_58, Madeline\_57
- Track 37 : WelcomeAyanna\_59, ThankyouJordi\_59
- Track 38 : Cynthia\_53, Whiteclaw\_53, Sahara\_52, Haley23\_53, Bjanes7\_50, Savage\_53, Nettuno\_49, Lamberg\_49, GemG\_53, Gizermo\_53, Mocha12\_53, Clap\_53, TuertoX\_53, Sproutie\_53
- Track 39 : SoilAssassin\_51, LordFarquaad\_53, Attis\_51
- Track 40 : Ebert\_57
- Track 41 : Matteo\_46
- Track 42 : BaxterFox\_59, PantheRoc\_59
- Track 43 : Yeezy\_56
- Track 44 : Oregano\_57, Beenie\_47, Samman98\_54, DobbysSock\_46, Clark\_53, MichaelScott\_54, Annalisa\_56
- Track 45 : WinkNick\_56, Dolores\_55, Sekhmet\_55
- Track 46 : Easley\_51
- Track 47 : Adora\_54, Shlim410\_55, Hortense\_57, Twinkle\_56, Howe\_57
- Track 48 : Dorito\_49
- Track 49 : Powerball\_55, PhriskyACE\_54
- Track 50 : Thimann\_56, Mcklovin\_53, Suerte\_50
- Track 51 : Sidious\_56
- Track 52 : RavenCo17\_53
- Track 53 : Bakery\_59
- Track 54 : Nubi\_54, SmokingBunny\_54, Togo\_53
- Track 55 : Evamon\_53, Salvador\_53
- Track 56 : Mutzi\_53, Portcullis\_55, Jambalaya\_53, Fireball\_56, Savbucketdawg\_53, Twister6\_56, YungMoney\_56, Danyall\_55
- Track 57 : Gezellig\_56
- Track 58 : ClamChowder\_56, Fugax\_57, KimmyK\_55, PinkCoffee\_56, Barb\_56, Phlop\_53
- Track 59 : Valary\_56, Halo3\_54, VanDeWege\_57, RogerDodger\_57, Wizard\_53
- Track 60 : PullumCavea\_53
- Track 61 : TillyBobJoe\_56
- Track 62 : Arri\_56
- Track 63 : Shinji\_53
- Track 64 : Clown\_66
- Track 65 : Malibo\_59
- Track 66 : DumpsterDude\_55
- Track 67 : Ruthy\_54
- Track 68 : ChickenDinner\_68, Misha28\_64, Awesomesauce\_66, DocMcStuffins\_65, Piper2020\_67, TootsiePop\_64
- Track 69 : Zucker\_64
- Track 70 : CLED96\_42, Schiebel\_42, JorRay\_42, Phish\_42, Coleslaw\_42, Hope\_42, GoldenAsh\_42, Barkley26\_42, Angel\_42, Avrafan\_42, Zombie\_42, Plagueis\_42, Olga\_42, Cedasite\_42, BPs\_42, Kareem\_42, Darionha\_42, BruceB\_42, Crespo\_42, Jane\_42, Marmie\_42, Renaissance\_42, Gomashi\_42, DMoney\_42, Camri\_42, Phreak\_42, Annihilator\_42, Mowgli\_42, Peeb\_42, Remy19\_42, Frosty24\_42, Gideon\_42, TomBrady\_42, LouisV14\_44, ZoMa\_42, OctaviousRex\_42, Cherrybomb426\_42, Grizzly\_42, BQuat\_42, CassieYates\_42, PinkYoshi\_42, Halo\_42, ShaboiShabazz\_42, Sweets\_42, Kasen3\_42, Sizemore\_42
- Track 71 : Hotshotbaby7\_42, Chance64\_42, Liefie\_42, Aroostook\_42, Jolene\_42, DNAllI\_0041, Periodt\_42, Jonghyun\_41
- Track 72 : Terror\_41, Taheera\_41
- Track 73 : Paito\_43
- Track 74 : Rabbs\_43, Sneeze\_43

- Track 75 : ECartman\_42
- Track 76 : FlagStaff\_42, Pace1224\_42
- Track 77 : Avocado\_43
- Track 78 : Cambiare\_44
- Track 79 : MOOREtheMARYer\_44
- Track 80 : Pinnie\_42
- Track 81 : Mercurio\_45
- Track 82 : Jolie2\_42
- Track 83 : Lemuria\_44
- Track 84 : Antsirabe\_42
- Track 85 : Stargaze\_43
- Track 86 : Babsiella\_47
- Track 87 : QueenHazel\_43, Xula\_42
- Track 88 : Sbash\_57
- Track 89 : Che9c\_60
- Track 90 : Charlie\_47, Journey\_49
- Track 91 : Silvy\_45, Aggie\_45
- Track 92 : MichelleMyBell\_47
- Track 93 : SkinnyPete\_44
- Track 94 : CactusJack\_45, Philonius\_47, GreaseLightnin\_46, Willsammy\_44, Glaske\_45, StevieRay\_45, KilKor\_45, Juniormint\_46, Megiddo\_45, Bunnies\_46, Ksquared\_45, Phalm\_45
- Track 95 : Camster\_46
- Track 96 : Jung\_44, HC\_45
- Track 97 : Malithi\_46, Phegasus\_46, Arib1\_46, Venti\_46, Vidya\_45, Techage\_45, Zilizabeth\_46, Kari\_45, Langerak\_46, Fishburne\_45, Mangethe\_46, Majeke\_46, Bartholomew\_45, Donovan\_46
- Track 98 : Necropolis\_45, Dynamo\_46
- Track 99 : Thespis\_45, Atcoo\_45, Brusacoram\_45, Xeno\_47, StressBall\_45
- Track 100 : Sonah\_46
- Track 101 : Phineas\_47, Pygmy\_49, Bogie\_49, Shipwreck\_49, HUHilltop\_47
- Track 102 : FirstPlacePfu\_46
- Track 103 : Jebeks\_47
- Track 104 : Polkaroo\_46
- Track 105 : Tortellini\_55
- Track 106 : Xavia\_52
- Track 107 : BigNuz\_47, Nazo\_48
- Track 108 : Phayonce\_46
- Track 109 : Purky\_51
- Track 110 : Ibrahim\_44, Bernal13\_44, ZenTime222\_43, Whitty\_43, RonRayGun\_44, Nairb\_43
- Track 111 : Mendokysei\_42
- Track 112 : Gudmit\_45
- Track 113 : GMA1\_46
- Track 114 : Mbo4\_46
- Track 115 : OnionKnight\_39
- Track 116 : Eyre\_43
- Track 117 : ArV2\_52
- Track 118 : LilSpotty\_63
- Track 119 : Whack\_53

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

The start number called the most often in the published annotations is 91, it was called in 86 of the 275 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adora\_54, Agueybana\_58, AlumE\_58, Angelique\_55, Annalisa\_56, Antonio\_56, Attis\_51, BaxterFox\_59, BeeGee\_62, Beenie\_47, Bialota\_54, Bjaner7\_50, BoyNamedSue\_58, Bradissa\_53, Bunnybear\_52, Cashline\_56, Clap\_53, Clark\_53, Confidence\_57, Cynthia\_53, DobbysSock\_46, Dolores\_55, Dorito\_49, DumpsterDude\_55, EMSquaredA\_56, Easley\_51, Ebert\_57, EdnaMode\_50, EnalisNailo\_53, Eudoria\_56, Floral\_57, GemG\_53, Gizermo\_53, Haley23\_53, Herod\_57, Hortense\_57, Howe\_57, Hugley\_55, Hyzer\_65, Jablanski\_59, Kita\_57, Lamberg\_49, Lilas\_55, LonelyBoi\_55, LordFarquaad\_53, Madeline\_57, Malibo\_59, Manasvini\_57, Maridalia\_60, Marteena\_55, Matteo\_46, Mcklovin\_53, MichaelScott\_54, Mocha12\_53, Neobush\_56, Nettuno\_49, Ohgeesy\_56, Oregano\_57, PantheRoc\_59, PhriskyACE\_54, Pickett\_49, Pollux\_59, Polly\_53, Posh\_59, Powerball\_55, Pytheas\_59, Ruthy\_54, Sahara\_52, Samman98\_54, Savage\_53, Sekhmet\_55, Shlim410\_55, Sidious\_56, SoilAssassin\_51, Sproutie\_53, Suerte\_50, Suscepit\_56, Tayonia\_56, ThankyouJordi\_59, Thimann\_56, Trumpet\_56, TuertoX\_53, Twinkle\_56, WelcomeAyanna\_59, Whiteclaw\_53, WinkNick\_56, Wrigley\_61, Yeet412\_51, Yeezy\_56, Zameen\_56, Zirinka\_53,

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

- Eyre\_43, Gudmit\_45,

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

- AbbyDaisy\_69, Aggie\_45, Anatole\_37, Anekin\_72, Angel\_42, Annihilator\_42, Antsirabe\_42, ArV2\_52, Arib1\_46, Aroostook\_42, Arri\_56, Atcoo\_45, Avocado\_43, Avrafan\_42, Awesomesauce\_66, B22\_39, B3\_36, BPs\_42, BQuat\_42, Babsiella\_47, Bakery\_59, Barb\_56, Barkley26\_42, Bartholomew\_45, Bernal13\_44, BigNuz\_47, Bogie\_49, Bosnia\_54, BruceB\_42, Brusacoram\_45, Bunnies\_46, CLED96\_42, CactusJack\_45, Cambiare\_44, Camri\_42, Camster\_46, CassieYates\_42, Cedasite\_42, Chance64\_42, Charlie\_47, Che9c\_60, Cherrybomb426\_42, ChickenDinner\_68, ClamChowder\_56, Clown\_66, Coleslaw\_42, Crespo\_42, DMoney\_42, DNAIII\_0041, Danyall\_55, Darionha\_42, DocMcStuffins\_65, Donovan\_46, Doucette\_40, Dynamo\_46, E1\_37, E6\_41, ECartman\_42, Evamon\_53, EvePickles\_65, Farewell\_58, Fireball\_56, FirstPlacePfu\_46, Fishburne\_45, FlagStaff\_42, Frosty24\_42, Fugax\_57, G4\_38, GMA1\_46, Gezellig\_56, Gideon\_42, Glaske\_45, GoldenAsh\_42, Gomashi\_42, GreaseLightnin\_46, Grizzly\_42, HC\_45, HUHilltop\_47, Halo3\_54, Halo\_42, Hillester\_73, Hope\_42, Hotshotbaby7\_42, Ibrahim\_44, JCole\_50, Jambalaya\_53, Jane\_42, Jebeks\_47, Jolene\_42, Jolie2\_42, Jonghyun\_41, JorRay\_42, Journey\_49, Jung\_44, Juniormint\_46, Kareem\_42, Kari\_45, Kasen3\_42, KilKor\_45, KimmyK\_55, Ksquared\_45, Langerak\_46, Lemuria\_44, Liefie\_42, LilSpotty\_63, LouisV14\_44, MOOREtheMARYer\_44, Majeke\_46, Malithi\_46, Mangethe\_46, Mao1\_64, Marmie\_42, Mbo4\_46, Megiddo\_45, Mendokysei\_42, Mercurio\_45, MichelleMyBell\_47, MidnightRain\_71, Misha28\_64, Mowgli\_42, Mutzi\_53, Nairb\_43, Nazo\_48, Necropolis\_45, Nubi\_54, OctaviousRex\_42, Olga\_42, OnionKnight\_39, Pace1224\_42, Paito\_43, Peeb\_42, Periodt\_42, Persistence\_62, Phalm\_45, Phayonce\_46, Phegasus\_46, Philonius\_47, Phineas\_47, Phish\_42, Phlop\_53, Phreak\_42, PinkCoffee\_56, PinkYoshi\_42, Pinnie\_42, Piper2020\_67, Plagueis\_42, Polkaroo\_46, Portcullis\_55,

PullumCavea\_53, Purky\_51, Pygmy\_49, QueenHazel\_43, Rabbs\_43, RadFad\_73, RavenCo17\_53, Remy19\_42, Renaissance\_42, RogerDodger\_57, RonRayGun\_44, Salvador\_53, Savbucketdawg\_53, Sbash\_57, Schiebel\_42, Seahorse\_72, Sejanus\_63, ShaboiShabazz\_42, Shinji\_53, Shipwreck\_49, Silvy\_45, Sizemore\_42, SkinnyPete\_44, SmokingBunny\_54, Sneeze\_43, Sonah\_46, Sparky\_56, Stargaze\_43, StevieRay\_45, StressBall\_45, Sweets\_42, Taheera\_41, Techage\_45, Terror\_41, Thespis\_45, TillyBobJoe\_56, Togo\_53, TomBrady\_42, TootsiePop\_64, Tortellini\_55, Twister6\_56, Valary\_56, VanDeWege\_57, Venti\_46, Vidya\_45, Whack\_53, Whitty\_43, Willsammy\_44, Wizard\_53, Xavia\_52, Xeno\_47, Xula\_42, YungMoney\_56, ZenTime222\_43, Zilizebeth\_46, ZoMa\_42, Zombie\_42, Zucker\_64,

### Summary by start number:

#### Start 13:

- Found in 1 of 299 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Eyre\_43 (singleton),

#### Start 16:

- Found in 1 of 299 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gudmit\_45 (singleton),

#### Start 66:

- Found in 71 of 299 ( 23.7% ) of genes in pham
- Manual Annotations of this start: 66 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angel\_42 (G1), Annihilator\_42 (G1), Antsirabe\_42 (G5), Aroostook\_42 (G1), Avocado\_43 (G2), Avrafan\_42 (G1), BPs\_42 (G1), BQuat\_42 (G1), Barkley26\_42 (G1), BruceB\_42 (G1), CLED96\_42 (G1), Cambiare\_44 (G2), Camri\_42 (G1), CassieYates\_42 (G1), Cedasite\_42 (G1), Chance64\_42 (G1), Cherrybomb426\_42 (G1), Coleslaw\_42 (G1), Crespo\_42 (G1), DMoney\_42 (G1), DNAlll\_0041 (G1), Darionha\_42 (G1), ECartman\_42 (G1), FlagStaff\_42 (G2), Frosty24\_42 (G1), Gideon\_42 (G1), GoldenAsh\_42 (G1), Gomashi\_42 (G1), Grizzly\_42 (G1), Halo\_42 (G1), Hope\_42 (G1), Hotshotbaby7\_42 (G1), Jane\_42 (G1), Jolene\_42 (G1), Jolie2\_42 (G4), Jonghyun\_41 (G1), JorRay\_42 (G1), Kareem\_42 (G1), Kasen3\_42 (G1), Lemuria\_44 (G4), Liefie\_42 (G1), LouisV14\_44 (G1), MOOREtheMARYer\_44 (G3), Marmie\_42 (G1), Mercurio\_45 (G4), Mowgli\_42 (G1), OctaviousRex\_42 (G1), Olga\_42 (G1), Pace1224\_42 (G2), Paito\_43 (G1), Peeb\_42 (G1), Periodt\_42 (G1), Phish\_42 (G1), Phreak\_42 (G1), PinkYoshi\_42 (G1), Pinnie\_42 (G3), Plagueis\_42 (G1), Rabbs\_43 (G1), Remy19\_42 (G1), Renaissance\_42 (G1), Schiebel\_42 (G1), ShaboiShabazz\_42 (G1), Sizemore\_42 (G1), Sneeze\_43 (G1), Stargaze\_43 (G5), Sweets\_42 (G1), Taheera\_41 (G1), Terror\_41 (G1), TomBrady\_42 (G1), ZoMa\_42 (G1), Zombie\_42 (G1),

#### Start 82:

- Found in 12 of 299 ( 4.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Gezellig\_56 (DC1),



Start 84:

- Found in 2 of 299 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 275
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Farewell\_58 (AF),

Start 89:

- Found in 20 of 299 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 19 of 275
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Barb\_56 (DC1), ClamChowder\_56 (DC1), Clown\_66 (DC2), Evamon\_53 (DC1), Fugax\_57 (DC1), Halo3\_54 (DC1), KimmyK\_55 (DC1), Nubi\_54 (DC1), Phlop\_53 (DC1), PinkCoffee\_56 (DC1), PullumCavea\_53 (DC1), RogerDodger\_57 (DC1), Salvador\_53 (DC1), SmokingBunny\_54 (DC1), TillyBobJoe\_56 (DC1), Togo\_53 (DC1), Valary\_56 (DC1), VanDeWege\_57 (DC1), Wizard\_53 (DC1),

Start 91:

- Found in 93 of 299 ( 31.1% ) of genes in pham
- Manual Annotations of this start: 86 of 275
- Called 97.8% of time when present
- Phage (with cluster) where this start called: Adora\_54 (CZ4), Agueybana\_58 (CZ1), AlumE\_58 (CZ1), Angelique\_55 (CY1), Annalisa\_56 (CZ4), Antonio\_56 (CZ1), Attis\_51 (CZ2), BaxterFox\_59 (CZ3), BeeGee\_62 (CY), Beenie\_47 (CZ4), Bialota\_54 (CZ1), Bjanes7\_50 (CZ2), BoyNamedSue\_58 (CZ1), Bradissa\_53 (CY1), Bunnybear\_52 (CZ), Cashline\_56 (CY), Clap\_53 (CZ2), Clark\_53 (CZ4), Confidence\_57 (CY1), Cynthia\_53 (CZ2), DobbysSock\_46 (CZ4), Dolores\_55 (CZ4), Dorito\_49 (CZ4), DumpsterDude\_55 (DW), EMSquaredA\_56 (CY1), Easley\_51 (CZ4), Ebert\_57 (CZ2), EdnaMode\_50 (CZ2), EnalisNailo\_53 (CY1), Eudoria\_56 (CZ1), Floral\_57 (CY1), GemG\_53 (CZ2), Gizermo\_53 (CZ2), Haley23\_53 (CZ2), Herod\_57 (CZ1), Hortense\_57 (CZ4), Howe\_57 (CZ4), Hugley\_55 (CZ1), Hyzer\_65 (CZ1), Jablanski\_59 (CY), Kita\_57 (CZ1), Lamberg\_49 (CZ2), Lilas\_55 (CY1), LonelyBoi\_55 (CY), LordFarquaad\_53 (CZ2), Madeline\_57 (CZ1), Malibo\_59 (DW), Manasvini\_57 (CZ1), Maridalia\_60 (CZ1), Marteena\_55 (CY1), Matteo\_46 (CZ2), Mcklovin\_53 (CZ4), MichaelScott\_54 (CZ4), Mocha12\_53 (CZ2), Neobush\_56 (CZ1), Nettuno\_49 (CZ2), Ohgeesy\_56 (CZ), Oregano\_57 (CZ4), PantheRoc\_59 (CZ3), PhriskyACE\_54 (CZ4), Pickett\_49 (CZ2), Pollux\_59 (CY1), Polly\_53 (CZ1), Posh\_59 (CY), Powerball\_55 (CZ4), Pytheas\_59 (CY), Ruthy\_54 (DW), Sahara\_52 (CZ2), Samman98\_54 (CZ4), Savage\_53 (CZ2), Sekhmet\_55 (CZ4), Shlim410\_55 (CZ4), Sidious\_56 (CZ7), SoilAssassin\_51 (CZ2), Sproutie\_53 (CZ2), Suerte\_50 (CZ4), Suscepit\_56 (CZ1), Tayonia\_56 (CZ1), ThankyouJordi\_59 (CZ1), Thimann\_56 (CZ4), Trumpet\_56 (CZ1), TuertoX\_53 (CZ2), Twinkle\_56 (CZ4), WelcomeAyanna\_59 (CZ1), Whiteclaw\_53 (CZ2), WinkNick\_56 (CZ4), Wrigley\_61 (CY), Yeet412\_51 (CZ2), Yeezy\_56 (CZ3), Zameen\_56 (CZ1), Zirinka\_53 (CZ1),

Start 93:

- Found in 4 of 299 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 275
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Bosnia\_54 (CZ1), JCole\_50 (CZ2), RavenCo17\_53 (CZ8),

Start 101:

- Found in 1 of 299 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Seahorse\_72 (AY),

Start 103:

- Found in 2 of 299 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 275
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Arri\_56 (DC1),

Start 104:

- Found in 2 of 299 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 275
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Sparky\_56 (AF),

Start 106:

- Found in 1 of 299 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: OnionKnight\_39 (singleton),

Start 114:

- Found in 8 of 299 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 6 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Awesomesauce\_66 (F1), ChickenDinner\_68 (F1), DocMcStuffins\_65 (F1), LilSpotty\_63 (singleton), Misha28\_64 (F1), Piper2020\_67 (F1), TootsiePop\_64 (F1), Tortellini\_55 (P2),

Start 115:

- Found in 3 of 299 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mao1\_64 (AD), Mbo4\_46 (singleton), Sejanus\_63 (AD),

Start 117:

- Found in 61 of 299 ( 20.4% ) of genes in pham
- Manual Annotations of this start: 57 of 275
- Called 98.4% of time when present
- Phage (with cluster) where this start called: Aggie\_45 (N), Arib1\_46 (P1), Atcoo\_45 (P1), Babsiella\_47 (I1), Bartholomew\_45 (P1), BigNuz\_47 (P4), Bogie\_49 (P1), Brusacoram\_45 (P1), Bunnies\_46 (P1), CactusJack\_45 (P1), Camster\_46 (P1), Charlie\_47 (N), Che9c\_60 (I2), Donovan\_46 (P1), Dynamo\_46 (P1), FirstPlacePfu\_46 (P1), Fishburne\_45 (P1), Glaske\_45 (P1), GreaseLightnin\_46 (P1), HC\_45 (I1), HUHilltop\_47 (P1), Jebeks\_47 (P1), Journey\_49 (N), Jung\_44 (P1), Juniormint\_46 (P1), Kari\_45 (P1), KilKor\_45 (P1), Ksquared\_45 (P1), Langerak\_46 (P1), Majeke\_46 (P1), Malithi\_46 (P1), Mangethe\_46 (P1), Megiddo\_45 (P1), MichelleMyBell\_47 (N), Nazo\_48 (P4), Necropolis\_45 (P1), Phalm\_45 (P1), Phayonce\_46 (P5), Phegasus\_46 (P1), Philonius\_47 (N), Phineas\_47 (P1), Purky\_51

(P6), Pygmy\_49 (P1), QueenHazel\_43 (I1), Sbash\_57 (I2), Shipwreck\_49 (P1), Silvy\_45 (N), SkinnyPete\_44 (N), Sonah\_46 (P1), StevieRay\_45 (P1), StressBall\_45 (P1), Techage\_45 (P1), Thespis\_45 (P1), Venti\_46 (P1), Vidya\_45 (P1), Willsammy\_44 (P1), Xavia\_52 (P3), Xen0\_47 (N), Xula\_42 (I1), Zilizebeth\_46 (P1),

Start 118:

- Found in 1 of 299 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Whack\_53 (singleton),

Start 120:

- Found in 1 of 299 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA1\_46 (singleton),

Start 121:

- Found in 7 of 299 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 7 of 275
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anatole\_37 (BV), B22\_39 (BW), B3\_36 (BV), Doucette\_40 (BW), E1\_37 (BV), E6\_41 (BW), G4\_38 (BW),

Start 122:

- Found in 11 of 299 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 6 of 275
- Called 81.8% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_69 (AY), Anekin\_72 (AY), ArV2\_52 (singleton), EvePickles\_65 (AY), Hillester\_73 (AY), MidnightRain\_71 (AY), Persistence\_62 (AY), RadFad\_73 (AY), Zucker\_64 (FN),

Start 123:

- Found in 19 of 299 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 7 of 275
- Called 36.8% of time when present
- Phage (with cluster) where this start called: Bernal13\_44 (T), Ibrahim\_44 (T), Mendokysej\_42 (T), Nairb\_43 (T), RonRayGun\_44 (T), Whitty\_43 (T), ZenTime222\_43 (T),

Start 126:

- Found in 11 of 299 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 9 of 275
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Bakery\_59 (DC1), Danyall\_55 (DC1), Fireball\_56 (DC1), Jambalaya\_53 (DC1), Mutzi\_53 (DC1), Portcullis\_55 (DC1), Savbucketdawg\_53 (DC1), Shinji\_53 (DC1), Twister6\_56 (DC1), YungMoney\_56 (DC1),

Start 127:

- Found in 66 of 299 ( 22.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.5% of time when present

- Phage (with cluster) where this start called: Polkaroo\_46 (P1),

### **Summary by clusters:**

There are 35 clusters represented in this pham: singleton, I2, CZ2, CZ3, CZ1, CZ8, CZ4, BV, BW, DW, FN, G5, G4, G3, G2, G1, I1, AF, P2, P3, CY1, P1, P6, AD, P4, P5, N, CZ, CY, T, AY, DC2, DC1, CZ7, F1,

Info for manual annotations of cluster AD:

- Start number 115 was manually annotated 2 times for cluster AD.

Info for manual annotations of cluster AF:

- Start number 84 was manually annotated 1 time for cluster AF.
- Start number 104 was manually annotated 1 time for cluster AF.

Info for manual annotations of cluster AY:

- Start number 101 was manually annotated 1 time for cluster AY.
- Start number 122 was manually annotated 5 times for cluster AY.

Info for manual annotations of cluster BV:

- Start number 121 was manually annotated 3 times for cluster BV.

Info for manual annotations of cluster BW:

- Start number 121 was manually annotated 4 times for cluster BW.

Info for manual annotations of cluster CY:

- Start number 91 was manually annotated 7 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 91 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CZ:

- Start number 91 was manually annotated 2 times for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 91 was manually annotated 20 times for cluster CZ1.
- Start number 93 was manually annotated 1 time for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 91 was manually annotated 22 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 91 was manually annotated 2 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 91 was manually annotated 20 times for cluster CZ4.

Info for manual annotations of cluster CZ7:

- Start number 91 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster CZ8:

- Start number 93 was manually annotated 1 time for cluster CZ8.

Info for manual annotations of cluster DC1:

- Start number 89 was manually annotated 18 times for cluster DC1.
- Start number 103 was manually annotated 1 time for cluster DC1.
- Start number 126 was manually annotated 9 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 89 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DW:

- Start number 91 was manually annotated 3 times for cluster DW.

Info for manual annotations of cluster F1:

- Start number 114 was manually annotated 4 times for cluster F1.

Info for manual annotations of cluster FN:

- Start number 122 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster G1:

- Start number 66 was manually annotated 58 times for cluster G1.

Info for manual annotations of cluster G2:

- Start number 66 was manually annotated 3 times for cluster G2.

Info for manual annotations of cluster G3:

- Start number 66 was manually annotated 2 times for cluster G3.

Info for manual annotations of cluster G4:

- Start number 66 was manually annotated 2 times for cluster G4.

Info for manual annotations of cluster G5:

- Start number 66 was manually annotated 1 time for cluster G5.

Info for manual annotations of cluster I1:

- Start number 117 was manually annotated 4 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 117 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster N:

- Start number 117 was manually annotated 7 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 117 was manually annotated 39 times for cluster P1.

Info for manual annotations of cluster P2:

- Start number 114 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 117 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster P4:

- Start number 117 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 117 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster P6:

- Start number 117 was manually annotated 1 time for cluster P6.

Info for manual annotations of cluster T:

- Start number 123 was manually annotated 7 times for cluster T.

### **Gene Information:**

Gene: AbbyDaisy\_69 Start: 36824, Stop: 37663, Start Num: 122

Candidate Starts for AbbyDaisy\_69:

(Start: 122 @36824 has 6 MA's), (156, 37034), (175, 37145), (178, 37160), (201, 37280), (225, 37448), (226, 37454), (243, 37565),

Gene: Adora\_54 Start: 39285, Stop: 40148, Start Num: 91

Candidate Starts for Adora\_54:

(75, 39222), (Start: 91 @39285 has 86 MA's), (146, 39435), (150, 39468), (175, 39618), (179, 39645), (196, 39741), (199, 39768), (201, 39774), (226, 39954), (256, 40128),

Gene: Aggie\_45 Start: 31200, Stop: 32129, Start Num: 117

Candidate Starts for Aggie\_45:

(69, 31029), (71, 31032), (81, 31065), (86, 31080), (Start: 117 @31200 has 57 MA's), (127, 31230), (133, 31284), (152, 31401), (156, 31428), (157, 31443), (163, 31497), (166, 31539), (175, 31578), (193, 31680), (208, 31794), (221, 31866), (224, 31890), (225, 31893), (238, 31977), (244, 32016), (263, 32118),

Gene: Agueybana\_58 Start: 40560, Stop: 41423, Start Num: 91

Candidate Starts for Agueybana\_58:

(Start: 91 @40560 has 86 MA's), (127, 40584), (132, 40632), (150, 40743), (166, 40854), (167, 40860), (175, 40893), (187, 40956), (196, 41016), (199, 41043), (211, 41151), (226, 41229),

Gene: AlumE\_58 Start: 40324, Stop: 41199, Start Num: 91

Candidate Starts for AlumE\_58:

(34, 40093), (37, 40111), (42, 40129), (49, 40171), (56, 40189), (58, 40195), (67, 40243), (75, 40261), (78, 40270), (Start: 91 @40324 has 86 MA's), (132, 40408), (150, 40519), (166, 40630), (167, 40636), (175, 40669), (196, 40792), (199, 40819), (211, 40927), (226, 41005),

Gene: Anatole\_37 Start: 26633, Stop: 27484, Start Num: 121

Candidate Starts for Anatole\_37:

(12, 26144), (21, 26186), (26, 26234), (30, 26261), (58, 26381), (60, 26393), (62, 26405), (83, 26477), (88, 26501), (92, 26513), (99, 26543), (112, 26597), (Start: 121 @26633 has 7 MA's), (Start: 123 @26636 has 7 MA's), (128, 26669), (134, 26726), (137, 26741), (141, 26768), (142, 26777), (144, 26780), (152, 26840), (156, 26867), (164, 26921), (167, 26945), (174, 26969), (175, 26978), (179, 27005), (188, 27053), (189, 27071), (221, 27278), (234, 27356), (248, 27452),

Gene: Anekin\_72 Start: 36816, Stop: 37655, Start Num: 122

Candidate Starts for Anekin\_72:

(113, 36792), (Start: 122 @36816 has 6 MA's), (156, 37026), (175, 37137), (178, 37152), (192, 37230), (201, 37272), (225, 37440), (226, 37446), (227, 37449),

Gene: Angel\_42 Start: 31892, Stop: 32977, Start Num: 66

Candidate Starts for Angel\_42:

(Start: 66 @31892 has 66 MA's), (98, 32006), (107, 32030), (111, 32060), (151, 32279), (152, 32282), (156, 32309), (163, 32378), (171, 32441), (175, 32459), (177, 32471), (195, 32561), (225, 32777), (226, 32783), (238, 32861), (246, 32909), (249, 32924),

Gene: Angelique\_55 Start: 40522, Stop: 41361, Start Num: 91

Candidate Starts for Angelique\_55:

(Start: 91 @40522 has 86 MA's), (149, 40693), (166, 40807), (170, 40825), (185, 40900), (226, 41155),

Gene: Annalisa\_56 Start: 36687, Stop: 37526, Start Num: 91

Candidate Starts for Annalisa\_56:

(69, 36624), (Start: 91 @36687 has 86 MA's), (129, 36735), (149, 36858), (166, 36972), (170, 36990), (226, 37320),

Gene: Annihilator\_42 Start: 31898, Stop: 32983, Start Num: 66

Candidate Starts for Annihilator\_42:

(Start: 66 @31898 has 66 MA's), (98, 32012), (107, 32036), (111, 32066), (151, 32285), (152, 32288), (156, 32315), (163, 32384), (171, 32447), (175, 32465), (177, 32477), (195, 32567), (225, 32783), (226, 32789), (238, 32867), (246, 32915), (249, 32930),

Gene: Antonio\_56 Start: 38840, Stop: 39715, Start Num: 91

Candidate Starts for Antonio\_56:

(67, 38759), (75, 38777), (78, 38786), (Start: 91 @38840 has 86 MA's), (150, 39035), (175, 39185), (196, 39308), (199, 39335), (211, 39443), (226, 39521),

Gene: Antsirabe\_42 Start: 32945, Stop: 34024, Start Num: 66

Candidate Starts for Antsirabe\_42:

(61, 32927), (Start: 66 @32945 has 66 MA's), (90, 33026), (147, 33293), (151, 33332), (152, 33335), (157, 33377), (167, 33479), (171, 33494), (175, 33512), (177, 33524), (195, 33614), (225, 33833), (226, 33839), (246, 33965),

Gene: ArV2\_52 Start: 29030, Stop: 29857, Start Num: 122

Candidate Starts for ArV2\_52:

(Start: 122 @29030 has 6 MA's), (175, 29351), (178, 29366), (188, 29420), (217, 29609), (222, 29630), (225, 29654), (259, 29846),

Gene: Arib1\_46 Start: 31623, Stop: 32552, Start Num: 117

Candidate Starts for Arib1\_46:

(86, 31503), (Start: 117 @31623 has 57 MA's), (127, 31653), (133, 31707), (152, 31824), (156, 31851), (157, 31866), (163, 31920), (175, 32001), (193, 32103), (208, 32217), (221, 32289), (224, 32313), (225, 32316), (238, 32400), (244, 32439), (263, 32541),

Gene: Aroostook\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Aroostook\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (220, 32762), (225, 32792), (238, 32876), (246, 32924), (249, 32939),

Gene: Arri\_56 Start: 40968, Stop: 41882, Start Num: 103

Candidate Starts for Arri\_56:

(96, 40938), (Start: 103 @40968 has 1 MA's), (Start: 126 @41049 has 9 MA's), (133, 41118), (135, 41133), (143, 41175), (175, 41373), (187, 41436), (188, 41442), (208, 41601), (225, 41700),

Gene: Atcoo\_45 Start: 32107, Stop: 33033, Start Num: 117

Candidate Starts for Atcoo\_45:

(Start: 117 @32107 has 57 MA's), (127, 32134), (133, 32188), (152, 32305), (156, 32332), (157, 32347), (175, 32482), (177, 32494), (187, 32551), (195, 32590), (208, 32698), (221, 32770), (224, 32794), (225, 32797), (238, 32881), (244, 32920), (263, 33022),

Gene: Attis\_51 Start: 35973, Stop: 36848, Start Num: 91

Candidate Starts for Attis\_51:

(67, 35892), (75, 35910), (78, 35919), (Start: 91 @35973 has 86 MA's), (150, 36168), (166, 36279), (167, 36285), (175, 36318), (177, 36330), (183, 36357), (196, 36441), (199, 36468), (211, 36576), (221, 36621), (226, 36654),

Gene: Avocado\_43 Start: 33992, Stop: 35071, Start Num: 66

Candidate Starts for Avocado\_43:

(1, 33143), (2, 33251), (3, 33278), (45, 33899), (Start: 66 @33992 has 66 MA's), (128, 34226), (147, 34340), (151, 34379), (152, 34382), (167, 34526), (171, 34541), (175, 34559), (195, 34661), (225, 34880), (246, 35012),

Gene: Avrafan\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Avrafan\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Awesomesauce\_66 Start: 40126, Stop: 40980, Start Num: 114

Candidate Starts for Awesomesauce\_66:

(Start: 114 @40126 has 6 MA's), (146, 40288), (150, 40321), (152, 40333), (155, 40357), (166, 40432), (170, 40450), (175, 40471), (193, 40573), (199, 40624), (202, 40636), (204, 40651), (219, 40768), (228, 40819), (229, 40825), (234, 40855), (246, 40939),

Gene: B22\_39 Start: 26398, Stop: 27249, Start Num: 121

Candidate Starts for B22\_39:

(99, 26314), (112, 26368), (Start: 121 @26398 has 7 MA's), (Start: 123 @26401 has 7 MA's), (128, 26434), (134, 26491), (144, 26545), (152, 26605), (156, 26632), (164, 26686), (167, 26710), (174, 26734), (175, 26743), (179, 26770), (187, 26812), (188, 26818), (209, 26986), (221, 27043), (224, 27067), (234, 27121), (242, 27187), (248, 27217),

Gene: B3\_36 Start: 25890, Stop: 26810, Start Num: 121

Candidate Starts for B3\_36:

(12, 25401), (21, 25443), (26, 25491), (30, 25518), (58, 25638), (60, 25650), (62, 25662), (83, 25734), (88, 25758), (92, 25770), (99, 25800), (112, 25854), (Start: 121 @25890 has 7 MA's), (Start: 123 @25893 has 7 MA's), (128, 25926), (134, 25983), (137, 25998), (142, 26034), (144, 26037), (152, 26097), (156, 26124), (164, 26178), (167, 26202), (174, 26226), (175, 26235), (179, 26262), (188, 26310), (189, 26328), (201, 26385), (208, 26460), (209, 26478), (210, 26484), (221, 26535), (223, 26544), (234, 26613), (240, 26670), (248, 26709), (253, 26733),

Gene: BPs\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for BPs\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792),



(226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: BQuat\_42 Start: 31898, Stop: 32983, Start Num: 66

Candidate Starts for BQuat\_42:

(Start: 66 @31898 has 66 MA's), (98, 32012), (107, 32036), (111, 32066), (151, 32285), (152, 32288), (156, 32315), (163, 32384), (171, 32447), (175, 32465), (177, 32477), (195, 32567), (225, 32783), (226, 32789), (238, 32867), (246, 32915), (249, 32930),

Gene: Babsiella\_47 Start: 32479, Stop: 33405, Start Num: 117

Candidate Starts for Babsiella\_47:

(86, 32359), (Start: 117 @32479 has 57 MA's), (Start: 123 @32488 has 7 MA's), (127, 32506), (133, 32560), (152, 32677), (156, 32704), (157, 32719), (163, 32773), (175, 32854), (187, 32923), (188, 32929), (193, 32956), (205, 33037), (208, 33070), (221, 33142), (224, 33166), (225, 33169), (238, 33253), (244, 33292), (263, 33394),

Gene: Bakery\_59 Start: 42229, Stop: 43062, Start Num: 126

Candidate Starts for Bakery\_59:

(Start: 103 @42148 has 1 MA's), (Start: 126 @42229 has 9 MA's), (133, 42298), (135, 42313), (143, 42355), (175, 42553), (187, 42616), (188, 42622), (208, 42781), (225, 42880),

Gene: Barb\_56 Start: 41203, Stop: 42051, Start Num: 89

Candidate Starts for Barb\_56:

(Start: 89 @41203 has 19 MA's), (94, 41218), (258, 42031),

Gene: Barkley26\_42 Start: 31914, Stop: 32999, Start Num: 66

Candidate Starts for Barkley26\_42:

(Start: 66 @31914 has 66 MA's), (98, 32028), (107, 32052), (111, 32082), (151, 32301), (152, 32304), (156, 32331), (163, 32400), (171, 32463), (175, 32481), (177, 32493), (195, 32583), (225, 32799), (226, 32805), (238, 32883), (246, 32931), (249, 32946),

Gene: Bartholomew\_45 Start: 31617, Stop: 32546, Start Num: 117

Candidate Starts for Bartholomew\_45:

(86, 31497), (Start: 117 @31617 has 57 MA's), (127, 31647), (133, 31701), (152, 31818), (156, 31845), (157, 31860), (163, 31914), (175, 31995), (193, 32097), (208, 32211), (221, 32283), (224, 32307), (225, 32310), (238, 32394), (244, 32433), (263, 32535),

Gene: BaxterFox\_59 Start: 41045, Stop: 41908, Start Num: 91

Candidate Starts for BaxterFox\_59:

(48, 40889), (57, 40913), (76, 40985), (77, 40988), (78, 40991), (Start: 91 @41045 has 86 MA's), (150, 41228), (166, 41339), (167, 41345), (175, 41378), (187, 41441), (196, 41501), (199, 41528), (211, 41636), (226, 41714),

Gene: BeeGee\_62 Start: 40767, Stop: 41630, Start Num: 91

Candidate Starts for BeeGee\_62:

(42, 40572), (49, 40614), (56, 40632), (58, 40638), (75, 40704), (78, 40713), (Start: 91 @40767 has 86 MA's), (127, 40791), (132, 40839), (150, 40950), (175, 41100), (196, 41223), (199, 41250), (211, 41358), (222, 41406), (226, 41436),

Gene: Beenie\_47 Start: 36265, Stop: 37104, Start Num: 91

Candidate Starts for Beenie\_47:

(69, 36202), (Start: 91 @36265 has 86 MA's), (129, 36313), (149, 36436), (166, 36550), (170, 36568), (226, 36898),

Gene: Bernal13\_44 Start: 32597, Stop: 33427, Start Num: 123

Candidate Starts for Bernal13\_44:

(Start: 123 @32597 has 7 MA's), (152, 32786), (156, 32813), (173, 32924), (187, 32987), (215, 33191), (218, 33206),

Gene: Bialota\_54 Start: 39472, Stop: 40347, Start Num: 91

Candidate Starts for Bialota\_54:

(67, 39391), (75, 39409), (78, 39418), (Start: 91 @39472 has 86 MA's), (150, 39667), (175, 39817), (196, 39940), (199, 39967), (211, 40075), (226, 40153),

Gene: BigNuz\_47 Start: 33511, Stop: 34458, Start Num: 117

Candidate Starts for BigNuz\_47:

(86, 33391), (Start: 117 @33511 has 57 MA's), (127, 33538), (133, 33592), (148, 33676), (152, 33709), (157, 33751), (166, 33847), (175, 33886), (193, 33988), (208, 34102), (209, 34120), (210, 34126), (212, 34132), (221, 34174), (224, 34198), (225, 34201), (238, 34285), (243, 34321), (244, 34324),

Gene: Bjaner7\_50 Start: 34872, Stop: 35735, Start Num: 91

Candidate Starts for Bjaner7\_50:

(78, 34818), (Start: 91 @34872 has 86 MA's), (132, 34944), (150, 35055), (166, 35166), (175, 35205), (195, 35307), (196, 35328), (199, 35355), (211, 35463), (226, 35541),

Gene: Bogie\_49 Start: 33878, Stop: 34804, Start Num: 117

Candidate Starts for Bogie\_49:

(Start: 117 @33878 has 57 MA's), (127, 33905), (133, 33959), (152, 34076), (156, 34103), (157, 34118), (163, 34172), (175, 34253), (177, 34265), (187, 34322), (195, 34361), (208, 34469), (221, 34541), (224, 34565), (225, 34568), (238, 34652), (244, 34691), (263, 34793),

Gene: Bosnia\_54 Start: 40928, Stop: 41755, Start Num: 93

Candidate Starts for Bosnia\_54:

(Start: 93 @40928 has 2 MA's), (127, 40949), (146, 41066), (193, 41345), (195, 41351), (196, 41372), (200, 41387), (202, 41396),

Gene: BoyNamedSue\_58 Start: 40324, Stop: 41199, Start Num: 91

Candidate Starts for BoyNamedSue\_58:

(34, 40093), (37, 40111), (42, 40129), (49, 40171), (56, 40189), (58, 40195), (67, 40243), (75, 40261), (78, 40270), (Start: 91 @40324 has 86 MA's), (132, 40408), (150, 40519), (166, 40630), (167, 40636), (175, 40669), (196, 40792), (199, 40819), (211, 40927), (226, 41005),

Gene: Bradissa\_53 Start: 39968, Stop: 40798, Start Num: 91

Candidate Starts for Bradissa\_53:

(42, 39776), (49, 39818), (58, 39842), (78, 39914), (Start: 91 @39968 has 86 MA's), (146, 40109), (172, 40277), (182, 40328), (187, 40355), (188, 40361), (193, 40388), (195, 40394), (196, 40415), (200, 40430),

Gene: BruceB\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for BruceB\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Brusacoram\_45 Start: 31613, Stop: 32539, Start Num: 117

Candidate Starts for Brusacoram\_45:

(Start: 117 @31613 has 57 MA's), (127, 31640), (133, 31694), (152, 31811), (156, 31838), (157, 31853), (175, 31988), (177, 32000), (187, 32057), (195, 32096), (208, 32204), (221, 32276), (224, 32300), (225, 32303), (238, 32387), (244, 32426), (263, 32528),

Gene: Bunnies\_46 Start: 31627, Stop: 32553, Start Num: 117

Candidate Starts for Bunnies\_46:

(Start: 117 @31627 has 57 MA's), (127, 31654), (133, 31708), (152, 31825), (156, 31852), (157, 31867), (175, 32002), (177, 32014), (187, 32071), (195, 32110), (208, 32218), (212, 32248), (221, 32290), (224, 32314), (225, 32317), (238, 32401), (244, 32440), (263, 32542),

Gene: Bunnybear\_52 Start: 38350, Stop: 39213, Start Num: 91

Candidate Starts for Bunnybear\_52:

(15, 37996), (19, 38017), (48, 38197), (57, 38221), (Start: 91 @38350 has 86 MA's), (146, 38500), (150, 38533), (175, 38683), (196, 38806), (199, 38833), (211, 38941), (222, 38989), (226, 39019),

Gene: CLED96\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for CLED96\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: CactusJack\_45 Start: 31877, Stop: 32803, Start Num: 117

Candidate Starts for CactusJack\_45:

(Start: 117 @31877 has 57 MA's), (127, 31904), (133, 31958), (152, 32075), (156, 32102), (157, 32117), (175, 32252), (177, 32264), (187, 32321), (195, 32360), (208, 32468), (212, 32498), (221, 32540), (224, 32564), (225, 32567), (238, 32651), (244, 32690), (263, 32792),

Gene: Cambiare\_44 Start: 34235, Stop: 35314, Start Num: 66

Candidate Starts for Cambiare\_44:

(2, 33494), (3, 33521), (45, 34142), (Start: 66 @34235 has 66 MA's), (128, 34469), (147, 34583), (151, 34622), (152, 34625), (167, 34769), (171, 34784), (175, 34802), (195, 34904), (225, 35123), (246, 35255),

Gene: Camri\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Camri\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Camster\_46 Start: 31634, Stop: 32560, Start Num: 117

Candidate Starts for Camster\_46:

(Start: 117 @31634 has 57 MA's), (127, 31661), (133, 31715), (152, 31832), (156, 31859), (157, 31874), (163, 31928), (175, 32009), (193, 32111), (208, 32225), (221, 32297), (224, 32321), (225, 32324), (238, 32408), (244, 32447), (263, 32549),

Gene: Cashline\_56 Start: 40617, Stop: 41480, Start Num: 91

Candidate Starts for Cashline\_56:

(Start: 91 @40617 has 86 MA's), (150, 40800), (166, 40911), (167, 40917), (175, 40950), (196, 41073), (199, 41100), (211, 41208), (226, 41286),

Gene: CassieYates\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for CassieYates\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Cedasite\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Cedasite\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Chance64\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Chance64\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (220, 32762), (225, 32792), (238, 32876), (246, 32924), (249, 32939),

Gene: Charlie\_47 Start: 30994, Stop: 31923, Start Num: 117

Candidate Starts for Charlie\_47:

(86, 30874), (Start: 117 @30994 has 57 MA's), (127, 31024), (133, 31078), (152, 31195), (156, 31222), (157, 31237), (163, 31291), (175, 31372), (193, 31474), (208, 31588), (221, 31660), (224, 31684), (225, 31687), (238, 31771), (244, 31810), (263, 31912),

Gene: Che9c\_60 Start: 42706, Stop: 43650, Start Num: 117

Candidate Starts for Che9c\_60:

(65, 42514), (86, 42586), (Start: 117 @42706 has 57 MA's), (124, 42712), (127, 42730), (138, 42805), (143, 42841), (152, 42901), (157, 42943), (163, 42997), (166, 43039), (175, 43078), (177, 43090), (193, 43180), (203, 43240), (208, 43294), (225, 43393), (238, 43477), (243, 43513),

Gene: Cherrybomb426\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Cherrybomb426\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: ChickenDinner\_68 Start: 41043, Stop: 41897, Start Num: 114

Candidate Starts for ChickenDinner\_68:

(Start: 114 @41043 has 6 MA's), (146, 41205), (150, 41238), (152, 41250), (155, 41274), (166, 41349), (170, 41367), (175, 41388), (193, 41490), (199, 41541), (202, 41553), (204, 41568), (219, 41685), (228, 41736), (229, 41742), (234, 41772), (246, 41856),

Gene: ClamChowder\_56 Start: 41203, Stop: 42051, Start Num: 89

Candidate Starts for ClamChowder\_56:

(Start: 89 @41203 has 19 MA's), (94, 41218), (258, 42031),

Gene: Clap\_53 Start: 35051, Stop: 35914, Start Num: 91

Candidate Starts for Clap\_53:

(78, 34997), (Start: 91 @35051 has 86 MA's), (132, 35123), (150, 35234), (166, 35345), (175, 35384), (195, 35486), (196, 35507), (199, 35534), (211, 35642), (226, 35720),

Gene: Clark\_53 Start: 36082, Stop: 36921, Start Num: 91

Candidate Starts for Clark\_53:

(69, 36019), (Start: 91 @36082 has 86 MA's), (129, 36130), (149, 36253), (166, 36367), (170, 36385), (226, 36715),

Gene: Clown\_66 Start: 45838, Stop: 46686, Start Num: 89

Candidate Starts for Clown\_66:

(Start: 89 @45838 has 19 MA's), (100, 45871), (132, 45919), (188, 46240),

Gene: Coleslaw\_42 Start: 31898, Stop: 32983, Start Num: 66

Candidate Starts for Coleslaw\_42:

(Start: 66 @31898 has 66 MA's), (98, 32012), (107, 32036), (111, 32066), (151, 32285), (152, 32288), (156, 32315), (163, 32384), (171, 32447), (175, 32465), (177, 32477), (195, 32567), (225, 32783), (226, 32789), (238, 32867), (246, 32915), (249, 32930),

Gene: Confidence\_57 Start: 38465, Stop: 39328, Start Num: 91

Candidate Starts for Confidence\_57:

(Start: 91 @38465 has 86 MA's), (146, 38615), (150, 38648), (175, 38798), (196, 38921), (199, 38948), (211, 39056), (222, 39104), (226, 39134), (238, 39212),

Gene: Crespo\_42 Start: 31908, Stop: 32993, Start Num: 66

Candidate Starts for Crespo\_42:

(Start: 66 @31908 has 66 MA's), (98, 32022), (107, 32046), (111, 32076), (151, 32295), (152, 32298), (156, 32325), (163, 32394), (171, 32457), (175, 32475), (177, 32487), (195, 32577), (225, 32793), (226, 32799), (238, 32877), (246, 32925), (249, 32940),

Gene: Cynthia\_53 Start: 35049, Stop: 35912, Start Num: 91

Candidate Starts for Cynthia\_53:

(78, 34995), (Start: 91 @35049 has 86 MA's), (132, 35121), (150, 35232), (166, 35343), (175, 35382), (195, 35484), (196, 35505), (199, 35532), (211, 35640), (226, 35718),

Gene: DMoney\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for DMoney\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: DNAIII\_0041 Start: 30541, Stop: 31626, Start Num: 66

Candidate Starts for DNAIII\_0041:

(Start: 66 @30541 has 66 MA's), (98, 30655), (107, 30679), (111, 30709), (151, 30928), (152, 30931), (156, 30958), (163, 31027), (171, 31090), (175, 31108), (177, 31120), (220, 31396), (225, 31426), (238, 31510), (246, 31558), (249, 31573),

Gene: Danyall\_55 Start: 40890, Stop: 41723, Start Num: 126

Candidate Starts for Danyall\_55:

(Start: 126 @40890 has 9 MA's), (133, 40959), (135, 40974), (143, 41016), (152, 41076), (175, 41214), (187, 41277), (188, 41283), (208, 41442), (225, 41541),

Gene: Darionha\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Darionha\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: DobbysSock\_46 Start: 34924, Stop: 35763, Start Num: 91

Candidate Starts for DobbysSock\_46:

(69, 34861), (Start: 91 @34924 has 86 MA's), (129, 34972), (149, 35095), (166, 35209), (170, 35227), (226, 35557),

Gene: DocMcStuffins\_65 Start: 41043, Stop: 41897, Start Num: 114

Candidate Starts for DocMcStuffins\_65:

(Start: 114 @41043 has 6 MA's), (146, 41205), (150, 41238), (152, 41250), (155, 41274), (166, 41349), (170, 41367), (175, 41388), (193, 41490), (199, 41541), (202, 41553), (204, 41568), (219, 41685), (228, 41736), (229, 41742), (234, 41772), (246, 41856),

Gene: Dolores\_55 Start: 36820, Stop: 37683, Start Num: 91

Candidate Starts for Dolores\_55:

(75, 36757), (Start: 91 @36820 has 86 MA's), (166, 37114), (175, 37153), (178, 37168), (196, 37276), (199, 37303), (201, 37309), (207, 37363), (211, 37411), (221, 37456), (222, 37459), (226, 37489),

Gene: Donovan\_46 Start: 31640, Stop: 32569, Start Num: 117

Candidate Starts for Donovan\_46:

(86, 31520), (Start: 117 @31640 has 57 MA's), (127, 31670), (133, 31724), (152, 31841), (156, 31868), (157, 31883), (163, 31937), (175, 32018), (193, 32120), (208, 32234), (221, 32306), (224, 32330), (225, 32333), (238, 32417), (244, 32456), (263, 32558),

Gene: Dorito\_49 Start: 34569, Stop: 35408, Start Num: 91

Candidate Starts for Dorito\_49:

(69, 34506), (Start: 91 @34569 has 86 MA's), (129, 34617), (149, 34740), (166, 34854), (170, 34872), (226, 35202), (228, 35211), (236, 35265),

Gene: Doucette\_40 Start: 27776, Stop: 28702, Start Num: 121

Candidate Starts for Doucette\_40:

(112, 27746), (Start: 121 @27776 has 7 MA's), (Start: 123 @27779 has 7 MA's), (128, 27812), (134, 27869), (144, 27923), (152, 27983), (156, 28010), (164, 28064), (167, 28088), (174, 28112), (175, 28121), (179, 28148), (188, 28196), (189, 28214), (201, 28271), (221, 28421), (234, 28499), (245, 28574), (248, 28595), (264, 28679),

Gene: DumpsterDude\_55 Start: 42126, Stop: 42956, Start Num: 91

Candidate Starts for DumpsterDude\_55:

(4, 41562), (5, 41565), (29, 41865), (32, 41880), (34, 41895), (35, 41901), (39, 41919), (49, 41973), (58, 41997), (75, 42063), (77, 42069), (Start: 91 @42126 has 86 MA's), (146, 42267), (185, 42504), (193, 42546), (196, 42573), (198, 42585),

Gene: Dynamo\_46 Start: 32100, Stop: 33029, Start Num: 117

Candidate Starts for Dynamo\_46:

(86, 31980), (Start: 117 @32100 has 57 MA's), (127, 32130), (133, 32184), (152, 32301), (156, 32328), (157, 32343), (163, 32397), (175, 32478), (193, 32580), (208, 32694), (221, 32766), (224, 32790), (225, 32793), (238, 32877), (244, 32916), (263, 33018),

Gene: E1\_37 Start: 26633, Stop: 27484, Start Num: 121

Candidate Starts for E1\_37:

(12, 26144), (21, 26186), (26, 26234), (30, 26261), (58, 26381), (60, 26393), (62, 26405), (83, 26477), (88, 26501), (92, 26513), (99, 26543), (112, 26597), (Start: 121 @26633 has 7 MA's), (Start: 123 @26636 has 7 MA's), (128, 26669), (134, 26726), (137, 26741), (141, 26768), (142, 26777), (144, 26780), (152, 26840), (156, 26867), (164, 26921), (167, 26945), (174, 26969), (175, 26978), (179, 27005), (188, 27053), (189, 27071), (221, 27278), (234, 27356), (248, 27452),

Gene: E6\_41 Start: 29214, Stop: 30065, Start Num: 121

Candidate Starts for E6\_41:

(12, 28731), (21, 28773), (26, 28821), (30, 28848), (58, 28968), (60, 28980), (62, 28992), (83, 29064), (88, 29088), (92, 29100), (99, 29130), (112, 29184), (Start: 121 @29214 has 7 MA's), (Start: 123 @29217 has 7 MA's), (128, 29250), (134, 29307), (144, 29361), (152, 29421), (156, 29448), (164, 29502), (167, 29526), (174, 29550), (175, 29559), (179, 29586), (188, 29634), (189, 29652), (221, 29859), (224, 29883), (234, 29937), (248, 30033),

Gene: ECartman\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for ECartman\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: EMSquaredA\_56 Start: 39499, Stop: 40374, Start Num: 91

Candidate Starts for EMSquaredA\_56:

(34, 39268), (37, 39286), (42, 39304), (49, 39346), (56, 39364), (58, 39370), (67, 39418), (75, 39436), (78, 39445), (Start: 91 @39499 has 86 MA's), (132, 39583), (150, 39694), (166, 39805), (167, 39811), (175, 39844), (196, 39967), (199, 39994), (211, 40102), (226, 40180),

Gene: Easley\_51 Start: 36057, Stop: 36890, Start Num: 91

Candidate Starts for Easley\_51:

(75, 35994), (Start: 91 @36057 has 86 MA's), (132, 36129), (146, 36198), (153, 36246), (193, 36477), (196, 36504),

Gene: Ebert\_57 Start: 35471, Stop: 36346, Start Num: 91

Candidate Starts for Ebert\_57:

(22, 35156), (34, 35240), (37, 35258), (42, 35276), (49, 35318), (56, 35336), (58, 35342), (67, 35390), (75, 35408), (78, 35417), (Start: 91 @35471 has 86 MA's), (150, 35666), (167, 35783), (175, 35816), (187, 35879), (195, 35918), (196, 35939), (199, 35966), (211, 36074), (226, 36152),

Gene: EdnaMode\_50 Start: 34661, Stop: 35536, Start Num: 91

Candidate Starts for EdnaMode\_50:

(67, 34580), (75, 34598), (78, 34607), (Start: 91 @34661 has 86 MA's), (150, 34856), (175, 35006), (196, 35129), (199, 35156), (211, 35264), (226, 35342),

Gene: EnalisNailo\_53 Start: 39490, Stop: 40341, Start Num: 91

Candidate Starts for EnalisNailo\_53:

(40, 39295), (47, 39337), (54, 39355), (56, 39361), (73, 39427), (77, 39436), (Start: 91 @39490 has 86 MA's), (166, 39787), (170, 39805), (226, 40135),

Gene: Eudoria\_56 Start: 38840, Stop: 39715, Start Num: 91

Candidate Starts for Eudoria\_56:

(Start: 91 @38840 has 86 MA's), (150, 39035), (175, 39185), (196, 39308), (199, 39335), (211, 39443), (226, 39521),

Gene: Evamon\_53 Start: 40929, Stop: 41777, Start Num: 89

Candidate Starts for Evamon\_53:

(82, 40902), (Start: 89 @40929 has 19 MA's), (94, 40944),

Gene: EvePickles\_65 Start: 36266, Stop: 37069, Start Num: 122

Candidate Starts for EvePickles\_65:

(Start: 122 @36266 has 6 MA's), (175, 36587), (178, 36602), (190, 36680), (199, 36719), (201, 36725), (220, 36863), (221, 36866), (227, 36902), (232, 36929),

Gene: Eyre\_43 Start: 29570, Stop: 30892, Start Num: 13

Candidate Starts for Eyre\_43:

(8, 29468), (9, 29525), (Start: 13 @29570 has 1 MA's), (24, 29630), (31, 29687), (50, 29783), (55, 29795), (72, 29867), (74, 29870), (Start: 91 @29936 has 86 MA's), (100, 29969), (110, 30008), (128, 30089), (140, 30176), (156, 30266), (177, 30389), (182, 30413), (185, 30431), (220, 30650), (226, 30686), (258, 30869),

Gene: Farewell\_58 Start: 39058, Stop: 40056, Start Num: 84

Candidate Starts for Farewell\_58:

(Start: 84 @39058 has 1 MA's), (Start: 104 @39133 has 1 MA's), (105, 39139), (152, 39382), (155, 39406), (156, 39409), (157, 39412), (162, 39451), (172, 39520), (175, 39532), (181, 39562), (199, 39670), (215, 39790), (219, 39811), (226, 39853), (239, 39943), (246, 39982),

Gene: Fireball\_56 Start: 41525, Stop: 42358, Start Num: 126

Candidate Starts for Fireball\_56:

(Start: 126 @41525 has 9 MA's), (133, 41594), (135, 41609), (143, 41651), (152, 41711), (175, 41849), (187, 41912), (188, 41918), (208, 42077), (225, 42176),

Gene: FirstPlacePfu\_46 Start: 31649, Stop: 32578, Start Num: 117

Candidate Starts for FirstPlacePfu\_46:

(86, 31529), (Start: 117 @31649 has 57 MA's), (127, 31679), (133, 31733), (152, 31850), (156, 31877), (157, 31892), (163, 31946), (166, 31988), (175, 32027), (193, 32129), (208, 32243), (221, 32315), (224, 32339), (225, 32342), (238, 32426), (244, 32465), (263, 32567),

Gene: Fishburne\_45 Start: 31617, Stop: 32546, Start Num: 117

Candidate Starts for Fishburne\_45:

(86, 31497), (Start: 117 @31617 has 57 MA's), (127, 31647), (133, 31701), (152, 31818), (156, 31845), (157, 31860), (163, 31914), (175, 31995), (193, 32097), (208, 32211), (221, 32283), (224, 32307), (225, 32310), (238, 32394), (244, 32433), (263, 32535),

Gene: FlagStaff\_42 Start: 33012, Stop: 34091, Start Num: 66

Candidate Starts for FlagStaff\_42:

(Start: 66 @33012 has 66 MA's), (108, 33159), (147, 33360), (151, 33399), (152, 33402), (156, 33429), (171, 33561), (175, 33579), (177, 33591), (195, 33681), (207, 33783), (220, 33870), (225, 33900), (230, 33927), (246, 34032),

Gene: Floral\_57 Start: 41384, Stop: 42259, Start Num: 91

Candidate Starts for Floral\_57:

(6, 40919), (10, 40985), (23, 41078), (42, 41189), (49, 41231), (56, 41249), (58, 41255), (75, 41321), (78, 41330), (Start: 91 @41384 has 86 MA's), (146, 41546), (150, 41579), (166, 41690), (175, 41729), (199, 41879), (211, 41987), (226, 42065),

Gene: Frosty24\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Frosty24\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Fugax\_57 Start: 41195, Stop: 42043, Start Num: 89

Candidate Starts for Fugax\_57:

(Start: 89 @41195 has 19 MA's), (94, 41210), (258, 42023),



Gene: G4\_38 Start: 26748, Stop: 27599, Start Num: 121

Candidate Starts for G4\_38:

(7, 26205), (12, 26304), (21, 26346), (22, 26355), (26, 26394), (30, 26421), (58, 26529), (62, 26550), (65, 26562), (80, 26610), (99, 26664), (112, 26718), (Start: 121 @26748 has 7 MA's), (Start: 123 @26751 has 7 MA's), (128, 26784), (134, 26841), (137, 26856), (141, 26883), (142, 26892), (144, 26895), (152, 26955), (156, 26982), (164, 27036), (167, 27060), (174, 27084), (175, 27093), (179, 27120), (188, 27168), (189, 27186), (201, 27243), (208, 27318), (209, 27336), (210, 27342), (221, 27393), (223, 27402), (234, 27471), (248, 27567),

Gene: GMA1\_46 Start: 29913, Stop: 30710, Start Num: 120

Candidate Starts for GMA1\_46:

(33, 29616), (59, 29730), (75, 29793), (120, 29913), (187, 30309), (188, 30315), (202, 30393), (219, 30519), (226, 30561), (227, 30564),

Gene: GemG\_53 Start: 35055, Stop: 35918, Start Num: 91

Candidate Starts for GemG\_53:

(78, 35001), (Start: 91 @35055 has 86 MA's), (132, 35127), (150, 35238), (166, 35349), (175, 35388), (195, 35490), (196, 35511), (199, 35538), (211, 35646), (226, 35724),

Gene: Gezellig\_56 Start: 41007, Stop: 41882, Start Num: 82

Candidate Starts for Gezellig\_56:

(82, 41007), (Start: 89 @41034 has 19 MA's), (258, 41862),

Gene: Gideon\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Gideon\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Gizermo\_53 Start: 35051, Stop: 35914, Start Num: 91

Candidate Starts for Gizermo\_53:

(78, 34997), (Start: 91 @35051 has 86 MA's), (132, 35123), (150, 35234), (166, 35345), (175, 35384), (195, 35486), (196, 35507), (199, 35534), (211, 35642), (226, 35720),

Gene: Glaske\_45 Start: 31877, Stop: 32803, Start Num: 117

Candidate Starts for Glaske\_45:

(Start: 117 @31877 has 57 MA's), (127, 31904), (133, 31958), (152, 32075), (156, 32102), (157, 32117), (175, 32252), (177, 32264), (187, 32321), (195, 32360), (208, 32468), (212, 32498), (221, 32540), (224, 32564), (225, 32567), (238, 32651), (244, 32690), (263, 32792),

Gene: GoldenAsh\_42 Start: 31892, Stop: 32977, Start Num: 66

Candidate Starts for GoldenAsh\_42:

(Start: 66 @31892 has 66 MA's), (98, 32006), (107, 32030), (111, 32060), (151, 32279), (152, 32282), (156, 32309), (163, 32378), (171, 32441), (175, 32459), (177, 32471), (195, 32561), (225, 32777), (226, 32783), (238, 32861), (246, 32909), (249, 32924),

Gene: Gomashi\_42 Start: 31908, Stop: 32993, Start Num: 66

Candidate Starts for Gomashi\_42:

(Start: 66 @31908 has 66 MA's), (98, 32022), (107, 32046), (111, 32076), (151, 32295), (152, 32298), (156, 32325), (163, 32394), (171, 32457), (175, 32475), (177, 32487), (195, 32577), (225, 32793), (226, 32799), (238, 32877), (246, 32925), (249, 32940),

Gene: GreaseLightnin\_46 Start: 31856, Stop: 32782, Start Num: 117

Candidate Starts for GreaseLightnin\_46:

(Start: 117 @31856 has 57 MA's), (127, 31883), (133, 31937), (152, 32054), (156, 32081), (157, 32096), (175, 32231), (177, 32243), (187, 32300), (195, 32339), (208, 32447), (212, 32477), (221, 32519), (224, 32543), (225, 32546), (238, 32630), (244, 32669), (263, 32771),

Gene: Grizzly\_42 Start: 31892, Stop: 32977, Start Num: 66

Candidate Starts for Grizzly\_42:

(Start: 66 @31892 has 66 MA's), (98, 32006), (107, 32030), (111, 32060), (151, 32279), (152, 32282), (156, 32309), (163, 32378), (171, 32441), (175, 32459), (177, 32471), (195, 32561), (225, 32777), (226, 32783), (238, 32861), (246, 32909), (249, 32924),

Gene: Gudmit\_45 Start: 29257, Stop: 30438, Start Num: 16

Candidate Starts for Gudmit\_45:

(Start: 16 @29257 has 1 MA's), (20, 29284), (24, 29308), (38, 29401), (50, 29455), (52, 29461), (55, 29467), (63, 29503), (64, 29512), (79, 29560), (Start: 91 @29608 has 86 MA's), (100, 29626), (128, 29638), (129, 29650), (166, 29887), (167, 29893), (201, 30067), (220, 30199), (222, 30205),

Gene: HC\_45 Start: 31260, Stop: 32189, Start Num: 117

Candidate Starts for HC\_45:

(86, 31140), (Start: 117 @31260 has 57 MA's), (127, 31290), (133, 31344), (152, 31461), (156, 31488), (157, 31503), (163, 31557), (175, 31638), (193, 31740), (208, 31854), (221, 31926), (224, 31950), (225, 31953), (238, 32037), (244, 32076), (263, 32178),

Gene: HUHilltop\_47 Start: 32135, Stop: 33061, Start Num: 117

Candidate Starts for HUHilltop\_47:

(Start: 117 @32135 has 57 MA's), (127, 32162), (133, 32216), (152, 32333), (156, 32360), (157, 32375), (163, 32429), (175, 32510), (177, 32522), (187, 32579), (195, 32618), (208, 32726), (221, 32798), (224, 32822), (225, 32825), (238, 32909), (244, 32948), (263, 33050),

Gene: Haley23\_53 Start: 35051, Stop: 35914, Start Num: 91

Candidate Starts for Haley23\_53:

(78, 34997), (Start: 91 @35051 has 86 MA's), (132, 35123), (150, 35234), (166, 35345), (175, 35384), (195, 35486), (196, 35507), (199, 35534), (211, 35642), (226, 35720),

Gene: Halo\_42 Start: 31902, Stop: 32987, Start Num: 66

Candidate Starts for Halo\_42:

(Start: 66 @31902 has 66 MA's), (98, 32016), (107, 32040), (111, 32070), (151, 32289), (152, 32292), (156, 32319), (163, 32388), (171, 32451), (175, 32469), (177, 32481), (195, 32571), (225, 32787), (226, 32793), (238, 32871), (246, 32919), (249, 32934),

Gene: Halo3\_54 Start: 41619, Stop: 42467, Start Num: 89

Candidate Starts for Halo3\_54:

(82, 41592), (Start: 89 @41619 has 19 MA's), (258, 42447),

Gene: Herod\_57 Start: 41310, Stop: 42173, Start Num: 91

Candidate Starts for Herod\_57:

(Start: 91 @41310 has 86 MA's), (150, 41493), (166, 41604), (167, 41610), (175, 41643), (187, 41706), (196, 41766), (199, 41793), (211, 41901), (226, 41979),

Gene: Hillester\_73 Start: 37290, Stop: 38117, Start Num: 122

Candidate Starts for Hillester\_73:

(102, 37269), (Start: 122 @37290 has 6 MA's), (138, 37377), (154, 37494), (171, 37593), (175, 37611), (178, 37626), (227, 37923), (259, 38106),

Gene: Hope\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Hope\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Hortense\_57 Start: 40640, Stop: 41503, Start Num: 91

Candidate Starts for Hortense\_57:

(75, 40577), (Start: 91 @40640 has 86 MA's), (146, 40790), (150, 40823), (175, 40973), (179, 41000), (196, 41096), (199, 41123), (201, 41129), (226, 41309), (256, 41483),

Gene: Hotshotbaby7\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Hotshotbaby7\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (220, 32762), (225, 32792), (238, 32876), (246, 32924), (249, 32939),

Gene: Howe\_57 Start: 40640, Stop: 41503, Start Num: 91

Candidate Starts for Howe\_57:

(75, 40577), (Start: 91 @40640 has 86 MA's), (146, 40790), (150, 40823), (175, 40973), (179, 41000), (196, 41096), (199, 41123), (201, 41129), (226, 41309), (256, 41483),

Gene: Hugley\_55 Start: 41290, Stop: 42153, Start Num: 91

Candidate Starts for Hugley\_55:

(Start: 91 @41290 has 86 MA's), (150, 41473), (166, 41584), (167, 41590), (175, 41623), (187, 41686), (196, 41746), (199, 41773), (211, 41881), (226, 41959),

Gene: Hyzer\_65 Start: 43242, Stop: 44117, Start Num: 91

Candidate Starts for Hyzer\_65:

(Start: 91 @43242 has 86 MA's), (132, 43326), (146, 43404), (166, 43548), (175, 43587), (177, 43599), (178, 43602), (196, 43710), (199, 43737), (206, 43785), (211, 43845), (226, 43923), (227, 43926),

Gene: Ibrahim\_44 Start: 33043, Stop: 33873, Start Num: 123

Candidate Starts for Ibrahim\_44:

(Start: 123 @33043 has 7 MA's), (152, 33232), (156, 33259), (173, 33370), (187, 33433), (215, 33637), (218, 33652),

Gene: JCole\_50 Start: 33782, Stop: 34609, Start Num: 93

Candidate Starts for JCole\_50:

(Start: 93 @33782 has 2 MA's), (127, 33803), (146, 33920), (193, 34199), (195, 34205), (196, 34226), (200, 34241), (202, 34250),

Gene: Jablanski\_59 Start: 42318, Stop: 43193, Start Num: 91

Candidate Starts for Jablanski\_59:

(Start: 91 @42318 has 86 MA's), (150, 42513), (175, 42663), (195, 42765), (196, 42786), (199, 42813), (211, 42921), (226, 42999),

Gene: Jambalaya\_53 Start: 40688, Stop: 41521, Start Num: 126

Candidate Starts for Jambalaya\_53:

(Start: 126 @40688 has 9 MA's), (133, 40757), (135, 40772), (143, 40814), (152, 40874), (175, 41012), (187, 41075), (188, 41081), (208, 41240), (225, 41339),

Gene: Jane\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Jane\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Jebeks\_47 Start: 31677, Stop: 32606, Start Num: 117

Candidate Starts for Jebeks\_47:

(86, 31557), (Start: 117 @31677 has 57 MA's), (127, 31707), (133, 31761), (152, 31878), (156, 31905), (157, 31920), (163, 31974), (166, 32016), (175, 32055), (193, 32157), (208, 32271), (221, 32343), (224, 32367), (225, 32370), (238, 32454), (244, 32493), (263, 32595),

Gene: Jolene\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Jolene\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (220, 32762), (225, 32792), (238, 32876), (246, 32924), (249, 32939),

Gene: Jolie2\_42 Start: 32418, Stop: 33506, Start Num: 66

Candidate Starts for Jolie2\_42:

(45, 32328), (Start: 66 @32418 has 66 MA's), (95, 32511), (107, 32556), (116, 32604), (125, 32619), (129, 32661), (139, 32718), (151, 32802), (152, 32805), (156, 32832), (160, 32883), (171, 32964), (175, 32982), (208, 33207), (220, 33273), (225, 33303), (235, 33360), (238, 33387), (246, 33435),

Gene: Jonghyun\_41 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Jonghyun\_41:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (220, 32762), (225, 32792), (238, 32876), (246, 32924), (249, 32939),

Gene: JorRay\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for JorRay\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Journey\_49 Start: 30994, Stop: 31923, Start Num: 117

Candidate Starts for Journey\_49:

(86, 30874), (Start: 117 @30994 has 57 MA's), (127, 31024), (133, 31078), (152, 31195), (156, 31222), (157, 31237), (163, 31291), (175, 31372), (193, 31474), (208, 31588), (221, 31660), (224, 31684), (225, 31687), (238, 31771), (244, 31810), (263, 31912),

Gene: Jung\_44 Start: 31575, Stop: 32504, Start Num: 117

Candidate Starts for Jung\_44:

(86, 31455), (Start: 117 @31575 has 57 MA's), (127, 31605), (133, 31659), (152, 31776), (156, 31803), (157, 31818), (163, 31872), (175, 31953), (193, 32055), (208, 32169), (221, 32241), (224, 32265), (225, 32268), (238, 32352), (244, 32391), (263, 32493),

Gene: Juniormint\_46 Start: 31649, Stop: 32575, Start Num: 117

Candidate Starts for Juniormint\_46:

(Start: 117 @31649 has 57 MA's), (127, 31676), (133, 31730), (152, 31847), (156, 31874), (157, 31889), (175, 32024), (177, 32036), (187, 32093), (195, 32132), (208, 32240), (212, 32270), (221,

32312), (224, 32336), (225, 32339), (238, 32423), (244, 32462), (263, 32564),

Gene: Kareem\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Kareem\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Kari\_45 Start: 31614, Stop: 32543, Start Num: 117

Candidate Starts for Kari\_45:

(86, 31494), (Start: 117 @31614 has 57 MA's), (127, 31644), (133, 31698), (152, 31815), (156, 31842), (157, 31857), (163, 31911), (175, 31992), (193, 32094), (208, 32208), (221, 32280), (224, 32304), (225, 32307), (238, 32391), (244, 32430), (263, 32532),

Gene: Kasen3\_42 Start: 31893, Stop: 32978, Start Num: 66

Candidate Starts for Kasen3\_42:

(Start: 66 @31893 has 66 MA's), (98, 32007), (107, 32031), (111, 32061), (151, 32280), (152, 32283), (156, 32310), (163, 32379), (171, 32442), (175, 32460), (177, 32472), (195, 32562), (225, 32778), (226, 32784), (238, 32862), (246, 32910), (249, 32925),

Gene: KilKor\_45 Start: 31877, Stop: 32803, Start Num: 117

Candidate Starts for KilKor\_45:

(Start: 117 @31877 has 57 MA's), (127, 31904), (133, 31958), (152, 32075), (156, 32102), (157, 32117), (175, 32252), (177, 32264), (187, 32321), (195, 32360), (208, 32468), (212, 32498), (221, 32540), (224, 32564), (225, 32567), (238, 32651), (244, 32690), (263, 32792),

Gene: KimmyK\_55 Start: 41637, Stop: 42485, Start Num: 89

Candidate Starts for KimmyK\_55:

(Start: 89 @41637 has 19 MA's), (94, 41652), (258, 42465),

Gene: Kita\_57 Start: 38849, Stop: 39724, Start Num: 91

Candidate Starts for Kita\_57:

(67, 38768), (75, 38786), (78, 38795), (Start: 91 @38849 has 86 MA's), (150, 39044), (175, 39194), (196, 39317), (199, 39344), (211, 39452), (226, 39530),

Gene: Ksquared\_45 Start: 31627, Stop: 32553, Start Num: 117

Candidate Starts for Ksquared\_45:

(Start: 117 @31627 has 57 MA's), (127, 31654), (133, 31708), (152, 31825), (156, 31852), (157, 31867), (175, 32002), (177, 32014), (187, 32071), (195, 32110), (208, 32218), (212, 32248), (221, 32290), (224, 32314), (225, 32317), (238, 32401), (244, 32440), (263, 32542),

Gene: Lamberg\_49 Start: 33560, Stop: 34423, Start Num: 91

Candidate Starts for Lamberg\_49:

(78, 33506), (Start: 91 @33560 has 86 MA's), (132, 33632), (150, 33743), (166, 33854), (175, 33893), (195, 33995), (196, 34016), (199, 34043), (211, 34151), (226, 34229),

Gene: Langerak\_46 Start: 31633, Stop: 32562, Start Num: 117

Candidate Starts for Langerak\_46:

(86, 31513), (Start: 117 @31633 has 57 MA's), (127, 31663), (133, 31717), (152, 31834), (156, 31861), (157, 31876), (163, 31930), (175, 32011), (193, 32113), (208, 32227), (221, 32299), (224, 32323), (225, 32326), (238, 32410), (244, 32449), (263, 32551),

Gene: Lemuria\_44 Start: 33756, Stop: 34844, Start Num: 66

Candidate Starts for Lemuria\_44:

(45, 33666), (Start: 66 @33756 has 66 MA's), (95, 33849), (107, 33894), (119, 33948), (129, 33999), (138, 34050), (151, 34140), (156, 34170), (157, 34185), (171, 34302), (175, 34320), (177, 34332), (215, 34587), (221, 34614), (225, 34641), (231, 34671), (246, 34773), (252, 34806), (260, 34839),

Gene: Liefie\_42 Start: 31905, Stop: 32990, Start Num: 66

Candidate Starts for Liefie\_42:

(Start: 66 @31905 has 66 MA's), (98, 32019), (107, 32043), (111, 32073), (151, 32292), (152, 32295), (156, 32322), (163, 32391), (171, 32454), (175, 32472), (177, 32484), (220, 32760), (225, 32790), (238, 32874), (246, 32922), (249, 32937),

Gene: LilSpotty\_63 Start: 38834, Stop: 39688, Start Num: 114

Candidate Starts for LilSpotty\_63:

(Start: 114 @38834 has 6 MA's), (146, 38996), (150, 39029), (155, 39065), (166, 39140), (170, 39158), (175, 39179), (191, 39278), (193, 39281), (202, 39344), (204, 39359), (219, 39476), (228, 39527), (229, 39533), (234, 39563), (246, 39647),

Gene: Lilas\_55 Start: 41222, Stop: 42097, Start Num: 91

Candidate Starts for Lilas\_55:

(67, 41141), (75, 41159), (78, 41168), (Start: 91 @41222 has 86 MA's), (150, 41417), (175, 41567), (196, 41690), (199, 41717), (211, 41825), (226, 41903),

Gene: LonelyBoi\_55 Start: 41380, Stop: 42243, Start Num: 91

Candidate Starts for LonelyBoi\_55:

(15, 41026), (19, 41047), (48, 41227), (57, 41251), (Start: 91 @41380 has 86 MA's), (146, 41530), (150, 41563), (175, 41713), (195, 41815), (196, 41836), (199, 41863), (211, 41971), (222, 42019), (226, 42049),

Gene: LordFarquaad\_53 Start: 35954, Stop: 36829, Start Num: 91

Candidate Starts for LordFarquaad\_53:

(67, 35873), (75, 35891), (78, 35900), (Start: 91 @35954 has 86 MA's), (150, 36149), (166, 36260), (167, 36266), (175, 36299), (177, 36311), (183, 36338), (196, 36422), (199, 36449), (211, 36557), (221, 36602), (226, 36635),

Gene: LouisV14\_44 Start: 34172, Stop: 35257, Start Num: 66

Candidate Starts for LouisV14\_44:

(Start: 66 @34172 has 66 MA's), (98, 34286), (107, 34310), (111, 34340), (151, 34559), (152, 34562), (156, 34589), (163, 34658), (171, 34721), (175, 34739), (177, 34751), (195, 34841), (225, 35057), (226, 35063), (238, 35141), (246, 35189), (249, 35204),

Gene: MOOREtheMARYer\_44 Start: 33458, Stop: 34549, Start Num: 66

Candidate Starts for MOOREtheMARYer\_44:

(18, 33224), (Start: 66 @33458 has 66 MA's), (128, 33692), (147, 33806), (151, 33845), (152, 33848), (167, 33992), (171, 34007), (175, 34025), (207, 34229), (225, 34346), (246, 34478),

Gene: Madeline\_57 Start: 40750, Stop: 41613, Start Num: 91

Candidate Starts for Madeline\_57:

(Start: 91 @40750 has 86 MA's), (127, 40774), (132, 40822), (150, 40933), (166, 41044), (167, 41050), (175, 41083), (187, 41146), (196, 41206), (199, 41233), (211, 41341), (226, 41419),

Gene: Majeke\_46 Start: 31658, Stop: 32587, Start Num: 117

Candidate Starts for Majeke\_46:

(86, 31538), (Start: 117 @31658 has 57 MA's), (127, 31688), (133, 31742), (152, 31859), (156, 31886), (157, 31901), (163, 31955), (175, 32036), (193, 32138), (208, 32252), (221, 32324), (224, 32348), (225, 32351), (238, 32435), (244, 32474), (263, 32576),

Gene: Malibo\_59 Start: 40468, Stop: 41298, Start Num: 91

Candidate Starts for Malibo\_59:

(19, 40132), (29, 40207), (32, 40222), (34, 40237), (35, 40243), (39, 40261), (49, 40315), (58, 40339), (75, 40405), (77, 40411), (Start: 91 @40468 has 86 MA's), (185, 40846), (193, 40888), (196, 40915), (198, 40927),

Gene: Malithi\_46 Start: 31533, Stop: 32462, Start Num: 117

Candidate Starts for Malithi\_46:

(86, 31413), (Start: 117 @31533 has 57 MA's), (127, 31563), (133, 31617), (152, 31734), (156, 31761), (157, 31776), (163, 31830), (175, 31911), (193, 32013), (208, 32127), (221, 32199), (224, 32223), (225, 32226), (238, 32310), (244, 32349), (263, 32451),

Gene: Manasvini\_57 Start: 38864, Stop: 39739, Start Num: 91

Candidate Starts for Manasvini\_57:

(67, 38783), (75, 38801), (78, 38810), (Start: 91 @38864 has 86 MA's), (150, 39059), (175, 39209), (196, 39332), (199, 39359), (211, 39467), (226, 39545),

Gene: Mangethe\_46 Start: 31658, Stop: 32587, Start Num: 117

Candidate Starts for Mangethe\_46:

(86, 31538), (Start: 117 @31658 has 57 MA's), (127, 31688), (133, 31742), (152, 31859), (156, 31886), (157, 31901), (163, 31955), (175, 32036), (193, 32138), (208, 32252), (221, 32324), (224, 32348), (225, 32351), (238, 32435), (244, 32474), (263, 32576),

Gene: Mao1\_64 Start: 47563, Stop: 48474, Start Num: 115

Candidate Starts for Mao1\_64:

(Start: 115 @47563 has 2 MA's), (133, 47650), (135, 47665), (152, 47767), (156, 47794), (157, 47809), (161, 47854), (166, 47905), (175, 47944), (177, 47956), (193, 48040), (195, 48046), (205, 48127), (208, 48160), (209, 48178), (212, 48190), (214, 48196), (220, 48229), (221, 48232), (224, 48256), (225, 48259), (226, 48265), (244, 48382), (250, 48409), (262, 48454),

Gene: Maridalia\_60 Start: 40096, Stop: 40959, Start Num: 91

Candidate Starts for Maridalia\_60:

(15, 39742), (19, 39763), (48, 39943), (57, 39967), (Start: 91 @40096 has 86 MA's), (146, 40246), (150, 40279), (175, 40429), (196, 40552), (199, 40579), (211, 40687), (222, 40735), (226, 40765),

Gene: Marmie\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Marmie\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Marteena\_55 Start: 39499, Stop: 40374, Start Num: 91

Candidate Starts for Marteena\_55:

(34, 39268), (37, 39286), (42, 39304), (49, 39346), (56, 39364), (58, 39370), (67, 39418), (75, 39436), (78, 39445), (Start: 91 @39499 has 86 MA's), (132, 39583), (150, 39694), (166, 39805), (167, 39811), (175, 39844), (196, 39967), (199, 39994), (211, 40102), (226, 40180),

Gene: Matteo\_46 Start: 32611, Stop: 33450, Start Num: 91

Candidate Starts for Matteo\_46:

(71, 32548), (Start: 91 @32611 has 86 MA's), (149, 32782), (166, 32896), (170, 32914), (185, 32989), (189, 33022), (226, 33244),

Gene: Mbo4\_46 Start: 35910, Stop: 36782, Start Num: 115

Candidate Starts for Mbo4\_46:

(Start: 115 @35910 has 2 MA's), (Start: 122 @35925 has 6 MA's), (131, 35985), (136, 36015), (138, 36018), (166, 36231), (174, 36261), (175, 36270), (188, 36339), (197, 36402), (218, 36558), (238, 36684), (239, 36696),

Gene: Mcklovin\_53 Start: 42095, Stop: 42934, Start Num: 91

Candidate Starts for Mcklovin\_53:

(73, 42032), (77, 42041), (Start: 91 @42095 has 86 MA's), (129, 42143), (149, 42266), (166, 42380), (170, 42398), (226, 42728),

Gene: Megiddo\_45 Start: 31877, Stop: 32803, Start Num: 117

Candidate Starts for Megiddo\_45:

(Start: 117 @31877 has 57 MA's), (127, 31904), (133, 31958), (152, 32075), (156, 32102), (157, 32117), (175, 32252), (177, 32264), (187, 32321), (195, 32360), (208, 32468), (212, 32498), (221, 32540), (224, 32564), (225, 32567), (238, 32651), (244, 32690), (263, 32792),

Gene: Mendokysei\_42 Start: 32149, Stop: 32979, Start Num: 123

Candidate Starts for Mendokysei\_42:

(17, 31687), (28, 31774), (52, 31894), (87, 32023), (Start: 93 @32044 has 2 MA's), (Start: 123 @32149 has 7 MA's), (152, 32338), (156, 32365), (173, 32476), (195, 32578), (236, 32869),

Gene: Mercurio\_45 Start: 34295, Stop: 35383, Start Num: 66

Candidate Starts for Mercurio\_45:

(43, 34193), (45, 34202), (Start: 66 @34295 has 66 MA's), (107, 34433), (116, 34481), (119, 34487), (129, 34538), (151, 34679), (152, 34682), (157, 34724), (171, 34841), (175, 34859), (177, 34871), (220, 35150), (225, 35180), (235, 35237), (246, 35312), (260, 35378),

Gene: MichaelScott\_54 Start: 37559, Stop: 38398, Start Num: 91

Candidate Starts for MichaelScott\_54:

(69, 37496), (Start: 91 @37559 has 86 MA's), (129, 37607), (149, 37730), (166, 37844), (170, 37862), (226, 38192),

Gene: MichelleMyBell\_47 Start: 31300, Stop: 32202, Start Num: 117

Candidate Starts for MichelleMyBell\_47:

(53, 31054), (57, 31066), (73, 31132), (86, 31177), (Start: 117 @31300 has 57 MA's), (Start: 123 @31306 has 7 MA's), (127, 31324), (133, 31378), (148, 31462), (152, 31495), (153, 31498), (157, 31537), (163, 31591), (175, 31672), (193, 31774), (208, 31888), (214, 31924), (220, 31957), (221, 31960), (224, 31984), (225, 31987), (226, 31993), (244, 32110), (250, 32137), (262, 32182),

Gene: MidnightRain\_71 Start: 37076, Stop: 37903, Start Num: 122

Candidate Starts for MidnightRain\_71:

(102, 37055), (Start: 122 @37076 has 6 MA's), (138, 37163), (154, 37280), (171, 37379), (175, 37397), (178, 37412), (227, 37709), (259, 37892),

Gene: Misha28\_64 Start: 40131, Stop: 40985, Start Num: 114

Candidate Starts for Misha28\_64:

(Start: 114 @40131 has 6 MA's), (146, 40293), (150, 40326), (152, 40338), (155, 40362), (166, 40437), (170, 40455), (175, 40476), (193, 40578), (199, 40629), (202, 40641), (204, 40656), (219, 40773), (228, 40824), (229, 40830), (234, 40860), (246, 40944),



Gene: Mocha12\_53 Start: 35051, Stop: 35914, Start Num: 91

Candidate Starts for Mocha12\_53:

(78, 34997), (Start: 91 @35051 has 86 MA's), (132, 35123), (150, 35234), (166, 35345), (175, 35384), (195, 35486), (196, 35507), (199, 35534), (211, 35642), (226, 35720),

Gene: Mowgli\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Mowgli\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Mutzi\_53 Start: 42017, Stop: 42850, Start Num: 126

Candidate Starts for Mutzi\_53:

(Start: 126 @42017 has 9 MA's), (133, 42086), (135, 42101), (143, 42143), (152, 42203), (175, 42341), (187, 42404), (188, 42410), (208, 42569), (225, 42668),

Gene: Nairb\_43 Start: 32597, Stop: 33427, Start Num: 123

Candidate Starts for Nairb\_43:

(Start: 123 @32597 has 7 MA's), (152, 32786), (156, 32813), (173, 32924), (187, 32987), (215, 33191), (218, 33206),

Gene: Nazo\_48 Start: 33708, Stop: 34655, Start Num: 117

Candidate Starts for Nazo\_48:

(86, 33588), (Start: 117 @33708 has 57 MA's), (127, 33735), (133, 33789), (148, 33873), (152, 33906), (157, 33948), (166, 34044), (175, 34083), (193, 34185), (208, 34299), (209, 34317), (210, 34323), (212, 34329), (221, 34371), (224, 34395), (225, 34398), (238, 34482), (243, 34518), (244, 34521),

Gene: Necropolis\_45 Start: 31689, Stop: 32618, Start Num: 117

Candidate Starts for Necropolis\_45:

(86, 31569), (Start: 117 @31689 has 57 MA's), (127, 31719), (133, 31773), (152, 31890), (156, 31917), (157, 31932), (163, 31986), (175, 32067), (193, 32169), (208, 32283), (221, 32355), (224, 32379), (225, 32382), (238, 32466), (244, 32505), (263, 32607),

Gene: Neobush\_56 Start: 38834, Stop: 39709, Start Num: 91

Candidate Starts for Neobush\_56:

(67, 38753), (75, 38771), (78, 38780), (Start: 91 @38834 has 86 MA's), (150, 39029), (175, 39179), (196, 39302), (199, 39329), (211, 39437), (226, 39515),

Gene: Nettuno\_49 Start: 33560, Stop: 34423, Start Num: 91

Candidate Starts for Nettuno\_49:

(78, 33506), (Start: 91 @33560 has 86 MA's), (132, 33632), (150, 33743), (166, 33854), (175, 33893), (195, 33995), (196, 34016), (199, 34043), (211, 34151), (226, 34229),

Gene: Nubi\_54 Start: 41034, Stop: 41882, Start Num: 89

Candidate Starts for Nubi\_54:

(82, 41007), (Start: 89 @41034 has 19 MA's),

Gene: OctaviousRex\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for OctaviousRex\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792),

(226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Ohgeesy\_56 Start: 39515, Stop: 40390, Start Num: 91

Candidate Starts for Ohgeesy\_56:

(22, 39200), (34, 39284), (37, 39302), (42, 39320), (49, 39362), (56, 39380), (58, 39386), (67, 39434), (75, 39452), (78, 39461), (Start: 91 @39515 has 86 MA's), (150, 39710), (167, 39827), (175, 39860), (187, 39923), (196, 39983), (199, 40010), (211, 40118), (226, 40196),

Gene: Olga\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Olga\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: OnionKnight\_39 Start: 28260, Stop: 29147, Start Num: 106

Candidate Starts for OnionKnight\_39:

(85, 28182), (Start: 106 @28260 has 1 MA's), (109, 28272), (128, 28338), (148, 28461), (152, 28494), (174, 28623), (175, 28632), (194, 28737), (224, 28965), (228, 28983), (244, 29091), (251, 29133),

Gene: Oregano\_57 Start: 37319, Stop: 38158, Start Num: 91

Candidate Starts for Oregano\_57:

(69, 37256), (Start: 91 @37319 has 86 MA's), (129, 37367), (149, 37490), (166, 37604), (170, 37622), (226, 37952),

Gene: Pace1224\_42 Start: 33012, Stop: 34091, Start Num: 66

Candidate Starts for Pace1224\_42:

(Start: 66 @33012 has 66 MA's), (108, 33159), (147, 33360), (151, 33399), (152, 33402), (156, 33429), (171, 33561), (175, 33579), (177, 33591), (195, 33681), (207, 33783), (220, 33870), (225, 33900), (230, 33927), (246, 34032),

Gene: Paito\_43 Start: 32145, Stop: 33233, Start Num: 66

Candidate Starts for Paito\_43:

(27, 31989), (Start: 66 @32145 has 66 MA's), (98, 32259), (107, 32283), (130, 32406), (131, 32409), (132, 32415), (145, 32481), (151, 32532), (152, 32535), (156, 32562), (163, 32631), (171, 32694), (175, 32712), (177, 32724), (184, 32754), (195, 32814), (206, 32907), (211, 32964), (225, 33033), (236, 33102), (238, 33117), (246, 33165),

Gene: PantheRoc\_59 Start: 40114, Stop: 40977, Start Num: 91

Candidate Starts for PantheRoc\_59:

(48, 39958), (57, 39982), (76, 40054), (77, 40057), (78, 40060), (Start: 91 @40114 has 86 MA's), (150, 40297), (166, 40408), (167, 40414), (175, 40447), (187, 40510), (196, 40570), (199, 40597), (211, 40705), (226, 40783),

Gene: Peeb\_42 Start: 31892, Stop: 32977, Start Num: 66

Candidate Starts for Peeb\_42:

(Start: 66 @31892 has 66 MA's), (98, 32006), (107, 32030), (111, 32060), (151, 32279), (152, 32282), (156, 32309), (163, 32378), (171, 32441), (175, 32459), (177, 32471), (195, 32561), (225, 32777), (226, 32783), (238, 32861), (246, 32909), (249, 32924),

Gene: Periodt\_42 Start: 31898, Stop: 32983, Start Num: 66

Candidate Starts for Periodt\_42:

(Start: 66 @31898 has 66 MA's), (98, 32012), (107, 32036), (111, 32066), (151, 32285), (152, 32288), (156, 32315), (163, 32384), (171, 32447), (175, 32465), (177, 32477), (220, 32753), (225, 32783),

(238, 32867), (246, 32915), (249, 32930),

Gene: Persistence\_62 Start: 34633, Stop: 35460, Start Num: 122

Candidate Starts for Persistence\_62:

(51, 34423), (71, 34501), (75, 34507), (113, 34609), (Start: 122 @34633 has 6 MA's), (167, 34921), (171, 34936), (175, 34954), (178, 34969), (192, 35047), (227, 35266), (259, 35449),

Gene: Phalm\_45 Start: 31877, Stop: 32803, Start Num: 117

Candidate Starts for Phalm\_45:

(Start: 117 @31877 has 57 MA's), (127, 31904), (133, 31958), (152, 32075), (156, 32102), (157, 32117), (175, 32252), (177, 32264), (187, 32321), (195, 32360), (208, 32468), (212, 32498), (221, 32540), (224, 32564), (225, 32567), (238, 32651), (244, 32690), (263, 32792),

Gene: Phayonce\_46 Start: 33725, Stop: 34636, Start Num: 117

Candidate Starts for Phayonce\_46:

(Start: 117 @33725 has 57 MA's), (Start: 123 @33734 has 7 MA's), (127, 33752), (133, 33806), (152, 33923), (156, 33950), (157, 33965), (166, 34061), (175, 34100), (177, 34112), (186, 34160), (193, 34202), (195, 34208), (205, 34289), (208, 34322), (209, 34340), (212, 34352), (214, 34358), (220, 34391), (221, 34394), (224, 34418), (225, 34421), (226, 34427), (244, 34544), (250, 34571), (262, 34616),

Gene: Phegasus\_46 Start: 31625, Stop: 32554, Start Num: 117

Candidate Starts for Phegasus\_46:

(86, 31505), (Start: 117 @31625 has 57 MA's), (127, 31655), (133, 31709), (152, 31826), (156, 31853), (157, 31868), (163, 31922), (175, 32003), (193, 32105), (208, 32219), (221, 32291), (224, 32315), (225, 32318), (238, 32402), (244, 32441), (263, 32543),

Gene: Philonius\_47 Start: 30729, Stop: 31655, Start Num: 117

Candidate Starts for Philonius\_47:

(Start: 117 @30729 has 57 MA's), (127, 30756), (133, 30810), (152, 30927), (156, 30954), (157, 30969), (175, 31104), (177, 31116), (187, 31173), (195, 31212), (208, 31320), (212, 31350), (221, 31392), (224, 31416), (225, 31419), (238, 31503), (244, 31542), (263, 31644),

Gene: Phineas\_47 Start: 32470, Stop: 33396, Start Num: 117

Candidate Starts for Phineas\_47:

(Start: 117 @32470 has 57 MA's), (127, 32497), (133, 32551), (152, 32668), (156, 32695), (157, 32710), (163, 32764), (175, 32845), (177, 32857), (187, 32914), (195, 32953), (208, 33061), (221, 33133), (224, 33157), (225, 33160), (238, 33244), (244, 33283), (263, 33385),

Gene: Phish\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Phish\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Phlop\_53 Start: 41109, Stop: 41957, Start Num: 89

Candidate Starts for Phlop\_53:

(Start: 89 @41109 has 19 MA's), (94, 41124), (258, 41937),

Gene: Phreak\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Phreak\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792),

(226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: PhriskyACE\_54 Start: 37457, Stop: 38290, Start Num: 91

Candidate Starts for PhriskyACE\_54:

(75, 37394), (78, 37403), (Start: 91 @37457 has 86 MA's), (132, 37529), (146, 37598), (156, 37670), (193, 37877), (196, 37904), (200, 37919),

Gene: Pickett\_49 Start: 33137, Stop: 34012, Start Num: 91

Candidate Starts for Pickett\_49:

(67, 33056), (75, 33074), (78, 33083), (Start: 91 @33137 has 86 MA's), (150, 33332), (175, 33482), (196, 33605), (199, 33632), (211, 33740), (226, 33818),

Gene: PinkCoffee\_56 Start: 41212, Stop: 42060, Start Num: 89

Candidate Starts for PinkCoffee\_56:

(Start: 89 @41212 has 19 MA's), (94, 41227), (258, 42040),

Gene: PinkYoshi\_42 Start: 31898, Stop: 32983, Start Num: 66

Candidate Starts for PinkYoshi\_42:

(Start: 66 @31898 has 66 MA's), (98, 32012), (107, 32036), (111, 32066), (151, 32285), (152, 32288), (156, 32315), (163, 32384), (171, 32447), (175, 32465), (177, 32477), (195, 32567), (225, 32783), (226, 32789), (238, 32867), (246, 32915), (249, 32930),

Gene: Pinnie\_42 Start: 33163, Stop: 34254, Start Num: 66

Candidate Starts for Pinnie\_42:

(18, 32929), (Start: 66 @33163 has 66 MA's), (70, 33178), (108, 33310), (128, 33397), (147, 33511), (151, 33550), (152, 33553), (167, 33697), (171, 33712), (175, 33730), (177, 33742), (207, 33934), (225, 34051), (246, 34183),

Gene: Piper2020\_67 Start: 41026, Stop: 41880, Start Num: 114

Candidate Starts for Piper2020\_67:

(Start: 114 @41026 has 6 MA's), (146, 41188), (150, 41221), (152, 41233), (155, 41257), (166, 41332), (170, 41350), (175, 41371), (193, 41473), (199, 41524), (202, 41536), (204, 41551), (219, 41668), (228, 41719), (229, 41725), (234, 41755), (246, 41839),

Gene: Plagueis\_42 Start: 31727, Stop: 32812, Start Num: 66

Candidate Starts for Plagueis\_42:

(Start: 66 @31727 has 66 MA's), (98, 31841), (107, 31865), (111, 31895), (151, 32114), (152, 32117), (156, 32144), (163, 32213), (171, 32276), (175, 32294), (177, 32306), (195, 32396), (225, 32612), (226, 32618), (238, 32696), (246, 32744), (249, 32759),

Gene: Polkaroo\_46 Start: 31651, Stop: 32550, Start Num: 127

Candidate Starts for Polkaroo\_46:

(Start: 117 @31624 has 57 MA's), (127, 31651), (133, 31705), (152, 31822), (156, 31849), (157, 31864), (175, 31999), (195, 32107), (208, 32215), (212, 32245), (221, 32287), (224, 32311), (225, 32314), (238, 32398), (244, 32437), (263, 32539),

Gene: Pollux\_59 Start: 41384, Stop: 42259, Start Num: 91

Candidate Starts for Pollux\_59:

(6, 40919), (10, 40985), (23, 41078), (42, 41189), (49, 41231), (56, 41249), (58, 41255), (75, 41321), (78, 41330), (Start: 91 @41384 has 86 MA's), (146, 41546), (150, 41579), (166, 41690), (175, 41729), (199, 41879), (211, 41987), (226, 42065),

Gene: Polly\_53 Start: 38283, Stop: 39158, Start Num: 91

Candidate Starts for Polly\_53:

(67, 38202), (75, 38220), (78, 38229), (Start: 91 @38283 has 86 MA's), (150, 38478), (175, 38628), (196, 38751), (199, 38778), (211, 38886), (226, 38964),

Gene: Portcullis\_55 Start: 40701, Stop: 41534, Start Num: 126

Candidate Starts for Portcullis\_55:

(Start: 126 @40701 has 9 MA's), (133, 40770), (135, 40785), (143, 40827), (152, 40887), (175, 41025), (187, 41088), (188, 41094), (208, 41253), (225, 41352),

Gene: Posh\_59 Start: 41292, Stop: 42122, Start Num: 91

Candidate Starts for Posh\_59:

(Start: 91 @41292 has 86 MA's), (185, 41670), (193, 41712), (195, 41718), (196, 41739), (200, 41754),

Gene: Powerball\_55 Start: 37583, Stop: 38416, Start Num: 91

Candidate Starts for Powerball\_55:

(75, 37520), (78, 37529), (Start: 91 @37583 has 86 MA's), (132, 37655), (146, 37724), (156, 37796), (193, 38003), (196, 38030), (200, 38045),

Gene: PullumCavea\_53 Start: 41109, Stop: 41957, Start Num: 89

Candidate Starts for PullumCavea\_53:

(Start: 89 @41109 has 19 MA's), (258, 41937),

Gene: Purky\_51 Start: 34107, Stop: 35051, Start Num: 117

Candidate Starts for Purky\_51:

(65, 33915), (86, 33987), (Start: 117 @34107 has 57 MA's), (124, 34113), (127, 34131), (138, 34206), (143, 34242), (152, 34302), (157, 34344), (163, 34398), (166, 34440), (175, 34479), (177, 34491), (208, 34695), (225, 34794), (238, 34878), (243, 34914),

Gene: Pygmy\_49 Start: 33934, Stop: 34860, Start Num: 117

Candidate Starts for Pygmy\_49:

(Start: 117 @33934 has 57 MA's), (127, 33961), (133, 34015), (152, 34132), (156, 34159), (157, 34174), (163, 34228), (175, 34309), (177, 34321), (187, 34378), (195, 34417), (208, 34525), (221, 34597), (224, 34621), (225, 34624), (238, 34708), (244, 34747), (263, 34849),

Gene: Pytheas\_59 Start: 42317, Stop: 43192, Start Num: 91

Candidate Starts for Pytheas\_59:

(Start: 91 @42317 has 86 MA's), (150, 42512), (175, 42662), (195, 42764), (196, 42785), (199, 42812), (211, 42920), (226, 42998),

Gene: QueenHazel\_43 Start: 31778, Stop: 32704, Start Num: 117

Candidate Starts for QueenHazel\_43:

(41, 31481), (46, 31505), (62, 31574), (86, 31658), (Start: 117 @31778 has 57 MA's), (Start: 123 @31787 has 7 MA's), (127, 31805), (133, 31859), (152, 31976), (156, 32003), (157, 32018), (163, 32072), (166, 32114), (175, 32153), (187, 32222), (188, 32228), (193, 32255), (205, 32336), (208, 32369), (221, 32441), (224, 32465), (225, 32468), (238, 32552), (244, 32591), (263, 32693),

Gene: Rabbs\_43 Start: 32095, Stop: 33180, Start Num: 66

Candidate Starts for Rabbs\_43:

(11, 31795), (Start: 66 @32095 has 66 MA's), (107, 32233), (130, 32356), (151, 32482), (156, 32512), (163, 32581), (171, 32644), (175, 32662), (177, 32674), (195, 32764), (211, 32911), (225, 32980), (238, 33064), (246, 33112),

Gene: RadFad\_73 Start: 37290, Stop: 38117, Start Num: 122

Candidate Starts for RadFad\_73:

(102, 37269), (Start: 122 @37290 has 6 MA's), (138, 37377), (154, 37494), (171, 37593), (175, 37611), (178, 37626), (227, 37923), (259, 38106),

Gene: RavenCo17\_53 Start: 38730, Stop: 39557, Start Num: 93

Candidate Starts for RavenCo17\_53:

(Start: 93 @38730 has 2 MA's), (146, 38868), (168, 39021), (193, 39147), (195, 39153), (196, 39174), (200, 39189), (202, 39198),

Gene: Remy19\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Remy19\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Renaissance\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for Renaissance\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: RogerDodger\_57 Start: 41231, Stop: 42079, Start Num: 89

Candidate Starts for RogerDodger\_57:

(82, 41204), (Start: 89 @41231 has 19 MA's), (258, 42059),

Gene: RonRayGun\_44 Start: 33043, Stop: 33873, Start Num: 123

Candidate Starts for RonRayGun\_44:

(Start: 123 @33043 has 7 MA's), (152, 33232), (156, 33259), (173, 33370), (187, 33433), (215, 33637), (218, 33652),

Gene: Ruthy\_54 Start: 39658, Stop: 40491, Start Num: 91

Candidate Starts for Ruthy\_54:

(75, 39595), (77, 39601), (Start: 91 @39658 has 86 MA's), (146, 39802), (185, 40039), (193, 40081), (195, 40087), (196, 40108), (198, 40120),

Gene: Sahara\_52 Start: 34798, Stop: 35661, Start Num: 91

Candidate Starts for Sahara\_52:

(78, 34744), (Start: 91 @34798 has 86 MA's), (132, 34870), (150, 34981), (166, 35092), (175, 35131), (195, 35233), (196, 35254), (199, 35281), (211, 35389), (226, 35467),

Gene: Salvador\_53 Start: 40927, Stop: 41775, Start Num: 89

Candidate Starts for Salvador\_53:

(82, 40900), (Start: 89 @40927 has 19 MA's), (94, 40942),

Gene: Samman98\_54 Start: 36185, Stop: 37024, Start Num: 91

Candidate Starts for Samman98\_54:

(69, 36122), (Start: 91 @36185 has 86 MA's), (129, 36233), (149, 36356), (166, 36470), (170, 36488), (226, 36818),

Gene: Savage\_53 Start: 35051, Stop: 35914, Start Num: 91

Candidate Starts for Savage\_53:

(78, 34997), (Start: 91 @35051 has 86 MA's), (132, 35123), (150, 35234), (166, 35345), (175, 35384), (195, 35486), (196, 35507), (199, 35534), (211, 35642), (226, 35720),

Gene: Savbucketdawg\_53 Start: 40688, Stop: 41521, Start Num: 126

Candidate Starts for Savbucketdawg\_53:

(Start: 126 @40688 has 9 MA's), (133, 40757), (135, 40772), (143, 40814), (152, 40874), (175, 41012), (187, 41075), (188, 41081), (208, 41240), (225, 41339),

Gene: Sbash\_57 Start: 40492, Stop: 41409, Start Num: 117

Candidate Starts for Sbash\_57:

(Start: 117 @40492 has 57 MA's), (127, 40519), (133, 40573), (156, 40717), (157, 40732), (163, 40786), (166, 40828), (175, 40867), (177, 40879), (193, 40969), (208, 41083), (213, 41116), (221, 41155), (224, 41179), (225, 41182), (238, 41266), (244, 41305), (248, 41329), (263, 41398),

Gene: Schiebel\_42 Start: 31892, Stop: 32977, Start Num: 66

Candidate Starts for Schiebel\_42:

(Start: 66 @31892 has 66 MA's), (98, 32006), (107, 32030), (111, 32060), (151, 32279), (152, 32282), (156, 32309), (163, 32378), (171, 32441), (175, 32459), (177, 32471), (195, 32561), (225, 32777), (226, 32783), (238, 32861), (246, 32909), (249, 32924),

Gene: Seahorse\_72 Start: 37934, Stop: 38800, Start Num: 101

Candidate Starts for Seahorse\_72:

(44, 37712), (Start: 101 @37934 has 1 MA's), (113, 37937), (Start: 122 @37961 has 6 MA's), (128, 37991), (156, 38171), (167, 38249), (175, 38282), (178, 38297), (201, 38417), (225, 38585), (226, 38591), (243, 38702),

Gene: Sejanus\_63 Start: 48683, Stop: 49585, Start Num: 115

Candidate Starts for Sejanus\_63:

(Start: 115 @48683 has 2 MA's), (133, 48761), (152, 48878), (156, 48905), (157, 48920), (161, 48965), (166, 49016), (175, 49055), (177, 49067), (193, 49151), (208, 49271), (214, 49307), (220, 49340), (221, 49343), (224, 49367), (225, 49370), (226, 49376), (244, 49493), (250, 49520), (262, 49565),

Gene: Sekhmet\_55 Start: 37219, Stop: 38082, Start Num: 91

Candidate Starts for Sekhmet\_55:

(75, 37156), (Start: 91 @37219 has 86 MA's), (166, 37513), (175, 37552), (178, 37567), (196, 37675), (199, 37702), (201, 37708), (207, 37762), (211, 37810), (221, 37855), (222, 37858), (226, 37888),

Gene: ShaboiShabazz\_42 Start: 31907, Stop: 32992, Start Num: 66

Candidate Starts for ShaboiShabazz\_42:

(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297), (156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792), (226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Shinji\_53 Start: 40451, Stop: 41284, Start Num: 126

Candidate Starts for Shinji\_53:

(Start: 126 @40451 has 9 MA's), (133, 40520), (135, 40535), (143, 40577), (152, 40637), (175, 40775), (187, 40838), (188, 40844), (208, 41003), (225, 41102),

Gene: Shipwreck\_49 Start: 33909, Stop: 34835, Start Num: 117

Candidate Starts for Shipwreck\_49:

(Start: 117 @33909 has 57 MA's), (127, 33936), (133, 33990), (152, 34107), (156, 34134), (157, 34149), (163, 34203), (175, 34284), (177, 34296), (187, 34353), (195, 34392), (208, 34500), (221,

34572), (224, 34596), (225, 34599), (238, 34683), (244, 34722), (263, 34824),

Gene: Shlim410\_55 Start: 40640, Stop: 41503, Start Num: 91

Candidate Starts for Shlim410\_55:

(75, 40577), (Start: 91 @40640 has 86 MA's), (146, 40790), (150, 40823), (175, 40973), (179, 41000), (196, 41096), (199, 41123), (201, 41129), (226, 41309), (256, 41483),

Gene: Sidious\_56 Start: 39609, Stop: 40484, Start Num: 91

Candidate Starts for Sidious\_56:

(14, 39249), (34, 39378), (42, 39414), (49, 39456), (56, 39474), (58, 39480), (75, 39546), (78, 39555), (Start: 91 @39609 has 86 MA's), (146, 39771), (150, 39804), (166, 39915), (175, 39954), (196, 40077), (199, 40104), (211, 40212), (226, 40290), (236, 40353),

Gene: Silvy\_45 Start: 31200, Stop: 32129, Start Num: 117

Candidate Starts for Silvy\_45:

(69, 31029), (71, 31032), (81, 31065), (86, 31080), (Start: 117 @31200 has 57 MA's), (127, 31230), (133, 31284), (152, 31401), (156, 31428), (157, 31443), (163, 31497), (166, 31539), (175, 31578), (193, 31680), (208, 31794), (221, 31866), (224, 31890), (225, 31893), (238, 31977), (244, 32016), (263, 32118),

Gene: Sizemore\_42 Start: 31893, Stop: 32978, Start Num: 66

Candidate Starts for Sizemore\_42:

(Start: 66 @31893 has 66 MA's), (98, 32007), (107, 32031), (111, 32061), (151, 32280), (152, 32283), (156, 32310), (163, 32379), (171, 32442), (175, 32460), (177, 32472), (195, 32562), (225, 32778), (226, 32784), (238, 32862), (246, 32910), (249, 32925),

Gene: SkinnyPete\_44 Start: 30665, Stop: 31612, Start Num: 117

Candidate Starts for SkinnyPete\_44:

(Start: 117 @30665 has 57 MA's), (124, 30674), (127, 30692), (133, 30746), (152, 30863), (158, 30914), (166, 31001), (175, 31040), (177, 31052), (193, 31142), (201, 31199), (203, 31217), (206, 31241), (210, 31295), (212, 31301), (220, 31340), (221, 31343), (225, 31370), (226, 31376), (244, 31493), (263, 31595),

Gene: SmokingBunny\_54 Start: 41020, Stop: 41868, Start Num: 89

Candidate Starts for SmokingBunny\_54:

(82, 40993), (Start: 89 @41020 has 19 MA's),

Gene: Sneeze\_43 Start: 32094, Stop: 33179, Start Num: 66

Candidate Starts for Sneeze\_43:

(11, 31794), (Start: 66 @32094 has 66 MA's), (107, 32232), (130, 32355), (151, 32481), (156, 32511), (163, 32580), (171, 32643), (175, 32661), (177, 32673), (195, 32763), (211, 32910), (225, 32979), (238, 33063), (246, 33111),

Gene: SoilAssassin\_51 Start: 35972, Stop: 36847, Start Num: 91

Candidate Starts for SoilAssassin\_51:

(67, 35891), (75, 35909), (78, 35918), (Start: 91 @35972 has 86 MA's), (150, 36167), (166, 36278), (167, 36284), (175, 36317), (177, 36329), (183, 36356), (196, 36440), (199, 36467), (211, 36575), (221, 36620), (226, 36653),

Gene: Sonah\_46 Start: 31603, Stop: 32532, Start Num: 117

Candidate Starts for Sonah\_46:

(86, 31483), (Start: 117 @31603 has 57 MA's), (127, 31633), (133, 31687), (152, 31804), (156, 31831), (157, 31846), (163, 31900), (175, 31981), (177, 31993), (187, 32050), (195, 32089), (208,



32197), (221, 32269), (224, 32293), (225, 32296), (238, 32380), (244, 32419), (263, 32521),

Gene: Sparky\_56 Start: 39597, Stop: 40523, Start Num: 104

Candidate Starts for Sparky\_56:

(68, 39477), (Start: 84 @39522 has 1 MA's), (87, 39537), (Start: 104 @39597 has 1 MA's), (105, 39603), (155, 39864), (156, 39867), (157, 39882), (163, 39936), (166, 39978), (175, 40017), (177, 40029),

Gene: Sproutie\_53 Start: 35051, Stop: 35914, Start Num: 91

Candidate Starts for Sproutie\_53:

(78, 34997), (Start: 91 @35051 has 86 MA's), (132, 35123), (150, 35234), (166, 35345), (175, 35384), (195, 35486), (196, 35507), (199, 35534), (211, 35642), (226, 35720),

Gene: Stargaze\_43 Start: 33184, Stop: 34263, Start Num: 66

Candidate Starts for Stargaze\_43:

(25, 32989), (36, 33064), (Start: 66 @33184 has 66 MA's), (128, 33418), (147, 33532), (151, 33571), (160, 33652), (167, 33718), (171, 33733), (175, 33751), (177, 33763), (225, 34072), (226, 34078), (246, 34204),

Gene: StevieRay\_45 Start: 31579, Stop: 32505, Start Num: 117

Candidate Starts for StevieRay\_45:

(Start: 117 @31579 has 57 MA's), (127, 31606), (133, 31660), (152, 31777), (156, 31804), (157, 31819), (175, 31954), (177, 31966), (187, 32023), (195, 32062), (208, 32170), (212, 32200), (221, 32242), (224, 32266), (225, 32269), (238, 32353), (244, 32392), (263, 32494),

Gene: StressBall\_45 Start: 31877, Stop: 32803, Start Num: 117

Candidate Starts for StressBall\_45:

(Start: 117 @31877 has 57 MA's), (127, 31904), (133, 31958), (152, 32075), (156, 32102), (157, 32117), (175, 32252), (177, 32264), (187, 32321), (195, 32360), (208, 32468), (221, 32540), (224, 32564), (225, 32567), (238, 32651), (244, 32690), (263, 32792),

Gene: Suerte\_50 Start: 36159, Stop: 36998, Start Num: 91

Candidate Starts for Suerte\_50:

(73, 36096), (77, 36105), (Start: 91 @36159 has 86 MA's), (129, 36207), (149, 36330), (166, 36444), (170, 36462), (226, 36792),

Gene: Suscepit\_56 Start: 38841, Stop: 39716, Start Num: 91

Candidate Starts for Suscepit\_56:

(67, 38760), (75, 38778), (78, 38787), (Start: 91 @38841 has 86 MA's), (150, 39036), (175, 39186), (196, 39309), (199, 39336), (211, 39444), (226, 39522),

Gene: Sweets\_42 Start: 31902, Stop: 32987, Start Num: 66

Candidate Starts for Sweets\_42:

(Start: 66 @31902 has 66 MA's), (98, 32016), (107, 32040), (111, 32070), (151, 32289), (152, 32292), (156, 32319), (163, 32388), (171, 32451), (175, 32469), (177, 32481), (195, 32571), (225, 32787), (226, 32793), (238, 32871), (246, 32919), (249, 32934),

Gene: Taheera\_41 Start: 31598, Stop: 32683, Start Num: 66

Candidate Starts for Taheera\_41:

(11, 31322), (Start: 66 @31598 has 66 MA's), (107, 31736), (130, 31859), (151, 31985), (156, 32015), (163, 32084), (171, 32147), (175, 32165), (177, 32177), (195, 32267), (211, 32414), (225, 32483), (238, 32567), (246, 32615), (254, 32657),

Gene: Tayonia\_56 Start: 38840, Stop: 39715, Start Num: 91

Candidate Starts for Tayonia\_56:

(67, 38759), (75, 38777), (78, 38786), (Start: 91 @38840 has 86 MA's), (150, 39035), (175, 39185), (196, 39308), (199, 39335), (211, 39443), (226, 39521),

Gene: Techage\_45 Start: 31643, Stop: 32572, Start Num: 117

Candidate Starts for Techage\_45:

(86, 31523), (Start: 117 @31643 has 57 MA's), (127, 31673), (133, 31727), (152, 31844), (156, 31871), (157, 31886), (163, 31940), (175, 32021), (193, 32123), (208, 32237), (221, 32309), (224, 32333), (225, 32336), (238, 32420), (244, 32459), (263, 32561),

Gene: Terror\_41 Start: 31598, Stop: 32683, Start Num: 66

Candidate Starts for Terror\_41:

(11, 31322), (Start: 66 @31598 has 66 MA's), (107, 31736), (130, 31859), (151, 31985), (156, 32015), (163, 32084), (171, 32147), (175, 32165), (177, 32177), (195, 32267), (211, 32414), (225, 32483), (238, 32567), (246, 32615), (254, 32657),

Gene: ThankyouJordi\_59 Start: 41692, Stop: 42531, Start Num: 91

Candidate Starts for ThankyouJordi\_59:

(75, 41632), (77, 41638), (Start: 91 @41692 has 86 MA's), (149, 41863), (166, 41977), (170, 41995), (185, 42070), (226, 42325),

Gene: Thespis\_45 Start: 31613, Stop: 32539, Start Num: 117

Candidate Starts for Thespis\_45:

(Start: 117 @31613 has 57 MA's), (127, 31640), (133, 31694), (152, 31811), (156, 31838), (157, 31853), (175, 31988), (177, 32000), (187, 32057), (195, 32096), (208, 32204), (221, 32276), (224, 32300), (225, 32303), (238, 32387), (244, 32426), (263, 32528),

Gene: Thimann\_56 Start: 37603, Stop: 38442, Start Num: 91

Candidate Starts for Thimann\_56:

(73, 37540), (77, 37549), (Start: 91 @37603 has 86 MA's), (129, 37651), (149, 37774), (166, 37888), (170, 37906), (226, 38236),

Gene: TillyBobJoe\_56 Start: 42531, Stop: 43376, Start Num: 89

Candidate Starts for TillyBobJoe\_56:

(82, 42504), (Start: 89 @42531 has 19 MA's), (172, 42849), (182, 42900), (225, 43167), (231, 43197),

Gene: Togo\_53 Start: 41020, Stop: 41868, Start Num: 89

Candidate Starts for Togo\_53:

(82, 40993), (Start: 89 @41020 has 19 MA's),

Gene: TomBrady\_42 Start: 31908, Stop: 32993, Start Num: 66

Candidate Starts for TomBrady\_42:

(Start: 66 @31908 has 66 MA's), (98, 32022), (107, 32046), (111, 32076), (151, 32295), (152, 32298), (156, 32325), (163, 32394), (171, 32457), (175, 32475), (177, 32487), (195, 32577), (225, 32793), (226, 32799), (238, 32877), (246, 32925), (249, 32940),

Gene: TootsiePop\_64 Start: 40131, Stop: 40985, Start Num: 114

Candidate Starts for TootsiePop\_64:

(Start: 114 @40131 has 6 MA's), (146, 40293), (150, 40326), (152, 40338), (155, 40362), (166, 40437), (170, 40455), (175, 40476), (193, 40578), (199, 40629), (202, 40641), (204, 40656), (219, 40773), (228, 40824), (229, 40830), (234, 40860), (246, 40944),

Gene: Tortellini\_55 Start: 39104, Stop: 39952, Start Num: 114

Candidate Starts for Tortellini\_55:

(Start: 114 @39104 has 6 MA's), (146, 39260), (150, 39293), (152, 39305), (155, 39329), (156, 39332), (166, 39404), (170, 39422), (175, 39443), (193, 39545), (199, 39596), (202, 39608), (204, 39623), (219, 39740), (228, 39791), (229, 39797), (234, 39827), (246, 39911),

Gene: Trumpet\_56 Start: 38841, Stop: 39716, Start Num: 91

Candidate Starts for Trumpet\_56:

(67, 38760), (75, 38778), (78, 38787), (Start: 91 @38841 has 86 MA's), (150, 39036), (175, 39186), (196, 39309), (199, 39336), (211, 39444), (226, 39522),

Gene: TuertoX\_53 Start: 35051, Stop: 35914, Start Num: 91

Candidate Starts for TuertoX\_53:

(78, 34997), (Start: 91 @35051 has 86 MA's), (132, 35123), (150, 35234), (166, 35345), (175, 35384), (195, 35486), (196, 35507), (199, 35534), (211, 35642), (226, 35720),

Gene: Twinkle\_56 Start: 41699, Stop: 42562, Start Num: 91

Candidate Starts for Twinkle\_56:

(75, 41636), (Start: 91 @41699 has 86 MA's), (146, 41849), (150, 41882), (175, 42032), (179, 42059), (196, 42155), (199, 42182), (201, 42188), (226, 42368), (256, 42542),

Gene: Twister6\_56 Start: 40801, Stop: 41634, Start Num: 126

Candidate Starts for Twister6\_56:

(Start: 126 @40801 has 9 MA's), (133, 40870), (135, 40885), (143, 40927), (152, 40987), (175, 41125), (187, 41188), (188, 41194), (208, 41353), (225, 41452),

Gene: Valary\_56 Start: 41836, Stop: 42684, Start Num: 89

Candidate Starts for Valary\_56:

(82, 41809), (Start: 89 @41836 has 19 MA's), (258, 42664),

Gene: VanDeWege\_57 Start: 41128, Stop: 41976, Start Num: 89

Candidate Starts for VanDeWege\_57:

(82, 41101), (Start: 89 @41128 has 19 MA's), (258, 41956),

Gene: Venti\_46 Start: 31617, Stop: 32546, Start Num: 117

Candidate Starts for Venti\_46:

(86, 31497), (Start: 117 @31617 has 57 MA's), (127, 31647), (133, 31701), (152, 31818), (156, 31845), (157, 31860), (163, 31914), (175, 31995), (193, 32097), (208, 32211), (221, 32283), (224, 32307), (225, 32310), (238, 32394), (244, 32433), (263, 32535),

Gene: Vidya\_45 Start: 31650, Stop: 32579, Start Num: 117

Candidate Starts for Vidya\_45:

(86, 31530), (Start: 117 @31650 has 57 MA's), (127, 31680), (133, 31734), (152, 31851), (156, 31878), (157, 31893), (163, 31947), (175, 32028), (193, 32130), (208, 32244), (221, 32316), (224, 32340), (225, 32343), (238, 32427), (244, 32466), (263, 32568),

Gene: WelcomeAyanna\_59 Start: 41839, Stop: 42678, Start Num: 91

Candidate Starts for WelcomeAyanna\_59:

(75, 41779), (77, 41785), (Start: 91 @41839 has 86 MA's), (149, 42010), (166, 42124), (170, 42142), (185, 42217), (226, 42472),

Gene: Whack\_53 Start: 36342, Stop: 37211, Start Num: 118

Candidate Starts for Whack\_53:

(51, 36096), (65, 36150), (68, 36165), (97, 36261), (Start: 118 @36342 has 1 MA's), (138, 36441), (148, 36504), (157, 36579), (159, 36600), (174, 36684), (175, 36693), (176, 36702), (180, 36726), (194, 36792), (201, 36849), (221, 36993), (237, 37095), (256, 37200), (257, 37203),

Gene: Whiteclaw\_53 Start: 35051, Stop: 35914, Start Num: 91

Candidate Starts for Whiteclaw\_53:

(78, 34997), (Start: 91 @35051 has 86 MA's), (132, 35123), (150, 35234), (166, 35345), (175, 35384), (195, 35486), (196, 35507), (199, 35534), (211, 35642), (226, 35720),

Gene: Whitty\_43 Start: 32598, Stop: 33428, Start Num: 123

Candidate Starts for Whitty\_43:

(Start: 123 @32598 has 7 MA's), (152, 32787), (156, 32814), (173, 32925), (187, 32988), (215, 33192), (218, 33207),

Gene: Willsammy\_44 Start: 31360, Stop: 32286, Start Num: 117

Candidate Starts for Willsammy\_44:

(Start: 117 @31360 has 57 MA's), (127, 31387), (133, 31441), (152, 31558), (156, 31585), (157, 31600), (175, 31735), (177, 31747), (187, 31804), (195, 31843), (208, 31951), (212, 31981), (221, 32023), (224, 32047), (225, 32050), (238, 32134), (244, 32173), (263, 32275),

Gene: WinkNick\_56 Start: 36743, Stop: 37606, Start Num: 91

Candidate Starts for WinkNick\_56:

(75, 36680), (Start: 91 @36743 has 86 MA's), (166, 37037), (175, 37076), (178, 37091), (196, 37199), (199, 37226), (201, 37232), (207, 37286), (211, 37334), (221, 37379), (222, 37382), (226, 37412),

Gene: Wizard\_53 Start: 41034, Stop: 41882, Start Num: 89

Candidate Starts for Wizard\_53:

(82, 41007), (Start: 89 @41034 has 19 MA's), (258, 41862),

Gene: Wrigley\_61 Start: 40875, Stop: 41705, Start Num: 91

Candidate Starts for Wrigley\_61:

(Start: 91 @40875 has 86 MA's), (185, 41253), (193, 41295), (195, 41301), (196, 41322), (200, 41337),

Gene: Xavia\_52 Start: 38393, Stop: 39310, Start Num: 117

Candidate Starts for Xavia\_52:

(Start: 117 @38393 has 57 MA's), (127, 38420), (133, 38474), (152, 38591), (166, 38729), (169, 38741), (175, 38768), (177, 38780), (186, 38828), (193, 38870), (201, 38927), (203, 38945), (206, 38969), (210, 39023), (212, 39029), (220, 39068), (221, 39071), (225, 39098), (226, 39104), (233, 39146), (244, 39221), (246, 39233), (255, 39260), (261, 39281),

Gene: Xeno\_47 Start: 30955, Stop: 31881, Start Num: 117

Candidate Starts for Xeno\_47:

(Start: 117 @30955 has 57 MA's), (127, 30982), (133, 31036), (152, 31153), (156, 31180), (157, 31195), (175, 31330), (177, 31342), (187, 31399), (195, 31438), (208, 31546), (221, 31618), (224, 31642), (225, 31645), (238, 31729), (244, 31768), (263, 31870),

Gene: Xula\_42 Start: 31380, Stop: 32306, Start Num: 117

Candidate Starts for Xula\_42:

(41, 31083), (46, 31107), (62, 31176), (86, 31260), (Start: 117 @31380 has 57 MA's), (Start: 123 @31389 has 7 MA's), (127, 31407), (133, 31461), (152, 31578), (156, 31605), (157, 31620), (163, 31674), (166, 31716), (175, 31755), (187, 31824), (188, 31830), (193, 31857), (205, 31938), (208, 31971), (221, 32043), (224, 32067), (225, 32070), (238, 32154), (244, 32193), (263, 32295),

Gene: Yeet412\_51 Start: 35973, Stop: 36848, Start Num: 91  
Candidate Starts for Yeet412\_51:  
(67, 35892), (75, 35910), (78, 35919), (Start: 91 @35973 has 86 MA's), (150, 36168), (175, 36318),  
(196, 36441), (199, 36468), (211, 36576), (226, 36654),

Gene: Yeezy\_56 Start: 38295, Stop: 39125, Start Num: 91  
Candidate Starts for Yeezy\_56:  
(Start: 91 @38295 has 86 MA's), (146, 38436), (185, 38673), (193, 38715), (195, 38721), (196,  
38742), (198, 38754), (202, 38766),

Gene: YungMoney\_56 Start: 44559, Stop: 45392, Start Num: 126  
Candidate Starts for YungMoney\_56:  
(Start: 126 @44559 has 9 MA's), (133, 44628), (135, 44643), (143, 44685), (152, 44745), (175,  
44883), (187, 44946), (188, 44952), (208, 45111), (225, 45210),

Gene: Zameen\_56 Start: 38840, Stop: 39715, Start Num: 91  
Candidate Starts for Zameen\_56:  
(67, 38759), (75, 38777), (78, 38786), (Start: 91 @38840 has 86 MA's), (150, 39035), (175, 39185),  
(196, 39308), (199, 39335), (211, 39443), (226, 39521),

Gene: ZenTime222\_43 Start: 32597, Stop: 33427, Start Num: 123  
Candidate Starts for ZenTime222\_43:  
(Start: 123 @32597 has 7 MA's), (152, 32786), (156, 32813), (173, 32924), (187, 32987), (215,  
33191), (218, 33206),

Gene: Zilizebeth\_46 Start: 31649, Stop: 32578, Start Num: 117  
Candidate Starts for Zilizebeth\_46:  
(86, 31529), (Start: 117 @31649 has 57 MA's), (127, 31679), (133, 31733), (152, 31850), (156,  
31877), (157, 31892), (163, 31946), (175, 32027), (193, 32129), (208, 32243), (221, 32315), (224,  
32339), (225, 32342), (238, 32426), (244, 32465), (263, 32567),

Gene: Zirinka\_53 Start: 39460, Stop: 40335, Start Num: 91  
Candidate Starts for Zirinka\_53:  
(67, 39379), (75, 39397), (78, 39406), (Start: 91 @39460 has 86 MA's), (150, 39655), (175, 39805),  
(196, 39928), (199, 39955), (211, 40063), (226, 40141),

Gene: ZoMa\_42 Start: 31907, Stop: 32992, Start Num: 66  
Candidate Starts for ZoMa\_42:  
(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297),  
(156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792),  
(226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Zombie\_42 Start: 31907, Stop: 32992, Start Num: 66  
Candidate Starts for Zombie\_42:  
(Start: 66 @31907 has 66 MA's), (98, 32021), (107, 32045), (111, 32075), (151, 32294), (152, 32297),  
(156, 32324), (163, 32393), (171, 32456), (175, 32474), (177, 32486), (195, 32576), (225, 32792),  
(226, 32798), (238, 32876), (246, 32924), (249, 32939),

Gene: Zucker\_64 Start: 36175, Stop: 37002, Start Num: 122  
Candidate Starts for Zucker\_64:  
(102, 36151), (Start: 122 @36175 has 6 MA's), (154, 36379), (165, 36442), (173, 36484), (175,  
36496), (178, 36511), (179, 36523), (188, 36565), (192, 36589), (201, 36631), (203, 36649), (216,

36751), (220, 36769), (233, 36847), (241, 36910), (247, 36937),