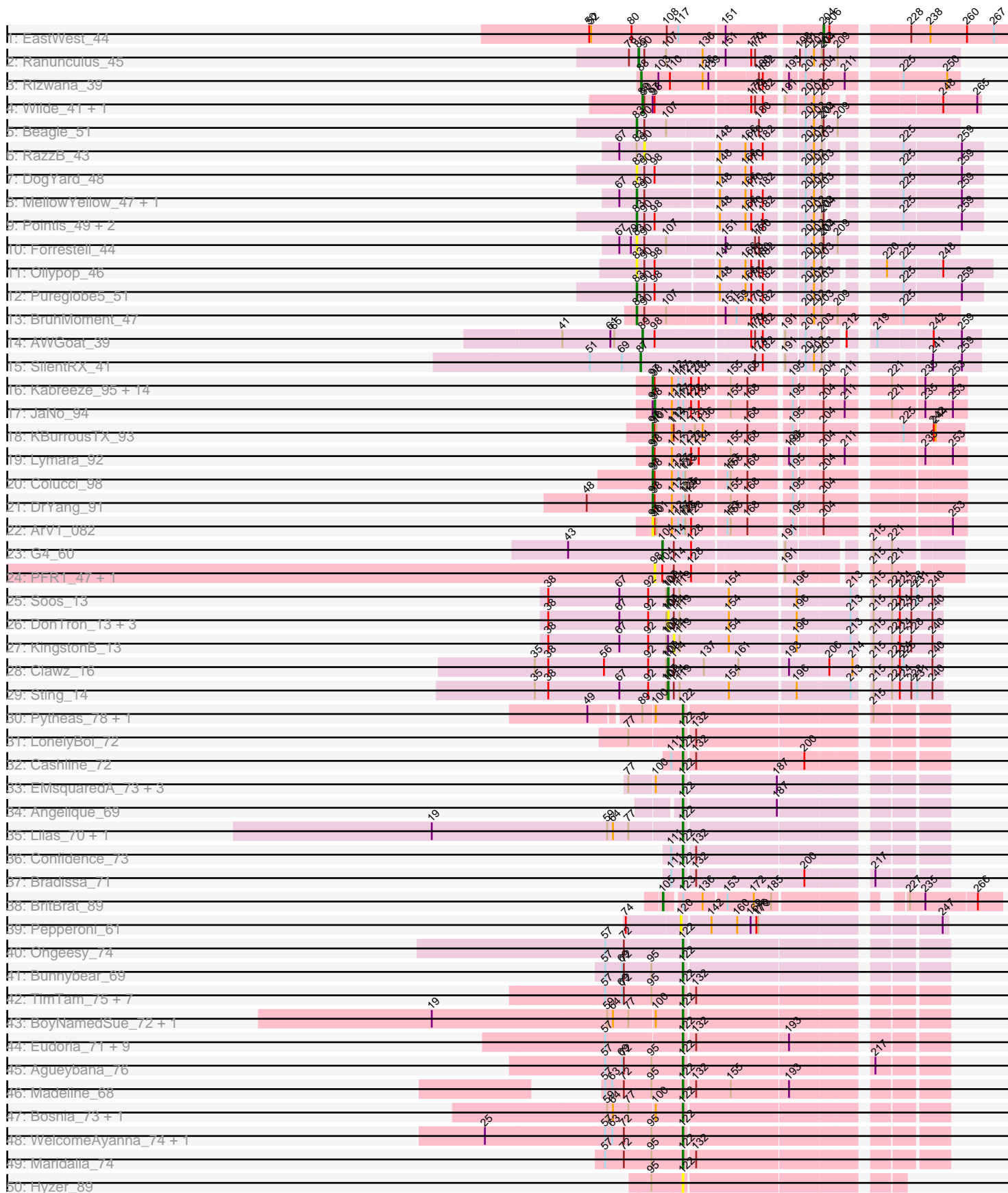
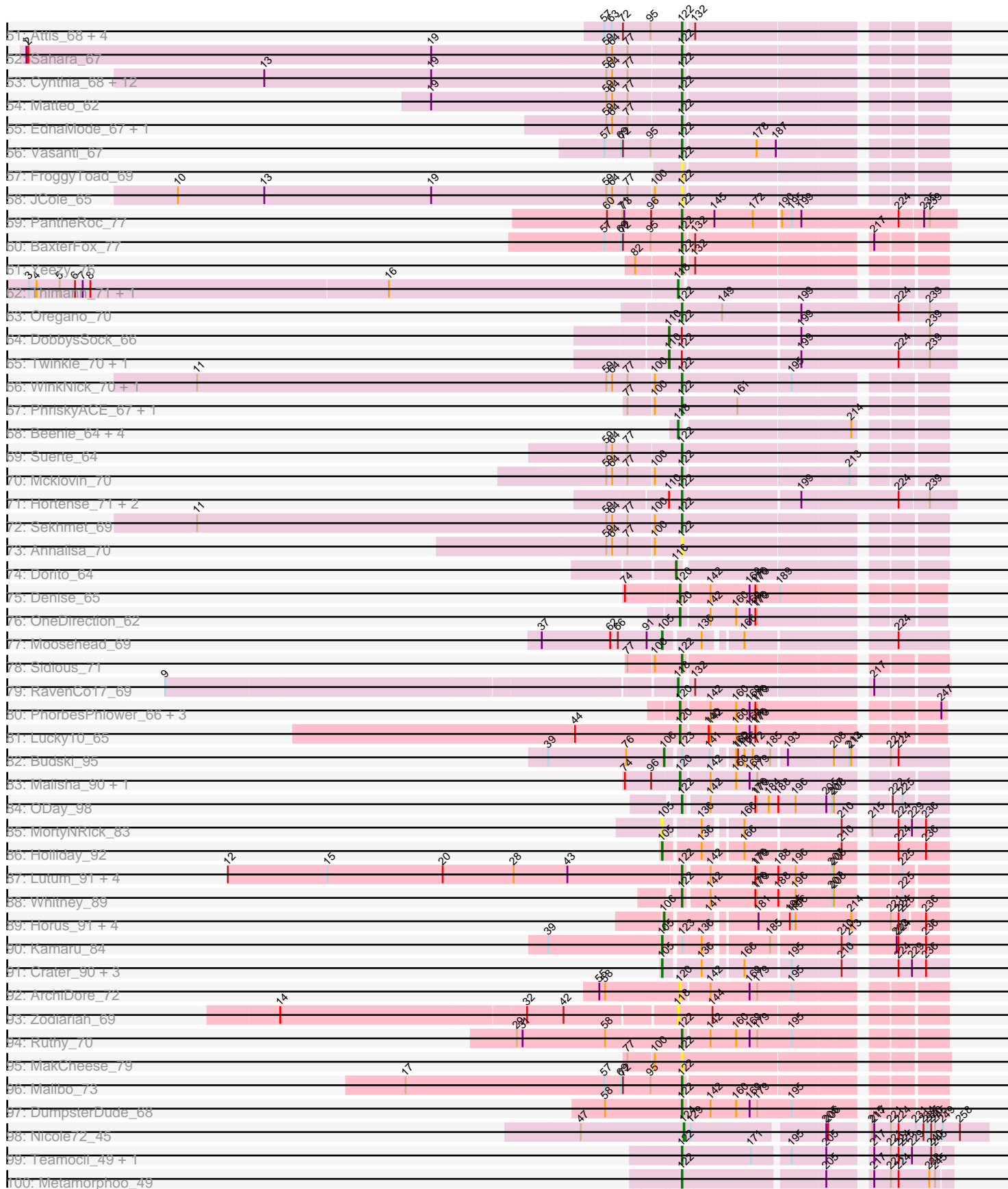


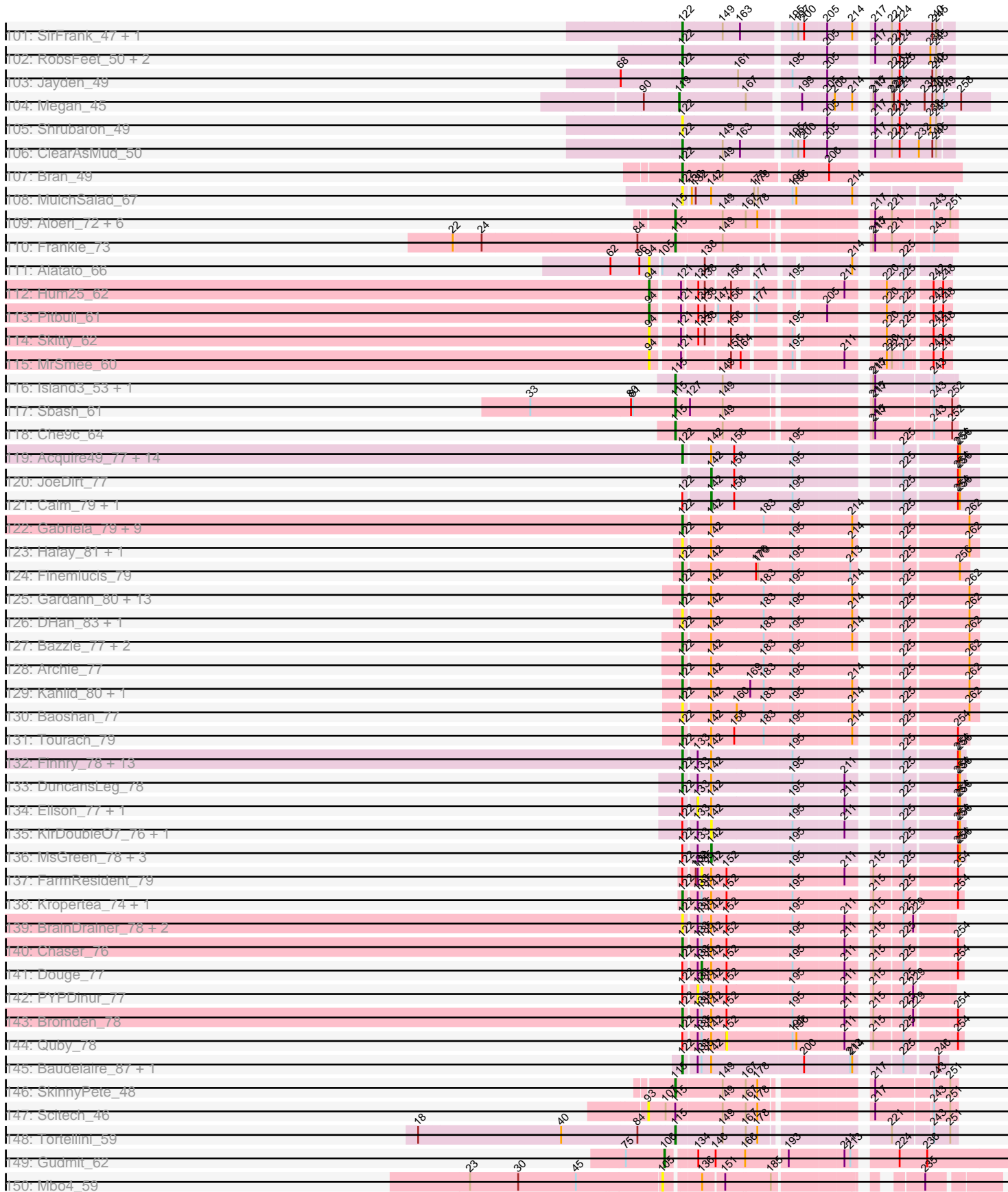
# Pham 202609



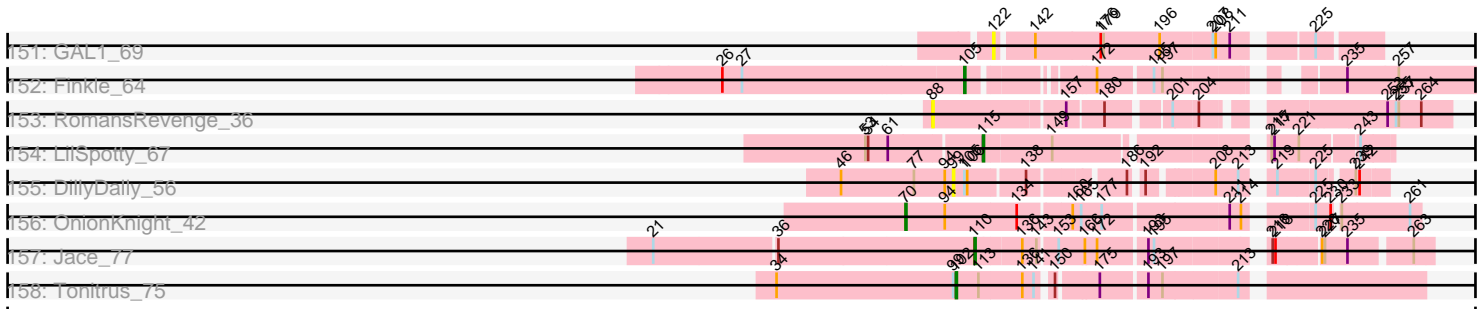
Pham 202609



Pham 202609



Pham 202609



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 202609 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202609 has 321 members, 66 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_44
- Track 2 : Ranunculus\_45
- Track 3 : Rizwana\_39
- Track 4 : Wilde\_41, Tank\_41
- Track 5 : Beagle\_51
- Track 6 : RazzB\_43
- Track 7 : DogYard\_48
- Track 8 : MellowYellow\_47, NyleyClemson\_46
- Track 9 : Pointis\_49, Kubulix\_48, Odyssey395\_52
- Track 10 : Forrestell\_44
- Track 11 : Ollypop\_46
- Track 12 : Pureglobe5\_51
- Track 13 : BruhMoment\_47
- Track 14 : AWGoat\_39
- Track 15 : SilentRX\_41
- Track 16 : Kabreeze\_95, JayCookie\_95, EdgarPoe\_94, Conboy\_93, Chocolat\_95, Mordred\_95, HumptyDumpty\_95, Tophat\_96, MoyaNatalis\_94, PrincessTrina\_96, RosiePosie\_95, Chubster\_95, Linus\_95, Scavito\_96, Chipper1996\_960
- Track 17 : JaNo\_94
- Track 18 : KBurrousTX\_93
- Track 19 : Lymara\_92
- Track 20 : Colucci\_98
- Track 21 : DrYang\_91
- Track 22 : ArV1\_082
- Track 23 : G4\_60
- Track 24 : PFR1\_47, PFR2\_49
- Track 25 : Soos\_13
- Track 26 : DonTron\_13, ColdSoup\_15, Jollymon\_15, Amo99\_15
- Track 27 : KingstonB\_13
- Track 28 : Clawz\_16
- Track 29 : Sting\_14
- Track 30 : Pytheas\_78, Jablanski\_77
- Track 31 : LonelyBoi\_72
- Track 32 : Cashline\_72
- Track 33 : EMSquaredA\_73, Floral\_74, Pollux\_76, Marteena\_72
- Track 34 : Angelique\_69
- Track 35 : Lilas\_70, EnalisNailo\_69

- Track 36 : Confidence\_73
- Track 37 : Bradissa\_71
- Track 38 : BritBrat\_89
- Track 39 : Pepperoni\_61
- Track 40 : Ohgeesy\_74
- Track 41 : Bunnybear\_69
- Track 42 : TimTam\_75, Zirinka\_69, Herod\_75, Eviarto\_75, BatStarr\_74, Hugley\_73, Nymphadora\_75, Bialota\_69
- Track 43 : BoyNamedSue\_72, AlumE\_72
- Track 44 : Eudoria\_71, Neobush\_73, Kita\_72, Polly\_68, Manasvini\_73, Suscepit\_71, Tayonia\_71, Antonio\_70, Trumpet\_71, Zameen\_71
- Track 45 : Agueybana\_76
- Track 46 : Madeline\_68
- Track 47 : Bosnia\_73, BeeGee\_76
- Track 48 : WelcomeAyanna\_74, ThankyouJordi\_74
- Track 49 : Maridalia\_74
- Track 50 : Hyzer\_89
- Track 51 : Attis\_68, Yeet412\_67, SoilAssassin\_68, LordFarquaad\_71, Nettuno\_66
- Track 52 : Sahara\_67
- Track 53 : Cynthia\_68, Bjanes7\_65, Sproutie\_68, Whiteclaw\_68, Ebert\_71, Clap\_68, Mocha12\_68, Haley23\_68, TuertoX\_68, GemG\_68, Gizermo\_68, Savage\_68, Lamberg\_64
- Track 54 : Matteo\_62
- Track 55 : EdnaMode\_67, Pickett\_65
- Track 56 : Vasanti\_67
- Track 57 : FroggyToad\_69
- Track 58 : JCole\_65
- Track 59 : PantheRoc\_77
- Track 60 : BaxterFox\_77
- Track 61 : Yeezy\_76
- Track 62 : Thimann\_71, Easley\_68
- Track 63 : Oregano\_70
- Track 64 : DobbysSock\_66
- Track 65 : Twinkle\_70, Shlim410\_69
- Track 66 : WinkNick\_70, Dolores\_70
- Track 67 : PhriskyACE\_67, Powerball\_68
- Track 68 : Beenie\_64, Samman98\_71, Invectra\_71, Clark\_69, MichaelScott\_71
- Track 69 : Suerte\_64
- Track 70 : Mcklovin\_70
- Track 71 : Hortense\_71, Adora\_68, Howe\_71
- Track 72 : Sekhmet\_69
- Track 73 : Annalisa\_70
- Track 74 : Dorito\_64
- Track 75 : Denise\_65
- Track 76 : OneDirection\_62
- Track 77 : Moosehead\_69
- Track 78 : Sidious\_71
- Track 79 : RavenCo17\_69
- Track 80 : PhorbessPhlower\_66, Kuwabara\_86, Lton\_65, Morkie\_68
- Track 81 : Lucky10\_65
- Track 82 : Budski\_95
- Track 83 : Malisha\_90, Faith5x5\_63
- Track 84 : ODay\_98

- Track 85 : MortyNRick\_83
- Track 86 : Holliday\_92
- Track 87 : Lutum\_91, BENtherdunthat\_90, Phabuloso\_97, BotCity\_93, Getalong\_93
- Track 88 : Whitney\_89
- Track 89 : Horus\_91, Leroy\_90, Frickyeah\_97, ShawBrad\_95, Periwinkle\_99
- Track 90 : Kamaru\_84
- Track 91 : Crater\_90, Ecliptus\_97, Apricot\_90, Phistory\_88
- Track 92 : ArchiDore\_72
- Track 93 : Zodiariah\_69
- Track 94 : Ruthy\_70
- Track 95 : MakCheese\_79
- Track 96 : Malibo\_73
- Track 97 : DumpsterDude\_68
- Track 98 : Nicole72\_45
- Track 99 : Teamocil\_49, Gina\_49
- Track 100 : Metamorphoo\_49
- Track 101 : SirFrank\_47, NoodlelyBoi\_48
- Track 102 : RobsFeet\_50, Tyrumbra\_47, Fireman\_49
- Track 103 : Jayden\_49
- Track 104 : Megan\_45
- Track 105 : Shrubaron\_49
- Track 106 : ClearAsMud\_50
- Track 107 : Bran\_49
- Track 108 : MulchSalad\_67
- Track 109 : Aloeri\_72, ChickenDinner\_72, Misha28\_68, DocMcStuffins\_70, Awesomesauce\_70, Piper2020\_71, TootsiePop\_68
- Track 110 : Frankie\_73
- Track 111 : Alatato\_66
- Track 112 : Hum25\_62
- Track 113 : Pitbull\_61
- Track 114 : Skitty\_62
- Track 115 : MrSmee\_60
- Track 116 : Island3\_53, Brujita\_53
- Track 117 : Sbash\_61
- Track 118 : Che9c\_64
- Track 119 : Acquire49\_77, UPIE\_76, Appletree2\_76, AvadaKedavra\_77, DirkDirk\_74, Tyson\_78, Rose5\_77, Enceladus\_74, LeBron\_76, Halena\_75, CicholasNage\_74, MAckerman\_75, Wamburgxpress\_77, Zaria\_78, Wyatt2\_78
- Track 120 : JoeDirt\_77
- Track 121 : Calm\_79, Silverleaf\_77
- Track 122 : Gabriela\_79, BobsGarage\_80, Breezona\_80, Faith1\_80, BigCheese\_80, Winky\_80, Itos\_79, Miley16\_80, DrSeegs\_80, Netyap\_81
- Track 123 : Hafay\_81, Claus\_80
- Track 124 : Finemlucis\_79
- Track 125 : Gardann\_80, GuuelaD\_78, Zakai\_81, LilDestine\_79, Loadrie\_79, Lewan\_81, Crossroads\_80, Rumpelstiltskin\_77, Sarshaun\_81, Soap141\_80, Vetrrix\_79, MkaliMitinis3\_81, Nicholasp3\_80, Underpass\_71
- Track 126 : DHan\_83, ZhongYanYuan\_77
- Track 127 : Bazzle\_77, DanBing\_80, Wigglewiggle\_79
- Track 128 : Archie\_77
- Track 129 : Kahlid\_80, Wilder\_81
- Track 130 : Baoshan\_77
- Track 131 : Tourach\_79

- Track 132 : Finnry\_78, Moostard\_76, Clautastrophe\_76, Lolly9\_77, MiniMac\_82, Whirlwind\_79, Kingsolomon\_76, Krypton555\_79, Nicholas\_76, MiniLon\_82, Lumos\_79, Samty\_77, Jubie\_77, Snenia\_77
- Track 133 : DuncansLeg\_78
- Track 134 : Ellson\_77, BourbonZero\_79
- Track 135 : KirDoubleO7\_76, LiyuLake\_77
- Track 136 : MsGreen\_78, TriFive\_78, Bellis\_76, Jobypre\_79
- Track 137 : FarmResident\_79
- Track 138 : Kropertea\_74, DyoEdafos\_82
- Track 139 : BrainDrainer\_78, Sheng711\_79, Douzhi\_78
- Track 140 : Chaser\_76
- Track 141 : Douge\_77
- Track 142 : PYPDinur\_77
- Track 143 : Bromden\_78
- Track 144 : Quby\_78
- Track 145 : Baudelaire\_87, Aegeus\_87
- Track 146 : SkinnyPete\_48
- Track 147 : Scitech\_46
- Track 148 : Tortellini\_59
- Track 149 : Gudmit\_62
- Track 150 : Mbo4\_59
- Track 151 : GAL1\_69
- Track 152 : Finkle\_64
- Track 153 : RomansRevenge\_36
- Track 154 : LilSpotty\_67
- Track 155 : DillyDally\_56
- Track 156 : OnionKnight\_42
- Track 157 : Jace\_77
- Track 158 : Tonitrus\_75

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

The start number called the most often in the published annotations is 122, it was called in 160 of the 255 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_77, Adora\_68, Aegeus\_87, Agueybana\_76, AlumE\_72, Angelique\_69, Annalisa\_70, Antonio\_70, Appletree2\_76, Archie\_77, Attis\_68, AvadaKedavra\_77, BENtherdunthat\_90, Baoshan\_77, BatStarr\_74, Baudelaire\_87, BaxterFox\_77, Bazzle\_77, BeeGee\_76, Bialota\_69, BigCheese\_80, Bjaner7\_65, BobsGarage\_80, Bosnia\_73, BotCity\_93, BoyNamedSue\_72, Bradissa\_71, BrainDrainer\_78, Bran\_49, Breezona\_80, Bromden\_78, Bunnybear\_69, Cashline\_72, Chaser\_76, CicholasNage\_74, Clap\_68, Claus\_80, Clautastrophe\_76, ClearAsMud\_50, Confidence\_73, Crossroads\_80, Cynthia\_68, DHan\_83, DanBing\_80, DirkDirk\_74, Dolores\_70, Douzhi\_78, DrSeegs\_80, DumpsterDude\_68, DuncansLeg\_78, DyoEdafos\_82, EMsquaredA\_73, Ebert\_71, EdnaMode\_67, EnalisNailo\_69, Enceladus\_74, Eudoria\_71, Eviarto\_75, Faith1\_80, Finemlucis\_79, Finnry\_78, Fireman\_49, Floral\_74, FroggyToad\_69, GAL1\_69, Gabriela\_79, Gardann\_80, GemG\_68, Getalong\_93, Gina\_49, Gizermo\_68, GuuelaD\_78, Hafay\_81, Halena\_75, Haley23\_68, Herod\_75, Hortense\_71, Howe\_71, Hugley\_73, Hyzer\_89, Itos\_79,



JCole\_65, Jablanski\_77, Jayden\_49, Jubie\_77, Kahlid\_80, Kingsolomon\_76, Kita\_72, Kropertea\_74, Krypton555\_79, Lamberg\_64, LeBron\_76, Lewan\_81, LilDestine\_79, Lilas\_70, Loadrie\_79, Lolly9\_77, LonelyBoi\_72, LordFarquaad\_71, Lumos\_79, Lutum\_91, MAckerman\_75, Madeline\_68, MakCheese\_79, Malibo\_73, Manasvini\_73, Maridalia\_74, Marteena\_72, Matteo\_62, Mcklovin\_70, Metamorphoo\_49, Miley16\_80, MiniLon\_82, MiniMac\_82, MkaliMitinis3\_81, Mocha12\_68, Moostard\_76, MulchSalad\_67, Neobush\_73, Nettuno\_66, Netyap\_81, Nicholas\_76, Nicholasp3\_80, NoodlelyBoi\_48, Nymphadora\_75, ODay\_98, Ohgeesy\_74, Oregano\_70, PantheRoc\_77, Phabuloso\_97, PhriskyACE\_67, Pickett\_65, Pollux\_76, Polly\_68, Powerball\_68, Pytheas\_78, RobsFeet\_50, Rose5\_77, Rumpelstiltskin\_77, Ruthy\_70, Sahara\_67, Samty\_77, Sarshaun\_81, Savage\_68, Sekhmet\_69, Sheng711\_79, Shrubaron\_49, Sidious\_71, SirFrank\_47, Snenia\_77, Soap141\_80, SoilAssassin\_68, Sproutie\_68, Suerte\_64, Suscepit\_71, Tayonia\_71, Teamocil\_49, ThankyouJordi\_74, TimTam\_75, Tourach\_79, Trumpet\_71, TuertoX\_68, Tyrumbra\_47, Tyson\_78, UPIE\_76, Underpass\_71, Vasanti\_67, Vetrix\_79, Wamburgrxpress\_77, WelcomeAyanna\_74, Whirlwind\_79, Whiteclaw\_68, Whitney\_89, Wigglewiggle\_79, Wilder\_81, WinkNick\_70, Winky\_80, Wyatt2\_78, Yeet412\_67, Yeezy\_76, Zakai\_81, Zameen\_71, Zaria\_78, ZhongYanYuan\_77, Zirinka\_69,

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

- Bellis\_76, BourbonZero\_79, Calm\_79, DobbysSock\_66, Douge\_77, Ellson\_77, FarmResident\_79, Jobypre\_79, KirDoubleO7\_76, LiyuLake\_77, MsGreen\_78, PYPDinur\_77, Quby\_78, Shlim410\_69, Silverleaf\_77, TriFive\_78, Twinkle\_70,

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

- AWGoat\_39, Alatato\_66, Aloeri\_72, Amo99\_15, Apricot\_90, ArV1\_082, ArchiDore\_72, Awesomesauce\_70, Beagle\_51, Beenie\_64, BritBrat\_89, BruhMoment\_47, Brujita\_53, Budski\_95, Che9c\_64, ChickenDinner\_72, Chipper1996\_960, Chocolat\_95, Chubster\_95, Clark\_69, Clawz\_16, ColdSoup\_15, Colucci\_98, Conboy\_93, Crater\_90, Denise\_65, DillyDally\_56, DocMcStuffins\_70, DogYard\_48, DonTron\_13, Dorito\_64, DrYang\_91, Easley\_68, EastWest\_44, Ecliptus\_97, EdgarPoe\_94, Faith5x5\_63, Finkle\_64, Forrestell\_44, Frankie\_73, Frickyeah\_97, G4\_60, Gudmit\_62, Holliday\_92, Horus\_91, Hum25\_62, HumptyDumpty\_95, Invectra\_71, Island3\_53, JaNo\_94, Jace\_77, JayCookie\_95, JoeDirt\_77, Jollymon\_15, KBurroustX\_93, Kabreeze\_95, Kamaru\_84, KingstonB\_13, Kubulix\_48, Kuwabara\_86, Leroy\_90, LilSpotty\_67, Linus\_95, Lton\_65, Lucky10\_65, Lymara\_92, Malisha\_90, Mbo4\_59, Megan\_45, MellowYellow\_47, MichaelScott\_71, Misha28\_68, Moosehead\_69, Mordred\_95, Morkie\_68, MortyNRick\_83, MoyaNatalis\_94, MrSmee\_60, Nicole72\_45, NyleyClemson\_46, Odyssey395\_52, Ollypop\_46, OneDirection\_62, OnionKnight\_42, PFR1\_47, PFR2\_49, Pepperoni\_61, Periwinkle\_99, Phistory\_88, PhorbesPhlower\_66, Piper2020\_71, Pitbull\_61, Pointis\_49, PrincessTrina\_96, Pureglobe5\_51, Ranunculus\_45, RavenCo17\_69, RazzB\_43, Rizwana\_39, RomansRevenge\_36, RosiePosie\_95, Samman98\_71, Sbash\_61, Scavito\_96, Scitech\_46, ShawBrad\_95, SilentRX\_41, SkinnyPete\_48, Skitty\_62, Soos\_13, Sting\_14, Tank\_41, Thimann\_71, Tonitrus\_75, TootsiePop\_68, Tophat\_96, Tortellini\_59, Wilde\_41, Zodiariah\_69,

### Summary by start number:

Start 70:

- Found in 1 of 321 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present

- Phage (with cluster) where this start called: OnionKnight\_42 (singleton),

Start 83:

- Found in 12 of 321 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 6 of 255
- Called 91.7% of time when present
- Phage (with cluster) where this start called: Beagle\_51 (AP2), BruhMoment\_47 (AP3), DogYard\_48 (AP2), Forrestell\_44 (AP2), Kubulix\_48 (AP2), MellowYellow\_47 (AP2), NyleyClemson\_46 (AP2), Odyssey395\_52 (AP2), Ollypop\_46 (AP2), Pointis\_49 (AP2), Pureglobe5\_51 (AP2),

Start 85:

- Found in 1 of 321 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ranunculus\_45 (AP),

Start 87:

- Found in 1 of 321 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SilentRX\_41 (AP4),

Start 88:

- Found in 2 of 321 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rizwana\_39 (AP1), RomansRevenge\_36 (singleton),

Start 89:

- Found in 5 of 321 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 3 of 255
- Called 60.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_39 (AP4), Tank\_41 (AP1), Wilde\_41 (AP1),

Start 90:

- Found in 16 of 321 ( 5.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 6.2% of time when present
- Phage (with cluster) where this start called: RazzB\_43 (AP2),

Start 93:

- Found in 1 of 321 ( 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: Scitech\_46 (N),

Start 94:

- Found in 7 of 321 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 2 of 255
- Called 71.4% of time when present

- Phage (with cluster) where this start called: Alatato\_66 (FB), Hum25\_62 (FQ), MrSmee\_60 (FQ), Pitbull\_61 (FQ), Skitty\_62 (FQ),

#### Start 97:

- Found in 23 of 321 ( 7.2% ) of genes in pham
- Manual Annotations of this start: 18 of 255
- Called 87.0% of time when present
- Phage (with cluster) where this start called: ArV1\_082 (AR), Chipper1996\_960 (AR), Chocolat\_95 (AR), Chubster\_95 (AR), Colucci\_98 (AR), Conboy\_93 (AR), DrYang\_91 (AR), EdgarPoe\_94 (AR), HumptyDumpty\_95 (AR), JayCookie\_95 (AR), KBurrousTX\_93 (AR), Kabreeze\_95 (AR), Linus\_95 (AR), Lymara\_92 (AR), Mordred\_95 (AR), MoyaNatalis\_94 (AR), PrincessTrina\_96 (AR), RosiePosie\_95 (AR), Scavito\_96 (AR), Tophat\_96 (AR),

#### Start 98:

- Found in 32 of 321 ( 10.0% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 9.4% of time when present
- Phage (with cluster) where this start called: JaNo\_94 (AR), PFR1\_47 (BX), PFR2\_49 (BX),

#### Start 99:

- Found in 2 of 321 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DillyDally\_56 (singleton),

#### Start 102:

- Found in 1 of 321 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tonitrus\_75 (singleton),

#### Start 104:

- Found in 3 of 321 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 33.3% of time when present
- Phage (with cluster) where this start called: G4\_60 (BW),

#### Start 105:

- Found in 13 of 321 ( 4.0% ) of genes in pham
- Manual Annotations of this start: 9 of 255
- Called 84.6% of time when present
- Phage (with cluster) where this start called: Apricot\_90 (DN3), BritBrat\_89 (CY2), Crater\_90 (DN3), Ecliptus\_97 (DN), Finkle\_64 (singleton), Holliday\_92 (DN1), Kamaru\_84 (DN1), Mbo4\_59 (singleton), Moosehead\_69 (CZ6), MortyNRick\_83 (DN), Phistory\_88 (DN1),

#### Start 106:

- Found in 8 of 321 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 5 of 255
- Called 87.5% of time when present

- Phage (with cluster) where this start called: Budski\_95 (DN), Frickyeah\_97 (DN1), Gudmit\_62 (singleton), Horus\_91 (DN1), Leroy\_90 (DN1), Periwinkle\_99 (DN1), ShawBrad\_95 (DN1),

#### Start 109:

- Found in 8 of 321 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 3 of 255
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Amo99\_15 (CP), Clawz\_16 (CP), ColdSoup\_15 (CP), DonTron\_13 (CP), Jollymon\_15 (CP), Soos\_13 (CP), Sting\_14 (CP),

#### Start 110:

- Found in 8 of 321 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 4 of 255
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DobbysSock\_66 (CZ4), Jace\_77 (singleton), Shlim410\_69 (CZ4), Twinkle\_70 (CZ4),

#### Start 114:

- Found in 12 of 321 ( 3.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: KingstonB\_13 (CP),

#### Start 115:

- Found in 16 of 321 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 13 of 255
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Aloeri\_72 (F1), Awesomesauce\_70 (F1), Brujita\_53 (I1), Che9c\_64 (I2), ChickenDinner\_72 (F1), DocMcStuffins\_70 (F1), Frankie\_73 (F1), Island3\_53 (I1), LilSpotty\_67 (singleton), Misha28\_68 (F1), Piper2020\_71 (F1), Sbash\_61 (I2), SkinnyPete\_48 (N), TootsiePop\_68 (F1), Tortellini\_59 (P2),

#### Start 116:

- Found in 1 of 321 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dorito\_64 (CZ4),

#### Start 118:

- Found in 9 of 321 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 7 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beenie\_64 (CZ4), Clark\_69 (CZ4), Easley\_68 (CZ4), Invectra\_71 (CZ4), MichaelScott\_71 (CZ4), RavenCo17\_69 (CZ8), Samman98\_71 (CZ4), Thimann\_71 (CZ4), Zodiariah\_69 (DW),

#### Start 119:

- Found in 8 of 321 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 12.5% of time when present

- Phage (with cluster) where this start called: Megan\_45 (EC),

Start 120:

- Found in 11 of 321 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 9 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArchiDore\_72 (DW), Denise\_65 (CZ5), Faith5x5\_63 (CZ6), Kuwabara\_86 (DN4), Lton\_65 (CZ), Lucky10\_65 (DH), Malisha\_90 (DN), Morkie\_68 (DH), OneDirection\_62 (CZ6), Pepperoni\_61 (CZ), PhorbesPhlower\_66 (DH),

Start 122:

- Found in 202 of 321 ( 62.9% ) of genes in pham
- Manual Annotations of this start: 160 of 255
- Called 91.6% of time when present
- Phage (with cluster) where this start called: Acquire49\_77 (L1), Adora\_68 (CZ4), Aegeus\_87 (L5), Agueybana\_76 (CZ1), AlumE\_72 (CZ1), Angelique\_69 (CY1), Annalisa\_70 (CZ4), Antonio\_70 (CZ1), Appletree2\_76 (L1), Archie\_77 (L2), Attis\_68 (CZ2), AvadaKedavra\_77 (L1), BENtherdunthat\_90 (DN1), Baoshan\_77 (L2), BatStarr\_74 (CZ1), Baudelaire\_87 (L5), BaxterFox\_77 (CZ3), Bazzle\_77 (L2), BeeGee\_76 (CY), Bialota\_69 (CZ1), BigCheese\_80 (L2), Bjanes7\_65 (CZ2), BobsGarage\_80 (L2), Bosnia\_73 (CZ1), BotCity\_93 (DN), BoyNamedSue\_72 (CZ1), Bradissa\_71 (CY1), BrainDrainer\_78 (L4), Bran\_49 (EP), Breezona\_80 (L2), Bromden\_78 (L4), Bunnybear\_69 (CZ), Cashline\_72 (CY), Chaser\_76 (L4), CicholasNage\_74 (L1), Clap\_68 (CZ2), Claus\_80 (L2), Clautastrophe\_76 (L3), ClearAsMud\_50 (EC), Confidence\_73 (CY1), Crossroads\_80 (L2), Cynthia\_68 (CZ2), DHan\_83 (L2), DanBing\_80 (L2), DirkDirk\_74 (L1), Dolores\_70 (CZ4), Douzhi\_78 (L4), DrSeegs\_80 (L2), DumpsterDude\_68 (DW), DuncansLeg\_78 (L3), DyoEdafos\_82 (L4), EMSquaredA\_73 (CY1), Ebert\_71 (CZ2), EdnaMode\_67 (CZ2), EnalisNailo\_69 (CY1), Enceladus\_74 (L1), Eudoria\_71 (CZ1), Eviarto\_75 (CZ1), Faith1\_80 (L2), Finemlucis\_79 (L2), Finnry\_78 (L3), Fireman\_49 (EC), Floral\_74 (CY1), FroggyToad\_69 (CZ2), GAL1\_69 (singleton), Gabriela\_79 (L2), Gardann\_80 (L2), GemG\_68 (CZ2), Getalong\_93 (DN1), Gina\_49 (EC), Gizermo\_68 (CZ2), GuuelaD\_78 (L2), Hafay\_81 (L2), Halena\_75 (L1), Haley23\_68 (CZ2), Herod\_75 (CZ1), Hortense\_71 (CZ4), Howe\_71 (CZ4), Hugley\_73 (CZ1), Hyzer\_89 (CZ1), Itos\_79 (L2), JCole\_65 (CZ2), Jablanski\_77 (CY), Jayden\_49 (EC), Jubie\_77 (L3), Kahlid\_80 (L2), Kingsolomon\_76 (L3), Kita\_72 (CZ1), Kropertea\_74 (L4), Krypton555\_79 (L3), Lamberg\_64 (CZ2), LeBron\_76 (L1), Lewan\_81 (L2), LilDestine\_79 (L2), Lilas\_70 (CY1), Loadrie\_79 (L2), Lolly9\_77 (L3), LonelyBoi\_72 (CY), LordFarquaad\_71 (CZ2), Lumos\_79 (L3), Lutum\_91 (DN1), MAckerman\_75 (L1), Madeline\_68 (CZ1), MakCheese\_79 (DW), Malibo\_73 (DW), Manasvini\_73 (CZ1), Maridalia\_74 (CZ1), Marteena\_72 (CY1), Matteo\_62 (CZ2), Mcklovin\_70 (CZ4), Metamorphoo\_49 (EC), Miley16\_80 (L2), MiniLon\_82 (L3), MiniMac\_82 (L3), MkaliMitinis3\_81 (L2), Mocha12\_68 (CZ2), Moostard\_76 (L3), MulchSalad\_67 (F), Neobush\_73 (CZ1), Nettuno\_66 (CZ2), Netyap\_81 (L2), Nicholas\_76 (L3), Nicholasp3\_80 (L2), NoodlelyBoi\_48 (EC), Nymphadora\_75 (CZ1), ODay\_98 (DN), Ohgeesy\_74 (CZ), Oregano\_70 (CZ4), PantheRoc\_77 (CZ3), Phabuloso\_97 (DN1), PhriskyACE\_67 (CZ4), Pickett\_65 (CZ2), Pollux\_76 (CY1), Polly\_68 (CZ1), Powerball\_68 (CZ4), Pytheas\_78 (CY), RobsFeet\_50 (EC), Rose5\_77 (L1), Rumpelstiltskin\_77 (L2), Ruthy\_70 (DW), Sahara\_67 (CZ2), Samty\_77 (L3), Sarshaun\_81 (L2), Savage\_68 (CZ2), Sekhmet\_69 (CZ4), Sheng711\_79 (L4), Shrubaron\_49 (EC), Sidious\_71 (CZ7), SirFrank\_47 (EC), Snenia\_77 (L3), Soap141\_80 (L2), SoilAssassin\_68 (CZ2), Sproutie\_68 (CZ2), Suerte\_64 (CZ4),

Suscepit\_71 (CZ1), Tayonia\_71 (CZ1), Teamocil\_49 (EC), ThankyouJordi\_74 (CZ1), TimTam\_75 (CZ1), Tourach\_79 (L2), Trumpet\_71 (CZ1), TuertoX\_68 (CZ2), Tyrumbra\_47 (EC), Tyson\_78 (L1), UPIE\_76 (L1), Underpass\_71 (L2), Vasanti\_67 (CZ2), Vetric\_79 (L2), Wamburggrxpress\_77 (L1), WelcomeAyanna\_74 (CZ1), Whirlwind\_79 (L3), Whiteclaw\_68 (CZ2), Whitney\_89 (DN1), Wigglewiggles\_79 (L2), Wilder\_81 (L2), WinkNick\_70 (CZ4), Winky\_80 (L2), Wyatt2\_78 (L1), Yeet412\_67 (CZ2), Yeezy\_76 (CZ3), Zakai\_81 (L2), Zameen\_71 (CZ1), Zaria\_78 (L1), ZhongYanYuan\_77 (L2), Zirinka\_69 (CZ1),

Start 124:

- Found in 1 of 321 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nicole72\_45 (EC),

Start 133:

- Found in 36 of 321 ( 11.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: BourbonZero\_79 (L3), Ellson\_77 (L3), PYPDinur\_77 (L4),

Start 135:

- Found in 13 of 321 ( 4.0% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 15.4% of time when present
- Phage (with cluster) where this start called: Douge\_77 (L4), FarmResident\_79 (L4),

Start 142:

- Found in 113 of 321 ( 35.2% ) of genes in pham
- Manual Annotations of this start: 4 of 255
- Called 8.0% of time when present
- Phage (with cluster) where this start called: Bellis\_76 (L3), Calm\_79 (L1), Jobypre\_79 (L3), JoeDirt\_77 (L1), KirDoubleO7\_76 (L3), LiyuLake\_77 (L3), MsGreen\_78 (L3), Silverleaf\_77 (L1), TriFive\_78 (L3),

Start 152:

- Found in 11 of 321 ( 3.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Quby\_78 (L4),

Start 204:

- Found in 30 of 321 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 3.3% of time when present
- Phage (with cluster) where this start called: EastWest\_44 (AO),

### Summary by clusters:

There are 44 clusters represented in this pham: DN, FQ, singleton, DH, AP2, CZ3, AP1, CZ6, CZ7, CZ4, CZ5, FB, BW, CZ8, DW, BX, DN4, I1, I2, CZ2, DN1, DN3, AP3, AP4, EC, CY2, CY1, CZ1, F, AO, N, CZ, L4, AR, L2, L3, L1, CP, EP, F1, AP, P2, CY,

L5,

Info for manual annotations of cluster AO:

- Start number 204 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AP:

- Start number 85 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 88 was manually annotated 1 time for cluster AP1.
- Start number 89 was manually annotated 2 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 83 was manually annotated 5 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 83 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 87 was manually annotated 1 time for cluster AP4.
- Start number 89 was manually annotated 1 time for cluster AP4.

Info for manual annotations of cluster AR:

- Start number 97 was manually annotated 18 times for cluster AR.
- Start number 98 was manually annotated 1 time for cluster AR.

Info for manual annotations of cluster BW:

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

Info for manual annotations of cluster CP:

- Start number 109 was manually annotated 3 times for cluster CP.

Info for manual annotations of cluster CY:

- Start number 122 was manually annotated 5 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 122 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 105 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CZ:

- Start number 120 was manually annotated 1 time for cluster CZ.
- Start number 122 was manually annotated 2 times for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 122 was manually annotated 25 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 122 was manually annotated 23 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 122 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 110 was manually annotated 3 times for cluster CZ4.
- Start number 116 was manually annotated 1 time for cluster CZ4.
- Start number 118 was manually annotated 6 times for cluster CZ4.
- Start number 122 was manually annotated 10 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 120 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 105 was manually annotated 1 time for cluster CZ6.
- Start number 120 was manually annotated 2 times for cluster CZ6.

Info for manual annotations of cluster CZ7:

- Start number 122 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster CZ8:

- Start number 118 was manually annotated 1 time for cluster CZ8.

Info for manual annotations of cluster DH:

- Start number 120 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 105 was manually annotated 1 time for cluster DN.
- Start number 106 was manually annotated 1 time for cluster DN.
- Start number 120 was manually annotated 1 time for cluster DN.
- Start number 122 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 105 was manually annotated 3 times for cluster DN1.
- Start number 106 was manually annotated 3 times for cluster DN1.
- Start number 122 was manually annotated 5 times for cluster DN1.

Info for manual annotations of cluster DN3:

- Start number 105 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 120 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DW:

- Start number 122 was manually annotated 3 times for cluster DW.

Info for manual annotations of cluster EC:

- Start number 119 was manually annotated 1 time for cluster EC.
- Start number 122 was manually annotated 9 times for cluster EC.
- Start number 124 was manually annotated 1 time for cluster EC.

Info for manual annotations of cluster EP:

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



Info for manual annotations of cluster F1:

- Start number 115 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster FQ:

- Start number 94 was manually annotated 2 times for cluster FQ.

Info for manual annotations of cluster I1:

- Start number 115 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 115 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster L1:

- Start number 122 was manually annotated 15 times for cluster L1.
- Start number 142 was manually annotated 3 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 122 was manually annotated 28 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 122 was manually annotated 15 times for cluster L3.
- Start number 142 was manually annotated 1 time for cluster L3.

Info for manual annotations of cluster L4:

- Start number 122 was manually annotated 3 times for cluster L4.
- Start number 135 was manually annotated 1 time for cluster L4.

Info for manual annotations of cluster L5:

- Start number 122 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster N:

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

Info for manual annotations of cluster P2:

- Start number 115 was manually annotated 1 time for cluster P2.

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

Gene: AWGoat\_39 Start: 35301, Stop: 34870, Start Num: 89

Candidate Starts for AWGoat\_39:

(41, 35424), (61, 35349), (65, 35343), (Start: 89 @35301 has 3 MA's), (Start: 98 @35283 has 1 MA's), (170, 35148), (174, 35142), (182, 35130), (191, 35106), (201, 35079), (203, 35058), (212, 35040), (219, 35013), (242, 34941), (259, 34899),

Gene: Acquire49\_77 Start: 51648, Stop: 52061, Start Num: 122

Candidate Starts for Acquire49\_77:

(Start: 122 @51648 has 160 MA's), (Start: 142 @51687 has 4 MA's), (158, 51723), (195, 51810), (225, 51951), (254, 52029), (256, 52032),

Gene: Adora\_68 Start: 47407, Stop: 47808, Start Num: 122

Candidate Starts for Adora\_68:

(Start: 110 @47389 has 4 MA's), (Start: 122 @47407 has 160 MA's), (199, 47584), (224, 47728), (239, 47770),

Gene: Aegeus\_87 Start: 54478, Stop: 54843, Start Num: 122

Candidate Starts for Aegeus\_87:

(Start: 122 @54478 has 160 MA's), (133, 54496), (Start: 135 @54502 has 1 MA's), (Start: 142 @54517 has 4 MA's), (200, 54658), (213, 54724), (214, 54727), (225, 54781), (246, 54829),

Gene: Agueybana\_76 Start: 49121, Stop: 49486, Start Num: 122

Candidate Starts for Agueybana\_76:

(57, 49004), (69, 49028), (72, 49031), (95, 49073), (Start: 122 @49121 has 160 MA's), (217, 49385),

Gene: Alatato\_66 Start: 36072, Stop: 36431, Start Num: 94

Candidate Starts for Alatato\_66:

(62, 36012), (86, 36057), (Start: 94 @36072 has 2 MA's), (Start: 105 @36087 has 9 MA's), (138, 36144), (214, 36318), (225, 36372),

Gene: Aloeri\_72 Start: 43637, Stop: 44014, Start Num: 115

Candidate Starts for Aloeri\_72:

(Start: 115 @43637 has 13 MA's), (149, 43706), (167, 43742), (178, 43760), (217, 43901), (221, 43925), (243, 43982), (251, 44006),

Gene: AlumE\_72 Start: 48795, Stop: 49160, Start Num: 122

Candidate Starts for AlumE\_72:

(19, 48408), (59, 48681), (64, 48690), (77, 48714), (100, 48753), (Start: 122 @48795 has 160 MA's),

Gene: Amo99\_15 Start: 7379, Stop: 7768, Start Num: 109

Candidate Starts for Amo99\_15:

(38, 7193), (67, 7304), (92, 7349), (107, 7376), (Start: 109 @7379 has 3 MA's), (114, 7388), (Start: 119 @7397 has 1 MA's), (154, 7472), (196, 7571), (213, 7649), (215, 7664), (221, 7691), (224, 7703), (228, 7721), (240, 7754),

Gene: Angelique\_69 Start: 48080, Stop: 48445, Start Num: 122

Candidate Starts for Angelique\_69:

(Start: 122 @48080 has 160 MA's), (187, 48221),

Gene: Annalisa\_70 Start: 43981, Stop: 44349, Start Num: 122

Candidate Starts for Annalisa\_70:

(59, 43867), (64, 43876), (77, 43900), (100, 43939), (Start: 122 @43981 has 160 MA's),

Gene: Antonio\_70 Start: 46557, Stop: 46922, Start Num: 122

Candidate Starts for Antonio\_70:

(57, 46443), (Start: 122 @46557 has 160 MA's), (132, 46572), (193, 46713),

Gene: Appletree2\_76 Start: 51259, Stop: 51672, Start Num: 122

Candidate Starts for Appletree2\_76:

(Start: 122 @51259 has 160 MA's), (Start: 142 @51298 has 4 MA's), (158, 51334), (195, 51421), (225, 51562), (254, 51640), (256, 51643),

Gene: Apricot\_90 Start: 48459, Stop: 48836, Start Num: 105

Candidate Starts for Apricot\_90:

(Start: 105 @48459 has 9 MA's), (136, 48507), (166, 48555), (195, 48621), (210, 48693), (224, 48759), (229, 48780), (236, 48801),

Gene: ArV1\_082 Start: 60520, Stop: 60933, Start Num: 97

Candidate Starts for ArV1\_082:

(Start: 97 @60520 has 18 MA's), (Start: 98 @60523 has 1 MA's), (101, 60526), (112, 60550), (117, 60559), (123, 60565), (125, 60568), (128, 60577), (153, 60628), (155, 60631), (168, 60655), (195, 60715), (Start: 204 @60751 has 1 MA's), (253, 60913),

Gene: ArchiDore\_72 Start: 49542, Stop: 49913, Start Num: 120

Candidate Starts for ArchiDore\_72:

(55, 49416), (58, 49425), (Start: 120 @49542 has 9 MA's), (Start: 142 @49584 has 4 MA's), (169, 49644), (179, 49656), (195, 49710),

Gene: Archie\_77 Start: 53141, Stop: 53554, Start Num: 122

Candidate Starts for Archie\_77:

(Start: 122 @53141 has 160 MA's), (Start: 142 @53180 has 4 MA's), (183, 53261), (195, 53303), (225, 53444), (262, 53540),

Gene: Attis\_68 Start: 45280, Stop: 45648, Start Num: 122

Candidate Starts for Attis\_68:

(57, 45163), (63, 45172), (72, 45190), (95, 45232), (Start: 122 @45280 has 160 MA's), (132, 45295),

Gene: AvadaKedavra\_77 Start: 51727, Stop: 52140, Start Num: 122

Candidate Starts for AvadaKedavra\_77:

(Start: 122 @51727 has 160 MA's), (Start: 142 @51766 has 4 MA's), (158, 51802), (195, 51889), (225, 52030), (254, 52108), (256, 52111),

Gene: Awesomesauce\_70 Start: 42720, Stop: 43097, Start Num: 115

Candidate Starts for Awesomesauce\_70:

(Start: 115 @42720 has 13 MA's), (149, 42789), (167, 42825), (178, 42843), (217, 42984), (221, 43008), (243, 43065), (251, 43089),

Gene: BENtherdunthat\_90 Start: 49249, Stop: 49614, Start Num: 122

Candidate Starts for BENtherdunthat\_90:

(12, 48544), (15, 48700), (20, 48880), (28, 48991), (43, 49075), (Start: 122 @49249 has 160 MA's), (Start: 142 @49285 has 4 MA's), (176, 49354), (179, 49357), (188, 49390), (196, 49417), (207, 49471), (208, 49474), (225, 49552),

Gene: Baoshan\_77 Start: 53427, Stop: 53840, Start Num: 122

Candidate Starts for Baoshan\_77:

(Start: 122 @53427 has 160 MA's), (Start: 142 @53466 has 4 MA's), (160, 53505), (183, 53547), (195, 53589), (214, 53676), (225, 53730), (262, 53826),

Gene: BatStarr\_74 Start: 49525, Stop: 49890, Start Num: 122

Candidate Starts for BatStarr\_74:

(57, 49408), (69, 49432), (72, 49435), (95, 49477), (Start: 122 @49525 has 160 MA's), (132, 49540),

Gene: Baudelaire\_87 Start: 54478, Stop: 54843, Start Num: 122

Candidate Starts for Baudelaire\_87:

(Start: 122 @54478 has 160 MA's), (133, 54496), (Start: 135 @54502 has 1 MA's), (Start: 142 @54517 has 4 MA's), (200, 54658), (213, 54724), (214, 54727), (225, 54781), (246, 54829),

Gene: BaxterFox\_77 Start: 50109, Stop: 50474, Start Num: 122

Candidate Starts for BaxterFox\_77:

(57, 49992), (69, 50016), (72, 50019), (95, 50061), (Start: 122 @50109 has 160 MA's), (132, 50124), (217, 50373),

Gene: Bazzle\_77 Start: 53330, Stop: 53743, Start Num: 122

Candidate Starts for Bazzle\_77:

(Start: 122 @53330 has 160 MA's), (Start: 142 @53369 has 4 MA's), (183, 53450), (195, 53492), (214, 53579), (225, 53633), (262, 53729),

Gene: Beagle\_51 Start: 38228, Stop: 37809, Start Num: 83

Candidate Starts for Beagle\_51:

(Start: 83 @38228 has 6 MA's), (90, 38216), (107, 38183), (180, 38057), (201, 38000), (202, 37988), (203, 37979), (Start: 204 @37976 has 1 MA's), (209, 37958),

Gene: BeeGee\_76 Start: 48379, Stop: 48744, Start Num: 122

Candidate Starts for BeeGee\_76:

(59, 48265), (64, 48274), (77, 48298), (100, 48337), (Start: 122 @48379 has 160 MA's),

Gene: Beenie\_64 Start: 44525, Stop: 44890, Start Num: 118

Candidate Starts for Beenie\_64:

(Start: 118 @44525 has 7 MA's), (214, 44774),

Gene: Bellis\_76 Start: 53474, Stop: 53827, Start Num: 142

Candidate Starts for Bellis\_76:

(Start: 122 @53435 has 160 MA's), (133, 53453), (Start: 142 @53474 has 4 MA's), (195, 53597), (225, 53738), (254, 53816), (256, 53819),

Gene: Bialota\_69 Start: 48237, Stop: 48602, Start Num: 122

Candidate Starts for Bialota\_69:

(57, 48120), (69, 48144), (72, 48147), (95, 48189), (Start: 122 @48237 has 160 MA's), (132, 48252),

Gene: BigCheese\_80 Start: 53557, Stop: 53970, Start Num: 122

Candidate Starts for BigCheese\_80:

(Start: 122 @53557 has 160 MA's), (Start: 142 @53596 has 4 MA's), (183, 53677), (195, 53719), (214, 53806), (225, 53860), (262, 53956),

Gene: Bjaner7\_65 Start: 42654, Stop: 43019, Start Num: 122

Candidate Starts for Bjaner7\_65:

(13, 42006), (19, 42267), (59, 42540), (64, 42549), (77, 42573), (Start: 122 @42654 has 160 MA's),

Gene: BobsGarage\_80 Start: 53557, Stop: 53970, Start Num: 122

Candidate Starts for BobsGarage\_80:

(Start: 122 @53557 has 160 MA's), (Start: 142 @53596 has 4 MA's), (183, 53677), (195, 53719), (214, 53806), (225, 53860), (262, 53956),

Gene: Bosnia\_73 Start: 50639, Stop: 51004, Start Num: 122

Candidate Starts for Bosnia\_73:

(59, 50525), (64, 50534), (77, 50558), (100, 50597), (Start: 122 @50639 has 160 MA's),

Gene: BotCity\_93 Start: 50778, Stop: 51143, Start Num: 122

Candidate Starts for BotCity\_93:

(12, 50073), (15, 50229), (20, 50409), (28, 50520), (43, 50604), (Start: 122 @50778 has 160 MA's), (Start: 142 @50814 has 4 MA's), (176, 50883), (179, 50886), (188, 50919), (196, 50946), (207, 51000), (208, 51003), (225, 51081),

Gene: BourbonZero\_79 Start: 53449, Stop: 53823, Start Num: 133

Candidate Starts for BourbonZero\_79:

(Start: 122 @53431 has 160 MA's), (133, 53449), (Start: 142 @53470 has 4 MA's), (195, 53593), (211, 53668), (225, 53734), (254, 53812), (256, 53815),

Gene: BoyNamedSue\_72 Start: 48795, Stop: 49160, Start Num: 122

Candidate Starts for BoyNamedSue\_72:

(19, 48408), (59, 48681), (64, 48690), (77, 48714), (100, 48753), (Start: 122 @48795 has 160 MA's),

Gene: Bradissa\_71 Start: 49627, Stop: 49992, Start Num: 122

Candidate Starts for Bradissa\_71:

(111, 49609), (Start: 122 @49627 has 160 MA's), (132, 49642), (200, 49807), (217, 49891),

Gene: BrainDrainer\_78 Start: 52369, Stop: 52743, Start Num: 122

Candidate Starts for BrainDrainer\_78:

(Start: 122 @52369 has 160 MA's), (133, 52387), (Start: 135 @52393 has 1 MA's), (Start: 142 @52408 has 4 MA's), (152, 52432), (195, 52531), (211, 52606), (215, 52630), (225, 52672), (229, 52687),

Gene: Bran\_49 Start: 35390, Stop: 35785, Start Num: 122

Candidate Starts for Bran\_49:

(Start: 122 @35390 has 160 MA's), (149, 35450), (206, 35606),

Gene: Breezona\_80 Start: 53557, Stop: 53970, Start Num: 122

Candidate Starts for Breezona\_80:

(Start: 122 @53557 has 160 MA's), (Start: 142 @53596 has 4 MA's), (183, 53677), (195, 53719), (214, 53806), (225, 53860), (262, 53956),

Gene: BritBrat\_89 Start: 51800, Stop: 52234, Start Num: 105

Candidate Starts for BritBrat\_89:

(Start: 105 @51800 has 9 MA's), (123, 51821), (136, 51848), (153, 51881), (172, 51920), (185, 51947), (227, 52097), (235, 52121), (266, 52199),

Gene: Bromden\_78 Start: 53002, Stop: 53388, Start Num: 122

Candidate Starts for Bromden\_78:

(Start: 122 @53002 has 160 MA's), (133, 53020), (Start: 135 @53026 has 1 MA's), (Start: 142 @53041 has 4 MA's), (152, 53065), (195, 53164), (211, 53239), (215, 53263), (225, 53305), (229, 53320), (254, 53380),

Gene: BruhMoment\_47 Start: 39339, Stop: 38920, Start Num: 83

Candidate Starts for BruhMoment\_47:

(Start: 83 @39339 has 6 MA's), (90, 39327), (107, 39294), (151, 39216), (159, 39201), (170, 39180), (182, 39162), (201, 39111), (202, 39099), (203, 39090), (209, 39069), (225, 38994),

Gene: Brujita\_53 Start: 36853, Stop: 37233, Start Num: 115

Candidate Starts for Brujita\_53:

(Start: 115 @36853 has 13 MA's), (149, 36925), (215, 37117), (217, 37120), (243, 37201),

Gene: Budski\_95 Start: 51613, Stop: 51987, Start Num: 106

Candidate Starts for Budski\_95:

(39, 51436), (76, 51556), (Start: 106 @51613 has 5 MA's), (123, 51631), (141, 51670), (160, 51694), (162, 51697), (166, 51706), (172, 51718), (185, 51745), (193, 51766), (208, 51835), (213, 51856), (214, 51859), (221, 51898), (224, 51910),

Gene: Bunnybear\_69 Start: 47790, Stop: 48155, Start Num: 122

Candidate Starts for Bunnybear\_69:

(57, 47673), (69, 47697), (72, 47700), (95, 47742), (Start: 122 @47790 has 160 MA's),

Gene: Calm\_79 Start: 52009, Stop: 52383, Start Num: 142

Candidate Starts for Calm\_79:

(Start: 122 @51970 has 160 MA's), (Start: 142 @52009 has 4 MA's), (158, 52045), (195, 52132), (225, 52273), (254, 52351), (256, 52354),

Gene: Cashline\_72 Start: 50322, Stop: 50687, Start Num: 122

Candidate Starts for Cashline\_72:

(111, 50304), (Start: 122 @50322 has 160 MA's), (132, 50337), (200, 50502),

Gene: Chaser\_76 Start: 52001, Stop: 52387, Start Num: 122

Candidate Starts for Chaser\_76:

(Start: 122 @52001 has 160 MA's), (133, 52019), (Start: 135 @52025 has 1 MA's), (Start: 142 @52040 has 4 MA's), (152, 52064), (195, 52163), (211, 52238), (215, 52262), (225, 52304), (254, 52379),

Gene: Che9c\_64 Start: 45395, Stop: 45778, Start Num: 115

Candidate Starts for Che9c\_64:

(Start: 115 @45395 has 13 MA's), (149, 45467), (215, 45659), (217, 45662), (243, 45743), (252, 45770),

Gene: ChickenDinner\_72 Start: 43637, Stop: 44014, Start Num: 115

Candidate Starts for ChickenDinner\_72:

(Start: 115 @43637 has 13 MA's), (149, 43706), (167, 43742), (178, 43760), (217, 43901), (221, 43925), (243, 43982), (251, 44006),

Gene: Chipper1996\_960 Start: 62228, Stop: 62641, Start Num: 97

Candidate Starts for Chipper1996\_960:

(Start: 97 @62228 has 18 MA's), (Start: 98 @62231 has 1 MA's), (112, 62258), (117, 62267), (123, 62273), (128, 62285), (134, 62297), (155, 62339), (168, 62363), (195, 62423), (Start: 204 @62459 has 1 MA's), (211, 62489), (221, 62540), (235, 62582), (253, 62621),

Gene: Chocolat\_95 Start: 61935, Stop: 62348, Start Num: 97

Candidate Starts for Chocolat\_95:

(Start: 97 @61935 has 18 MA's), (Start: 98 @61938 has 1 MA's), (112, 61965), (117, 61974), (123, 61980), (128, 61992), (134, 62004), (155, 62046), (168, 62070), (195, 62130), (Start: 204 @62166 has 1 MA's), (211, 62196), (221, 62247), (235, 62289), (253, 62328),

Gene: Chubster\_95 Start: 62175, Stop: 62588, Start Num: 97

Candidate Starts for Chubster\_95:

(Start: 97 @62175 has 18 MA's), (Start: 98 @62178 has 1 MA's), (112, 62205), (117, 62214), (123, 62220), (128, 62232), (134, 62244), (155, 62286), (168, 62310), (195, 62370), (Start: 204 @62406 has 1 MA's), (211, 62436), (221, 62487), (235, 62529), (253, 62568),

Gene: CicholasNage\_74 Start: 51312, Stop: 51725, Start Num: 122

Candidate Starts for CicholasNage\_74:

(Start: 122 @51312 has 160 MA's), (Start: 142 @51351 has 4 MA's), (158, 51387), (195, 51474), (225, 51615), (254, 51693), (256, 51696),

Gene: Clap\_68 Start: 42833, Stop: 43198, Start Num: 122

Candidate Starts for Clap\_68:

(13, 42185), (19, 42446), (59, 42719), (64, 42728), (77, 42752), (Start: 122 @42833 has 160 MA's),

Gene: Clark\_69 Start: 44288, Stop: 44653, Start Num: 118

Candidate Starts for Clark\_69:

(Start: 118 @44288 has 7 MA's), (214, 44537),

Gene: Claus\_80 Start: 53492, Stop: 53905, Start Num: 122

Candidate Starts for Claus\_80:

(Start: 122 @53492 has 160 MA's), (Start: 142 @53531 has 4 MA's), (195, 53654), (214, 53741), (225, 53795), (262, 53891),

Gene: Clautastrophe\_76 Start: 53433, Stop: 53825, Start Num: 122

Candidate Starts for Clautastrophe\_76:

(Start: 122 @53433 has 160 MA's), (133, 53451), (Start: 142 @53472 has 4 MA's), (195, 53595), (225, 53736), (254, 53814), (256, 53817),

Gene: Clawz\_16 Start: 7752, Stop: 8141, Start Num: 109

Candidate Starts for Clawz\_16:

(35, 7545), (38, 7566), (56, 7653), (92, 7722), (107, 7749), (Start: 109 @7752 has 3 MA's), (114, 7761), (137, 7806), (161, 7860), (193, 7932), (206, 7992), (214, 8025), (215, 8037), (221, 8064), (224, 8076), (225, 8082), (240, 8127),

Gene: ClearAsMud\_50 Start: 32507, Stop: 32881, Start Num: 122

Candidate Starts for ClearAsMud\_50:

(Start: 122 @32507 has 160 MA's), (149, 32567), (163, 32594), (195, 32663), (197, 32672), (200, 32681), (205, 32714), (217, 32765), (221, 32789), (224, 32801), (232, 32831), (240, 32852), (245, 32858),

Gene: ColdSoup\_15 Start: 7379, Stop: 7768, Start Num: 109

Candidate Starts for ColdSoup\_15:

(38, 7193), (67, 7304), (92, 7349), (107, 7376), (Start: 109 @7379 has 3 MA's), (114, 7388), (Start: 119 @7397 has 1 MA's), (154, 7472), (196, 7571), (213, 7649), (215, 7664), (221, 7691), (224, 7703), (228, 7721), (240, 7754),

Gene: Colucci\_98 Start: 62563, Stop: 62976, Start Num: 97

Candidate Starts for Colucci\_98:

(Start: 97 @62563 has 18 MA's), (Start: 98 @62566 has 1 MA's), (112, 62593), (117, 62602), (123, 62608), (125, 62611), (153, 62671), (155, 62674), (168, 62698), (195, 62758), (Start: 204 @62794 has 1 MA's),

Gene: Conboy\_93 Start: 61684, Stop: 62097, Start Num: 97

Candidate Starts for Conboy\_93:

(Start: 97 @61684 has 18 MA's), (Start: 98 @61687 has 1 MA's), (112, 61714), (117, 61723), (123, 61729), (128, 61741), (134, 61753), (155, 61795), (168, 61819), (195, 61879), (Start: 204 @61915 has 1 MA's), (211, 61945), (221, 61996), (235, 62038), (253, 62077),

Gene: Confidence\_73 Start: 47600, Stop: 47965, Start Num: 122

Candidate Starts for Confidence\_73:

(111, 47582), (Start: 122 @47600 has 160 MA's), (132, 47615),

Gene: Crater\_90 Start: 48803, Stop: 49180, Start Num: 105

Candidate Starts for Crater\_90:

(Start: 105 @48803 has 9 MA's), (136, 48851), (166, 48899), (195, 48965), (210, 49037), (224, 49103), (229, 49124), (236, 49145),

Gene: Crossroads\_80 Start: 53632, Stop: 54045, Start Num: 122

Candidate Starts for Crossroads\_80:

(Start: 122 @53632 has 160 MA's), (Start: 142 @53671 has 4 MA's), (183, 53752), (195, 53794), (214, 53881), (225, 53935), (262, 54031),

Gene: Cynthia\_68 Start: 42831, Stop: 43196, Start Num: 122

Candidate Starts for Cynthia\_68:

(13, 42183), (19, 42444), (59, 42717), (64, 42726), (77, 42750), (Start: 122 @42831 has 160 MA's),

Gene: DHan\_83 Start: 53710, Stop: 54123, Start Num: 122

Candidate Starts for DHan\_83:

(Start: 122 @53710 has 160 MA's), (Start: 142 @53749 has 4 MA's), (183, 53830), (195, 53872), (214, 53959), (225, 54013), (262, 54109),

Gene: DanBing\_80 Start: 53362, Stop: 53775, Start Num: 122

Candidate Starts for DanBing\_80:

(Start: 122 @53362 has 160 MA's), (Start: 142 @53401 has 4 MA's), (183, 53482), (195, 53524), (214, 53611), (225, 53665), (262, 53761),

Gene: Denise\_65 Start: 39624, Stop: 39992, Start Num: 120

Candidate Starts for Denise\_65:

(74, 39543), (Start: 120 @39624 has 9 MA's), (Start: 142 @39666 has 4 MA's), (169, 39726), (176, 39735), (179, 39738), (189, 39774),

Gene: DillyDally\_56 Start: 35605, Stop: 35967, Start Num: 99

Candidate Starts for DillyDally\_56:

(46, 35485), (77, 35563), (Start: 94 @35596 has 2 MA's), (99, 35605), (Start: 105 @35617 has 9 MA's), (Start: 106 @35620 has 5 MA's), (138, 35674), (186, 35761), (192, 35770), (208, 35830), (213, 35851), (219, 35872), (225, 35908), (239, 35938), (242, 35941),

Gene: DirkDirk\_74 Start: 50839, Stop: 51252, Start Num: 122

Candidate Starts for DirkDirk\_74:

(Start: 122 @50839 has 160 MA's), (Start: 142 @50878 has 4 MA's), (158, 50914), (195, 51001), (225, 51142), (254, 51220), (256, 51223),

Gene: DobbysSock\_66 Start: 44836, Stop: 45252, Start Num: 110

Candidate Starts for DobbysSock\_66:

(Start: 110 @44836 has 4 MA's), (Start: 122 @44854 has 160 MA's), (199, 45031), (239, 45217),

Gene: DocMcStuffins\_70 Start: 43637, Stop: 44014, Start Num: 115

Candidate Starts for DocMcStuffins\_70:

(Start: 115 @43637 has 13 MA's), (149, 43706), (167, 43742), (178, 43760), (217, 43901), (221, 43925), (243, 43982), (251, 44006),

Gene: DogYard\_48 Start: 38145, Stop: 37708, Start Num: 83

Candidate Starts for DogYard\_48:



(Start: 83 @38145 has 6 MA's), (90, 38133), (Start: 98 @38118 has 1 MA's), (148, 38031), (166, 37998), (170, 37989), (201, 37920), (202, 37908), (203, 37899), (225, 37818), (259, 37740),

Gene: Dolores\_70 Start: 43516, Stop: 43884, Start Num: 122

Candidate Starts for Dolores\_70:

(11, 42763), (59, 43402), (64, 43411), (77, 43435), (100, 43474), (Start: 122 @43516 has 160 MA's), (195, 43681),

Gene: DonTron\_13 Start: 6968, Stop: 7357, Start Num: 109

Candidate Starts for DonTron\_13:

(38, 6782), (67, 6893), (92, 6938), (107, 6965), (Start: 109 @6968 has 3 MA's), (114, 6977), (Start: 119 @6986 has 1 MA's), (154, 7061), (196, 7160), (213, 7238), (215, 7253), (221, 7280), (224, 7292), (228, 7310), (240, 7343),

Gene: Dorito\_64 Start: 42718, Stop: 43086, Start Num: 116

Candidate Starts for Dorito\_64:

(Start: 116 @42718 has 1 MA's),

Gene: Douge\_77 Start: 51948, Stop: 52310, Start Num: 135

Candidate Starts for Douge\_77:

(Start: 122 @51924 has 160 MA's), (133, 51942), (Start: 135 @51948 has 1 MA's), (Start: 142 @51963 has 4 MA's), (152, 51987), (195, 52086), (211, 52161), (215, 52185), (225, 52227), (254, 52302),

Gene: Douzhi\_78 Start: 52186, Stop: 52560, Start Num: 122

Candidate Starts for Douzhi\_78:

(Start: 122 @52186 has 160 MA's), (133, 52204), (Start: 135 @52210 has 1 MA's), (Start: 142 @52225 has 4 MA's), (152, 52249), (195, 52348), (211, 52423), (215, 52447), (225, 52489), (229, 52504),

Gene: DrSeegs\_80 Start: 53557, Stop: 53970, Start Num: 122

Candidate Starts for DrSeegs\_80:

(Start: 122 @53557 has 160 MA's), (Start: 142 @53596 has 4 MA's), (183, 53677), (195, 53719), (214, 53806), (225, 53860), (262, 53956),

Gene: DrYang\_91 Start: 61721, Stop: 62134, Start Num: 97

Candidate Starts for DrYang\_91:

(48, 61619), (Start: 97 @61721 has 18 MA's), (Start: 98 @61724 has 1 MA's), (112, 61751), (123, 61766), (125, 61769), (126, 61775), (155, 61832), (168, 61856), (195, 61916), (Start: 204 @61952 has 1 MA's),

Gene: DumpsterDude\_68 Start: 50011, Stop: 50379, Start Num: 122

Candidate Starts for DumpsterDude\_68:

(58, 49891), (Start: 122 @50011 has 160 MA's), (Start: 142 @50050 has 4 MA's), (160, 50089), (169, 50110), (179, 50122), (195, 50176),

Gene: DuncansLeg\_78 Start: 53419, Stop: 53811, Start Num: 122

Candidate Starts for DuncansLeg\_78:

(Start: 122 @53419 has 160 MA's), (133, 53437), (Start: 142 @53458 has 4 MA's), (195, 53581), (211, 53656), (225, 53722), (254, 53800), (256, 53803),

Gene: DyoEdafos\_82 Start: 52834, Stop: 53220, Start Num: 122

Candidate Starts for DyoEdafos\_82:

(Start: 122 @52834 has 160 MA's), (133, 52852), (Start: 135 @52858 has 1 MA's), (Start: 142 @52873 has 4 MA's), (152, 52897), (195, 52996), (215, 53095), (225, 53137), (254, 53212),

Gene: EMSquaredA\_73 Start: 47755, Stop: 48120, Start Num: 122  
Candidate Starts for EMSquaredA\_73:  
(77, 47674), (100, 47713), (Start: 122 @47755 has 160 MA's), (187, 47896),

Gene: Easley\_68 Start: 43289, Stop: 43654, Start Num: 118  
Candidate Starts for Easley\_68:  
(3, 42284), (4, 42296), (5, 42332), (6, 42356), (7, 42368), (8, 42380), (16, 42842), (Start: 118 @43289 has 7 MA's),

Gene: EastWest\_44 Start: 33743, Stop: 34048, Start Num: 204  
Candidate Starts for EastWest\_44:  
(50, 33407), (52, 33410), (80, 33473), (108, 33527), (117, 33545), (151, 33611), (Start: 204 @33743 has 1 MA's), (206, 33752), (228, 33857), (238, 33887), (260, 33944), (267, 33986),

Gene: Ebert\_71 Start: 43265, Stop: 43630, Start Num: 122  
Candidate Starts for Ebert\_71:  
(13, 42617), (19, 42878), (59, 43151), (64, 43160), (77, 43184), (Start: 122 @43265 has 160 MA's),

Gene: Ecliptus\_97 Start: 52002, Stop: 52379, Start Num: 105  
Candidate Starts for Ecliptus\_97:  
(Start: 105 @52002 has 9 MA's), (136, 52050), (166, 52098), (195, 52164), (210, 52236), (224, 52302), (229, 52323), (236, 52344),

Gene: EdgarPoe\_94 Start: 62092, Stop: 62505, Start Num: 97  
Candidate Starts for EdgarPoe\_94:  
(Start: 97 @62092 has 18 MA's), (Start: 98 @62095 has 1 MA's), (112, 62122), (117, 62131), (123, 62137), (128, 62149), (134, 62161), (155, 62203), (168, 62227), (195, 62287), (Start: 204 @62323 has 1 MA's), (211, 62353), (221, 62404), (235, 62446), (253, 62485),

Gene: EdnaMode\_67 Start: 42941, Stop: 43306, Start Num: 122  
Candidate Starts for EdnaMode\_67:  
(59, 42827), (64, 42836), (77, 42860), (Start: 122 @42941 has 160 MA's),

Gene: Ellson\_77 Start: 53752, Stop: 54126, Start Num: 133  
Candidate Starts for Ellson\_77:  
(Start: 122 @53734 has 160 MA's), (133, 53752), (Start: 142 @53773 has 4 MA's), (195, 53896), (211, 53971), (225, 54037), (254, 54115), (256, 54118),

Gene: EnalisNailo\_69 Start: 48247, Stop: 48612, Start Num: 122  
Candidate Starts for EnalisNailo\_69:  
(19, 47860), (59, 48133), (64, 48142), (77, 48166), (Start: 122 @48247 has 160 MA's),

Gene: Enceladus\_74 Start: 51616, Stop: 52029, Start Num: 122  
Candidate Starts for Enceladus\_74:  
(Start: 122 @51616 has 160 MA's), (Start: 142 @51655 has 4 MA's), (158, 51691), (195, 51778), (225, 51919), (254, 51997), (256, 52000),

Gene: Eudoria\_71 Start: 46557, Stop: 46922, Start Num: 122  
Candidate Starts for Eudoria\_71:  
(57, 46443), (Start: 122 @46557 has 160 MA's), (132, 46572), (193, 46713),

Gene: Eviarto\_75 Start: 49500, Stop: 49865, Start Num: 122

Candidate Starts for Eviarto\_75:

(57, 49383), (69, 49407), (72, 49410), (95, 49452), (Start: 122 @49500 has 160 MA's), (132, 49515),

Gene: Faith1\_80 Start: 53557, Stop: 53970, Start Num: 122

Candidate Starts for Faith1\_80:

(Start: 122 @53557 has 160 MA's), (Start: 142 @53596 has 4 MA's), (183, 53677), (195, 53719), (214, 53806), (225, 53860), (262, 53956),

Gene: Faith5x5\_63 Start: 38073, Stop: 38444, Start Num: 120

Candidate Starts for Faith5x5\_63:

(74, 37992), (96, 38031), (Start: 120 @38073 has 9 MA's), (Start: 142 @38115 has 4 MA's), (160, 38154), (169, 38175), (179, 38187),

Gene: FarmResident\_79 Start: 51952, Stop: 52314, Start Num: 135

Candidate Starts for FarmResident\_79:

(Start: 122 @51928 has 160 MA's), (132, 51943), (133, 51946), (Start: 135 @51952 has 1 MA's), (Start: 142 @51967 has 4 MA's), (152, 51991), (195, 52090), (211, 52165), (215, 52189), (225, 52231), (254, 52306),

Gene: Finemlucis\_79 Start: 54025, Stop: 54423, Start Num: 122

Candidate Starts for Finemlucis\_79:

(Start: 122 @54025 has 160 MA's), (Start: 142 @54064 has 4 MA's), (176, 54133), (179, 54136), (195, 54187), (213, 54271), (225, 54328), (256, 54409),

Gene: Finkle\_64 Start: 40296, Stop: 40754, Start Num: 105

Candidate Starts for Finkle\_64:

(26, 40047), (27, 40068), (Start: 105 @40296 has 9 MA's), (172, 40404), (195, 40458), (197, 40467), (235, 40605), (257, 40659),

Gene: Finnry\_78 Start: 53684, Stop: 54076, Start Num: 122

Candidate Starts for Finnry\_78:

(Start: 122 @53684 has 160 MA's), (133, 53702), (Start: 142 @53723 has 4 MA's), (195, 53846), (225, 53987), (254, 54065), (256, 54068),

Gene: Fireman\_49 Start: 33919, Stop: 34293, Start Num: 122

Candidate Starts for Fireman\_49:

(Start: 122 @33919 has 160 MA's), (205, 34126), (217, 34177), (221, 34201), (224, 34213), (238, 34261), (245, 34270),

Gene: Floral\_74 Start: 49712, Stop: 50077, Start Num: 122

Candidate Starts for Floral\_74:

(77, 49631), (100, 49670), (Start: 122 @49712 has 160 MA's), (187, 49853),

Gene: Forrestell\_44 Start: 36597, Stop: 36178, Start Num: 83

Candidate Starts for Forrestell\_44:

(67, 36621), (79, 36603), (Start: 83 @36597 has 6 MA's), (90, 36585), (107, 36552), (151, 36474), (174, 36432), (180, 36426), (201, 36369), (202, 36357), (203, 36348), (Start: 204 @36345 has 1 MA's), (209, 36327),

Gene: Frankie\_73 Start: 45043, Stop: 45420, Start Num: 115

Candidate Starts for Frankie\_73:

(22, 44707), (24, 44749), (84, 44986), (Start: 115 @45043 has 13 MA's), (149, 45112), (215, 45304), (217, 45307), (221, 45331), (243, 45388),

Gene: Frickyeah\_97 Start: 50758, Stop: 51126, Start Num: 106

Candidate Starts for Frickyeah\_97:

(Start: 106 @50758 has 5 MA's), (141, 50815), (181, 50872), (194, 50914), (195, 50917), (196, 50923), (214, 51004), (221, 51043), (224, 51055), (225, 51061), (236, 51091),

Gene: FroggyToad\_69 Start: 44360, Stop: 44728, Start Num: 122

Candidate Starts for FroggyToad\_69:

(Start: 122 @44360 has 160 MA's),

Gene: G4\_60 Start: 34029, Stop: 34412, Start Num: 104

Candidate Starts for G4\_60:

(43, 33882), (Start: 104 @34029 has 1 MA's), (114, 34047), (128, 34071), (191, 34194), (215, 34290), (221, 34317),

Gene: GAL1\_69 Start: 43840, Stop: 44205, Start Num: 122

Candidate Starts for GAL1\_69:

(Start: 122 @43840 has 160 MA's), (Start: 142 @43876 has 4 MA's), (176, 43945), (179, 43948), (196, 44008), (207, 44062), (208, 44065), (211, 44077), (225, 44143),

Gene: Gabriela\_79 Start: 52903, Stop: 53316, Start Num: 122

Candidate Starts for Gabriela\_79:

(Start: 122 @52903 has 160 MA's), (Start: 142 @52942 has 4 MA's), (183, 53023), (195, 53065), (214, 53152), (225, 53206), (262, 53302),

Gene: Gardann\_80 Start: 53392, Stop: 53805, Start Num: 122

Candidate Starts for Gardann\_80:

(Start: 122 @53392 has 160 MA's), (Start: 142 @53431 has 4 MA's), (183, 53512), (195, 53554), (214, 53641), (225, 53695), (262, 53791),

Gene: GemG\_68 Start: 42837, Stop: 43202, Start Num: 122

Candidate Starts for GemG\_68:

(13, 42189), (19, 42450), (59, 42723), (64, 42732), (77, 42756), (Start: 122 @42837 has 160 MA's),

Gene: Getalong\_93 Start: 51704, Stop: 52069, Start Num: 122

Candidate Starts for Getalong\_93:

(12, 50999), (15, 51155), (20, 51335), (28, 51446), (43, 51530), (Start: 122 @51704 has 160 MA's), (Start: 142 @51740 has 4 MA's), (176, 51809), (179, 51812), (188, 51845), (196, 51872), (207, 51926), (208, 51929), (225, 52007),

Gene: Gina\_49 Start: 32061, Stop: 32435, Start Num: 122

Candidate Starts for Gina\_49:

(Start: 122 @32061 has 160 MA's), (171, 32166), (195, 32217), (205, 32268), (217, 32319), (221, 32343), (224, 32355), (225, 32361), (229, 32376), (240, 32406), (245, 32412),

Gene: Gizermo\_68 Start: 42833, Stop: 43198, Start Num: 122

Candidate Starts for Gizermo\_68:

(13, 42185), (19, 42446), (59, 42719), (64, 42728), (77, 42752), (Start: 122 @42833 has 160 MA's),

Gene: Gudmit\_62 Start: 37386, Stop: 37871, Start Num: 106

Candidate Starts for Gudmit\_62:

(75, 37326), (Start: 106 @37386 has 5 MA's), (134, 37425), (146, 37452), (166, 37497), (193, 37557), (211, 37638), (213, 37647), (224, 37701), (236, 37743),

Gene: GuuelaD\_78 Start: 53672, Stop: 54085, Start Num: 122

Candidate Starts for GuuelaD\_78:

(Start: 122 @53672 has 160 MA's), (Start: 142 @53711 has 4 MA's), (183, 53792), (195, 53834), (214, 53921), (225, 53975), (262, 54071),

Gene: Hafay\_81 Start: 53487, Stop: 53900, Start Num: 122

Candidate Starts for Hafay\_81:

(Start: 122 @53487 has 160 MA's), (Start: 142 @53526 has 4 MA's), (195, 53649), (214, 53736), (225, 53790), (262, 53886),

Gene: Halena\_75 Start: 50886, Stop: 51299, Start Num: 122

Candidate Starts for Halena\_75:

(Start: 122 @50886 has 160 MA's), (Start: 142 @50925 has 4 MA's), (158, 50961), (195, 51048), (225, 51189), (254, 51267), (256, 51270),

Gene: Haley23\_68 Start: 42833, Stop: 43198, Start Num: 122

Candidate Starts for Haley23\_68:

(13, 42185), (19, 42446), (59, 42719), (64, 42728), (77, 42752), (Start: 122 @42833 has 160 MA's),

Gene: Herod\_75 Start: 49919, Stop: 50284, Start Num: 122

Candidate Starts for Herod\_75:

(57, 49802), (69, 49826), (72, 49829), (95, 49871), (Start: 122 @49919 has 160 MA's), (132, 49934),

Gene: Holliday\_92 Start: 52368, Stop: 52745, Start Num: 105

Candidate Starts for Holliday\_92:

(Start: 105 @52368 has 9 MA's), (136, 52416), (166, 52464), (210, 52602), (224, 52668), (236, 52710),

Gene: Hortense\_71 Start: 48762, Stop: 49163, Start Num: 122

Candidate Starts for Hortense\_71:

(Start: 110 @48744 has 4 MA's), (Start: 122 @48762 has 160 MA's), (199, 48939), (224, 49083), (239, 49125),

Gene: Horus\_91 Start: 51033, Stop: 51401, Start Num: 106

Candidate Starts for Horus\_91:

(Start: 106 @51033 has 5 MA's), (141, 51090), (181, 51147), (194, 51189), (195, 51192), (196, 51198), (214, 51279), (221, 51318), (224, 51330), (225, 51336), (236, 51366),

Gene: Howe\_71 Start: 48762, Stop: 49163, Start Num: 122

Candidate Starts for Howe\_71:

(Start: 110 @48744 has 4 MA's), (Start: 122 @48762 has 160 MA's), (199, 48939), (224, 49083), (239, 49125),

Gene: Hugley\_73 Start: 49899, Stop: 50264, Start Num: 122

Candidate Starts for Hugley\_73:

(57, 49782), (69, 49806), (72, 49809), (95, 49851), (Start: 122 @49899 has 160 MA's), (132, 49914),

Gene: Hum25\_62 Start: 35736, Stop: 36095, Start Num: 94

Candidate Starts for Hum25\_62:

(Start: 94 @35736 has 2 MA's), (121, 35775), (134, 35796), (138, 35805), (156, 35838), (177, 35865), (195, 35910), (211, 35973), (220, 36018), (225, 36039), (242, 36072), (248, 36084),

Gene: HumptyDumpty\_95 Start: 61895, Stop: 62308, Start Num: 97

Candidate Starts for HumptyDumpty\_95:

(Start: 97 @61895 has 18 MA's), (Start: 98 @61898 has 1 MA's), (112, 61925), (117, 61934), (123, 61940), (128, 61952), (134, 61964), (155, 62006), (168, 62030), (195, 62090), (Start: 204 @62126 has 1 MA's), (211, 62156), (221, 62207), (235, 62249), (253, 62288),

Gene: Hyzer\_89 Start: 56367, Stop: 56672, Start Num: 122

Candidate Starts for Hyzer\_89:

(95, 56319), (Start: 122 @56367 has 160 MA's),

Gene: Invecetra\_71 Start: 45861, Stop: 46226, Start Num: 118

Candidate Starts for Invecetra\_71:

(Start: 118 @45861 has 7 MA's), (214, 46110),

Gene: Island3\_53 Start: 36853, Stop: 37233, Start Num: 115

Candidate Starts for Island3\_53:

(Start: 115 @36853 has 13 MA's), (149, 36925), (215, 37117), (217, 37120), (243, 37201),

Gene: Itos\_79 Start: 52463, Stop: 52876, Start Num: 122

Candidate Starts for Itos\_79:

(Start: 122 @52463 has 160 MA's), (Start: 142 @52502 has 4 MA's), (183, 52583), (195, 52625), (214, 52712), (225, 52766), (262, 52862),

Gene: JCole\_65 Start: 41503, Stop: 41868, Start Num: 122

Candidate Starts for JCole\_65:

(10, 40720), (13, 40855), (19, 41116), (59, 41389), (64, 41398), (77, 41422), (100, 41461), (Start: 122 @41503 has 160 MA's),

Gene: JaNo\_94 Start: 61869, Stop: 62279, Start Num: 98

Candidate Starts for JaNo\_94:

(Start: 97 @61866 has 18 MA's), (Start: 98 @61869 has 1 MA's), (112, 61896), (117, 61905), (123, 61911), (128, 61923), (134, 61935), (155, 61977), (168, 62001), (195, 62061), (Start: 204 @62097 has 1 MA's), (211, 62127), (221, 62178), (235, 62220), (253, 62259),

Gene: Jablanski\_77 Start: 51014, Stop: 51379, Start Num: 122

Candidate Starts for Jablanski\_77:

(49, 50894), (Start: 89 @50963 has 3 MA's), (100, 50978), (Start: 122 @51014 has 160 MA's), (215, 51275),

Gene: Jace\_77 Start: 44043, Stop: 44462, Start Num: 110

Candidate Starts for Jace\_77:

(21, 43710), (36, 43836), (Start: 110 @44043 has 4 MA's), (136, 44088), (143, 44103), (153, 44121), (166, 44148), (172, 44160), (193, 44208), (195, 44214), (216, 44313), (218, 44316), (226, 44358), (227, 44361), (235, 44385), (263, 44445),

Gene: JayCookie\_95 Start: 62428, Stop: 62841, Start Num: 97

Candidate Starts for JayCookie\_95:

(Start: 97 @62428 has 18 MA's), (Start: 98 @62431 has 1 MA's), (112, 62458), (117, 62467), (123, 62473), (128, 62485), (134, 62497), (155, 62539), (168, 62563), (195, 62623), (Start: 204 @62659 has 1 MA's), (211, 62689), (221, 62740), (235, 62782), (253, 62821),

Gene: Jayden\_49 Start: 32758, Stop: 33132, Start Num: 122

Candidate Starts for Jayden\_49:

(68, 32671), (Start: 122 @32758 has 160 MA's), (161, 32842), (195, 32914), (205, 32965), (221, 33040), (224, 33052), (225, 33058), (240, 33103), (245, 33109),

Gene: Jobypre\_79 Start: 53472, Stop: 53825, Start Num: 142

Candidate Starts for Jobypre\_79:

(Start: 122 @53433 has 160 MA's), (133, 53451), (Start: 142 @53472 has 4 MA's), (195, 53595), (225, 53736), (254, 53814), (256, 53817),

Gene: JoeDirt\_77 Start: 52253, Stop: 52627, Start Num: 142

Candidate Starts for JoeDirt\_77:

(Start: 142 @52253 has 4 MA's), (158, 52289), (195, 52376), (225, 52517), (254, 52595), (256, 52598),

Gene: Jollymon\_15 Start: 7379, Stop: 7768, Start Num: 109

Candidate Starts for Jollymon\_15:

(38, 7193), (67, 7304), (92, 7349), (107, 7376), (Start: 109 @7379 has 3 MA's), (114, 7388), (Start: 119 @7397 has 1 MA's), (154, 7472), (196, 7571), (213, 7649), (215, 7664), (221, 7691), (224, 7703), (228, 7721), (240, 7754),

Gene: Jubie\_77 Start: 53568, Stop: 53960, Start Num: 122

Candidate Starts for Jubie\_77:

(Start: 122 @53568 has 160 MA's), (133, 53586), (Start: 142 @53607 has 4 MA's), (195, 53730), (225, 53871), (254, 53949), (256, 53952),

Gene: KBurrousTX\_93 Start: 63304, Stop: 63714, Start Num: 97

Candidate Starts for KBurrousTX\_93:

(Start: 97 @63304 has 18 MA's), (Start: 98 @63307 has 1 MA's), (101, 63310), (112, 63334), (114, 63337), (123, 63349), (131, 63367), (136, 63379), (168, 63439), (195, 63499), (Start: 204 @63535 has 1 MA's), (225, 63631), (242, 63667), (244, 63670),

Gene: Kabreeze\_95 Start: 61952, Stop: 62365, Start Num: 97

Candidate Starts for Kabreeze\_95:

(Start: 97 @61952 has 18 MA's), (Start: 98 @61955 has 1 MA's), (112, 61982), (117, 61991), (123, 61997), (128, 62009), (134, 62021), (155, 62063), (168, 62087), (195, 62147), (Start: 204 @62183 has 1 MA's), (211, 62213), (221, 62264), (235, 62306), (253, 62345),

Gene: Kahlid\_80 Start: 53563, Stop: 53976, Start Num: 122

Candidate Starts for Kahlid\_80:

(Start: 122 @53563 has 160 MA's), (Start: 142 @53602 has 4 MA's), (169, 53662), (183, 53683), (195, 53725), (214, 53812), (225, 53866), (262, 53962),

Gene: Kamaru\_84 Start: 48067, Stop: 48444, Start Num: 105

Candidate Starts for Kamaru\_84:

(39, 47893), (Start: 105 @48067 has 9 MA's), (123, 48088), (136, 48115), (185, 48202), (210, 48301), (213, 48313), (223, 48364), (224, 48367), (236, 48409),

Gene: Kingsolomon\_76 Start: 53440, Stop: 53832, Start Num: 122

Candidate Starts for Kingsolomon\_76:

(Start: 122 @53440 has 160 MA's), (133, 53458), (Start: 142 @53479 has 4 MA's), (195, 53602), (225, 53743), (254, 53821), (256, 53824),

Gene: KingstonB\_13 Start: 6977, Stop: 7357, Start Num: 114

Candidate Starts for KingstonB\_13:

(38, 6782), (67, 6893), (92, 6938), (107, 6965), (Start: 109 @6968 has 3 MA's), (114, 6977), (Start: 119 @6986 has 1 MA's), (154, 7061), (196, 7160), (213, 7238), (215, 7253), (221, 7280), (224, 7292), (228, 7310), (240, 7343),

Gene: KirDoubleO7\_76 Start: 53460, Stop: 53813, Start Num: 142

Candidate Starts for KirDoubleO7\_76:

(Start: 122 @53421 has 160 MA's), (133, 53439), (Start: 142 @53460 has 4 MA's), (195, 53583), (211, 53658), (225, 53724), (254, 53802), (256, 53805),

Gene: Kita\_72 Start: 46566, Stop: 46931, Start Num: 122

Candidate Starts for Kita\_72:

(57, 46452), (Start: 122 @46566 has 160 MA's), (132, 46581), (193, 46722),

Gene: Kropertea\_74 Start: 52116, Stop: 52502, Start Num: 122

Candidate Starts for Kropertea\_74:

(Start: 122 @52116 has 160 MA's), (133, 52134), (Start: 135 @52140 has 1 MA's), (Start: 142 @52155 has 4 MA's), (152, 52179), (195, 52278), (215, 52377), (225, 52419), (254, 52494),

Gene: Krypton555\_79 Start: 53667, Stop: 54059, Start Num: 122

Candidate Starts for Krypton555\_79:

(Start: 122 @53667 has 160 MA's), (133, 53685), (Start: 142 @53706 has 4 MA's), (195, 53829), (225, 53970), (254, 54048), (256, 54051),

Gene: Kubulix\_48 Start: 38093, Stop: 37656, Start Num: 83

Candidate Starts for Kubulix\_48:

(Start: 83 @38093 has 6 MA's), (90, 38081), (Start: 98 @38066 has 1 MA's), (148, 37979), (166, 37946), (170, 37937), (182, 37919), (201, 37868), (202, 37856), (203, 37847), (Start: 204 @37844 has 1 MA's), (225, 37766), (259, 37688),

Gene: Kuwabara\_86 Start: 51241, Stop: 51609, Start Num: 120

Candidate Starts for Kuwabara\_86:

(Start: 120 @51241 has 9 MA's), (Start: 142 @51283 has 4 MA's), (160, 51322), (169, 51343), (176, 51352), (179, 51355), (247, 51601),

Gene: Lamberg\_64 Start: 41342, Stop: 41707, Start Num: 122

Candidate Starts for Lamberg\_64:

(13, 40694), (19, 40955), (59, 41228), (64, 41237), (77, 41261), (Start: 122 @41342 has 160 MA's),

Gene: LeBron\_76 Start: 50885, Stop: 51298, Start Num: 122

Candidate Starts for LeBron\_76:

(Start: 122 @50885 has 160 MA's), (Start: 142 @50924 has 4 MA's), (158, 50960), (195, 51047), (225, 51188), (254, 51266), (256, 51269),

Gene: Leroy\_90 Start: 49228, Stop: 49596, Start Num: 106

Candidate Starts for Leroy\_90:

(Start: 106 @49228 has 5 MA's), (141, 49285), (181, 49342), (194, 49384), (195, 49387), (196, 49393), (214, 49474), (221, 49513), (224, 49525), (225, 49531), (236, 49561),

Gene: Lewan\_81 Start: 53615, Stop: 54049, Start Num: 122

Candidate Starts for Lewan\_81:

(Start: 122 @53615 has 160 MA's), (Start: 142 @53654 has 4 MA's), (183, 53735), (195, 53777), (214, 53864), (225, 53918), (262, 54014),



Gene: LilDestine\_79 Start: 53467, Stop: 53880, Start Num: 122

Candidate Starts for LilDestine\_79:

(Start: 122 @53467 has 160 MA's), (Start: 142 @53506 has 4 MA's), (183, 53587), (195, 53629), (214, 53716), (225, 53770), (262, 53866),

Gene: LilSpotty\_67 Start: 41443, Stop: 41820, Start Num: 115

Candidate Starts for LilSpotty\_67:

(53, 41326), (54, 41329), (61, 41350), (Start: 115 @41443 has 13 MA's), (149, 41512), (215, 41704), (217, 41707), (221, 41731), (243, 41788),

Gene: Lilas\_70 Start: 49785, Stop: 50150, Start Num: 122

Candidate Starts for Lilas\_70:

(19, 49398), (59, 49671), (64, 49680), (77, 49704), (Start: 122 @49785 has 160 MA's),

Gene: Linus\_95 Start: 62400, Stop: 62813, Start Num: 97

Candidate Starts for Linus\_95:

(Start: 97 @62400 has 18 MA's), (Start: 98 @62403 has 1 MA's), (112, 62430), (117, 62439), (123, 62445), (128, 62457), (134, 62469), (155, 62511), (168, 62535), (195, 62595), (Start: 204 @62631 has 1 MA's), (211, 62661), (221, 62712), (235, 62754), (253, 62793),

Gene: LiyuLake\_77 Start: 53533, Stop: 53886, Start Num: 142

Candidate Starts for LiyuLake\_77:

(Start: 122 @53494 has 160 MA's), (133, 53512), (Start: 142 @53533 has 4 MA's), (195, 53656), (211, 53731), (225, 53797), (254, 53875), (256, 53878),

Gene: Loadrie\_79 Start: 53642, Stop: 54055, Start Num: 122

Candidate Starts for Loadrie\_79:

(Start: 122 @53642 has 160 MA's), (Start: 142 @53681 has 4 MA's), (183, 53762), (195, 53804), (214, 53891), (225, 53945), (262, 54041),

Gene: Lolly9\_77 Start: 53537, Stop: 53929, Start Num: 122

Candidate Starts for Lolly9\_77:

(Start: 122 @53537 has 160 MA's), (133, 53555), (Start: 142 @53576 has 4 MA's), (195, 53699), (225, 53840), (254, 53918), (256, 53921),

Gene: LonelyBoi\_72 Start: 50747, Stop: 51112, Start Num: 122

Candidate Starts for LonelyBoi\_72:

(77, 50669), (Start: 122 @50747 has 160 MA's), (132, 50762),

Gene: LordFarquaad\_71 Start: 45261, Stop: 45629, Start Num: 122

Candidate Starts for LordFarquaad\_71:

(57, 45144), (63, 45153), (72, 45171), (95, 45213), (Start: 122 @45261 has 160 MA's), (132, 45276),

Gene: Lton\_65 Start: 38394, Stop: 38762, Start Num: 120

Candidate Starts for Lton\_65:

(Start: 120 @38394 has 9 MA's), (Start: 142 @38436 has 4 MA's), (160, 38475), (169, 38496), (176, 38505), (179, 38508), (247, 38754),

Gene: Lucky10\_65 Start: 40814, Stop: 41182, Start Num: 120

Candidate Starts for Lucky10\_65:

(44, 40652), (Start: 120 @40814 has 9 MA's), (140, 40853), (Start: 142 @40856 has 4 MA's), (160, 40895), (169, 40916), (176, 40925), (179, 40928),

Gene: Lumos\_79 Start: 53430, Stop: 53822, Start Num: 122

Candidate Starts for Lumos\_79:

(Start: 122 @53430 has 160 MA's), (133, 53448), (Start: 142 @53469 has 4 MA's), (195, 53592), (225, 53733), (254, 53811), (256, 53814),

Gene: Lutum\_91 Start: 49684, Stop: 50049, Start Num: 122

Candidate Starts for Lutum\_91:

(12, 48979), (15, 49135), (20, 49315), (28, 49426), (43, 49510), (Start: 122 @49684 has 160 MA's), (Start: 142 @49720 has 4 MA's), (176, 49789), (179, 49792), (188, 49825), (196, 49852), (207, 49906), (208, 49909), (225, 49987),

Gene: Lymara\_92 Start: 60859, Stop: 61272, Start Num: 97

Candidate Starts for Lymara\_92:

(Start: 97 @60859 has 18 MA's), (Start: 98 @60862 has 1 MA's), (112, 60889), (123, 60904), (128, 60916), (134, 60928), (155, 60970), (168, 60994), (193, 61048), (195, 61054), (Start: 204 @61090 has 1 MA's), (211, 61120), (235, 61213), (253, 61252),

Gene: MAckerman\_75 Start: 50879, Stop: 51292, Start Num: 122

Candidate Starts for MAckerman\_75:

(Start: 122 @50879 has 160 MA's), (Start: 142 @50918 has 4 MA's), (158, 50954), (195, 51041), (225, 51182), (254, 51260), (256, 51263),

Gene: Madeline\_68 Start: 48371, Stop: 48736, Start Num: 122

Candidate Starts for Madeline\_68:

(57, 48254), (63, 48263), (72, 48281), (95, 48323), (Start: 122 @48371 has 160 MA's), (132, 48386), (155, 48440), (193, 48527),

Gene: MakCheese\_79 Start: 49464, Stop: 49835, Start Num: 122

Candidate Starts for MakCheese\_79:

(77, 49383), (100, 49422), (Start: 122 @49464 has 160 MA's),

Gene: Malibo\_73 Start: 47674, Stop: 48039, Start Num: 122

Candidate Starts for Malibo\_73:

(17, 47248), (57, 47557), (69, 47581), (72, 47584), (95, 47626), (Start: 122 @47674 has 160 MA's),

Gene: Malisha\_90 Start: 52796, Stop: 53167, Start Num: 120

Candidate Starts for Malisha\_90:

(74, 52715), (96, 52754), (Start: 120 @52796 has 9 MA's), (Start: 142 @52838 has 4 MA's), (160, 52877), (169, 52898), (179, 52910),

Gene: Manasvini\_73 Start: 46581, Stop: 46946, Start Num: 122

Candidate Starts for Manasvini\_73:

(57, 46467), (Start: 122 @46581 has 160 MA's), (132, 46596), (193, 46737),

Gene: Maridalia\_74 Start: 47802, Stop: 48167, Start Num: 122

Candidate Starts for Maridalia\_74:

(57, 47685), (72, 47712), (95, 47754), (Start: 122 @47802 has 160 MA's), (132, 47817),

Gene: Marteena\_72 Start: 47755, Stop: 48120, Start Num: 122

Candidate Starts for Marteena\_72:

(77, 47674), (100, 47713), (Start: 122 @47755 has 160 MA's), (187, 47896),

Gene: Matteo\_62 Start: 41374, Stop: 41742, Start Num: 122

Candidate Starts for Matteo\_62:

(19, 40987), (59, 41260), (64, 41269), (77, 41293), (Start: 122 @41374 has 160 MA's),

Gene: Mbo4\_59 Start: 42474, Stop: 42896, Start Num: 105

Candidate Starts for Mbo4\_59:

(23, 42183), (30, 42258), (45, 42348), (Start: 105 @42474 has 9 MA's), (136, 42522), (151, 42552), (185, 42621), (235, 42795),

Gene: Mcklovin\_70 Start: 50090, Stop: 50455, Start Num: 122

Candidate Starts for Mcklovin\_70:

(59, 49976), (64, 49985), (77, 50009), (100, 50048), (Start: 122 @50090 has 160 MA's), (213, 50336),

Gene: Megan\_45 Start: 35422, Stop: 35853, Start Num: 119

Candidate Starts for Megan\_45:

(90, 35371), (Start: 119 @35422 has 1 MA's), (167, 35521), (199, 35593), (205, 35629), (208, 35641), (214, 35665), (215, 35677), (217, 35680), (221, 35704), (222, 35707), (224, 35716), (234, 35755), (240, 35767), (245, 35773), (249, 35782), (258, 35809),

Gene: MellowYellow\_47 Start: 36986, Stop: 36549, Start Num: 83

Candidate Starts for MellowYellow\_47:

(67, 37010), (Start: 83 @36986 has 6 MA's), (90, 36974), (148, 36872), (166, 36839), (170, 36830), (182, 36812), (201, 36761), (202, 36749), (203, 36740), (225, 36659), (259, 36581),

Gene: Metamorphoo\_49 Start: 33181, Stop: 33555, Start Num: 122

Candidate Starts for Metamorphoo\_49:

(Start: 122 @33181 has 160 MA's), (205, 33388), (217, 33439), (221, 33463), (224, 33475), (238, 33523), (245, 33532),

Gene: MichaelScott\_71 Start: 44969, Stop: 45334, Start Num: 118

Candidate Starts for MichaelScott\_71:

(Start: 118 @44969 has 7 MA's), (214, 45218),

Gene: Miley16\_80 Start: 53557, Stop: 53970, Start Num: 122

Candidate Starts for Miley16\_80:

(Start: 122 @53557 has 160 MA's), (Start: 142 @53596 has 4 MA's), (183, 53677), (195, 53719), (214, 53806), (225, 53860), (262, 53956),

Gene: MiniLon\_82 Start: 53538, Stop: 53930, Start Num: 122

Candidate Starts for MiniLon\_82:

(Start: 122 @53538 has 160 MA's), (133, 53556), (Start: 142 @53577 has 4 MA's), (195, 53700), (225, 53841), (254, 53919), (256, 53922),

Gene: MiniMac\_82 Start: 53533, Stop: 53925, Start Num: 122

Candidate Starts for MiniMac\_82:

(Start: 122 @53533 has 160 MA's), (133, 53551), (Start: 142 @53572 has 4 MA's), (195, 53695), (225, 53836), (254, 53914), (256, 53917),

Gene: Misha28\_68 Start: 42725, Stop: 43102, Start Num: 115

Candidate Starts for Misha28\_68:

(Start: 115 @42725 has 13 MA's), (149, 42794), (167, 42830), (178, 42848), (217, 42989), (221, 43013), (243, 43070), (251, 43094),

Gene: MkaliMitinis3\_81 Start: 53626, Stop: 54039, Start Num: 122

Candidate Starts for MkaliMitinis3\_81:

(Start: 122 @53626 has 160 MA's), (Start: 142 @53665 has 4 MA's), (183, 53746), (195, 53788), (214, 53875), (225, 53929), (262, 54025),

Gene: Mocha12\_68 Start: 42833, Stop: 43198, Start Num: 122

Candidate Starts for Mocha12\_68:

(13, 42185), (19, 42446), (59, 42719), (64, 42728), (77, 42752), (Start: 122 @42833 has 160 MA's),

Gene: Moosehead\_69 Start: 39233, Stop: 39610, Start Num: 105

Candidate Starts for Moosehead\_69:

(37, 39047), (62, 39152), (66, 39164), (91, 39209), (Start: 105 @39233 has 9 MA's), (136, 39281), (166, 39329), (224, 39533),

Gene: Moostard\_76 Start: 53435, Stop: 53827, Start Num: 122

Candidate Starts for Moostard\_76:

(Start: 122 @53435 has 160 MA's), (133, 53453), (Start: 142 @53474 has 4 MA's), (195, 53597), (225, 53738), (254, 53816), (256, 53819),

Gene: Mordred\_95 Start: 61991, Stop: 62404, Start Num: 97

Candidate Starts for Mordred\_95:

(Start: 97 @61991 has 18 MA's), (Start: 98 @61994 has 1 MA's), (112, 62021), (117, 62030), (123, 62036), (128, 62048), (134, 62060), (155, 62102), (168, 62126), (195, 62186), (Start: 204 @62222 has 1 MA's), (211, 62252), (221, 62303), (235, 62345), (253, 62384),

Gene: Morkie\_68 Start: 39542, Stop: 39910, Start Num: 120

Candidate Starts for Morkie\_68:

(Start: 120 @39542 has 9 MA's), (Start: 142 @39584 has 4 MA's), (160, 39623), (169, 39644), (176, 39653), (179, 39656), (247, 39902),

Gene: MortyNRick\_83 Start: 48781, Stop: 49158, Start Num: 105

Candidate Starts for MortyNRick\_83:

(Start: 105 @48781 has 9 MA's), (136, 48829), (166, 48877), (210, 49015), (215, 49042), (224, 49081), (229, 49102), (236, 49123),

Gene: MoyaNatalis\_94 Start: 61874, Stop: 62287, Start Num: 97

Candidate Starts for MoyaNatalis\_94:

(Start: 97 @61874 has 18 MA's), (Start: 98 @61877 has 1 MA's), (112, 61904), (117, 61913), (123, 61919), (128, 61931), (134, 61943), (155, 61985), (168, 62009), (195, 62069), (Start: 204 @62105 has 1 MA's), (211, 62135), (221, 62186), (235, 62228), (253, 62267),

Gene: MrSmee\_60 Start: 35393, Stop: 35752, Start Num: 94

Candidate Starts for MrSmee\_60:

(Start: 94 @35393 has 2 MA's), (121, 35432), (156, 35495), (164, 35507), (195, 35567), (211, 35630), (220, 35675), (221, 35681), (225, 35696), (242, 35729), (248, 35741),

Gene: MsGreen\_78 Start: 53471, Stop: 53824, Start Num: 142

Candidate Starts for MsGreen\_78:

(Start: 122 @53432 has 160 MA's), (133, 53450), (Start: 142 @53471 has 4 MA's), (195, 53594), (225, 53735), (254, 53813), (256, 53816),

Gene: MulchSalad\_67 Start: 40786, Stop: 41157, Start Num: 122

Candidate Starts for MulchSalad\_67:

(Start: 122 @40786 has 160 MA's), (130, 40795), (132, 40801), (Start: 142 @40825 has 4 MA's), (173, 40891), (179, 40897), (195, 40951), (196, 40957), (214, 41038),

Gene: Neobush\_73 Start: 47125, Stop: 47490, Start Num: 122

Candidate Starts for Neobush\_73:

(57, 47011), (Start: 122 @47125 has 160 MA's), (132, 47140), (193, 47281),

Gene: Nettuno\_66 Start: 42038, Stop: 42406, Start Num: 122

Candidate Starts for Nettuno\_66:

(57, 41921), (63, 41930), (72, 41948), (95, 41990), (Start: 122 @42038 has 160 MA's), (132, 42053),

Gene: Netyap\_81 Start: 53558, Stop: 53971, Start Num: 122

Candidate Starts for Netyap\_81:

(Start: 122 @53558 has 160 MA's), (Start: 142 @53597 has 4 MA's), (183, 53678), (195, 53720), (214, 53807), (225, 53861), (262, 53957),

Gene: Nicholas\_76 Start: 53440, Stop: 53832, Start Num: 122

Candidate Starts for Nicholas\_76:

(Start: 122 @53440 has 160 MA's), (133, 53458), (Start: 142 @53479 has 4 MA's), (195, 53602), (225, 53743), (254, 53821), (256, 53824),

Gene: Nicholasp3\_80 Start: 53392, Stop: 53805, Start Num: 122

Candidate Starts for Nicholasp3\_80:

(Start: 122 @53392 has 160 MA's), (Start: 142 @53431 has 4 MA's), (183, 53512), (195, 53554), (214, 53641), (225, 53695), (262, 53791),

Gene: Nicole72\_45 Start: 35846, Stop: 36274, Start Num: 124

Candidate Starts for Nicole72\_45:

(47, 35690), (Start: 124 @35846 has 1 MA's), (129, 35855), (205, 36047), (206, 36050), (215, 36095), (217, 36098), (221, 36122), (224, 36134), (231, 36161), (234, 36173), (237, 36179), (240, 36185), (245, 36191), (249, 36203), (258, 36230),

Gene: NoodlelyBoi\_48 Start: 32719, Stop: 33093, Start Num: 122

Candidate Starts for NoodlelyBoi\_48:

(Start: 122 @32719 has 160 MA's), (149, 32779), (163, 32806), (195, 32875), (197, 32884), (200, 32893), (205, 32926), (214, 32962), (217, 32977), (221, 33001), (224, 33013), (240, 33064), (245, 33070),

Gene: NyleyClemson\_46 Start: 36601, Stop: 36164, Start Num: 83

Candidate Starts for NyleyClemson\_46:

(67, 36625), (Start: 83 @36601 has 6 MA's), (90, 36589), (148, 36487), (166, 36454), (170, 36445), (182, 36427), (201, 36376), (202, 36364), (203, 36355), (225, 36274), (259, 36196),

Gene: Nymphadora\_75 Start: 49524, Stop: 49889, Start Num: 122

Candidate Starts for Nymphadora\_75:

(57, 49407), (69, 49431), (72, 49434), (95, 49476), (Start: 122 @49524 has 160 MA's), (132, 49539),

Gene: ODay\_98 Start: 52337, Stop: 52702, Start Num: 122

Candidate Starts for ODay\_98:

(Start: 122 @52337 has 160 MA's), (Start: 142 @52373 has 4 MA's), (176, 52442), (179, 52445), (184, 52463), (188, 52478), (196, 52505), (205, 52550), (207, 52559), (208, 52562), (222, 52625), (225, 52640),

Gene: Odyssey395\_52 Start: 38270, Stop: 37833, Start Num: 83

Candidate Starts for Odyssey395\_52:

(Start: 83 @38270 has 6 MA's), (90, 38258), (Start: 98 @38243 has 1 MA's), (148, 38156), (166, 38123), (170, 38114), (182, 38096), (201, 38045), (202, 38033), (203, 38024), (Start: 204 @38021 has 1 MA's), (225, 37943), (259, 37865),

Gene: Ohgeesy\_74 Start: 49004, Stop: 49369, Start Num: 122

Candidate Starts for Ohgeesy\_74:

(57, 48887), (72, 48914), (Start: 122 @49004 has 160 MA's),

Gene: Ollypop\_46 Start: 38043, Stop: 37591, Start Num: 83

Candidate Starts for Ollypop\_46:

(Start: 83 @38043 has 6 MA's), (90, 38031), (Start: 98 @38016 has 1 MA's), (148, 37929), (166, 37896), (170, 37887), (180, 37875), (182, 37869), (201, 37818), (202, 37806), (203, 37797), (220, 37737), (225, 37716), (248, 37665),

Gene: OneDirection\_62 Start: 36956, Stop: 37324, Start Num: 120

Candidate Starts for OneDirection\_62:

(Start: 120 @36956 has 9 MA's), (Start: 142 @36998 has 4 MA's), (160, 37037), (169, 37058), (176, 37067), (179, 37070),

Gene: OnionKnight\_42 Start: 30317, Stop: 30808, Start Num: 70

Candidate Starts for OnionKnight\_42:

(Start: 70 @30317 has 1 MA's), (Start: 94 @30359 has 2 MA's), (134, 30434), (160, 30485), (165, 30494), (177, 30515), (211, 30641), (214, 30653), (225, 30707), (230, 30722), (233, 30725), (261, 30797),

Gene: Oregano\_70 Start: 43852, Stop: 44250, Start Num: 122

Candidate Starts for Oregano\_70:

(Start: 122 @43852 has 160 MA's), (149, 43912), (199, 44029), (224, 44173), (239, 44215),

Gene: PFR1\_47 Start: 32984, Stop: 33379, Start Num: 98

Candidate Starts for PFR1\_47:

(Start: 98 @32984 has 1 MA's), (Start: 104 @32996 has 1 MA's), (114, 33014), (128, 33038), (191, 33161), (215, 33257), (221, 33284),

Gene: PFR2\_49 Start: 34553, Stop: 34948, Start Num: 98

Candidate Starts for PFR2\_49:

(Start: 98 @34553 has 1 MA's), (Start: 104 @34565 has 1 MA's), (114, 34583), (128, 34607), (191, 34730), (215, 34826), (221, 34853),

Gene: PYPDinur\_77 Start: 52639, Stop: 52995, Start Num: 133

Candidate Starts for PYPDinur\_77:

(Start: 122 @52621 has 160 MA's), (133, 52639), (Start: 135 @52645 has 1 MA's), (Start: 142 @52660 has 4 MA's), (152, 52684), (195, 52783), (211, 52858), (215, 52882), (225, 52924), (229, 52939),

Gene: PantheRoc\_77 Start: 49218, Stop: 49622, Start Num: 122

Candidate Starts for PantheRoc\_77:

(60, 49101), (71, 49125), (73, 49128), (96, 49170), (Start: 122 @49218 has 160 MA's), (145, 49266), (172, 49326), (190, 49365), (195, 49380), (199, 49395), (224, 49539), (235, 49575), (239, 49584),

Gene: Pepperoni\_61 Start: 38082, Stop: 38450, Start Num: 120

Candidate Starts for Pepperoni\_61:

(74, 38001), (Start: 120 @38082 has 9 MA's), (Start: 142 @38124 has 4 MA's), (160, 38163), (169, 38184), (176, 38193), (179, 38196), (247, 38442),

Gene: Periwinkle\_99 Start: 52035, Stop: 52403, Start Num: 106

Candidate Starts for Periwinkle\_99:

(Start: 106 @52035 has 5 MA's), (141, 52092), (181, 52149), (194, 52191), (195, 52194), (196, 52200), (214, 52281), (221, 52320), (224, 52332), (225, 52338), (236, 52368),

Gene: Phabuloso\_97 Start: 51176, Stop: 51541, Start Num: 122

Candidate Starts for Phabuloso\_97:

(12, 50471), (15, 50627), (20, 50807), (28, 50918), (43, 51002), (Start: 122 @51176 has 160 MA's), (Start: 142 @51212 has 4 MA's), (176, 51281), (179, 51284), (188, 51317), (196, 51344), (207, 51398), (208, 51401), (225, 51479),

Gene: Phistory\_88 Start: 48067, Stop: 48444, Start Num: 105

Candidate Starts for Phistory\_88:

(Start: 105 @48067 has 9 MA's), (136, 48115), (166, 48163), (195, 48229), (210, 48301), (224, 48367), (229, 48388), (236, 48409),

Gene: PhorbesPhlower\_66 Start: 38937, Stop: 39305, Start Num: 120

Candidate Starts for PhorbesPhlower\_66:

(Start: 120 @38937 has 9 MA's), (Start: 142 @38979 has 4 MA's), (160, 39018), (169, 39039), (176, 39048), (179, 39051), (247, 39297),

Gene: PhriskyACE\_67 Start: 44129, Stop: 44497, Start Num: 122

Candidate Starts for PhriskyACE\_67:

(77, 44048), (100, 44087), (Start: 122 @44129 has 160 MA's), (161, 44213),

Gene: Pickett\_65 Start: 41546, Stop: 41911, Start Num: 122

Candidate Starts for Pickett\_65:

(59, 41432), (64, 41441), (77, 41465), (Start: 122 @41546 has 160 MA's),

Gene: Piper2020\_71 Start: 43620, Stop: 43997, Start Num: 115

Candidate Starts for Piper2020\_71:

(Start: 115 @43620 has 13 MA's), (149, 43689), (167, 43725), (178, 43743), (217, 43884), (221, 43908), (243, 43965), (251, 43989),

Gene: Pitbull\_61 Start: 34580, Stop: 34939, Start Num: 94

Candidate Starts for Pitbull\_61:

(Start: 94 @34580 has 2 MA's), (121, 34619), (134, 34640), (138, 34649), (147, 34664), (156, 34682), (177, 34709), (205, 34793), (220, 34862), (225, 34883), (242, 34916), (248, 34928),

Gene: Pointis\_49 Start: 38268, Stop: 37831, Start Num: 83

Candidate Starts for Pointis\_49:

(Start: 83 @38268 has 6 MA's), (90, 38256), (Start: 98 @38241 has 1 MA's), (148, 38154), (166, 38121), (170, 38112), (182, 38094), (201, 38043), (202, 38031), (203, 38022), (Start: 204 @38019 has 1 MA's), (225, 37941), (259, 37863),

Gene: Pollux\_76 Start: 49712, Stop: 50077, Start Num: 122

Candidate Starts for Pollux\_76:

(77, 49631), (100, 49670), (Start: 122 @49712 has 160 MA's), (187, 49853),

Gene: Polly\_68 Start: 46000, Stop: 46365, Start Num: 122

Candidate Starts for Polly\_68:

(57, 45886), (Start: 122 @46000 has 160 MA's), (132, 46015), (193, 46156),

Gene: Powerball\_68 Start: 44232, Stop: 44600, Start Num: 122

Candidate Starts for Powerball\_68:

(77, 44151), (100, 44190), (Start: 122 @44232 has 160 MA's), (161, 44316),

Gene: PrincessTrina\_96 Start: 62182, Stop: 62595, Start Num: 97

Candidate Starts for PrincessTrina\_96:

(Start: 97 @62182 has 18 MA's), (Start: 98 @62185 has 1 MA's), (112, 62212), (117, 62221), (123, 62227), (128, 62239), (134, 62251), (155, 62293), (168, 62317), (195, 62377), (Start: 204 @62413 has 1 MA's), (211, 62443), (221, 62494), (235, 62536), (253, 62575),

Gene: Pureglobe5\_51 Start: 38451, Stop: 38014, Start Num: 83

Candidate Starts for Pureglobe5\_51:

(Start: 83 @38451 has 6 MA's), (90, 38439), (Start: 98 @38424 has 1 MA's), (148, 38337), (166, 38304), (170, 38295), (182, 38277), (201, 38226), (202, 38214), (203, 38205), (225, 38124), (259, 38046),

Gene: Pytheas\_78 Start: 51013, Stop: 51378, Start Num: 122

Candidate Starts for Pytheas\_78:

(49, 50893), (Start: 89 @50962 has 3 MA's), (100, 50977), (Start: 122 @51013 has 160 MA's), (215, 51274),

Gene: Quby\_78 Start: 52015, Stop: 52338, Start Num: 152

Candidate Starts for Quby\_78:

(Start: 122 @51952 has 160 MA's), (133, 51970), (Start: 135 @51976 has 1 MA's), (Start: 142 @51991 has 4 MA's), (152, 52015), (195, 52114), (196, 52120), (211, 52189), (215, 52213), (225, 52255), (254, 52330),

Gene: Ranunculus\_45 Start: 40272, Stop: 39856, Start Num: 85

Candidate Starts for Ranunculus\_45:

(78, 40284), (Start: 85 @40272 has 1 MA's), (90, 40263), (107, 40230), (136, 40179), (151, 40152), (170, 40116), (174, 40110), (198, 40056), (201, 40047), (202, 40035), (203, 40026), (Start: 204 @40023 has 1 MA's), (209, 40005),

Gene: RavenCo17\_69 Start: 47361, Stop: 47729, Start Num: 118

Candidate Starts for RavenCo17\_69:

(9, 46593), (Start: 118 @47361 has 7 MA's), (132, 47376), (217, 47625),

Gene: RazzB\_43 Start: 36720, Stop: 36295, Start Num: 90

Candidate Starts for RazzB\_43:

(67, 36756), (Start: 83 @36732 has 6 MA's), (90, 36720), (148, 36618), (166, 36585), (170, 36576), (182, 36558), (201, 36507), (202, 36495), (203, 36486), (225, 36405), (259, 36327),

Gene: Rizwana\_39 Start: 36865, Stop: 36446, Start Num: 88

Candidate Starts for Rizwana\_39:

(Start: 88 @36865 has 1 MA's), (103, 36841), (Start: 110 @36823 has 4 MA's), (136, 36775), (139, 36769), (180, 36703), (182, 36697), (193, 36667), (201, 36646), (Start: 204 @36622 has 1 MA's), (211, 36592), (225, 36526), (250, 36463),

Gene: RobsFeet\_50 Start: 33462, Stop: 33836, Start Num: 122

Candidate Starts for RobsFeet\_50:



(Start: 122 @33462 has 160 MA's), (205, 33669), (217, 33720), (221, 33744), (224, 33756), (238, 33804), (245, 33813),

Gene: RomansRevenge\_36 Start: 34253, Stop: 33783, Start Num: 88

Candidate Starts for RomansRevenge\_36:

(Start: 88 @34253 has 1 MA's), (157, 34124), (180, 34088), (201, 34031), (Start: 204 @34007 has 1 MA's), (253, 33851), (255, 33842), (257, 33839), (264, 33815),

Gene: Rose5\_77 Start: 52059, Stop: 52472, Start Num: 122

Candidate Starts for Rose5\_77:

(Start: 122 @52059 has 160 MA's), (Start: 142 @52098 has 4 MA's), (158, 52134), (195, 52221), (225, 52362), (254, 52440), (256, 52443),

Gene: RosiePosie\_95 Start: 62047, Stop: 62460, Start Num: 97

Candidate Starts for RosiePosie\_95:

(Start: 97 @62047 has 18 MA's), (Start: 98 @62050 has 1 MA's), (112, 62077), (117, 62086), (123, 62092), (128, 62104), (134, 62116), (155, 62158), (168, 62182), (195, 62242), (Start: 204 @62278 has 1 MA's), (211, 62308), (221, 62359), (235, 62401), (253, 62440),

Gene: Rumpelstiltskin\_77 Start: 53185, Stop: 53598, Start Num: 122

Candidate Starts for Rumpelstiltskin\_77:

(Start: 122 @53185 has 160 MA's), (Start: 142 @53224 has 4 MA's), (183, 53305), (195, 53347), (214, 53434), (225, 53488), (262, 53584),

Gene: Ruthy\_70 Start: 49109, Stop: 49477, Start Num: 122

Candidate Starts for Ruthy\_70:

(29, 48851), (31, 48860), (58, 48989), (Start: 122 @49109 has 160 MA's), (Start: 142 @49148 has 4 MA's), (160, 49187), (169, 49208), (179, 49220), (195, 49274),

Gene: Sahara\_67 Start: 42654, Stop: 43022, Start Num: 122

Candidate Starts for Sahara\_67:

(1, 41634), (2, 41637), (19, 42267), (59, 42540), (64, 42549), (77, 42573), (Start: 122 @42654 has 160 MA's),

Gene: Samman98\_71 Start: 44391, Stop: 44756, Start Num: 118

Candidate Starts for Samman98\_71:

(Start: 118 @44391 has 7 MA's), (214, 44640),

Gene: Samty\_77 Start: 53428, Stop: 53820, Start Num: 122

Candidate Starts for Samty\_77:

(Start: 122 @53428 has 160 MA's), (133, 53446), (Start: 142 @53467 has 4 MA's), (195, 53590), (225, 53731), (254, 53809), (256, 53812),

Gene: Sarshaun\_81 Start: 53650, Stop: 54063, Start Num: 122

Candidate Starts for Sarshaun\_81:

(Start: 122 @53650 has 160 MA's), (Start: 142 @53689 has 4 MA's), (183, 53770), (195, 53812), (214, 53899), (225, 53953), (262, 54049),

Gene: Savage\_68 Start: 42833, Stop: 43198, Start Num: 122

Candidate Starts for Savage\_68:

(13, 42185), (19, 42446), (59, 42719), (64, 42728), (77, 42752), (Start: 122 @42833 has 160 MA's),

Gene: Sbash\_61 Start: 42805, Stop: 43188, Start Num: 115

Candidate Starts for Sbash\_61:

(33, 42580), (80, 42736), (81, 42739), (Start: 115 @42805 has 13 MA's), (127, 42826), (149, 42877), (215, 43069), (217, 43072), (243, 43153), (252, 43180),

Gene: Scavito\_96 Start: 62040, Stop: 62453, Start Num: 97

Candidate Starts for Scavito\_96:

(Start: 97 @62040 has 18 MA's), (Start: 98 @62043 has 1 MA's), (112, 62070), (117, 62079), (123, 62085), (128, 62097), (134, 62109), (155, 62151), (168, 62175), (195, 62235), (Start: 204 @62271 has 1 MA's), (211, 62301), (221, 62352), (235, 62394), (253, 62433),

Gene: Scitech\_46 Start: 32555, Stop: 32974, Start Num: 93

Candidate Starts for Scitech\_46:

(93, 32555), (107, 32582), (Start: 115 @32597 has 13 MA's), (149, 32666), (167, 32702), (178, 32720), (217, 32861), (243, 32942), (251, 32966),

Gene: Sekhmet\_69 Start: 43915, Stop: 44283, Start Num: 122

Candidate Starts for Sekhmet\_69:

(11, 43162), (59, 43801), (64, 43810), (77, 43834), (100, 43873), (Start: 122 @43915 has 160 MA's),

Gene: ShawBrad\_95 Start: 49284, Stop: 49652, Start Num: 106

Candidate Starts for ShawBrad\_95:

(Start: 106 @49284 has 5 MA's), (141, 49341), (181, 49398), (194, 49440), (195, 49443), (196, 49449), (214, 49530), (221, 49569), (224, 49581), (225, 49587), (236, 49617),

Gene: Sheng711\_79 Start: 52255, Stop: 52629, Start Num: 122

Candidate Starts for Sheng711\_79:

(Start: 122 @52255 has 160 MA's), (133, 52273), (Start: 135 @52279 has 1 MA's), (Start: 142 @52294 has 4 MA's), (152, 52318), (195, 52417), (211, 52492), (215, 52516), (225, 52558), (229, 52573),

Gene: Shlim410\_69 Start: 48744, Stop: 49163, Start Num: 110

Candidate Starts for Shlim410\_69:

(Start: 110 @48744 has 4 MA's), (Start: 122 @48762 has 160 MA's), (199, 48939), (224, 49083), (239, 49125),

Gene: Shrubaron\_49 Start: 33096, Stop: 33470, Start Num: 122

Candidate Starts for Shrubaron\_49:

(Start: 122 @33096 has 160 MA's), (205, 33303), (217, 33354), (221, 33378), (224, 33390), (238, 33438), (245, 33447),

Gene: Sidious\_71 Start: 48554, Stop: 48919, Start Num: 122

Candidate Starts for Sidious\_71:

(77, 48473), (100, 48512), (Start: 122 @48554 has 160 MA's),

Gene: SilentRX\_41 Start: 36325, Stop: 35891, Start Num: 87

Candidate Starts for SilentRX\_41:

(51, 36400), (69, 36352), (Start: 87 @36325 has 1 MA's), (174, 36163), (182, 36151), (191, 36127), (201, 36100), (202, 36088), (203, 36079), (241, 35962), (259, 35920),

Gene: Silverleaf\_77 Start: 51554, Stop: 51928, Start Num: 142

Candidate Starts for Silverleaf\_77:

(Start: 122 @51515 has 160 MA's), (Start: 142 @51554 has 4 MA's), (158, 51590), (195, 51677), (225, 51818), (254, 51896), (256, 51899),

Gene: SirFrank\_47 Start: 32289, Stop: 32663, Start Num: 122

Candidate Starts for SirFrank\_47:

(Start: 122 @32289 has 160 MA's), (149, 32349), (163, 32376), (195, 32445), (197, 32454), (200, 32463), (205, 32496), (214, 32532), (217, 32547), (221, 32571), (224, 32583), (240, 32634), (245, 32640),

Gene: SkinnyPete\_48 Start: 33096, Stop: 33473, Start Num: 115

Candidate Starts for SkinnyPete\_48:

(Start: 115 @33096 has 13 MA's), (149, 33165), (167, 33201), (178, 33219), (217, 33360), (243, 33441), (251, 33465),

Gene: Skitty\_62 Start: 33627, Stop: 33986, Start Num: 94

Candidate Starts for Skitty\_62:

(Start: 94 @33627 has 2 MA's), (121, 33666), (134, 33687), (138, 33696), (156, 33729), (195, 33801), (220, 33909), (225, 33930), (242, 33963), (248, 33975),

Gene: Snenia\_77 Start: 53434, Stop: 53826, Start Num: 122

Candidate Starts for Snenia\_77:

(Start: 122 @53434 has 160 MA's), (133, 53452), (Start: 142 @53473 has 4 MA's), (195, 53596), (225, 53737), (254, 53815), (256, 53818),

Gene: Soap141\_80 Start: 53650, Stop: 54063, Start Num: 122

Candidate Starts for Soap141\_80:

(Start: 122 @53650 has 160 MA's), (Start: 142 @53689 has 4 MA's), (183, 53770), (195, 53812), (214, 53899), (225, 53953), (262, 54049),

Gene: SoilAssassin\_68 Start: 45279, Stop: 45647, Start Num: 122

Candidate Starts for SoilAssassin\_68:

(57, 45162), (63, 45171), (72, 45189), (95, 45231), (Start: 122 @45279 has 160 MA's), (132, 45294),

Gene: Soos\_13 Start: 6967, Stop: 7356, Start Num: 109

Candidate Starts for Soos\_13:

(38, 6781), (67, 6892), (92, 6937), (107, 6964), (Start: 109 @6967 has 3 MA's), (114, 6976), (Start: 119 @6985 has 1 MA's), (154, 7060), (196, 7159), (213, 7237), (215, 7252), (221, 7279), (224, 7291), (228, 7309), (231, 7318), (240, 7342),

Gene: Sproutie\_68 Start: 42833, Stop: 43198, Start Num: 122

Candidate Starts for Sproutie\_68:

(13, 42185), (19, 42446), (59, 42719), (64, 42728), (77, 42752), (Start: 122 @42833 has 160 MA's),

Gene: Sting\_14 Start: 7379, Stop: 7768, Start Num: 109

Candidate Starts for Sting\_14:

(35, 7172), (38, 7193), (67, 7304), (92, 7349), (107, 7376), (Start: 109 @7379 has 3 MA's), (114, 7388), (Start: 119 @7397 has 1 MA's), (154, 7472), (196, 7571), (213, 7649), (215, 7664), (221, 7691), (224, 7703), (228, 7721), (231, 7730), (240, 7754),

Gene: Suerte\_64 Start: 43530, Stop: 43898, Start Num: 122

Candidate Starts for Suerte\_64:

(59, 43416), (64, 43425), (77, 43449), (Start: 122 @43530 has 160 MA's),

Gene: Suscepit\_71 Start: 46558, Stop: 46923, Start Num: 122

Candidate Starts for Suscepit\_71:

(57, 46444), (Start: 122 @46558 has 160 MA's), (132, 46573), (193, 46714),

Gene: Tank\_41 Start: 36839, Stop: 36408, Start Num: 89

Candidate Starts for Tank\_41:

(Start: 89 @36839 has 3 MA's), (90, 36836), (Start: 97 @36824 has 18 MA's), (Start: 98 @36821 has 1 MA's), (170, 36686), (174, 36680), (182, 36668), (191, 36644), (201, 36617), (202, 36605), (203, 36596), (248, 36464), (265, 36413),

Gene: Tayonia\_71 Start: 46557, Stop: 46922, Start Num: 122

Candidate Starts for Tayonia\_71:

(57, 46443), (Start: 122 @46557 has 160 MA's), (132, 46572), (193, 46713),

Gene: Teamocil\_49 Start: 32160, Stop: 32534, Start Num: 122

Candidate Starts for Teamocil\_49:

(Start: 122 @32160 has 160 MA's), (171, 32265), (195, 32316), (205, 32367), (217, 32418), (221, 32442), (224, 32454), (225, 32460), (229, 32475), (240, 32505), (245, 32511),

Gene: ThankyouJordi\_74 Start: 49930, Stop: 50295, Start Num: 122

Candidate Starts for ThankyouJordi\_74:

(25, 49627), (57, 49813), (63, 49822), (72, 49840), (95, 49882), (Start: 122 @49930 has 160 MA's),

Gene: Thimann\_71 Start: 44657, Stop: 45025, Start Num: 118

Candidate Starts for Thimann\_71:

(3, 43652), (4, 43664), (5, 43700), (6, 43724), (7, 43736), (8, 43748), (16, 44210), (Start: 118 @44657 has 7 MA's),

Gene: TimTam\_75 Start: 49524, Stop: 49889, Start Num: 122

Candidate Starts for TimTam\_75:

(57, 49407), (69, 49431), (72, 49434), (95, 49476), (Start: 122 @49524 has 160 MA's), (132, 49539),

Gene: Tonitrus\_75 Start: 53537, Stop: 53983, Start Num: 102

Candidate Starts for Tonitrus\_75:

(34, 53345), (99, 53534), (Start: 102 @53537 has 1 MA's), (113, 53561), (136, 53606), (141, 53618), (150, 53630), (175, 53669), (193, 53714), (197, 53729), (213, 53804),

Gene: TootsiePop\_68 Start: 42725, Stop: 43102, Start Num: 115

Candidate Starts for TootsiePop\_68:

(Start: 115 @42725 has 13 MA's), (149, 42794), (167, 42830), (178, 42848), (217, 42989), (221, 43013), (243, 43070), (251, 43094),

Gene: Tophat\_96 Start: 62229, Stop: 62642, Start Num: 97

Candidate Starts for Tophat\_96:

(Start: 97 @62229 has 18 MA's), (Start: 98 @62232 has 1 MA's), (112, 62259), (117, 62268), (123, 62274), (128, 62286), (134, 62298), (155, 62340), (168, 62364), (195, 62424), (Start: 204 @62460 has 1 MA's), (211, 62490), (221, 62541), (235, 62583), (253, 62622),

Gene: Tortellini\_59 Start: 41926, Stop: 42303, Start Num: 115

Candidate Starts for Tortellini\_59:

(18, 41533), (40, 41752), (84, 41869), (Start: 115 @41926 has 13 MA's), (149, 41995), (167, 42031), (178, 42049), (221, 42214), (243, 42271), (251, 42295),

Gene: Tourach\_79 Start: 53675, Stop: 54073, Start Num: 122

Candidate Starts for Tourach\_79:

(Start: 122 @53675 has 160 MA's), (Start: 142 @53714 has 4 MA's), (158, 53750), (183, 53795), (195, 53837), (214, 53924), (225, 53978), (254, 54056),

Gene: TriFive\_78 Start: 53472, Stop: 53825, Start Num: 142

Candidate Starts for TriFive\_78:

(Start: 122 @53433 has 160 MA's), (133, 53451), (Start: 142 @53472 has 4 MA's), (195, 53595), (225, 53736), (254, 53814), (256, 53817),

Gene: Trumpet\_71 Start: 46558, Stop: 46923, Start Num: 122

Candidate Starts for Trumpet\_71:

(57, 46444), (Start: 122 @46558 has 160 MA's), (132, 46573), (193, 46714),

Gene: TuertoX\_68 Start: 42833, Stop: 43198, Start Num: 122

Candidate Starts for TuertoX\_68:

(13, 42185), (19, 42446), (59, 42719), (64, 42728), (77, 42752), (Start: 122 @42833 has 160 MA's),

Gene: Twinkle\_70 Start: 49803, Stop: 50222, Start Num: 110

Candidate Starts for Twinkle\_70:

(Start: 110 @49803 has 4 MA's), (Start: 122 @49821 has 160 MA's), (199, 49998), (224, 50142), (239, 50184),

Gene: Tyumbra\_47 Start: 33262, Stop: 33636, Start Num: 122

Candidate Starts for Tyumbra\_47:

(Start: 122 @33262 has 160 MA's), (205, 33469), (217, 33520), (221, 33544), (224, 33556), (238, 33604), (245, 33613),

Gene: Tyson\_78 Start: 51985, Stop: 52398, Start Num: 122

Candidate Starts for Tyson\_78:

(Start: 122 @51985 has 160 MA's), (Start: 142 @52024 has 4 MA's), (158, 52060), (195, 52147), (225, 52288), (254, 52366), (256, 52369),

Gene: UPIE\_76 Start: 51581, Stop: 51994, Start Num: 122

Candidate Starts for UPIE\_76:

(Start: 122 @51581 has 160 MA's), (Start: 142 @51620 has 4 MA's), (158, 51656), (195, 51743), (225, 51884), (254, 51962), (256, 51965),

Gene: Underpass\_71 Start: 48428, Stop: 48841, Start Num: 122

Candidate Starts for Underpass\_71:

(Start: 122 @48428 has 160 MA's), (Start: 142 @48467 has 4 MA's), (183, 48548), (195, 48590), (214, 48677), (225, 48731), (262, 48827),

Gene: Vasanti\_67 Start: 44256, Stop: 44621, Start Num: 122

Candidate Starts for Vasanti\_67:

(57, 44139), (69, 44163), (72, 44166), (95, 44208), (Start: 122 @44256 has 160 MA's), (178, 44367), (187, 44397),

Gene: Vetric\_79 Start: 53474, Stop: 53887, Start Num: 122

Candidate Starts for Vetric\_79:

(Start: 122 @53474 has 160 MA's), (Start: 142 @53513 has 4 MA's), (183, 53594), (195, 53636), (214, 53723), (225, 53777), (262, 53873),

Gene: Wamburgxpress\_77 Start: 52020, Stop: 52433, Start Num: 122

Candidate Starts for Wamburgxpress\_77:

(Start: 122 @52020 has 160 MA's), (Start: 142 @52059 has 4 MA's), (158, 52095), (195, 52182), (225, 52323), (254, 52401), (256, 52404),

Gene: WelcomeAyanna\_74 Start: 50077, Stop: 50442, Start Num: 122

Candidate Starts for WelcomeAyanna\_74:

(25, 49774), (57, 49960), (63, 49969), (72, 49987), (95, 50029), (Start: 122 @50077 has 160 MA's),

Gene: Whirlwind\_79 Start: 53633, Stop: 54025, Start Num: 122

Candidate Starts for Whirlwind\_79:

(Start: 122 @53633 has 160 MA's), (133, 53651), (Start: 142 @53672 has 4 MA's), (195, 53795), (225, 53936), (254, 54014), (256, 54017),

Gene: Whiteclaw\_68 Start: 42833, Stop: 43198, Start Num: 122

Candidate Starts for Whiteclaw\_68:

(13, 42185), (19, 42446), (59, 42719), (64, 42728), (77, 42752), (Start: 122 @42833 has 160 MA's),

Gene: Whitney\_89 Start: 51269, Stop: 51634, Start Num: 122

Candidate Starts for Whitney\_89:

(Start: 122 @51269 has 160 MA's), (Start: 142 @51305 has 4 MA's), (176, 51374), (179, 51377), (188, 51410), (196, 51437), (207, 51491), (208, 51494), (225, 51572),

Gene: Wigglewigggle\_79 Start: 53419, Stop: 53832, Start Num: 122

Candidate Starts for Wigglewigggle\_79:

(Start: 122 @53419 has 160 MA's), (Start: 142 @53458 has 4 MA's), (183, 53539), (195, 53581), (214, 53668), (225, 53722), (262, 53818),

Gene: Wilde\_41 Start: 36681, Stop: 36250, Start Num: 89

Candidate Starts for Wilde\_41:

(Start: 89 @36681 has 3 MA's), (90, 36678), (Start: 97 @36666 has 18 MA's), (Start: 98 @36663 has 1 MA's), (170, 36528), (174, 36522), (182, 36510), (191, 36486), (201, 36459), (202, 36447), (203, 36438), (248, 36306), (265, 36255),

Gene: Wilder\_81 Start: 53563, Stop: 53976, Start Num: 122

Candidate Starts for Wilder\_81:

(Start: 122 @53563 has 160 MA's), (Start: 142 @53602 has 4 MA's), (169, 53662), (183, 53683), (195, 53725), (214, 53812), (225, 53866), (262, 53962),

Gene: WinkNick\_70 Start: 43439, Stop: 43807, Start Num: 122

Candidate Starts for WinkNick\_70:

(11, 42686), (59, 43325), (64, 43334), (77, 43358), (100, 43397), (Start: 122 @43439 has 160 MA's), (195, 43604),

Gene: Winky\_80 Start: 53557, Stop: 53970, Start Num: 122

Candidate Starts for Winky\_80:

(Start: 122 @53557 has 160 MA's), (Start: 142 @53596 has 4 MA's), (183, 53677), (195, 53719), (214, 53806), (225, 53860), (262, 53956),

Gene: Wyatt2\_78 Start: 51983, Stop: 52396, Start Num: 122

Candidate Starts for Wyatt2\_78:

(Start: 122 @51983 has 160 MA's), (Start: 142 @52022 has 4 MA's), (158, 52058), (195, 52145), (225, 52286), (254, 52364), (256, 52367),

Gene: Yeet412\_67 Start: 44083, Stop: 44451, Start Num: 122

Candidate Starts for Yeet412\_67:  
(57, 43966), (63, 43975), (72, 43993), (95, 44035), (Start: 122 @44083 has 160 MA's), (132, 44098),

Gene: Yeezy\_76 Start: 47471, Stop: 47836, Start Num: 122  
Candidate Starts for Yeezy\_76:  
(82, 47405), (Start: 122 @47471 has 160 MA's), (132, 47486),

Gene: Zakai\_81 Start: 53883, Stop: 54296, Start Num: 122  
Candidate Starts for Zakai\_81:  
(Start: 122 @53883 has 160 MA's), (Start: 142 @53922 has 4 MA's), (183, 54003), (195, 54045), (214, 54132), (225, 54186), (262, 54282),

Gene: Zameen\_71 Start: 46557, Stop: 46922, Start Num: 122  
Candidate Starts for Zameen\_71:  
(57, 46443), (Start: 122 @46557 has 160 MA's), (132, 46572), (193, 46713),

Gene: Zaria\_78 Start: 51435, Stop: 51848, Start Num: 122  
Candidate Starts for Zaria\_78:  
(Start: 122 @51435 has 160 MA's), (Start: 142 @51474 has 4 MA's), (158, 51510), (195, 51597), (225, 51738), (254, 51816), (256, 51819),

Gene: ZhongYanYuan\_77 Start: 53010, Stop: 53423, Start Num: 122  
Candidate Starts for ZhongYanYuan\_77:  
(Start: 122 @53010 has 160 MA's), (Start: 142 @53049 has 4 MA's), (183, 53130), (195, 53172), (214, 53259), (225, 53313), (262, 53409),

Gene: Zirinka\_69 Start: 48225, Stop: 48590, Start Num: 122  
Candidate Starts for Zirinka\_69:  
(57, 48108), (69, 48132), (72, 48135), (95, 48177), (Start: 122 @48225 has 160 MA's), (132, 48240),

Gene: Zodiariah\_69 Start: 48840, Stop: 49217, Start Num: 118  
Candidate Starts for Zodiariah\_69:  
(14, 48246), (32, 48618), (42, 48675), (Start: 118 @48840 has 7 MA's), (144, 48894),