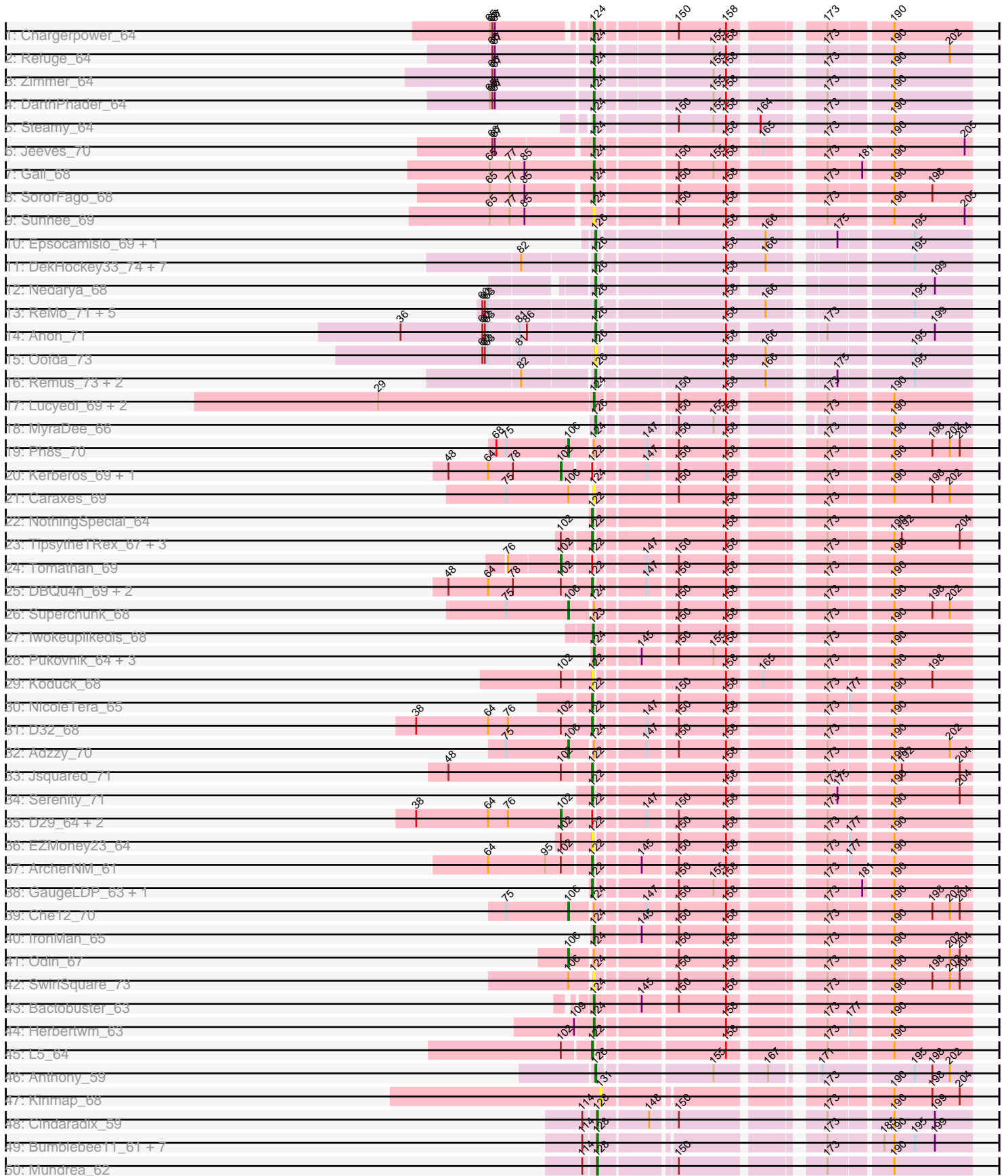
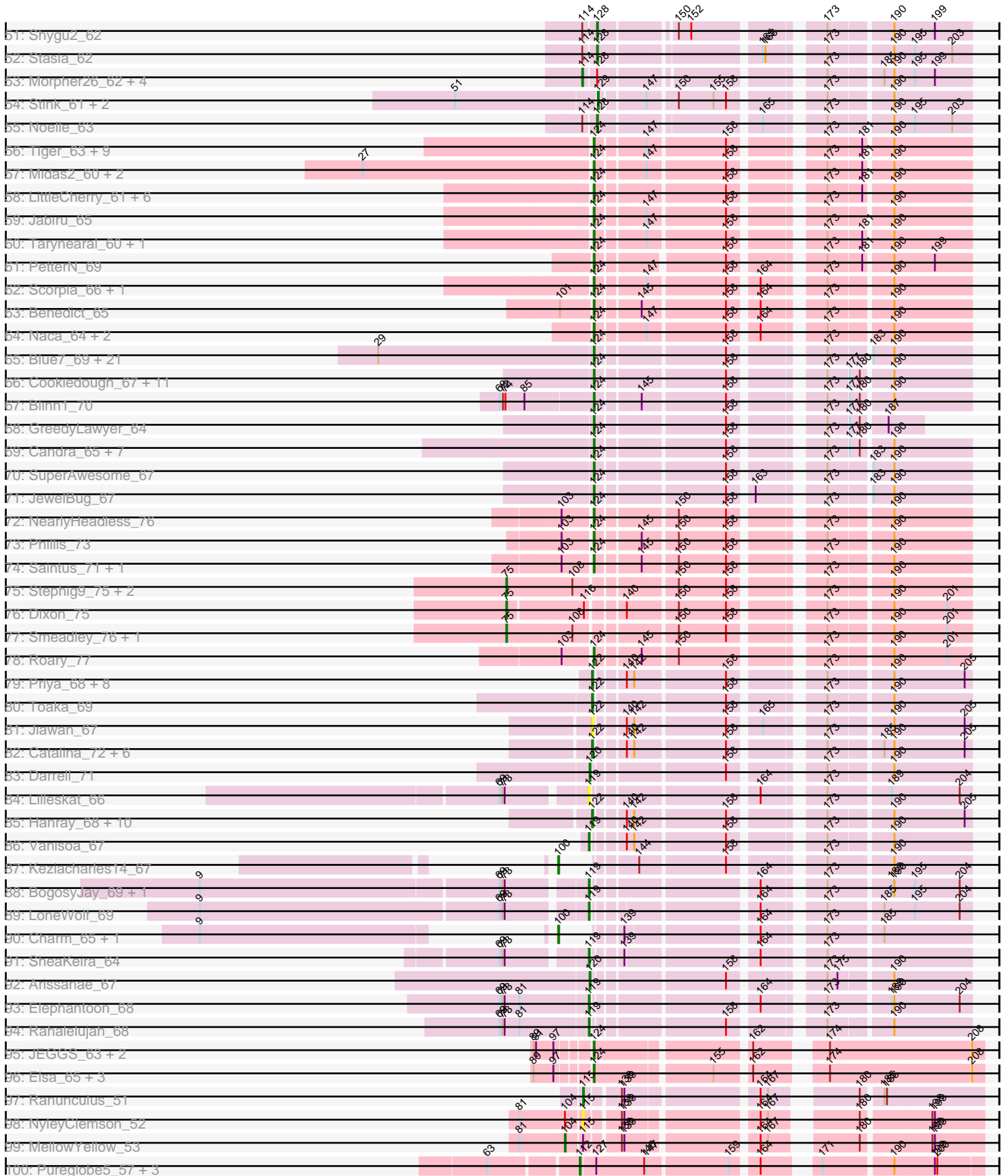


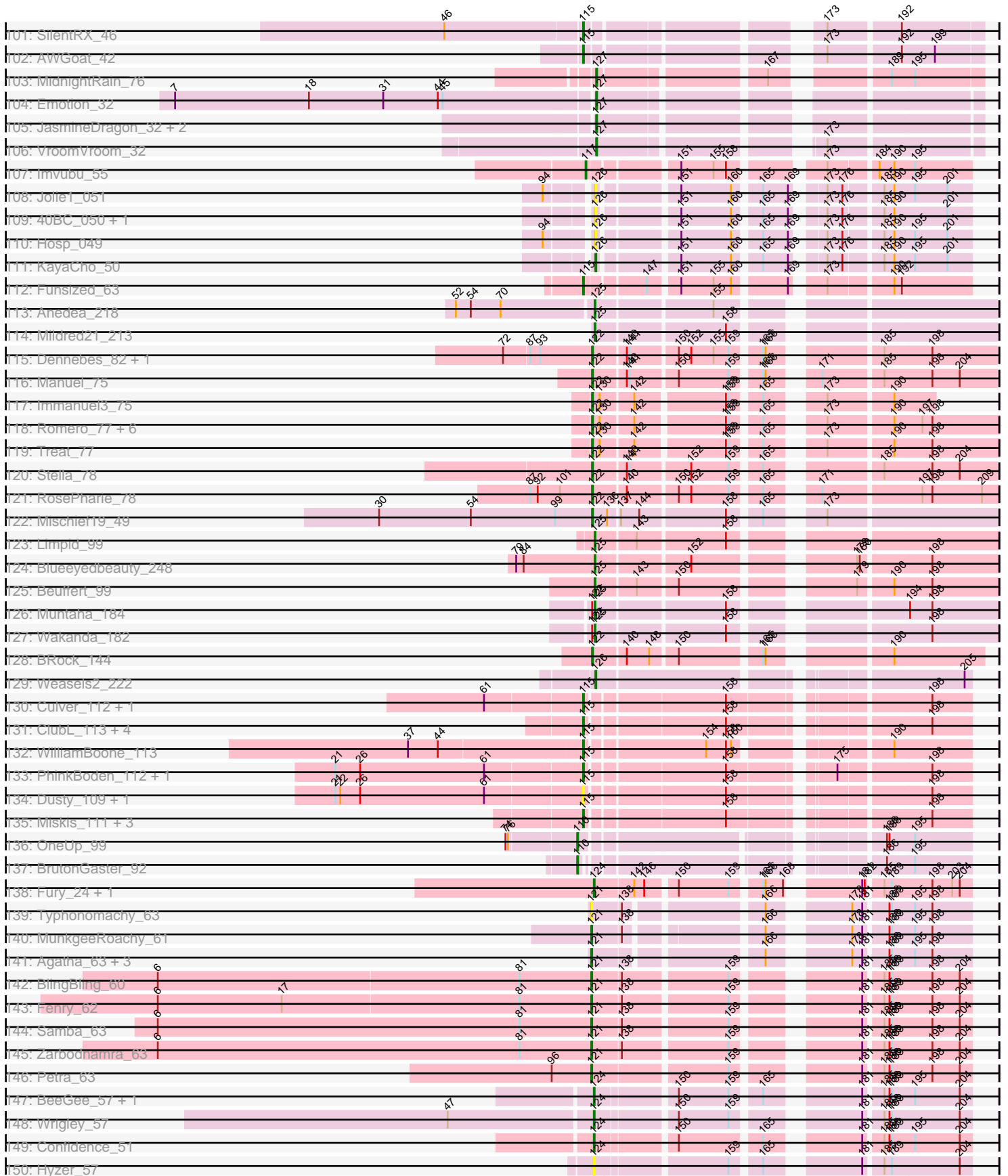
# Pham 196201



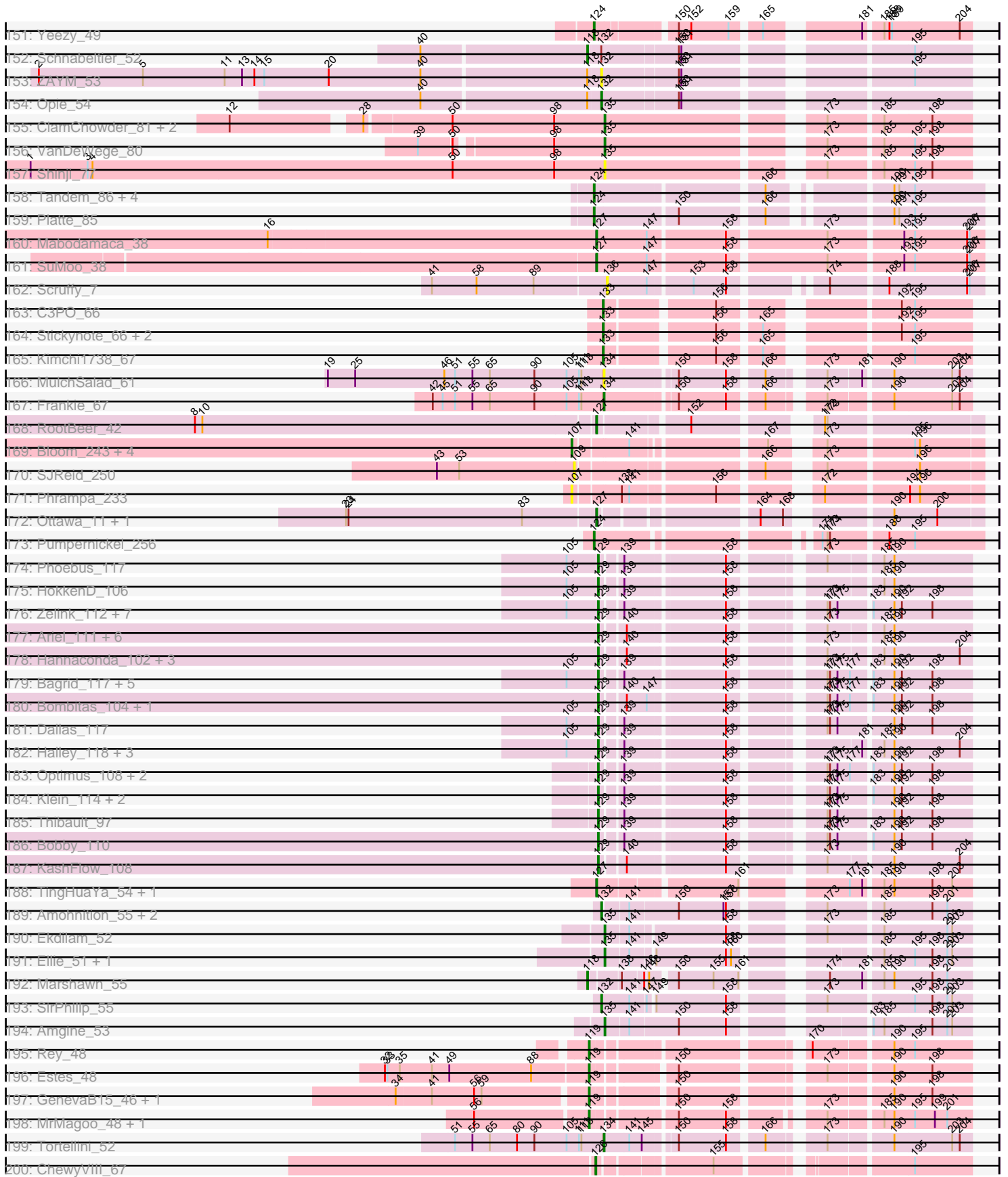
# Pham 196201



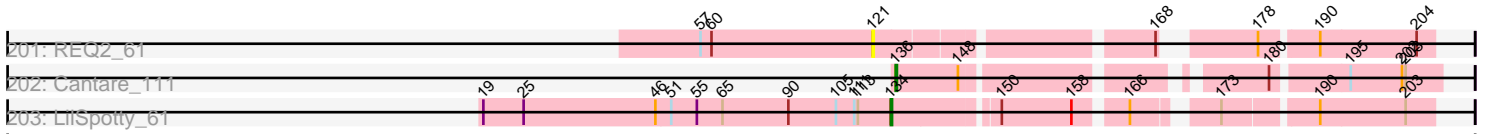
# Pham 196201



# Pham 196201



Pham 196201



A series of horizontal lines, likely representing a table or data grid, extending across the width of the page. The lines are evenly spaced and cover the majority of the page area below the initial track visualization.

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 196201 Report

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

Pham number 196201 has 416 members, 53 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower\_64
- Track 2 : Refuge\_64
- Track 3 : Zimmer\_64
- Track 4 : DarthPhader\_64
- Track 5 : Steamy\_64
- Track 6 : Jeeves\_70
- Track 7 : Gail\_68
- Track 8 : SororFago\_68
- Track 9 : Sunhee\_69
- Track 10 : Epsocamisio\_69, Nebulosus\_70
- Track 11 : DekHockey33\_74, Rosalind\_71, Battleship\_75, JSwag\_72, Switzerland\_72, KatherineG\_73, ShayRa\_73, MinecraftSteve\_73
- Track 12 : Nedarya\_68
- Track 13 : ReMo\_71, Looper\_72, Anaysia\_73, Boohoo\_73, Soups\_73, LastResort\_71
- Track 14 : Anon\_71
- Track 15 : Oofda\_73
- Track 16 : Remus\_73, Strosahl\_73, Waits\_73
- Track 17 : Lucyedi\_69, EagleEye\_70, PainterBoy\_68
- Track 18 : MyraDee\_66
- Track 19 : Ph8s\_70
- Track 20 : Kerberos\_69, Duplo\_69
- Track 21 : Caraxes\_69
- Track 22 : NothingSpecial\_64
- Track 23 : TipsytheTRex\_67, Quokka\_69, Bradman\_70, MajorMajor\_69
- Track 24 : Tomathan\_69
- Track 25 : DBQu4n\_69, StarStuff\_69, Pomar16\_68
- Track 26 : Superchunk\_68
- Track 27 : Iwokeuplikedis\_68
- Track 28 : Pukovnik\_64, Phaded\_64, Jaan\_66, Landor\_66
- Track 29 : Koduck\_68
- Track 30 : NicoleTera\_65
- Track 31 : D32\_68
- Track 32 : Adzzy\_70
- Track 33 : Jsquared\_71
- Track 34 : Serenity\_71
- Track 35 : D29\_64, Travvers\_68, Naji\_69

- Track 36 : EZMoney23\_64
- Track 37 : ArcherNM\_61
- Track 38 : GaugeLDP\_63, BabyBack\_64
- Track 39 : Che12\_70
- Track 40 : IronMan\_65
- Track 41 : Odin\_67
- Track 42 : SwirlSquare\_73
- Track 43 : Bactobuster\_63
- Track 44 : Herbertwm\_63
- Track 45 : L5\_64
- Track 46 : Anthony\_59
- Track 47 : Kinmap\_68
- Track 48 : Cindaradix\_59
- Track 49 : Bumblebee11\_61, AbbysRanger\_62, Backyardigan\_60, PetiteSangsue\_62, Katalie136\_62, Cici\_62, Datway\_62, Achebe\_61
- Track 50 : Mundrea\_62
- Track 51 : Shygu2\_62
- Track 52 : Stasia\_62
- Track 53 : Morpher26\_62, Xena\_61, Wile\_62, Perplexer\_62, Badger\_61
- Track 54 : Stink\_61, Miramae\_61, AvatarAhPeg\_61
- Track 55 : Noelle\_63
- Track 56 : Tiger\_63, AgentM\_63, Phlorence\_62, PickleBack\_64, Jovo\_64, Lev2\_64, Aragog\_63, ForGetIt\_64, Conspiracy\_64, Discoknowium\_61
- Track 57 : Midas2\_60, Cuco\_62, Coog\_60
- Track 58 : LittleCherry\_61, Twigg\_59, Bonamassa\_61, Swirley\_63, George\_58, HuhtaEnerson15\_61, Milcery\_61
- Track 59 : Jabiru\_65
- Track 60 : Tarynearal\_60, UnionJack\_65
- Track 61 : PetterN\_69
- Track 62 : Scorpia\_66, Chadwick\_66
- Track 63 : Benedict\_65
- Track 64 : Naca\_64, EITiger69\_66, Airmid\_64
- Track 65 : Blue7\_69, Jeffabunny\_68, Artemis2UCLA\_68, WunderPhul\_68, CloudWang3\_69, Gladiator\_65, Hexamo\_68, Hammer\_68, Wiks\_67, Helmet\_69, Rifter\_68, Tucker\_68, Lilbunny\_67, Zaka\_68, Koko\_70, Yokurt\_67, Gruunaga\_68, ToneTone\_65, Garak\_69, Zulu\_69, Indra\_71, Roksolana\_69
- Track 66 : Cookiedough\_67, Priamo\_69, Neeharika16\_66, Pmask\_66, Isiphiwo\_65, Newrala\_67, Dorothea\_67, Chartreuse\_64, DaVinci\_65, Jordennis\_66, McFly\_67, SuperCallie99\_64
- Track 67 : Blinn1\_70
- Track 68 : GreedyLawyer\_64
- Track 69 : Candra\_65, Kazan\_68, EricB\_66, BABullseye\_60, Hoot\_62, VohminGhazi\_67, SmellyB\_67, Kipper29\_67
- Track 70 : SuperAwesome\_67
- Track 71 : JewelBug\_67
- Track 72 : NearlyHeadless\_76
- Track 73 : Phillis\_73
- Track 74 : Saintus\_71, Danforth\_76
- Track 75 : Stephig9\_75, Groundhog\_75, Astro\_76
- Track 76 : Dixon\_75
- Track 77 : Smeadley\_76, Expelliarmus\_73
- Track 78 : Roary\_77

- Track 79 : Priya\_68, ExplosioNervosa\_68, Alma\_68, Spouty\_68, EmyBug\_67, Eidsmoe\_68, Fayely\_68, Qobbit\_68, Conquerage\_68
- Track 80 : Toaka\_69
- Track 81 : Jiawan\_67
- Track 82 : Catalina\_72, Aliter\_71, Tubs\_70, HortumSL17\_71, PackMan\_69, Myxus\_70, Phaeder\_70
- Track 83 : Darrell\_71
- Track 84 : Lilleskat\_66
- Track 85 : Hanray\_68, Beemo\_70, EdogawaKiddo\_68, Onglai\_68, Ugenie5\_65, RyeScarlet\_71, Phonnegut\_70, Scherzo\_69, Horex\_68, Sachima\_66, Pioneer\_70
- Track 86 : Vanisoa\_67
- Track 87 : Keziacharles14\_67
- Track 88 : BogosyJay\_69, Maminiaina\_69
- Track 89 : LoneWolf\_69
- Track 90 : Charm\_65, DreamTeam1\_65
- Track 91 : SheaKeira\_64
- Track 92 : Arissanae\_67
- Track 93 : Elephantoon\_68
- Track 94 : Rahalelujah\_68
- Track 95 : JEGGS\_63, Heisenberger\_63, Mudcat\_61
- Track 96 : Elsa\_65, Xenomorph\_61, Nason\_65, Arcadia\_65
- Track 97 : Ranunculus\_51
- Track 98 : NyleyClemson\_52
- Track 99 : MellowYellow\_53
- Track 100 : Pureglobe5\_57, Pointis\_54, Odyssey395\_58, Beagle\_56
- Track 101 : SilentRX\_46
- Track 102 : AWGoat\_42
- Track 103 : MidnightRain\_76
- Track 104 : Emotion\_32
- Track 105 : JasmineDragon\_32, ShakeltOph\_33, MiniMommy\_33
- Track 106 : VroomVroom\_32
- Track 107 : Imvubu\_55
- Track 108 : Jolie1\_051
- Track 109 : 40BC\_050, 39HC\_050
- Track 110 : Hosp\_049
- Track 111 : KayaCho\_50
- Track 112 : Funsized\_63
- Track 113 : Anedea\_218
- Track 114 : Mildred21\_213
- Track 115 : Dennebes\_82, Rideau\_81
- Track 116 : Manuel\_75
- Track 117 : Immanuel3\_75
- Track 118 : Romero\_77, JPandJE\_76, Percastrophe\_77, HaugeAnator\_77, ZooBear\_77, Olicious\_77, ToriToki\_77
- Track 119 : Treat\_77
- Track 120 : Stella\_78
- Track 121 : RosePharie\_78
- Track 122 : Mischief19\_49
- Track 123 : Limpid\_99
- Track 124 : Blueeyedbeauty\_248
- Track 125 : Beuffert\_99
- Track 126 : Muntaha\_184
- Track 127 : Wakanda\_182



- Track 128 : BRock\_144
- Track 129 : Weasels2\_222
- Track 130 : Culver\_112, Abscondus\_111
- Track 131 : ClubL\_113, Lozinak\_112, Smoothie\_113, Engineer\_113, Bachita\_114
- Track 132 : WilliamBoone\_113
- Track 133 : PhinkBoden\_112, Cucurbita\_113
- Track 134 : Dusty\_109, Geeche\_111
- Track 135 : Miskis\_111, Norvs\_114, Aphelion\_113, Toniann\_112
- Track 136 : OneUp\_99
- Track 137 : BrutonGaster\_92
- Track 138 : Fury\_24, Pleakley\_24
- Track 139 : Typhonomachy\_63
- Track 140 : MunkgeeRoachy\_61
- Track 141 : Agatha\_63, Cozz\_62, GoldHunter\_64, Axym\_62
- Track 142 : BlingBling\_60
- Track 143 : Fenry\_62
- Track 144 : Samba\_63
- Track 145 : Zarbodnamra\_63
- Track 146 : Petra\_63
- Track 147 : BeeGee\_57, LonelyBoi\_50
- Track 148 : Wrigley\_57
- Track 149 : Confidence\_51
- Track 150 : Hyzer\_57
- Track 151 : Yeezy\_49
- Track 152 : Schnabeltier\_52
- Track 153 : ZAYM\_53
- Track 154 : Opie\_54
- Track 155 : ClamChowder\_81, Fugax\_82, Barb\_81
- Track 156 : VanDeWege\_80
- Track 157 : Shinji\_77
- Track 158 : Tandem\_86, Hortus1\_86, Alleb\_84, Pioneer3\_86, OlinDD\_86
- Track 159 : Platte\_85
- Track 160 : Mabodamaca\_38
- Track 161 : SuMoo\_38
- Track 162 : Scruffy\_7
- Track 163 : C3PO\_66
- Track 164 : Stickynote\_66, Cruella\_66, Darwin\_67
- Track 165 : Kimchi1738\_67
- Track 166 : MulchSalad\_61
- Track 167 : Frankie\_67
- Track 168 : RootBeer\_42
- Track 169 : Bloom\_243, Talia1610\_241, Patbob\_239, Mimi\_244, Racecar\_241
- Track 170 : SJReid\_250
- Track 171 : Phrampa\_233
- Track 172 : Ottawa\_11, Kharcho\_11
- Track 173 : Pumpernickel\_256
- Track 174 : Phoebus\_117
- Track 175 : HokkenD\_106
- Track 176 : Zelink\_112, Duke13\_112, JuicyJay\_113, Beem\_118, NihilNomen\_118, Kalah2\_109, ThreeRngTarjay\_113, Dove\_102
- Track 177 : Ariel\_111, Porcelain\_111, Omega\_120, Courthouse\_106, Squint\_109, MiaZeal\_111, Superphikiman\_108
- Track 178 : Hannaconda\_102, Lucky2013\_108, Gonephishing\_105, LittleE\_115

- Track 179 : Bagrid\_117, Schatzie\_111, EricMillard\_109, BAKA\_117, Odette\_118, DmpstrDiver\_117
- Track 180 : Bombitas\_104, Yeet\_107
- Track 181 : Dallas\_117
- Track 182 : Halley\_118, Redno2\_108, Hughesyang\_115, Ejimix\_110
- Track 183 : Optimus\_108, Pound\_106, Minerva\_114
- Track 184 : Klein\_114, Wanda\_117, Constella\_99
- Track 185 : Thibault\_97
- Track 186 : Bobby\_110
- Track 187 : KashFlow\_108
- Track 188 : TingHuaYa\_54, LastHope\_56
- Track 189 : Amohntion\_55, Hammy\_55, DarthP\_55
- Track 190 : Ekdilam\_52
- Track 191 : Ellie\_51, Fefferhead\_53
- Track 192 : Marshawn\_55
- Track 193 : SirPhilip\_55
- Track 194 : Amgine\_53
- Track 195 : Rey\_48
- Track 196 : Estes\_48
- Track 197 : GenevaB15\_46, Aziz\_46
- Track 198 : MrMagoo\_48, GardenSalsa\_48
- Track 199 : Tortellini\_52
- Track 200 : ChewyVIII\_67
- Track 201 : REQ2\_61
- Track 202 : Cantare\_111
- Track 203 : LilSpotty\_61

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

The start number called the most often in the published annotations is 124, it was called in 115 of the 363 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AgentM\_63, Airmid\_64, Alleb\_84, Aragog\_63, Arcadia\_65, Artemis2UCLA\_68, BABullseye\_60, Bactobuster\_63, BeeGee\_57, Benedict\_65, Blinn1\_70, Blue7\_69, Bonamassa\_61, Candra\_65, Caraxes\_69, Chadwick\_66, Chargerpower\_64, Chartreuse\_64, CloudWang3\_69, Confidence\_51, Conspiracy\_64, Coog\_60, Cookiedough\_67, Cuco\_62, DaVinci\_65, Danforth\_76, DarthPhader\_64, Discoknowium\_61, Dorothea\_67, EagleEye\_70, EITiger69\_66, Elsa\_65, EricB\_66, ForGetIt\_64, Fury\_24, Gail\_68, Garak\_69, George\_58, Gladiator\_65, GreedyLawyer\_64, Gruunaga\_68, Hammer\_68, Heisenberger\_63, Helmet\_69, Herbertwm\_63, Hexamo\_68, Hoot\_62, Hortus1\_86, HuhtaEnerson15\_61, Hyzer\_57, Indra\_71, IronMan\_65, Isiphiwo\_65, JEGGS\_63, Jaan\_66, Jabiru\_65, Jeeves\_70, Jeffabunny\_68, JewelBug\_67, Jordennis\_66, Jovo\_64, Kazan\_68, Kipper29\_67, Koko\_70, Landor\_66, Lev2\_64, Lilbunny\_67, LittleCherry\_61, LonelyBoi\_50, Lucyedi\_69, McFly\_67, Midas2\_60, Milcery\_61, Mudcat\_61, Naca\_64, Nason\_65, NearlyHeadless\_76, Neeharika16\_66, Newrala\_67, OlinDD\_86, PainterBoy\_68, PetterN\_69, Phaded\_64, Phillis\_73, Phlorence\_62, PickleBack\_64, Pioneer3\_86, Platte\_85, Pleakley\_24, Pmask\_66, Priamo\_69, Pukovnik\_64, Pumpnickel\_256, Refuge\_64, Rifter\_68, Roary\_77, Roksolana\_69, Saintus\_71, Scorpia\_66,

SmellyB\_67, SororFago\_68, Steamy\_64, Sunhee\_69, SuperAwesome\_67, SuperCallie99\_64, SwirlSquare\_73, Swirley\_63, Tandem\_86, Tarynearal\_60, Tiger\_63, ToneTone\_65, Tucker\_68, Twigg\_59, UnionJack\_65, VohminGhazi\_67, Wiks\_67, Wrigley\_57, WunderPhul\_68, Xenomorph\_61, Yeezy\_49, Yokurt\_67, Zaka\_68, Zimmer\_64, Zulu\_69,

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

• Adzzy\_70, Che12\_70, Odin\_67, Ph8s\_70, Superchunk\_68,

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

• 39HC\_050, 40BC\_050, AWGoat\_42, AbbysRanger\_62, Abscondus\_111, Achebe\_61, Agatha\_63, Aliter\_71, Alma\_68, Amgine\_53, Amohnition\_55, Anaysia\_73, Anedea\_218, Anon\_71, Anthony\_59, Aphelion\_113, ArcherNM\_61, Ariel\_111, Arissanae\_67, Astro\_76, AvatarAhPeg\_61, Axym\_62, Aziz\_46, BAKA\_117, BRock\_144, BabyBack\_64, Bachita\_114, Backyardigan\_60, Badger\_61, Bagrid\_117, Barb\_81, Battleship\_75, Beagle\_56, Beem\_118, Beemo\_70, Beuffert\_99, BlingBling\_60, Bloom\_243, Blueeyedbeauty\_248, Bobby\_110, BogosyJay\_69, Bombitas\_104, Boohoo\_73, Bradman\_70, BrutonGaster\_92, Bumblebee11\_61, C3PO\_66, Cantare\_111, Catalina\_72, Charm\_65, ChewyVIII\_67, Cici\_62, Cindaradix\_59, ClamChowder\_81, ClubL\_113, Conquerage\_68, Constella\_99, Courthouse\_106, Cozz\_62, Cruella\_66, Cucurbita\_113, Culver\_112, D29\_64, D32\_68, DBQu4n\_69, Dallas\_117, Darrell\_71, DarthP\_55, Darwin\_67, Datway\_62, DekHockey33\_74, Dennebes\_82, Dixon\_75, DmpstrDiver\_117, Dove\_102, DreamTeam1\_65, Duke13\_112, Duplo\_69, Dusty\_109, EZMoney23\_64, EdogawaKiddo\_68, Eidsmoe\_68, Ejimix\_110, Ekdilam\_52, Elephantoon\_68, Ellie\_51, Emotion\_32, EmyBug\_67, Engineer\_113, Epsocamisio\_69, EricMillard\_109, Estes\_48, Expelliarmus\_73, ExplosioNervosa\_68, Fayely\_68, Fefferhead\_53, Ferry\_62, Frankie\_67, Fugax\_82, Funsized\_63, GardenSalsa\_48, GaugeLDP\_63, Geeche\_111, GenevaB15\_46, GoldHunter\_64, Gonephishing\_105, Groundhog\_75, Halley\_118, Hammy\_55, Hannaconda\_102, Hanray\_68, HaugeAnator\_77, HokkenD\_106, Horex\_68, HortumSL17\_71, Hosp\_049, Hughesyang\_115, Immanuel3\_75, Imvubu\_55, Iwokeuplikedis\_68, JPandJE\_76, JSwag\_72, JasmineDragon\_32, Jiawan\_67, Jolie1\_051, Jsquared\_71, JuicyJay\_113, Kalah2\_109, KashFlow\_108, Katalie136\_62, KatherineG\_73, KayaCho\_50, Kerberos\_69, Keziacharles14\_67, Kharcho\_11, Kimchi1738\_67, Kinmap\_68, Klein\_114, Koduck\_68, L5\_64, LastHope\_56, LastResort\_71, LilSpotty\_61, Lilleskat\_66, Limpid\_99, LittleE\_115, LoneWolf\_69, Looper\_72, Lozinak\_112, Lucky2013\_108, Mabodamaca\_38, MajorMajor\_69, Maminiana\_69, Manuel\_75, Marshawn\_55, MellowYellow\_53, MiaZeal\_111, MidnightRain\_76, Mildred21\_213, Mimi\_244, MinecraftSteve\_73, Minerva\_114, MiniMommy\_33, Miramae\_61, Mischief19\_49, Miskis\_111, Morpher26\_62, MrMagoo\_48, MulchSalad\_61, Mundrea\_62, MunkgeeRoachy\_61, Muntaha\_184, MyraDee\_66, Myxus\_70, Naji\_69, Nebulosus\_70, Nedarya\_68, NicoleTera\_65, NihilNomen\_118, Noelle\_63, Norvs\_114, NothingSpecial\_64, NyleyClemson\_52, Odette\_118, Odyssey395\_58, Olicious\_77, Omega\_120, OneUp\_99, Onglai\_68, Oofda\_73, Opie\_54, Optimus\_108, Ottawa\_11, PackMan\_69, Patbob\_239, Percastrophe\_77, Perplexer\_62, PetiteSangsue\_62, Petra\_63, Phaeder\_70, PhinkBoden\_112, Phoebus\_117, Phonnegut\_70, Phrampa\_233, Pioneer\_70, Pointis\_54, Pomar16\_68, Porcelain\_111, Pound\_106, Priya\_68, Pureglobe5\_57, Qobbit\_68, Quokka\_69, REQ2\_61, Racecar\_241, Rahalelujah\_68, Ranunculus\_51, ReMo\_71, Redno2\_108, Remus\_73, Rey\_48, Rideau\_81, Romero\_77, RootBeer\_42, Rosalind\_71, RosePharie\_78, RyeScarlet\_71, SJReid\_250, Sachima\_66, Samba\_63, Schatzie\_111, Scherzo\_69, Schnabeltier\_52, Scruffy\_7, Serenity\_71, ShakeltOph\_33, ShayRa\_73,

SheaKeira\_64, Shinji\_77, Shygu2\_62, SilentRX\_46, SirPhilip\_55, Smeadley\_76, Smoothie\_113, Soups\_73, Spouty\_68, Squint\_109, StarStuff\_69, Stasia\_62, Stella\_78, Stephig9\_75, Stickynote\_66, Stink\_61, Strosahl\_73, SuMoo\_38, Superphikiman\_108, Switzerland\_72, Talia1610\_241, Thibault\_97, ThreeRngTarjay\_113, TingHuaYa\_54, TipsytheTRex\_67, Toaka\_69, Tomathan\_69, Toniann\_112, ToriToki\_77, Tortellini\_52, Travvers\_68, Treat\_77, Tubs\_70, Typhonomachy\_63, Ugenie5\_65, VanDeWege\_80, Vanisoa\_67, VroomVroom\_32, Waits\_73, Wakanda\_182, Wanda\_117, Weasels2\_222, Wile\_62, WilliamBoone\_113, Xena\_61, Yeet\_107, ZAYM\_53, Zarbodnamra\_63, Zelink\_112, ZooBear\_77,

### Summary by start number:

#### Start 75:

- Found in 11 of 416 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 6 of 363
- Called 54.5% of time when present
- Phage (with cluster) where this start called: Astro\_76 (A8), Dixon\_75 (A8), Expelliarmus\_73 (A8), Groundhog\_75 (A8), Smeadley\_76 (A8), Stephig9\_75 (A8),

#### Start 100:

- Found in 3 of 416 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 3 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Charm\_65 (A9), DreamTeam1\_65 (A9), Keziacharles14\_67 (A9),

#### Start 102:

- Found in 19 of 416 ( 4.6% ) of genes in pham
- Manual Annotations of this start: 5 of 363
- Called 31.6% of time when present
- Phage (with cluster) where this start called: D29\_64 (A2), Duplo\_69 (A2), Kerberos\_69 (A2), Naji\_69 (A2), Tomathan\_69 (A2), Travvers\_68 (A2),

#### Start 104:

- Found in 2 of 416 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 363
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MellowYellow\_53 (AP2),

#### Start 106:

- Found in 7 of 416 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 5 of 363
- Called 71.4% of time when present
- Phage (with cluster) where this start called: Adzzy\_70 (A2), Che12\_70 (A2), Odin\_67 (A2), Ph8s\_70 (A2), Superchunk\_68 (A2),

#### Start 107:

- Found in 6 of 416 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bloom\_243 (FC), Mimi\_244 (FC), Patbob\_239 (FC), Phrampa\_233 (FC), Racecar\_241 (FC), Talia1610\_241 (FC),

Start 109:

- Found in 2 of 416 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: SJReid\_250 (FC),

Start 110:

- Found in 2 of 416 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BrutonGaster\_92 (CQ2), OneUp\_99 (CQ2),

Start 112:

- Found in 4 of 416 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 4 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beagle\_56 (AP2), Odyssey395\_58 (AP2), Pointis\_54 (AP2), Pureglobe5\_57 (AP2),

Start 114:

- Found in 18 of 416 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 5 of 363
- Called 27.8% of time when present
- Phage (with cluster) where this start called: Badger\_61 (A4), Morpher26\_62 (A4), Perplexer\_62 (A4), Wile\_62 (A4), Xena\_61 (A4),

Start 115:

- Found in 22 of 416 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 16 of 363
- Called 95.5% of time when present
- Phage (with cluster) where this start called: AWGoat\_42 (AP4), Abscondus\_111 (CQ1), Aphelion\_113 (CQ1), Bachita\_114 (CQ1), ClubL\_113 (CQ1), Cucurbita\_113 (CQ1), Culver\_112 (CQ1), Dusty\_109 (CQ1), Engineer\_113 (CQ1), Funsized\_63 (B9), Geeche\_111 (CQ1), Lozinak\_112 (CQ1), Miskis\_111 (CQ1), Norvs\_114 (CQ1), NyleyClemson\_52 (AP2), PhinkBoden\_112 (CQ1), Ranunculus\_51 (AP), SilentRX\_46 (AP4), Smoothie\_113 (CQ1), Toniann\_112 (CQ1), WilliamBoone\_113 (CQ1),

Start 117:

- Found in 1 of 416 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Imvubu\_55 (B10),

Start 118:

- Found in 4 of 416 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 363
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Marshawn\_55 (K6), Schnabeltier\_52 (DB),

Start 119:

- Found in 14 of 416 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 13 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aziz\_46 (M2), BogosyJay\_69 (A9), Elephantoon\_68 (A9), Estes\_48 (M2), GardenSalsa\_48 (M2), GenevaB15\_46 (M2), Lilleskat\_66 (A9), LoneWolf\_69 (A9), Maminaiaina\_69 (A9), MrMagoo\_48 (M2), Rahalelujah\_68 (A9), Rey\_48 (M2), SheaKeira\_64 (A9), Vanisoa\_67 (A9),

#### Start 120:

- Found in 2 of 416 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arissanee\_67 (A9), Darrell\_71 (A9),

#### Start 121:

- Found in 12 of 416 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 9 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agatha\_63 (CT), Axym\_62 (CT), BlingBling\_60 (CV), Cozz\_62 (CT), Fenry\_62 (CV), GoldHunter\_64 (CT), MunkgeeRoachy\_61 (CT), Petra\_63 (CV), REQ2\_61 (singleton), Samba\_63 (CV), Typhonomachy\_63 (CT), Zarbodnamra\_63 (CV),

#### Start 122:

- Found in 71 of 416 ( 17.1% ) of genes in pham
- Manual Annotations of this start: 50 of 363
- Called 88.7% of time when present
- Phage (with cluster) where this start called: Aliter\_71 (A9), Alma\_68 (A9), ArcherNM\_61 (A2), BRock\_144 (BS), BabyBack\_64 (A2), Beemo\_70 (A9), Bradman\_70 (A2), Catalina\_72 (A9), Conquerage\_68 (A9), D32\_68 (A2), DBQu4n\_69 (A2), Dennebes\_82 (BF), EZMoney23\_64 (A2), EdogawaKiddo\_68 (A9), Eidsmoe\_68 (A9), EmyBug\_67 (A9), ExplosioNervosa\_68 (A9), Fayely\_68 (A9), GaugeLDP\_63 (A2), Hanray\_68 (A9), HaugeAnator\_77 (BF), Horex\_68 (A9), HortumSL17\_71 (A9), Immanuel3\_75 (BF), JPandJE\_76 (BF), Jiawan\_67 (A9), Jsquared\_71 (A2), Koduck\_68 (A2), L5\_64 (A2), MajorMajor\_69 (A2), Manuel\_75 (BF), Mischief19\_49 (BG), Myxus\_70 (A9), NicoleTera\_65 (A2), NothingSpecial\_64 (A2), Olicious\_77 (BF), Onglai\_68 (A9), PackMan\_69 (A9), Percastrophe\_77 (BF), Phaeder\_70 (A9), Phonnegut\_70 (A9), Pioneer\_70 (A9), Pomar16\_68 (A2), Priya\_68 (A9), Qobbit\_68 (A9), Quokka\_69 (A2), Rideau\_81 (BF), Romero\_77 (BF), RosePharie\_78 (BF), RyeScarlet\_71 (A9), Sachima\_66 (A9), Scherzo\_69 (A9), Serenity\_71 (A2), Spouty\_68 (A9), StarStuff\_69 (A2), Stella\_78 (BF), TopsytheTRex\_67 (A2), Toaka\_69 (A9), ToriToki\_77 (BF), Treat\_77 (BF), Tubs\_70 (A9), Ugenie5\_65 (A9), ZooBear\_77 (BF),

#### Start 123:

- Found in 1 of 416 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Iwokeuplikedis\_68 (A2),

#### Start 124:

- Found in 129 of 416 ( 31.0% ) of genes in pham
- Manual Annotations of this start: 115 of 363

- Called 96.1% of time when present
- Phage (with cluster) where this start called: AgentM\_63 (A5), Airmid\_64 (A5), Alleb\_84 (ED1), Aragog\_63 (A5), Arcadia\_65 (AM), Artemis2UCLA\_68 (A6), BABullseye\_60 (A6), Bactobuster\_63 (A2), BeeGee\_57 (CY), Benedict\_65 (A5), Blinn1\_70 (A6), Blue7\_69 (A6), Bonamassa\_61 (A5), Candra\_65 (A6), Caraxes\_69 (A2), Chadwick\_66 (A5), Chargerpower\_64 (A), Chartreuse\_64 (A6), CloudWang3\_69 (A6), Confidence\_51 (CY1), Conspiracy\_64 (A5), Coog\_60 (A5), Cookiedough\_67 (A6), Cuco\_62 (A5), DaVinci\_65 (A6), Danforth\_76 (A8), DarthPhader\_64 (A12), Discoknowium\_61 (A5), Dorothea\_67 (A6), EagleEye\_70 (A16), EITiger69\_66 (A5), Elsa\_65 (AM), EricB\_66 (A6), ForGetIt\_64 (A5), Fury\_24 (CR5), Gail\_68 (A14), Garak\_69 (A6), George\_58 (A5), Gladiator\_65 (A6), GreedyLawyer\_64 (A6), Gruunaga\_68 (A6), Hammer\_68 (A6), Heisenberger\_63 (AM), Helmet\_69 (A6), Herbertwm\_63 (A2), Hexamo\_68 (A6), Hoot\_62 (A6), Hortus1\_86 (ED1), HuhtaEnerson15\_61 (A5), Hyzer\_57 (CZ1), Indra\_71 (A6), IronMan\_65 (A2), Isiphiwo\_65 (A6), JEGGS\_63 (AM), Jaan\_66 (A2), Jabiru\_65 (A5), Jeeves\_70 (A14), Jeffabunny\_68 (A6), JewelBug\_67 (A6), Jordennis\_66 (A6), Jovo\_64 (A5), Kazan\_68 (A6), Kipper29\_67 (A6), Koko\_70 (A6), Landor\_66 (A2), Lev2\_64 (A5), Lilbunny\_67 (A6), LittleCherry\_61 (A5), LonelyBoi\_50 (CY), Lucyedi\_69 (A16), McFly\_67 (A6), Midas2\_60 (A5), Milcery\_61 (A5), Mudcat\_61 (AM), Naca\_64 (A5), Nason\_65 (AM), NearlyHeadless\_76 (A8), Neeharika16\_66 (A6), Newrala\_67 (A6), OlinDD\_86 (ED1), PainterBoy\_68 (A16), PetterN\_69 (A5), Phaded\_64 (A2), Phillis\_73 (A8), Phlorence\_62 (A5), PickleBack\_64 (A5), Pioneer3\_86 (ED1), Platte\_85 (ED1), Pleakley\_24 (CR5), Pmask\_66 (A6), Priamo\_69 (A6), Pukovnik\_64 (A2), Pumpernickel\_256 (GD4), Refuge\_64 (A12), Rifter\_68 (A6), Roary\_77 (A8), Roksolana\_69 (A6), Saintus\_71 (A8), Scorpia\_66 (A5), SmellyB\_67 (A6), SororFago\_68 (A14), Steamy\_64 (A12), Sunhee\_69 (A14), SuperAwesome\_67 (A6), SuperCallie99\_64 (A6), SwirlSquare\_73 (A2), Swirley\_63 (A5), Tandem\_86 (ED1), Tarynearal\_60 (A5), Tiger\_63 (A5), ToneTone\_65 (A6), Tucker\_68 (A6), Twigg\_59 (A5), UnionJack\_65 (A5), VohminGhazi\_67 (A6), Wiks\_67 (A6), Wrigley\_57 (CY), WunderPhul\_68 (A6), Xenomorph\_61 (AM), Yeezy\_49 (CZ3), Yokurt\_67 (A6), Zaka\_68 (A6), Zimmer\_64 (A12), Zulu\_69 (A6),

#### Start 125:

- Found in 7 of 416 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 7 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anedea\_218 (BE1), Beuffert\_99 (BK1), Blueeyedbeauty\_248 (BK1), Limpid\_99 (BK1), Mildred21\_213 (BE1), Muntaha\_184 (BK2), Wakanda\_182 (BK2),

#### Start 126:

- Found in 31 of 416 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 26 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 39HC\_050 (B6), 40BC\_050 (B6), Anaysia\_73 (A15), Anon\_71 (A15), Anthony\_59 (A20), Battleship\_75 (A15), Boohoo\_73 (A15), ChewyVIII\_67 (singleton), DekHockey33\_74 (A15), Epsocamisio\_69 (A15), Hosp\_049 (B6), JSwag\_72 (A15), Jolie1\_051 (B6), KatherineG\_73 (A15), KayaCho\_50 (B6), LastResort\_71 (A15), Looper\_72 (A15), MinecraftSteve\_73 (A15), MyraDee\_66 (A18), Nebulosus\_70 (A15), Nedarya\_68 (A15), Oofda\_73 (A15), ReMo\_71 (A15), Remus\_73 (A15), Rosalind\_71 (A15), ShayRa\_73 (A15), Soups\_73 (A15), Strosahl\_73 (A15), Switzerland\_72 (A15), Waits\_73 (A15), Weasels2\_222 (CB),

Start 127:

- Found in 17 of 416 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 10 of 363
- Called 76.5% of time when present
- Phage (with cluster) where this start called: Emotion\_32 (AZ4), JasmineDragon\_32 (AZ4), Kharcho\_11 (FM), LastHope\_56 (K1), Mabodamaca\_38 (EH), MidnightRain\_76 (AY), MiniMommy\_33 (AZ4), Ottawa\_11 (FM), RootBeer\_42 (FA), ShakeltOph\_33 (AZ4), SuMoo\_38 (EH), TingHuaYa\_54 (K1), VroomVroom\_32 (AZ4),

Start 128:

- Found in 18 of 416 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 13 of 363
- Called 72.2% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_62 (A4), Achebe\_61 (A4), Backyardigan\_60 (A4), Bumblebee11\_61 (A4), Cici\_62 (A4), Cindaradix\_59 (A4), Datway\_62 (A4), Katalie136\_62 (A4), Mundrea\_62 (A4), Noelle\_63 (A4), PetiteSangsue\_62 (A4), Shygu2\_62 (A4), Stasia\_62 (A4),

Start 129:

- Found in 46 of 416 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 43 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ariel\_111 (J), AvatarAhPeg\_61 (A4), BAKA\_117 (J), Bagrid\_117 (J), Beem\_118 (J), Bobby\_110 (J), Bombitas\_104 (J), Constella\_99 (J), Courthouse\_106 (J), Dallas\_117 (J), DmpstrDiver\_117 (J), Dove\_102 (J), Duke13\_112 (J), Ejimix\_110 (J), EricMillard\_109 (J), Gonephishing\_105 (J), Halley\_118 (J), Hannaconda\_102 (J), HokkenD\_106 (J), Hughesyang\_115 (J), JuicyJay\_113 (J), Kalah2\_109 (J), KashFlow\_108 (J), Klein\_114 (J), LittleE\_115 (J), Lucky2013\_108 (J), MiaZeal\_111 (J), Minerva\_114 (J), Miramae\_61 (A4), NihilNomen\_118 (J), Odette\_118 (J), Omega\_120 (J), Optimus\_108 (J), Phoebus\_117 (J), Porcelain\_111 (J), Pound\_106 (J), Redno2\_108 (J), Schatzie\_111 (J), Squint\_109 (J), Stink\_61 (A4), Superphikiman\_108 (J), Thibault\_97 (J), ThreeRngTarjay\_113 (J), Wanda\_117 (J), Yeet\_107 (J), Zelink\_112 (J),

Start 131:

- Found in 1 of 416 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kinmap\_68 (A21),

Start 132:

- Found in 7 of 416 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 5 of 363
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Amohnition\_55 (K6), DarthP\_55 (K6), Hammy\_55 (K6), Opie\_54 (DB), SirPhilip\_55 (K6), ZAYM\_53 (DB),

Start 133:

- Found in 5 of 416 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 5 of 363



- Called 100.0% of time when present
- Phage (with cluster) where this start called: C3PO\_66 (EN), Cruella\_66 (EN), Darwin\_67 (EN), Kimchi1738\_67 (EN), Stickynote\_66 (EN),

#### Start 134:

- Found in 4 of 416 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 3 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Frankie\_67 (F1), LilSpotty\_61 (singleton), MulchSalad\_61 (F), Tortellini\_52 (P2),

#### Start 135:

- Found in 9 of 416 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 8 of 363
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amgine\_53 (K6), Barb\_81 (DC1), ClamChowder\_81 (DC1), Ekdilam\_52 (K6), Ellie\_51 (K6), Fefferhead\_53 (K6), Fugax\_82 (DC1), Shinji\_77 (DC1), VanDeWege\_80 (DC1),

#### Start 136:

- Found in 3 of 416 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 363
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Cantare\_111 (singleton), Scruffy\_7 (EM1),

### Summary by clusters:

There are 57 clusters represented in this pham: P2, BF, BG, GD4, AP2, CZ3, BS, DB, singleton, AP4, FA, K1, ED1, K6, B10, M2, FM, A15, A14, A16, CZ1, A12, F, A18, A2, A5, A4, A6, A9, A8, CQ1, CT, A, CY1, EN, EH, A21, CB, J, AM, AP, CY, BK1, BK2, CQ2, AY, CV, DC1, A20, F1, CR5, B6, FC, EM1, BE1, AZ4, B9,

Info for manual annotations of cluster A:

- Start number 124 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A12:

- Start number 124 was manually annotated 4 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 124 was manually annotated 3 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 126 was manually annotated 21 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 124 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A18:

- Start number 126 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A2:

- Start number 102 was manually annotated 5 times for cluster A2.

- Start number 106 was manually annotated 5 times for cluster A2.
- Start number 122 was manually annotated 13 times for cluster A2.
- Start number 123 was manually annotated 1 time for cluster A2.
- Start number 124 was manually annotated 7 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 126 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A4:

- Start number 114 was manually annotated 5 times for cluster A4.
- Start number 128 was manually annotated 13 times for cluster A4.
- Start number 129 was manually annotated 3 times for cluster A4.

Info for manual annotations of cluster A5:

- Start number 124 was manually annotated 29 times for cluster A5.

Info for manual annotations of cluster A6:

- Start number 124 was manually annotated 42 times for cluster A6.

Info for manual annotations of cluster A8:

- Start number 75 was manually annotated 6 times for cluster A8.
- Start number 124 was manually annotated 5 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 100 was manually annotated 3 times for cluster A9.
- Start number 119 was manually annotated 7 times for cluster A9.
- Start number 120 was manually annotated 2 times for cluster A9.
- Start number 122 was manually annotated 22 times for cluster A9.

Info for manual annotations of cluster AM:

- Start number 124 was manually annotated 7 times for cluster AM.

Info for manual annotations of cluster AP:

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

Info for manual annotations of cluster AP2:

- Start number 104 was manually annotated 1 time for cluster AP2.
- Start number 112 was manually annotated 4 times for cluster AP2.

Info for manual annotations of cluster AP4:

- Start number 115 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster AY:

- Start number 127 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster AZ4:

- Start number 127 was manually annotated 3 times for cluster AZ4.

Info for manual annotations of cluster B10:

- Start number 117 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B6:

- Start number 126 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B9:

- Start number 115 was manually annotated 1 time for cluster B9.

Info for manual annotations of cluster BE1:

- Start number 125 was manually annotated 2 times for cluster BE1.

Info for manual annotations of cluster BF:

- Start number 122 was manually annotated 13 times for cluster BF.

Info for manual annotations of cluster BG:

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

Info for manual annotations of cluster BK1:

- Start number 125 was manually annotated 3 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 125 was manually annotated 2 times for cluster BK2.

Info for manual annotations of cluster BS:

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

Info for manual annotations of cluster CB:

- Start number 126 was manually annotated 1 time for cluster CB.

Info for manual annotations of cluster CQ1:

- Start number 115 was manually annotated 12 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 110 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster CR5:

- Start number 124 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CT:

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

Info for manual annotations of cluster CV:

- Start number 121 was manually annotated 5 times for cluster CV.

Info for manual annotations of cluster CY:

- Start number 124 was manually annotated 3 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 124 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CZ3:

- Start number 124 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster DB:

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

- Start number 132 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DC1:

- Start number 135 was manually annotated 4 times for cluster DC1.

Info for manual annotations of cluster ED1:

- Start number 124 was manually annotated 6 times for cluster ED1.

Info for manual annotations of cluster EH:

- Start number 127 was manually annotated 2 times for cluster EH.

Info for manual annotations of cluster EN:

- Start number 133 was manually annotated 5 times for cluster EN.

Info for manual annotations of cluster F1:

- Start number 134 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster FA:

- Start number 127 was manually annotated 1 time for cluster FA.

Info for manual annotations of cluster FC:

- Start number 107 was manually annotated 2 times for cluster FC.

Info for manual annotations of cluster FM:

- Start number 127 was manually annotated 2 times for cluster FM.

Info for manual annotations of cluster GD4:

- Start number 124 was manually annotated 1 time for cluster GD4.

Info for manual annotations of cluster J:

- Start number 129 was manually annotated 40 times for cluster J.

Info for manual annotations of cluster K1:

- Start number 127 was manually annotated 1 time for cluster K1.

Info for manual annotations of cluster K6:

- Start number 118 was manually annotated 1 time for cluster K6.
- Start number 132 was manually annotated 4 times for cluster K6.
- Start number 135 was manually annotated 4 times for cluster K6.

Info for manual annotations of cluster M2:

- Start number 119 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster P2:

- Start number 134 was manually annotated 1 time for cluster P2.

***Gene Information:***

Gene: 39HC\_050 Start: 50405, Stop: 50022, Start Num: 126

Candidate Starts for 39HC\_050:

(Start: 126 @50405 has 26 MA's), (151, 50327), (160, 50267), (165, 50240), (169, 50210), (173, 50183), (176, 50165), (185, 50126), (190, 50114), (201, 50051),

Gene: 40BC\_050 Start: 50405, Stop: 50022, Start Num: 126

Candidate Starts for 40BC\_050:

(Start: 126 @50405 has 26 MA's), (151, 50327), (160, 50267), (165, 50240), (169, 50210), (173, 50183), (176, 50165), (185, 50126), (190, 50114), (201, 50051),

Gene: AWGoat\_42 Start: 36187, Stop: 35780, Start Num: 115

Candidate Starts for AWGoat\_42:

(Start: 115 @36187 has 16 MA's), (173, 35956), (192, 35875), (199, 35836),

Gene: AbbysRanger\_62 Start: 41338, Stop: 40955, Start Num: 128

Candidate Starts for AbbysRanger\_62:

(Start: 114 @41350 has 5 MA's), (Start: 128 @41338 has 13 MA's), (173, 41116), (185, 41059), (190, 41047), (195, 41023), (199, 40999),

Gene: Abscondus\_111 Start: 64932, Stop: 65336, Start Num: 115

Candidate Starts for Abscondus\_111:

(61, 64818), (Start: 115 @64932 has 16 MA's), (158, 65082), (198, 65289),

Gene: Achebe\_61 Start: 41321, Stop: 40938, Start Num: 128

Candidate Starts for Achebe\_61:

(Start: 114 @41333 has 5 MA's), (Start: 128 @41321 has 13 MA's), (173, 41099), (185, 41042), (190, 41030), (195, 41006), (199, 40982),

Gene: Adzzy\_70 Start: 40512, Stop: 40099, Start Num: 106

Candidate Starts for Adzzy\_70:

(Start: 75 @40587 has 6 MA's), (Start: 106 @40512 has 5 MA's), (Start: 124 @40488 has 115 MA's), (147, 40437), (150, 40407), (158, 40350), (173, 40260), (190, 40191), (202, 40125),

Gene: Agatha\_63 Start: 43367, Stop: 43753, Start Num: 121

Candidate Starts for Agatha\_63:

(Start: 121 @43367 has 9 MA's), (166, 43541), (178, 43619), (181, 43631), (188, 43655), (189, 43658), (195, 43685), (198, 43706),

Gene: AgentM\_63 Start: 40512, Stop: 40123, Start Num: 124

Candidate Starts for AgentM\_63:

(Start: 124 @40512 has 115 MA's), (147, 40461), (158, 40374), (173, 40284), (181, 40245), (190, 40215),

Gene: Airmid\_64 Start: 40674, Stop: 40285, Start Num: 124

Candidate Starts for Airmid\_64:

(Start: 124 @40674 has 115 MA's), (147, 40623), (158, 40536), (164, 40506), (173, 40446), (190, 40377),

Gene: Aliter\_71 Start: 41360, Stop: 40974, Start Num: 122

Candidate Starts for Aliter\_71:

(Start: 122 @41360 has 50 MA's), (140, 41333), (142, 41324), (158, 41225), (173, 41135), (185, 41078), (190, 41066), (205, 40982),

Gene: Alleb\_84 Start: 51042, Stop: 50629, Start Num: 124

Candidate Starts for Alleb\_84:

(Start: 124 @51042 has 115 MA's), (166, 50856), (190, 50736), (191, 50730), (195, 50712),

Gene: Alma\_68 Start: 41339, Stop: 40953, Start Num: 122

Candidate Starts for Alma\_68:

(Start: 122 @41339 has 50 MA's), (140, 41312), (142, 41303), (158, 41204), (173, 41114), (190, 41045), (205, 40961),

Gene: Amgine\_53 Start: 39598, Stop: 39984, Start Num: 135

Candidate Starts for Amgine\_53:

(Start: 135 @39598 has 8 MA's), (141, 39625), (150, 39682), (158, 39739), (183, 39868), (185, 39880), (198, 39937), (201, 39955), (203, 39961),

Gene: Amohnition\_55 Start: 39555, Stop: 39944, Start Num: 132

Candidate Starts for Amohnition\_55:

(Start: 132 @39555 has 5 MA's), (141, 39582), (150, 39639), (157, 39693), (158, 39696), (173, 39780), (185, 39840), (198, 39897), (201, 39915),

Gene: Anaysia\_73 Start: 40644, Stop: 40246, Start Num: 126

Candidate Starts for Anaysia\_73:

(60, 40770), (62, 40767), (63, 40764), (Start: 126 @40644 has 26 MA's), (158, 40503), (166, 40455), (195, 40314),

Gene: Anedea\_218 Start: 106894, Stop: 107316, Start Num: 125

Candidate Starts for Anedea\_218:

(52, 106732), (54, 106750), (70, 106786), (Start: 125 @106894 has 7 MA's), (155, 107023),

Gene: Anon\_71 Start: 40533, Stop: 40135, Start Num: 126

Candidate Starts for Anon\_71:

(36, 40758), (60, 40659), (62, 40656), (63, 40653), (81, 40617), (86, 40608), (Start: 126 @40533 has 26 MA's), (158, 40386), (173, 40296), (199, 40179),

Gene: Anthony\_59 Start: 38039, Stop: 37653, Start Num: 126

Candidate Starts for Anthony\_59:

(Start: 126 @38039 has 26 MA's), (155, 37916), (167, 37862), (171, 37823), (195, 37721), (198, 37700), (202, 37679),

Gene: Aphelion\_113 Start: 66485, Stop: 66889, Start Num: 115

Candidate Starts for Aphelion\_113:

(Start: 115 @66485 has 16 MA's), (158, 66635), (198, 66842),

Gene: Aragog\_63 Start: 40532, Stop: 40143, Start Num: 124

Candidate Starts for Aragog\_63:

(Start: 124 @40532 has 115 MA's), (147, 40481), (158, 40394), (173, 40304), (181, 40265), (190, 40235),

Gene: Arcadia\_65 Start: 41909, Stop: 42322, Start Num: 124

Candidate Starts for Arcadia\_65:

(89, 41852), (97, 41876), (Start: 124 @41909 has 115 MA's), (155, 42038), (162, 42074), (174, 42140), (208, 42308),

Gene: ArcherNM\_61 Start: 41338, Stop: 40952, Start Num: 122

Candidate Starts for ArcherNM\_61:

(64, 41458), (95, 41389), (Start: 102 @41371 has 5 MA's), (Start: 122 @41338 has 50 MA's), (145, 41293), (150, 41260), (158, 41203), (173, 41113), (177, 41089), (190, 41044),

Gene: Ariel\_111 Start: 60291, Stop: 60674, Start Num: 129

Candidate Starts for Ariel\_111:

(Start: 129 @60291 has 43 MA's), (140, 60315), (158, 60423), (173, 60513), (185, 60570), (190, 60582),

Gene: Arissanae\_67 Start: 41603, Stop: 41217, Start Num: 120

Candidate Starts for Arissanae\_67:

(Start: 120 @41603 has 2 MA's), (158, 41468), (173, 41378), (175, 41366), (190, 41309),

Gene: Artemis2UCLA\_68 Start: 39691, Stop: 39305, Start Num: 124

Candidate Starts for Artemis2UCLA\_68:

(29, 39946), (Start: 124 @39691 has 115 MA's), (158, 39556), (173, 39466), (183, 39421), (190, 39397),

Gene: Astro\_76 Start: 42589, Stop: 42107, Start Num: 75

Candidate Starts for Astro\_76:

(Start: 75 @42589 has 6 MA's), (108, 42511), (150, 42415), (158, 42358), (173, 42268), (190, 42199),

Gene: AvatarAhPeg\_61 Start: 41105, Stop: 40722, Start Num: 129

Candidate Starts for AvatarAhPeg\_61:

(51, 41270), (Start: 129 @41105 has 43 MA's), (147, 41057), (150, 41030), (155, 40988), (158, 40973), (173, 40883), (190, 40814),

Gene: Axym\_62 Start: 43254, Stop: 43640, Start Num: 121

Candidate Starts for Axym\_62:

(Start: 121 @43254 has 9 MA's), (166, 43428), (178, 43506), (181, 43518), (188, 43542), (189, 43545), (195, 43572), (198, 43593),

Gene: Aziz\_46 Start: 34794, Stop: 34402, Start Num: 119

Candidate Starts for Aziz\_46:

(34, 35016), (41, 34974), (56, 34923), (59, 34914), (Start: 119 @34794 has 13 MA's), (150, 34710), (190, 34494), (198, 34449),

Gene: BABullseye\_60 Start: 37359, Stop: 36973, Start Num: 124

Candidate Starts for BABullseye\_60:

(Start: 124 @37359 has 115 MA's), (158, 37224), (173, 37134), (177, 37110), (180, 37098), (190, 37065),

Gene: BAKA\_117 Start: 65040, Stop: 65426, Start Num: 129

Candidate Starts for BAKA\_117:

(105, 65004), (Start: 129 @65040 has 43 MA's), (139, 65061), (158, 65172), (173, 65262), (174, 65265), (175, 65274), (177, 65289), (183, 65310), (190, 65334), (192, 65343), (198, 65379),

Gene: BRock\_144 Start: 78265, Stop: 78675, Start Num: 122

Candidate Starts for BRock\_144:

(Start: 122 @78265 has 50 MA's), (140, 78301), (148, 78328), (150, 78355), (165, 78445), (166, 78448), (190, 78568),

Gene: BabyBack\_64 Start: 41878, Stop: 41492, Start Num: 122

Candidate Starts for BabyBack\_64:

(Start: 122 @41878 has 50 MA's), (150, 41800), (155, 41758), (158, 41743), (173, 41653), (181, 41614), (190, 41584),

Gene: Bachita\_114 Start: 66155, Stop: 66559, Start Num: 115

Candidate Starts for Bachita\_114:

(Start: 115 @66155 has 16 MA's), (158, 66305), (198, 66512),

Gene: Backyardigan\_60 Start: 41354, Stop: 40971, Start Num: 128

Candidate Starts for Backyardigan\_60:

(Start: 114 @41366 has 5 MA's), (Start: 128 @41354 has 13 MA's), (173, 41132), (185, 41075), (190, 41063), (195, 41039), (199, 41015),

Gene: Bactobuster\_63 Start: 42222, Stop: 41836, Start Num: 124

Candidate Starts for Bactobuster\_63:

(Start: 124 @42222 has 115 MA's), (145, 42177), (150, 42144), (158, 42087), (173, 41997), (190, 41928),

Gene: Badger\_61 Start: 41334, Stop: 40939, Start Num: 114

Candidate Starts for Badger\_61:

(Start: 114 @41334 has 5 MA's), (Start: 128 @41322 has 13 MA's), (173, 41100), (185, 41043), (190, 41031), (195, 41007), (199, 40983),

Gene: Bagrid\_117 Start: 64748, Stop: 65134, Start Num: 129

Candidate Starts for Bagrid\_117:

(105, 64712), (Start: 129 @64748 has 43 MA's), (139, 64769), (158, 64880), (173, 64970), (174, 64973), (175, 64982), (177, 64997), (183, 65018), (190, 65042), (192, 65051), (198, 65087),

Gene: Barb\_81 Start: 52690, Stop: 53085, Start Num: 135

Candidate Starts for Barb\_81:

(12, 52267), (28, 52408), (50, 52507), (98, 52630), (Start: 135 @52690 has 8 MA's), (173, 52921), (185, 52981), (198, 53038),

Gene: Battleship\_75 Start: 40851, Stop: 40453, Start Num: 126

Candidate Starts for Battleship\_75:

(82, 40932), (Start: 126 @40851 has 26 MA's), (158, 40710), (166, 40662), (195, 40521),

Gene: Beagle\_56 Start: 39658, Stop: 39236, Start Num: 112

Candidate Starts for Beagle\_56:

(63, 39754), (Start: 112 @39658 has 4 MA's), (Start: 127 @39643 has 10 MA's), (146, 39586), (147, 39583), (159, 39493), (164, 39466), (171, 39418), (190, 39340), (199, 39292), (200, 39289),

Gene: BeeGee\_57 Start: 38386, Stop: 38775, Start Num: 124

Candidate Starts for BeeGee\_57:

(Start: 124 @38386 has 115 MA's), (150, 38470), (159, 38530), (165, 38560), (181, 38653), (185, 38671), (188, 38677), (189, 38680), (195, 38707), (204, 38761),

Gene: Beem\_118 Start: 66102, Stop: 66488, Start Num: 129

Candidate Starts for Beem\_118:

(105, 66066), (Start: 129 @66102 has 43 MA's), (139, 66123), (158, 66234), (173, 66324), (174, 66327), (175, 66336), (183, 66372), (190, 66396), (192, 66405), (198, 66441),

Gene: Beemo\_70 Start: 41378, Stop: 40992, Start Num: 122

Candidate Starts for Beemo\_70:



(Start: 122 @41378 has 50 MA's), (140, 41351), (142, 41342), (158, 41243), (173, 41153), (190, 41084), (205, 41000),

Gene: Benedict\_65 Start: 40793, Stop: 40404, Start Num: 124

Candidate Starts for Benedict\_65:

(101, 40826), (Start: 124 @40793 has 115 MA's), (145, 40748), (158, 40655), (164, 40625), (173, 40565), (190, 40496),

Gene: Beuffert\_99 Start: 68400, Stop: 68825, Start Num: 125

Candidate Starts for Beuffert\_99:

(Start: 125 @68400 has 7 MA's), (143, 68445), (150, 68487), (179, 68664), (190, 68700), (198, 68745),

Gene: BlingBling\_60 Start: 40662, Stop: 41057, Start Num: 121

Candidate Starts for BlingBling\_60:

(6, 40140), (81, 40575), (Start: 121 @40662 has 9 MA's), (138, 40695), (159, 40812), (181, 40935), (185, 40953), (188, 40959), (189, 40962), (198, 41010), (204, 41043),

Gene: Blinn1\_70 Start: 39776, Stop: 39390, Start Num: 124

Candidate Starts for Blinn1\_70:

(69, 39881), (72, 39878), (74, 39875), (85, 39857), (Start: 124 @39776 has 115 MA's), (145, 39731), (158, 39641), (173, 39551), (177, 39527), (180, 39515), (190, 39482),

Gene: Bloom\_243 Start: 156000, Stop: 156422, Start Num: 107

Candidate Starts for Bloom\_243:

(Start: 107 @156000 has 2 MA's), (141, 156060), (167, 156201), (173, 156246), (195, 156342), (196, 156348),

Gene: Blue7\_69 Start: 39819, Stop: 39433, Start Num: 124

Candidate Starts for Blue7\_69:

(29, 40074), (Start: 124 @39819 has 115 MA's), (158, 39684), (173, 39594), (183, 39549), (190, 39525),

Gene: Blueeyedbeauty\_248 Start: 118392, Stop: 118817, Start Num: 125

Candidate Starts for Blueeyedbeauty\_248:

(79, 118299), (84, 118308), (Start: 125 @118392 has 7 MA's), (152, 118494), (179, 118656), (180, 118659), (198, 118737),

Gene: Bobby\_110 Start: 66483, Stop: 66869, Start Num: 129

Candidate Starts for Bobby\_110:

(Start: 129 @66483 has 43 MA's), (139, 66504), (158, 66615), (173, 66705), (174, 66708), (175, 66717), (183, 66753), (190, 66777), (192, 66786), (198, 66822),

Gene: BogosyJay\_69 Start: 41417, Stop: 41028, Start Num: 119

Candidate Starts for BogosyJay\_69:

(9, 41864), (69, 41510), (71, 41507), (73, 41504), (Start: 119 @41417 has 13 MA's), (164, 41252), (173, 41192), (189, 41123), (190, 41120), (195, 41096), (204, 41042),

Gene: Bombitas\_104 Start: 62038, Stop: 62424, Start Num: 129

Candidate Starts for Bombitas\_104:

(Start: 129 @62038 has 43 MA's), (140, 62062), (147, 62086), (158, 62170), (173, 62260), (174, 62263), (175, 62272), (177, 62287), (183, 62308), (190, 62332), (192, 62341), (198, 62377),

Gene: Bonamassa\_61 Start: 40354, Stop: 39965, Start Num: 124  
Candidate Starts for Bonamassa\_61:  
(Start: 124 @40354 has 115 MA's), (158, 40216), (173, 40126), (181, 40087), (190, 40057),

Gene: Boohoo\_73 Start: 40644, Stop: 40246, Start Num: 126  
Candidate Starts for Boohoo\_73:  
(60, 40770), (62, 40767), (63, 40764), (Start: 126 @40644 has 26 MA's), (158, 40503), (166, 40455),  
(195, 40314),

Gene: Bradman\_70 Start: 41009, Stop: 40623, Start Num: 122  
Candidate Starts for Bradman\_70:  
(Start: 102 @41039 has 5 MA's), (Start: 122 @41009 has 50 MA's), (158, 40874), (173, 40784), (190,  
40715), (192, 40706), (204, 40637),

Gene: BrutonGaster\_92 Start: 59955, Stop: 60353, Start Num: 110  
Candidate Starts for BrutonGaster\_92:  
(Start: 110 @59955 has 2 MA's), (186, 60252), (195, 60285),

Gene: Bumblebee11\_61 Start: 41324, Stop: 40941, Start Num: 128  
Candidate Starts for Bumblebee11\_61:  
(Start: 114 @41336 has 5 MA's), (Start: 128 @41324 has 13 MA's), (173, 41102), (185, 41045), (190,  
41033), (195, 41009), (199, 40985),

Gene: C3PO\_66 Start: 48881, Stop: 48504, Start Num: 133  
Candidate Starts for C3PO\_66:  
(Start: 133 @48881 has 5 MA's), (156, 48764), (192, 48587), (195, 48572),

Gene: Candra\_65 Start: 39723, Stop: 39337, Start Num: 124  
Candidate Starts for Candra\_65:  
(Start: 124 @39723 has 115 MA's), (158, 39588), (173, 39498), (177, 39474), (180, 39462), (190,  
39429),

Gene: Cantare\_111 Start: 82062, Stop: 82451, Start Num: 136  
Candidate Starts for Cantare\_111:  
(Start: 136 @82062 has 1 MA's), (148, 82113), (180, 82320), (195, 82377), (202, 82419), (203,  
82422),

Gene: Caraxes\_69 Start: 40235, Stop: 39846, Start Num: 124  
Candidate Starts for Caraxes\_69:  
(Start: 75 @40334 has 6 MA's), (Start: 106 @40259 has 5 MA's), (Start: 124 @40235 has 115 MA's),  
(150, 40154), (158, 40097), (173, 40007), (190, 39938), (198, 39893), (202, 39872),

Gene: Catalina\_72 Start: 41433, Stop: 41047, Start Num: 122  
Candidate Starts for Catalina\_72:  
(Start: 122 @41433 has 50 MA's), (140, 41406), (142, 41397), (158, 41298), (173, 41208), (185,  
41151), (190, 41139), (205, 41055),

Gene: Chadwick\_66 Start: 40650, Stop: 40261, Start Num: 124  
Candidate Starts for Chadwick\_66:  
(Start: 124 @40650 has 115 MA's), (147, 40599), (158, 40512), (164, 40482), (173, 40422), (190,  
40353),

Gene: Chargerpower\_64 Start: 39412, Stop: 39029, Start Num: 124

Candidate Starts for Chargerpower\_64:

(65, 39520), (66, 39517), (67, 39514), (Start: 124 @39412 has 115 MA's), (150, 39337), (158, 39280), (173, 39190), (190, 39121),

Gene: Charm\_65 Start: 40574, Stop: 40188, Start Num: 100

Candidate Starts for Charm\_65:

(9, 40850), (Start: 100 @40574 has 3 MA's), (139, 40550), (164, 40412), (173, 40352), (185, 40292),

Gene: Chartreuse\_64 Start: 39039, Stop: 38653, Start Num: 124

Candidate Starts for Chartreuse\_64:

(Start: 124 @39039 has 115 MA's), (158, 38904), (173, 38814), (177, 38790), (180, 38778), (190, 38745),

Gene: Che12\_70 Start: 40396, Stop: 39983, Start Num: 106

Candidate Starts for Che12\_70:

(Start: 75 @40471 has 6 MA's), (Start: 106 @40396 has 5 MA's), (Start: 124 @40372 has 115 MA's), (147, 40321), (150, 40291), (158, 40234), (173, 40144), (190, 40075), (198, 40030), (202, 40009), (204, 39997),

Gene: ChewyVIII\_67 Start: 48737, Stop: 48354, Start Num: 126

Candidate Starts for ChewyVIII\_67:

(Start: 126 @48737 has 26 MA's), (155, 48617), (195, 48422),

Gene: Cici\_62 Start: 41339, Stop: 40956, Start Num: 128

Candidate Starts for Cici\_62:

(Start: 114 @41351 has 5 MA's), (Start: 128 @41339 has 13 MA's), (173, 41117), (185, 41060), (190, 41048), (195, 41024), (199, 41000),

Gene: Cindaradix\_59 Start: 40951, Stop: 40565, Start Num: 128

Candidate Starts for Cindaradix\_59:

(Start: 114 @40963 has 5 MA's), (Start: 128 @40951 has 13 MA's), (148, 40897), (150, 40873), (173, 40726), (190, 40657), (199, 40609),

Gene: ClamChowder\_81 Start: 52690, Stop: 53085, Start Num: 135

Candidate Starts for ClamChowder\_81:

(12, 52267), (28, 52408), (50, 52507), (98, 52630), (Start: 135 @52690 has 8 MA's), (173, 52921), (185, 52981), (198, 53038),

Gene: CloudWang3\_69 Start: 40203, Stop: 39817, Start Num: 124

Candidate Starts for CloudWang3\_69:

(29, 40458), (Start: 124 @40203 has 115 MA's), (158, 40068), (173, 39978), (183, 39933), (190, 39909),

Gene: ClubL\_113 Start: 65085, Stop: 65489, Start Num: 115

Candidate Starts for ClubL\_113:

(Start: 115 @65085 has 16 MA's), (158, 65235), (198, 65442),

Gene: Confidence\_51 Start: 35894, Stop: 36283, Start Num: 124

Candidate Starts for Confidence\_51:

(Start: 124 @35894 has 115 MA's), (150, 35978), (165, 36068), (181, 36161), (185, 36179), (188, 36185), (189, 36188), (195, 36215), (204, 36269),

Gene: Conquerage\_68 Start: 41108, Stop: 40722, Start Num: 122

Candidate Starts for Conquerage\_68:

(Start: 122 @41108 has 50 MA's), (140, 41081), (142, 41072), (158, 40973), (173, 40883), (190, 40814), (205, 40730),

Gene: Conspiracy\_64 Start: 40754, Stop: 40365, Start Num: 124

Candidate Starts for Conspiracy\_64:

(Start: 124 @40754 has 115 MA's), (147, 40703), (158, 40616), (173, 40526), (181, 40487), (190, 40457),

Gene: Constella\_99 Start: 58878, Stop: 59264, Start Num: 129

Candidate Starts for Constella\_99:

(Start: 129 @58878 has 43 MA's), (139, 58899), (158, 59010), (173, 59100), (174, 59103), (175, 59112), (183, 59148), (190, 59172), (192, 59181), (198, 59217),

Gene: Coog\_60 Start: 40568, Stop: 40179, Start Num: 124

Candidate Starts for Coog\_60:

(27, 40835), (Start: 124 @40568 has 115 MA's), (147, 40517), (158, 40430), (173, 40340), (181, 40301), (190, 40271),

Gene: Cookiedough\_67 Start: 39667, Stop: 39281, Start Num: 124

Candidate Starts for Cookiedough\_67:

(Start: 124 @39667 has 115 MA's), (158, 39532), (173, 39442), (177, 39418), (180, 39406), (190, 39373),

Gene: Courthouse\_106 Start: 59891, Stop: 60274, Start Num: 129

Candidate Starts for Courthouse\_106:

(Start: 129 @59891 has 43 MA's), (140, 59915), (158, 60023), (173, 60113), (185, 60170), (190, 60182),

Gene: Cozz\_62 Start: 43369, Stop: 43755, Start Num: 121

Candidate Starts for Cozz\_62:

(Start: 121 @43369 has 9 MA's), (166, 43543), (178, 43621), (181, 43633), (188, 43657), (189, 43660), (195, 43687), (198, 43708),

Gene: Cruella\_66 Start: 48881, Stop: 48504, Start Num: 133

Candidate Starts for Cruella\_66:

(Start: 133 @48881 has 5 MA's), (156, 48764), (165, 48719), (192, 48587), (195, 48572),

Gene: Cuco\_62 Start: 40428, Stop: 40039, Start Num: 124

Candidate Starts for Cuco\_62:

(27, 40695), (Start: 124 @40428 has 115 MA's), (147, 40377), (158, 40290), (173, 40200), (181, 40161), (190, 40131),

Gene: Cucurbita\_113 Start: 66650, Stop: 67054, Start Num: 115

Candidate Starts for Cucurbita\_113:

(21, 66356), (26, 66386), (61, 66536), (Start: 115 @66650 has 16 MA's), (158, 66800), (175, 66905), (198, 67007),

Gene: Culver\_112 Start: 64404, Stop: 64808, Start Num: 115

Candidate Starts for Culver\_112:

(61, 64290), (Start: 115 @64404 has 16 MA's), (158, 64554), (198, 64761),

Gene: D29\_64 Start: 41880, Stop: 41464, Start Num: 102

Candidate Starts for D29\_64:

(38, 42054), (64, 41967), (76, 41943), (Start: 102 @41880 has 5 MA's), (Start: 122 @41850 has 50 MA's), (147, 41799), (150, 41772), (158, 41715), (173, 41625), (190, 41556),

Gene: D32\_68 Start: 41850, Stop: 41464, Start Num: 122

Candidate Starts for D32\_68:

(38, 42054), (64, 41967), (76, 41943), (Start: 102 @41880 has 5 MA's), (Start: 122 @41850 has 50 MA's), (147, 41799), (150, 41772), (158, 41715), (173, 41625), (190, 41556),

Gene: DBQu4n\_69 Start: 41830, Stop: 41444, Start Num: 122

Candidate Starts for DBQu4n\_69:

(48, 41995), (64, 41947), (78, 41917), (Start: 102 @41860 has 5 MA's), (Start: 122 @41830 has 50 MA's), (147, 41779), (150, 41752), (158, 41695), (173, 41605), (190, 41536),

Gene: DaVinci\_65 Start: 39093, Stop: 38707, Start Num: 124

Candidate Starts for DaVinci\_65:

(Start: 124 @39093 has 115 MA's), (158, 38958), (173, 38868), (177, 38844), (180, 38832), (190, 38799),

Gene: Dallas\_117 Start: 65617, Stop: 66003, Start Num: 129

Candidate Starts for Dallas\_117:

(105, 65581), (Start: 129 @65617 has 43 MA's), (139, 65638), (158, 65749), (173, 65839), (174, 65842), (175, 65851), (190, 65911), (192, 65920), (198, 65956),

Gene: Danforth\_76 Start: 42544, Stop: 42155, Start Num: 124

Candidate Starts for Danforth\_76:

(103, 42577), (Start: 124 @42544 has 115 MA's), (145, 42499), (150, 42463), (158, 42406), (173, 42316), (190, 42247),

Gene: Darrell\_71 Start: 41935, Stop: 41549, Start Num: 120

Candidate Starts for Darrell\_71:

(Start: 120 @41935 has 2 MA's), (158, 41800), (173, 41710), (190, 41641),

Gene: DarthP\_55 Start: 39439, Stop: 39828, Start Num: 132

Candidate Starts for DarthP\_55:

(Start: 132 @39439 has 5 MA's), (141, 39466), (150, 39523), (157, 39577), (158, 39580), (173, 39664), (185, 39724), (198, 39781), (201, 39799),

Gene: DarthPhader\_64 Start: 42068, Stop: 41685, Start Num: 124

Candidate Starts for DarthPhader\_64:

(65, 42188), (66, 42185), (67, 42182), (Start: 124 @42068 has 115 MA's), (155, 41951), (158, 41936), (173, 41846), (190, 41777),

Gene: Darwin\_67 Start: 48122, Stop: 47745, Start Num: 133

Candidate Starts for Darwin\_67:

(Start: 133 @48122 has 5 MA's), (156, 48005), (165, 47960), (192, 47828), (195, 47813),

Gene: Datway\_62 Start: 41310, Stop: 40927, Start Num: 128

Candidate Starts for Datway\_62:

(Start: 114 @41322 has 5 MA's), (Start: 128 @41310 has 13 MA's), (173, 41088), (185, 41031), (190, 41019), (195, 40995), (199, 40971),

Gene: DekHockey33\_74 Start: 40936, Stop: 40538, Start Num: 126

Candidate Starts for DekHockey33\_74:

(82, 41017), (Start: 126 @40936 has 26 MA's), (158, 40795), (166, 40747), (195, 40606),

Gene: Dennebes\_82 Start: 40059, Stop: 39634, Start Num: 122

Candidate Starts for Dennebes\_82:

(72, 40161), (87, 40131), (93, 40119), (Start: 122 @40059 has 50 MA's), (140, 40023), (141, 40020), (150, 39969), (152, 39954), (155, 39927), (159, 39909), (165, 39879), (166, 39876), (185, 39768), (198, 39711),

Gene: Discoknowium\_61 Start: 40271, Stop: 39882, Start Num: 124

Candidate Starts for Discoknowium\_61:

(Start: 124 @40271 has 115 MA's), (147, 40220), (158, 40133), (173, 40043), (181, 40004), (190, 39974),

Gene: Dixon\_75 Start: 42148, Stop: 41675, Start Num: 75

Candidate Starts for Dixon\_75:

(Start: 75 @42148 has 6 MA's), (116, 42067), (140, 42034), (150, 41983), (158, 41926), (173, 41836), (190, 41767), (201, 41704),

Gene: DmpstrDiver\_117 Start: 65037, Stop: 65423, Start Num: 129

Candidate Starts for DmpstrDiver\_117:

(105, 65001), (Start: 129 @65037 has 43 MA's), (139, 65058), (158, 65169), (173, 65259), (174, 65262), (175, 65271), (177, 65286), (183, 65307), (190, 65331), (192, 65340), (198, 65376),

Gene: Dorothea\_67 Start: 39665, Stop: 39279, Start Num: 124

Candidate Starts for Dorothea\_67:

(Start: 124 @39665 has 115 MA's), (158, 39530), (173, 39440), (177, 39416), (180, 39404), (190, 39371),

Gene: Dove\_102 Start: 60531, Stop: 60917, Start Num: 129

Candidate Starts for Dove\_102:

(105, 60495), (Start: 129 @60531 has 43 MA's), (139, 60552), (158, 60663), (173, 60753), (174, 60756), (175, 60765), (183, 60801), (190, 60825), (192, 60834), (198, 60870),

Gene: DreamTeam1\_65 Start: 40406, Stop: 40020, Start Num: 100

Candidate Starts for DreamTeam1\_65:

(9, 40682), (Start: 100 @40406 has 3 MA's), (139, 40382), (164, 40244), (173, 40184), (185, 40124),

Gene: Duke13\_112 Start: 62708, Stop: 63094, Start Num: 129

Candidate Starts for Duke13\_112:

(105, 62672), (Start: 129 @62708 has 43 MA's), (139, 62729), (158, 62840), (173, 62930), (174, 62933), (175, 62942), (183, 62978), (190, 63002), (192, 63011), (198, 63047),

Gene: Duplo\_69 Start: 41917, Stop: 41501, Start Num: 102

Candidate Starts for Duplo\_69:

(48, 42052), (64, 42004), (78, 41974), (Start: 102 @41917 has 5 MA's), (Start: 122 @41887 has 50 MA's), (147, 41836), (150, 41809), (158, 41752), (173, 41662), (190, 41593),

Gene: Dusty\_109 Start: 64991, Stop: 65395, Start Num: 115

Candidate Starts for Dusty\_109:

(21, 64697), (22, 64703), (26, 64727), (61, 64877), (Start: 115 @64991 has 16 MA's), (158, 65141), (198, 65348),

Gene: EZMoney23\_64 Start: 41540, Stop: 41157, Start Num: 122  
Candidate Starts for EZMoney23\_64:  
(Start: 102 @41573 has 5 MA's), (Start: 122 @41540 has 50 MA's), (150, 41465), (158, 41408), (173, 41318), (177, 41294), (190, 41249),

Gene: EagleEye\_70 Start: 41375, Stop: 40989, Start Num: 124  
Candidate Starts for EagleEye\_70:  
(29, 41633), (Start: 124 @41375 has 115 MA's), (150, 41297), (158, 41240), (173, 41150), (190, 41081),

Gene: EdogawaKiddo\_68 Start: 41400, Stop: 41014, Start Num: 122  
Candidate Starts for EdogawaKiddo\_68:  
(Start: 122 @41400 has 50 MA's), (140, 41373), (142, 41364), (158, 41265), (173, 41175), (190, 41106), (205, 41022),

Gene: Eidsmoe\_68 Start: 41100, Stop: 40714, Start Num: 122  
Candidate Starts for Eidsmoe\_68:  
(Start: 122 @41100 has 50 MA's), (140, 41073), (142, 41064), (158, 40965), (173, 40875), (190, 40806), (205, 40722),

Gene: Ejimix\_110 Start: 65796, Stop: 66179, Start Num: 129  
Candidate Starts for Ejimix\_110:  
(105, 65760), (Start: 129 @65796 has 43 MA's), (139, 65817), (158, 65928), (181, 66057), (185, 66075), (190, 66087), (204, 66165),

Gene: Ekdilam\_52 Start: 39075, Stop: 39458, Start Num: 135  
Candidate Starts for Ekdilam\_52:  
(Start: 135 @39075 has 8 MA's), (141, 39102), (158, 39210), (173, 39294), (185, 39354), (201, 39429), (203, 39435),

Gene: EITiger69\_66 Start: 40898, Stop: 40509, Start Num: 124  
Candidate Starts for EITiger69\_66:  
(Start: 124 @40898 has 115 MA's), (147, 40847), (158, 40760), (164, 40730), (173, 40670), (190, 40601),

Gene: Elephantoon\_68 Start: 40741, Stop: 40352, Start Num: 119  
Candidate Starts for Elephantoon\_68:  
(69, 40846), (71, 40843), (73, 40840), (81, 40822), (Start: 119 @40741 has 13 MA's), (164, 40576), (173, 40516), (189, 40447), (190, 40444), (204, 40366),

Gene: Ellie\_51 Start: 38816, Stop: 39196, Start Num: 135  
Candidate Starts for Ellie\_51:  
(Start: 135 @38816 has 8 MA's), (141, 38843), (149, 38867), (158, 38951), (160, 38957), (185, 39092), (195, 39128), (198, 39149), (201, 39167), (203, 39173),

Gene: Elsa\_65 Start: 41909, Stop: 42322, Start Num: 124  
Candidate Starts for Elsa\_65:  
(89, 41852), (97, 41876), (Start: 124 @41909 has 115 MA's), (155, 42038), (162, 42074), (174, 42140), (208, 42308),

Gene: Emotion\_32 Start: 23912, Stop: 24310, Start Num: 127  
Candidate Starts for Emotion\_32:  
(7, 23414), (18, 23576), (31, 23666), (44, 23732), (45, 23738), (Start: 127 @23912 has 10 MA's),

Gene: EmyBug\_67 Start: 41102, Stop: 40716, Start Num: 122

Candidate Starts for EmyBug\_67:

(Start: 122 @41102 has 50 MA's), (140, 41075), (142, 41066), (158, 40967), (173, 40877), (190, 40808), (205, 40724),

Gene: Engineer\_113 Start: 66128, Stop: 66532, Start Num: 115

Candidate Starts for Engineer\_113:

(Start: 115 @66128 has 16 MA's), (158, 66278), (198, 66485),

Gene: Epsocamisio\_69 Start: 40081, Stop: 39683, Start Num: 126

Candidate Starts for Epsocamisio\_69:

(Start: 126 @40081 has 26 MA's), (158, 39940), (166, 39892), (175, 39832), (195, 39751),

Gene: EricB\_66 Start: 39680, Stop: 39294, Start Num: 124

Candidate Starts for EricB\_66:

(Start: 124 @39680 has 115 MA's), (158, 39545), (173, 39455), (177, 39431), (180, 39419), (190, 39386),

Gene: EricMillard\_109 Start: 64677, Stop: 65063, Start Num: 129

Candidate Starts for EricMillard\_109:

(105, 64641), (Start: 129 @64677 has 43 MA's), (139, 64698), (158, 64809), (173, 64899), (174, 64902), (175, 64911), (177, 64926), (183, 64947), (190, 64971), (192, 64980), (198, 65016),

Gene: Estes\_48 Start: 35060, Stop: 34668, Start Num: 119

Candidate Starts for Estes\_48:

(32, 35303), (33, 35300), (35, 35285), (41, 35246), (49, 35225), (88, 35126), (Start: 119 @35060 has 13 MA's), (150, 34976), (173, 34829), (190, 34760), (198, 34715),

Gene: Expelliarmus\_73 Start: 42362, Stop: 41880, Start Num: 75

Candidate Starts for Expelliarmus\_73:

(Start: 75 @42362 has 6 MA's), (108, 42284), (150, 42188), (158, 42131), (173, 42041), (190, 41972), (201, 41909),

Gene: ExplosioNervosa\_68 Start: 41168, Stop: 40782, Start Num: 122

Candidate Starts for ExplosioNervosa\_68:

(Start: 122 @41168 has 50 MA's), (140, 41141), (142, 41132), (158, 41033), (173, 40943), (190, 40874), (205, 40790),

Gene: Fayely\_68 Start: 41069, Stop: 40683, Start Num: 122

Candidate Starts for Fayely\_68:

(Start: 122 @41069 has 50 MA's), (140, 41042), (142, 41033), (158, 40934), (173, 40844), (190, 40775), (205, 40691),

Gene: Fefferhead\_53 Start: 38763, Stop: 39143, Start Num: 135

Candidate Starts for Fefferhead\_53:

(Start: 135 @38763 has 8 MA's), (141, 38790), (149, 38814), (158, 38898), (160, 38904), (185, 39039), (195, 39075), (198, 39096), (201, 39114), (203, 39120),

Gene: Fenry\_62 Start: 41952, Stop: 42347, Start Num: 121

Candidate Starts for Fenry\_62:

(6, 41430), (17, 41580), (81, 41865), (Start: 121 @41952 has 9 MA's), (138, 41985), (159, 42102), (181, 42225), (185, 42243), (188, 42249), (189, 42252), (198, 42300), (204, 42333),



Gene: ForGetIt\_64 Start: 40779, Stop: 40390, Start Num: 124

Candidate Starts for ForGetIt\_64:

(Start: 124 @40779 has 115 MA's), (147, 40728), (158, 40641), (173, 40551), (181, 40512), (190, 40482),

Gene: Frankie\_67 Start: 42381, Stop: 42767, Start Num: 134

Candidate Starts for Frankie\_67:

(42, 42174), (45, 42186), (51, 42201), (55, 42222), (65, 42243), (90, 42297), (105, 42336), (111, 42351), (113, 42354), (Start: 134 @42381 has 3 MA's), (150, 42459), (158, 42516), (166, 42552), (173, 42606), (190, 42675), (203, 42744), (204, 42753),

Gene: Fugax\_82 Start: 52682, Stop: 53077, Start Num: 135

Candidate Starts for Fugax\_82:

(12, 52259), (28, 52400), (50, 52499), (98, 52622), (Start: 135 @52682 has 8 MA's), (173, 52913), (185, 52973), (198, 53030),

Gene: Funsized\_63 Start: 58183, Stop: 57782, Start Num: 115

Candidate Starts for Funsized\_63:

(Start: 115 @58183 has 16 MA's), (147, 58120), (151, 58090), (155, 58051), (160, 58030), (169, 57973), (173, 57943), (190, 57874), (192, 57865),

Gene: Fury\_24 Start: 9277, Stop: 9669, Start Num: 124

Candidate Starts for Fury\_24:

(Start: 124 @9277 has 115 MA's), (142, 9322), (146, 9334), (150, 9364), (159, 9424), (165, 9454), (166, 9457), (168, 9478), (181, 9547), (182, 9550), (185, 9565), (189, 9574), (198, 9622), (203, 9646), (204, 9655),

Gene: Gail\_68 Start: 41859, Stop: 41473, Start Num: 124

Candidate Starts for Gail\_68:

(65, 41985), (77, 41961), (85, 41943), (Start: 124 @41859 has 115 MA's), (150, 41781), (155, 41739), (158, 41724), (173, 41634), (181, 41595), (190, 41565),

Gene: Garak\_69 Start: 40058, Stop: 39672, Start Num: 124

Candidate Starts for Garak\_69:

(29, 40313), (Start: 124 @40058 has 115 MA's), (158, 39923), (173, 39833), (183, 39788), (190, 39764),

Gene: GardenSalsa\_48 Start: 35170, Stop: 34781, Start Num: 119

Candidate Starts for GardenSalsa\_48:

(56, 35302), (Start: 119 @35170 has 13 MA's), (150, 35083), (158, 35026), (173, 34942), (185, 34885), (190, 34873), (195, 34849), (199, 34825), (201, 34810),

Gene: GaugeLDP\_63 Start: 41446, Stop: 41060, Start Num: 122

Candidate Starts for GaugeLDP\_63:

(Start: 122 @41446 has 50 MA's), (150, 41368), (155, 41326), (158, 41311), (173, 41221), (181, 41182), (190, 41152),

Gene: Geeche\_111 Start: 65214, Stop: 65618, Start Num: 115

Candidate Starts for Geeche\_111:

(21, 64920), (22, 64926), (26, 64950), (61, 65100), (Start: 115 @65214 has 16 MA's), (158, 65364), (198, 65571),

Gene: GenevaB15\_46 Start: 34794, Stop: 34402, Start Num: 119  
Candidate Starts for GenevaB15\_46:  
(34, 35016), (41, 34974), (56, 34923), (59, 34914), (Start: 119 @34794 has 13 MA's), (150, 34710),  
(190, 34494), (198, 34449),

Gene: George\_58 Start: 40098, Stop: 39709, Start Num: 124  
Candidate Starts for George\_58:  
(Start: 124 @40098 has 115 MA's), (158, 39960), (173, 39870), (181, 39831), (190, 39801),

Gene: Gladiator\_65 Start: 39283, Stop: 38897, Start Num: 124  
Candidate Starts for Gladiator\_65:  
(29, 39538), (Start: 124 @39283 has 115 MA's), (158, 39148), (173, 39058), (183, 39013), (190,  
38989),

Gene: GoldHunter\_64 Start: 43358, Stop: 43744, Start Num: 121  
Candidate Starts for GoldHunter\_64:  
(Start: 121 @43358 has 9 MA's), (166, 43532), (178, 43610), (181, 43622), (188, 43646), (189,  
43649), (195, 43676), (198, 43697),

Gene: Gonephishing\_105 Start: 59315, Stop: 59698, Start Num: 129  
Candidate Starts for Gonephishing\_105:  
(Start: 129 @59315 has 43 MA's), (140, 59339), (158, 59447), (173, 59537), (185, 59594), (190,  
59606), (204, 59684),

Gene: GreedyLawyer\_64 Start: 39653, Stop: 39324, Start Num: 124  
Candidate Starts for GreedyLawyer\_64:  
(Start: 124 @39653 has 115 MA's), (158, 39518), (173, 39428), (177, 39404), (180, 39392), (187,  
39365),

Gene: Groundhog\_75 Start: 42567, Stop: 42085, Start Num: 75  
Candidate Starts for Groundhog\_75:  
(Start: 75 @42567 has 6 MA's), (108, 42489), (150, 42393), (158, 42336), (173, 42246), (190, 42177),

Gene: Gruunaga\_68 Start: 40016, Stop: 39630, Start Num: 124  
Candidate Starts for Gruunaga\_68:  
(29, 40271), (Start: 124 @40016 has 115 MA's), (158, 39881), (173, 39791), (183, 39746), (190,  
39722),

Gene: Halley\_118 Start: 66112, Stop: 66495, Start Num: 129  
Candidate Starts for Halley\_118:  
(105, 66076), (Start: 129 @66112 has 43 MA's), (139, 66133), (158, 66244), (181, 66373), (185,  
66391), (190, 66403), (204, 66481),

Gene: Hammer\_68 Start: 39623, Stop: 39237, Start Num: 124  
Candidate Starts for Hammer\_68:  
(29, 39878), (Start: 124 @39623 has 115 MA's), (158, 39488), (173, 39398), (183, 39353), (190,  
39329),

Gene: Hammy\_55 Start: 39427, Stop: 39816, Start Num: 132  
Candidate Starts for Hammy\_55:  
(Start: 132 @39427 has 5 MA's), (141, 39454), (150, 39511), (157, 39565), (158, 39568), (173,  
39652), (185, 39712), (198, 39769), (201, 39787),

Gene: Hannaconda\_102 Start: 58261, Stop: 58644, Start Num: 129  
Candidate Starts for Hannaconda\_102:  
(Start: 129 @58261 has 43 MA's), (140, 58285), (158, 58393), (173, 58483), (185, 58540), (190, 58552), (204, 58630),

Gene: Hanray\_68 Start: 41432, Stop: 41046, Start Num: 122  
Candidate Starts for Hanray\_68:  
(Start: 122 @41432 has 50 MA's), (140, 41405), (142, 41396), (158, 41297), (173, 41207), (190, 41138), (205, 41054),

Gene: HaugeAnator\_77 Start: 39587, Stop: 39162, Start Num: 122  
Candidate Starts for HaugeAnator\_77:  
(Start: 122 @39587 has 50 MA's), (130, 39578), (142, 39542), (158, 39443), (159, 39440), (165, 39410), (173, 39359), (190, 39287), (197, 39254), (198, 39242),

Gene: Heisenberger\_63 Start: 41118, Stop: 41531, Start Num: 124  
Candidate Starts for Heisenberger\_63:  
(89, 41061), (91, 41064), (97, 41085), (Start: 124 @41118 has 115 MA's), (162, 41283), (174, 41349), (208, 41517),

Gene: Helmet\_69 Start: 40058, Stop: 39672, Start Num: 124  
Candidate Starts for Helmet\_69:  
(29, 40313), (Start: 124 @40058 has 115 MA's), (158, 39923), (173, 39833), (183, 39788), (190, 39764),

Gene: Herbertwm\_63 Start: 41241, Stop: 40855, Start Num: 124  
Candidate Starts for Herbertwm\_63:  
(109, 41262), (Start: 124 @41241 has 115 MA's), (158, 41106), (173, 41016), (177, 40992), (190, 40947),

Gene: Hexamo\_68 Start: 39688, Stop: 39302, Start Num: 124  
Candidate Starts for Hexamo\_68:  
(29, 39943), (Start: 124 @39688 has 115 MA's), (158, 39553), (173, 39463), (183, 39418), (190, 39394),

Gene: HokkenD\_106 Start: 63371, Stop: 63754, Start Num: 129  
Candidate Starts for HokkenD\_106:  
(105, 63335), (Start: 129 @63371 has 43 MA's), (139, 63392), (158, 63503), (185, 63650), (190, 63662),

Gene: Horex\_68 Start: 41448, Stop: 41062, Start Num: 122  
Candidate Starts for Horex\_68:  
(Start: 122 @41448 has 50 MA's), (140, 41421), (142, 41412), (158, 41313), (173, 41223), (190, 41154), (205, 41070),

Gene: Hoot\_62 Start: 37538, Stop: 37152, Start Num: 124  
Candidate Starts for Hoot\_62:  
(Start: 124 @37538 has 115 MA's), (158, 37403), (173, 37313), (177, 37289), (180, 37277), (190, 37244),

Gene: HortumSL17\_71 Start: 41432, Stop: 41046, Start Num: 122  
Candidate Starts for HortumSL17\_71:

(Start: 122 @41432 has 50 MA's), (140, 41405), (142, 41396), (158, 41297), (173, 41207), (185, 41150), (190, 41138), (205, 41054),

Gene: Hortus1\_86 Start: 51617, Stop: 51204, Start Num: 124

Candidate Starts for Hortus1\_86:

(Start: 124 @51617 has 115 MA's), (166, 51431), (190, 51311), (191, 51305), (195, 51287),

Gene: Hosp\_049 Start: 48795, Stop: 48412, Start Num: 126

Candidate Starts for Hosp\_049:

(94, 48843), (Start: 126 @48795 has 26 MA's), (151, 48717), (160, 48657), (165, 48630), (169, 48600), (173, 48573), (176, 48555), (185, 48516), (190, 48504), (195, 48480), (201, 48441),

Gene: Hughesyang\_115 Start: 65568, Stop: 65951, Start Num: 129

Candidate Starts for Hughesyang\_115:

(105, 65532), (Start: 129 @65568 has 43 MA's), (139, 65589), (158, 65700), (181, 65829), (185, 65847), (190, 65859), (204, 65937),

Gene: HuhtaEnerson15\_61 Start: 40248, Stop: 39859, Start Num: 124

Candidate Starts for HuhtaEnerson15\_61:

(Start: 124 @40248 has 115 MA's), (158, 40110), (173, 40020), (181, 39981), (190, 39951),

Gene: Hyzer\_57 Start: 39859, Stop: 40248, Start Num: 124

Candidate Starts for Hyzer\_57:

(Start: 124 @39859 has 115 MA's), (159, 40003), (165, 40033), (181, 40126), (185, 40144), (189, 40153), (204, 40234),

Gene: Immanuel3\_75 Start: 39592, Stop: 39245, Start Num: 122

Candidate Starts for Immanuel3\_75:

(Start: 122 @39592 has 50 MA's), (130, 39583), (142, 39547), (158, 39448), (159, 39445), (165, 39415), (173, 39364), (190, 39292),

Gene: Imvubu\_55 Start: 53558, Stop: 53160, Start Num: 117

Candidate Starts for Imvubu\_55:

(Start: 117 @53558 has 1 MA's), (151, 53468), (155, 53429), (158, 53414), (173, 53321), (184, 53270), (190, 53252), (195, 53228),

Gene: Indra\_71 Start: 40059, Stop: 39673, Start Num: 124

Candidate Starts for Indra\_71:

(29, 40314), (Start: 124 @40059 has 115 MA's), (158, 39924), (173, 39834), (183, 39789), (190, 39765),

Gene: IronMan\_65 Start: 42406, Stop: 42020, Start Num: 124

Candidate Starts for IronMan\_65:

(Start: 124 @42406 has 115 MA's), (145, 42361), (150, 42328), (158, 42271), (173, 42181), (190, 42112),

Gene: Isiphiwo\_65 Start: 39219, Stop: 38833, Start Num: 124

Candidate Starts for Isiphiwo\_65:

(Start: 124 @39219 has 115 MA's), (158, 39084), (173, 38994), (177, 38970), (180, 38958), (190, 38925),

Gene: Iwokeuplikedis\_68 Start: 41379, Stop: 40990, Start Num: 123

Candidate Starts for Iwokeuplikedis\_68:

(Start: 123 @41379 has 1 MA's), (150, 41301), (158, 41244), (173, 41154), (190, 41082),

Gene: JEGGS\_63 Start: 41197, Stop: 41610, Start Num: 124

Candidate Starts for JEGGS\_63:

(89, 41140), (91, 41143), (97, 41164), (Start: 124 @41197 has 115 MA's), (162, 41362), (174, 41428), (208, 41596),

Gene: JPandJE\_76 Start: 39938, Stop: 39513, Start Num: 122

Candidate Starts for JPandJE\_76:

(Start: 122 @39938 has 50 MA's), (130, 39929), (142, 39893), (158, 39794), (159, 39791), (165, 39761), (173, 39710), (190, 39638), (197, 39605), (198, 39593),

Gene: JSwag\_72 Start: 40368, Stop: 39970, Start Num: 126

Candidate Starts for JSwag\_72:

(82, 40449), (Start: 126 @40368 has 26 MA's), (158, 40227), (166, 40179), (195, 40038),

Gene: Jaan\_66 Start: 42574, Stop: 42188, Start Num: 124

Candidate Starts for Jaan\_66:

(Start: 124 @42574 has 115 MA's), (145, 42529), (150, 42496), (155, 42454), (158, 42439), (173, 42349), (190, 42280),

Gene: Jabiru\_65 Start: 40817, Stop: 40428, Start Num: 124

Candidate Starts for Jabiru\_65:

(Start: 124 @40817 has 115 MA's), (147, 40766), (158, 40679), (173, 40589), (190, 40520),

Gene: JasmineDragon\_32 Start: 23314, Stop: 23712, Start Num: 127

Candidate Starts for JasmineDragon\_32:

(Start: 127 @23314 has 10 MA's),

Gene: Jeeves\_70 Start: 40857, Stop: 40468, Start Num: 124

Candidate Starts for Jeeves\_70:

(66, 40965), (67, 40962), (Start: 124 @40857 has 115 MA's), (158, 40722), (165, 40689), (173, 40632), (190, 40560), (205, 40476),

Gene: Jeffabunny\_68 Start: 39685, Stop: 39299, Start Num: 124

Candidate Starts for Jeffabunny\_68:

(29, 39940), (Start: 124 @39685 has 115 MA's), (158, 39550), (173, 39460), (183, 39415), (190, 39391),

Gene: JewelBug\_67 Start: 39959, Stop: 39573, Start Num: 124

Candidate Starts for JewelBug\_67:

(Start: 124 @39959 has 115 MA's), (158, 39824), (163, 39800), (173, 39734), (183, 39689), (190, 39665),

Gene: Jiawan\_67 Start: 41464, Stop: 41078, Start Num: 122

Candidate Starts for Jiawan\_67:

(Start: 122 @41464 has 50 MA's), (140, 41437), (142, 41428), (158, 41329), (165, 41296), (173, 41239), (190, 41170), (205, 41086),

Gene: Jolie1\_051 Start: 50701, Stop: 50318, Start Num: 126

Candidate Starts for Jolie1\_051:

(94, 50746), (Start: 126 @50701 has 26 MA's), (151, 50623), (160, 50563), (165, 50536), (169, 50506), (173, 50479), (176, 50461), (185, 50422), (190, 50410), (195, 50386), (201, 50347),

Gene: Jordennis\_66 Start: 39440, Stop: 39054, Start Num: 124  
Candidate Starts for Jordennis\_66:  
(Start: 124 @39440 has 115 MA's), (158, 39305), (173, 39215), (177, 39191), (180, 39179), (190, 39146),

Gene: Jovo\_64 Start: 41035, Stop: 40646, Start Num: 124  
Candidate Starts for Jovo\_64:  
(Start: 124 @41035 has 115 MA's), (147, 40984), (158, 40897), (173, 40807), (181, 40768), (190, 40738),

Gene: Jsquared\_71 Start: 41166, Stop: 40780, Start Num: 122  
Candidate Starts for Jsquared\_71:  
(48, 41331), (Start: 102 @41196 has 5 MA's), (Start: 122 @41166 has 50 MA's), (158, 41031), (173, 40941), (190, 40872), (192, 40863), (204, 40794),

Gene: JuicyJay\_113 Start: 67237, Stop: 67623, Start Num: 129  
Candidate Starts for JuicyJay\_113:  
(105, 67201), (Start: 129 @67237 has 43 MA's), (139, 67258), (158, 67369), (173, 67459), (174, 67462), (175, 67471), (183, 67507), (190, 67531), (192, 67540), (198, 67576),

Gene: Kalah2\_109 Start: 64903, Stop: 65289, Start Num: 129  
Candidate Starts for Kalah2\_109:  
(105, 64867), (Start: 129 @64903 has 43 MA's), (139, 64924), (158, 65035), (173, 65125), (174, 65128), (175, 65137), (183, 65173), (190, 65197), (192, 65206), (198, 65242),

Gene: KashFlow\_108 Start: 60766, Stop: 61149, Start Num: 129  
Candidate Starts for KashFlow\_108:  
(Start: 129 @60766 has 43 MA's), (140, 60790), (158, 60898), (173, 60988), (190, 61057), (204, 61135),

Gene: Katalie136\_62 Start: 41324, Stop: 40941, Start Num: 128  
Candidate Starts for Katalie136\_62:  
(Start: 114 @41336 has 5 MA's), (Start: 128 @41324 has 13 MA's), (173, 41102), (185, 41045), (190, 41033), (195, 41009), (199, 40985),

Gene: KatherineG\_73 Start: 40841, Stop: 40443, Start Num: 126  
Candidate Starts for KatherineG\_73:  
(82, 40922), (Start: 126 @40841 has 26 MA's), (158, 40700), (166, 40652), (195, 40511),

Gene: KayaCho\_50 Start: 50503, Stop: 50120, Start Num: 126  
Candidate Starts for KayaCho\_50:  
(Start: 126 @50503 has 26 MA's), (151, 50425), (160, 50365), (165, 50338), (169, 50308), (173, 50281), (176, 50263), (185, 50224), (190, 50212), (195, 50188), (201, 50149),

Gene: Kazan\_68 Start: 39693, Stop: 39307, Start Num: 124  
Candidate Starts for Kazan\_68:  
(Start: 124 @39693 has 115 MA's), (158, 39558), (173, 39468), (177, 39444), (180, 39432), (190, 39399),

Gene: Kerberos\_69 Start: 41879, Stop: 41463, Start Num: 102  
Candidate Starts for Kerberos\_69:

(48, 42014), (64, 41966), (78, 41936), (Start: 102 @41879 has 5 MA's), (Start: 122 @41849 has 50 MA's), (147, 41798), (150, 41771), (158, 41714), (173, 41624), (190, 41555),

Gene: Keziacharles14\_67 Start: 41988, Stop: 41599, Start Num: 100

Candidate Starts for Keziacharles14\_67:

(Start: 100 @41988 has 3 MA's), (144, 41946), (158, 41853), (173, 41763), (190, 41691),

Gene: Kharcho\_11 Start: 3851, Stop: 4243, Start Num: 127

Candidate Starts for Kharcho\_11:

(23, 3554), (24, 3557), (83, 3767), (Start: 127 @3851 has 10 MA's), (164, 4013), (168, 4040), (190, 4139), (200, 4190),

Gene: Kimchi1738\_67 Start: 48857, Stop: 48480, Start Num: 133

Candidate Starts for Kimchi1738\_67:

(Start: 133 @48857 has 5 MA's), (156, 48740), (165, 48695), (195, 48548),

Gene: Kinmap\_68 Start: 40146, Stop: 39766, Start Num: 131

Candidate Starts for Kinmap\_68:

(131, 40146), (173, 39927), (190, 39858), (198, 39813), (204, 39780),

Gene: Kipper29\_67 Start: 39706, Stop: 39320, Start Num: 124

Candidate Starts for Kipper29\_67:

(Start: 124 @39706 has 115 MA's), (158, 39571), (173, 39481), (177, 39457), (180, 39445), (190, 39412),

Gene: Klein\_114 Start: 63260, Stop: 63646, Start Num: 129

Candidate Starts for Klein\_114:

(Start: 129 @63260 has 43 MA's), (139, 63281), (158, 63392), (173, 63482), (174, 63485), (175, 63494), (183, 63530), (190, 63554), (192, 63563), (198, 63599),

Gene: Koduck\_68 Start: 40602, Stop: 40216, Start Num: 122

Candidate Starts for Koduck\_68:

(Start: 102 @40632 has 5 MA's), (Start: 122 @40602 has 50 MA's), (158, 40467), (165, 40434), (173, 40377), (190, 40308), (198, 40263),

Gene: Koko\_70 Start: 40543, Stop: 40157, Start Num: 124

Candidate Starts for Koko\_70:

(29, 40798), (Start: 124 @40543 has 115 MA's), (158, 40408), (173, 40318), (183, 40273), (190, 40249),

Gene: L5\_64 Start: 40755, Stop: 40369, Start Num: 122

Candidate Starts for L5\_64:

(Start: 102 @40785 has 5 MA's), (Start: 122 @40755 has 50 MA's), (158, 40620), (173, 40530), (190, 40461),

Gene: Landor\_66 Start: 42483, Stop: 42097, Start Num: 124

Candidate Starts for Landor\_66:

(Start: 124 @42483 has 115 MA's), (145, 42438), (150, 42405), (155, 42363), (158, 42348), (173, 42258), (190, 42189),

Gene: LastHope\_56 Start: 37963, Stop: 38349, Start Num: 127

Candidate Starts for LastHope\_56:

(Start: 127 @37963 has 10 MA's), (161, 38116), (177, 38212), (181, 38227), (185, 38245), (190, 38257), (198, 38302), (203, 38326),

Gene: LastResort\_71 Start: 40420, Stop: 40022, Start Num: 126

Candidate Starts for LastResort\_71:

(60, 40546), (62, 40543), (63, 40540), (Start: 126 @40420 has 26 MA's), (158, 40279), (166, 40231), (195, 40090),

Gene: Lev2\_64 Start: 40667, Stop: 40278, Start Num: 124

Candidate Starts for Lev2\_64:

(Start: 124 @40667 has 115 MA's), (147, 40616), (158, 40529), (173, 40439), (181, 40400), (190, 40370),

Gene: LilSpotty\_61 Start: 38299, Stop: 38685, Start Num: 134

Candidate Starts for LilSpotty\_61:

(19, 37966), (25, 37999), (46, 38107), (51, 38119), (55, 38140), (65, 38161), (90, 38215), (105, 38254), (111, 38269), (113, 38272), (Start: 134 @38299 has 3 MA's), (150, 38377), (158, 38434), (166, 38470), (173, 38524), (190, 38593), (203, 38662),

Gene: Lilbunny\_67 Start: 39689, Stop: 39303, Start Num: 124

Candidate Starts for Lilbunny\_67:

(29, 39944), (Start: 124 @39689 has 115 MA's), (158, 39554), (173, 39464), (183, 39419), (190, 39395),

Gene: Lilleskat\_66 Start: 41219, Stop: 40830, Start Num: 119

Candidate Starts for Lilleskat\_66:

(69, 41312), (71, 41309), (73, 41306), (Start: 119 @41219 has 13 MA's), (164, 41054), (173, 40994), (189, 40925), (204, 40844),

Gene: Limpid\_99 Start: 68068, Stop: 68493, Start Num: 125

Candidate Starts for Limpid\_99:

(Start: 125 @68068 has 7 MA's), (143, 68113), (158, 68212),

Gene: LittleCherry\_61 Start: 40118, Stop: 39729, Start Num: 124

Candidate Starts for LittleCherry\_61:

(Start: 124 @40118 has 115 MA's), (158, 39980), (173, 39890), (181, 39851), (190, 39821),

Gene: LittleE\_115 Start: 63882, Stop: 64265, Start Num: 129

Candidate Starts for LittleE\_115:

(Start: 129 @63882 has 43 MA's), (140, 63906), (158, 64014), (173, 64104), (185, 64161), (190, 64173), (204, 64251),

Gene: LoneWolf\_69 Start: 41266, Stop: 40880, Start Num: 119

Candidate Starts for LoneWolf\_69:

(9, 41716), (69, 41359), (71, 41356), (73, 41353), (Start: 119 @41266 has 13 MA's), (164, 41104), (173, 41044), (185, 40984), (195, 40948), (204, 40894),

Gene: LonelyBoi\_50 Start: 39411, Stop: 39800, Start Num: 124

Candidate Starts for LonelyBoi\_50:

(Start: 124 @39411 has 115 MA's), (150, 39495), (159, 39555), (165, 39585), (181, 39678), (185, 39696), (188, 39702), (189, 39705), (195, 39732), (204, 39786),

Gene: Looper\_72 Start: 40332, Stop: 39934, Start Num: 126



Candidate Starts for Looper\_72:

(60, 40458), (62, 40455), (63, 40452), (Start: 126 @40332 has 26 MA's), (158, 40191), (166, 40143), (195, 40002),

Gene: Lozinak\_112 Start: 65966, Stop: 66370, Start Num: 115

Candidate Starts for Lozinak\_112:

(Start: 115 @65966 has 16 MA's), (158, 66116), (198, 66323),

Gene: Lucky2013\_108 Start: 60332, Stop: 60715, Start Num: 129

Candidate Starts for Lucky2013\_108:

(Start: 129 @60332 has 43 MA's), (140, 60356), (158, 60464), (173, 60554), (185, 60611), (190, 60623), (204, 60701),

Gene: Lucyedi\_69 Start: 41571, Stop: 41185, Start Num: 124

Candidate Starts for Lucyedi\_69:

(29, 41829), (Start: 124 @41571 has 115 MA's), (150, 41493), (158, 41436), (173, 41346), (190, 41277),

Gene: Mabodamaca\_38 Start: 25972, Stop: 26409, Start Num: 127

Candidate Starts for Mabodamaca\_38:

(16, 25582), (Start: 127 @25972 has 10 MA's), (147, 26032), (158, 26119), (173, 26230), (193, 26314), (195, 26326), (206, 26389), (207, 26392),

Gene: MajorMajor\_69 Start: 41009, Stop: 40623, Start Num: 122

Candidate Starts for MajorMajor\_69:

(Start: 102 @41039 has 5 MA's), (Start: 122 @41009 has 50 MA's), (158, 40874), (173, 40784), (190, 40715), (192, 40706), (204, 40637),

Gene: Maminiaina\_69 Start: 41399, Stop: 41010, Start Num: 119

Candidate Starts for Maminiaina\_69:

(9, 41846), (69, 41492), (71, 41489), (73, 41486), (Start: 119 @41399 has 13 MA's), (164, 41234), (173, 41174), (189, 41105), (190, 41102), (195, 41078), (204, 41024),

Gene: Manuel\_75 Start: 39252, Stop: 38827, Start Num: 122

Candidate Starts for Manuel\_75:

(Start: 122 @39252 has 50 MA's), (140, 39216), (141, 39213), (150, 39162), (159, 39102), (165, 39072), (166, 39069), (171, 39027), (185, 38961), (198, 38904), (204, 38871),

Gene: Marshawn\_55 Start: 39223, Stop: 39612, Start Num: 118

Candidate Starts for Marshawn\_55:

(Start: 118 @39223 has 2 MA's), (138, 39256), (146, 39280), (148, 39283), (150, 39307), (155, 39349), (161, 39379), (174, 39451), (181, 39490), (185, 39508), (190, 39520), (198, 39565), (201, 39583),

Gene: McFly\_67 Start: 39652, Stop: 39266, Start Num: 124

Candidate Starts for McFly\_67:

(Start: 124 @39652 has 115 MA's), (158, 39517), (173, 39427), (177, 39403), (180, 39391), (190, 39358),

Gene: MellowYellow\_53 Start: 38680, Stop: 38258, Start Num: 104

Candidate Starts for MellowYellow\_53:

(81, 38734), (Start: 104 @38680 has 1 MA's), (Start: 115 @38665 has 16 MA's), (138, 38629), (139, 38626), (164, 38488), (167, 38479), (180, 38398), (198, 38320), (199, 38317),

Gene: MiaZeal\_111 Start: 60963, Stop: 61346, Start Num: 129

Candidate Starts for MiaZeal\_111:

(Start: 129 @60963 has 43 MA's), (140, 60987), (158, 61095), (173, 61185), (185, 61242), (190, 61254),

Gene: Midas2\_60 Start: 40568, Stop: 40179, Start Num: 124

Candidate Starts for Midas2\_60:

(27, 40835), (Start: 124 @40568 has 115 MA's), (147, 40517), (158, 40430), (173, 40340), (181, 40301), (190, 40271),

Gene: MidnightRain\_76 Start: 39445, Stop: 39840, Start Num: 127

Candidate Starts for MidnightRain\_76:

(Start: 127 @39445 has 10 MA's), (167, 39622), (189, 39733), (195, 39760),

Gene: Milcery\_61 Start: 40066, Stop: 39677, Start Num: 124

Candidate Starts for Milcery\_61:

(Start: 124 @40066 has 115 MA's), (158, 39928), (173, 39838), (181, 39799), (190, 39769),

Gene: Mildred21\_213 Start: 103422, Stop: 103844, Start Num: 125

Candidate Starts for Mildred21\_213:

(Start: 125 @103422 has 7 MA's), (158, 103566),

Gene: Mimi\_244 Start: 155375, Stop: 155797, Start Num: 107

Candidate Starts for Mimi\_244:

(Start: 107 @155375 has 2 MA's), (141, 155435), (167, 155576), (173, 155621), (195, 155717), (196, 155723),

Gene: MinecraftSteve\_73 Start: 40656, Stop: 40258, Start Num: 126

Candidate Starts for MinecraftSteve\_73:

(82, 40737), (Start: 126 @40656 has 26 MA's), (158, 40515), (166, 40467), (195, 40326),

Gene: Minerva\_114 Start: 64539, Stop: 64925, Start Num: 129

Candidate Starts for Minerva\_114:

(Start: 129 @64539 has 43 MA's), (139, 64560), (158, 64671), (173, 64761), (174, 64764), (175, 64773), (177, 64788), (183, 64809), (190, 64833), (192, 64842), (198, 64878),

Gene: MiniMommy\_33 Start: 23315, Stop: 23713, Start Num: 127

Candidate Starts for MiniMommy\_33:

(Start: 127 @23315 has 10 MA's),

Gene: Miramae\_61 Start: 40767, Stop: 40384, Start Num: 129

Candidate Starts for Miramae\_61:

(51, 40932), (Start: 129 @40767 has 43 MA's), (147, 40719), (150, 40692), (155, 40650), (158, 40635), (173, 40545), (190, 40476),

Gene: Mischief19\_49 Start: 43289, Stop: 42864, Start Num: 122

Candidate Starts for Mischief19\_49:

(30, 43547), (54, 43436), (99, 43334), (Start: 122 @43289 has 50 MA's), (Start: 136 @43271 has 1 MA's), (137, 43259), (144, 43238), (158, 43142), (165, 43109), (173, 43058),

Gene: Miskis\_111 Start: 64917, Stop: 65321, Start Num: 115

Candidate Starts for Miskis\_111:

(Start: 115 @64917 has 16 MA's), (158, 65067), (198, 65274),

Gene: Morpher26\_62 Start: 41357, Stop: 40962, Start Num: 114

Candidate Starts for Morpher26\_62:

(Start: 114 @41357 has 5 MA's), (Start: 128 @41345 has 13 MA's), (173, 41123), (185, 41066), (190, 41054), (195, 41030), (199, 41006),

Gene: MrMagoo\_48 Start: 35170, Stop: 34781, Start Num: 119

Candidate Starts for MrMagoo\_48:

(56, 35302), (Start: 119 @35170 has 13 MA's), (150, 35083), (158, 35026), (173, 34942), (185, 34885), (190, 34873), (195, 34849), (199, 34825), (201, 34810),

Gene: Mudcat\_61 Start: 42555, Stop: 42968, Start Num: 124

Candidate Starts for Mudcat\_61:

(89, 42498), (91, 42501), (97, 42522), (Start: 124 @42555 has 115 MA's), (162, 42720), (174, 42786), (208, 42954),

Gene: MulchSalad\_61 Start: 38224, Stop: 38610, Start Num: 134

Candidate Starts for MulchSalad\_61:

(19, 37891), (25, 37924), (46, 38032), (51, 38044), (55, 38065), (65, 38086), (90, 38140), (105, 38179), (111, 38194), (113, 38197), (Start: 134 @38224 has 3 MA's), (150, 38302), (158, 38359), (166, 38395), (173, 38449), (181, 38488), (190, 38518), (203, 38587), (204, 38596),

Gene: Mundrea\_62 Start: 41338, Stop: 40952, Start Num: 128

Candidate Starts for Mundrea\_62:

(Start: 114 @41350 has 5 MA's), (Start: 128 @41338 has 13 MA's), (150, 41260), (173, 41113), (190, 41044),

Gene: MunkgeeRoachy\_61 Start: 42695, Stop: 43078, Start Num: 121

Candidate Starts for MunkgeeRoachy\_61:

(Start: 121 @42695 has 9 MA's), (138, 42728), (166, 42866), (178, 42944), (181, 42956), (188, 42980), (189, 42983), (195, 43010), (198, 43031),

Gene: Muntaha\_184 Start: 94748, Stop: 95173, Start Num: 125

Candidate Starts for Muntaha\_184:

(Start: 122 @94745 has 50 MA's), (Start: 125 @94748 has 7 MA's), (158, 94892), (194, 95066), (198, 95093),

Gene: MyraDee\_66 Start: 39043, Stop: 38666, Start Num: 126

Candidate Starts for MyraDee\_66:

(Start: 126 @39043 has 26 MA's), (150, 38968), (155, 38926), (158, 38911), (173, 38827), (190, 38758),

Gene: Myxus\_70 Start: 41432, Stop: 41046, Start Num: 122

Candidate Starts for Myxus\_70:

(Start: 122 @41432 has 50 MA's), (140, 41405), (142, 41396), (158, 41297), (173, 41207), (185, 41150), (190, 41138), (205, 41054),

Gene: Naca\_64 Start: 41202, Stop: 40813, Start Num: 124

Candidate Starts for Naca\_64:

(Start: 124 @41202 has 115 MA's), (147, 41151), (158, 41064), (164, 41034), (173, 40974), (190, 40905),

Gene: Naji\_69 Start: 41880, Stop: 41464, Start Num: 102  
Candidate Starts for Naji\_69:  
(38, 42054), (64, 41967), (76, 41943), (Start: 102 @41880 has 5 MA's), (Start: 122 @41850 has 50 MA's), (147, 41799), (150, 41772), (158, 41715), (173, 41625), (190, 41556),

Gene: Nason\_65 Start: 41909, Stop: 42322, Start Num: 124  
Candidate Starts for Nason\_65:  
(89, 41852), (97, 41876), (Start: 124 @41909 has 115 MA's), (155, 42038), (162, 42074), (174, 42140), (208, 42308),

Gene: NearlyHeadless\_76 Start: 42310, Stop: 41921, Start Num: 124  
Candidate Starts for NearlyHeadless\_76:  
(103, 42343), (Start: 124 @42310 has 115 MA's), (150, 42229), (158, 42172), (173, 42082), (190, 42013),

Gene: Nebulosus\_70 Start: 40318, Stop: 39920, Start Num: 126  
Candidate Starts for Nebulosus\_70:  
(Start: 126 @40318 has 26 MA's), (158, 40177), (166, 40129), (175, 40069), (195, 39988),

Gene: Nedarya\_68 Start: 40272, Stop: 39877, Start Num: 126  
Candidate Starts for Nedarya\_68:  
(Start: 126 @40272 has 26 MA's), (158, 40128), (199, 39921),

Gene: Neeharika16\_66 Start: 39119, Stop: 38733, Start Num: 124  
Candidate Starts for Neeharika16\_66:  
(Start: 124 @39119 has 115 MA's), (158, 38984), (173, 38894), (177, 38870), (180, 38858), (190, 38825),

Gene: Newrala\_67 Start: 39654, Stop: 39268, Start Num: 124  
Candidate Starts for Newrala\_67:  
(Start: 124 @39654 has 115 MA's), (158, 39519), (173, 39429), (177, 39405), (180, 39393), (190, 39360),

Gene: NicoleTera\_65 Start: 41824, Stop: 41441, Start Num: 122  
Candidate Starts for NicoleTera\_65:  
(Start: 122 @41824 has 50 MA's), (150, 41749), (158, 41692), (173, 41602), (177, 41578), (190, 41533),

Gene: NihilNomen\_118 Start: 65189, Stop: 65575, Start Num: 129  
Candidate Starts for NihilNomen\_118:  
(105, 65153), (Start: 129 @65189 has 43 MA's), (139, 65210), (158, 65321), (173, 65411), (174, 65414), (175, 65423), (183, 65459), (190, 65483), (192, 65492), (198, 65528),

Gene: Noelle\_63 Start: 41653, Stop: 41267, Start Num: 128  
Candidate Starts for Noelle\_63:  
(Start: 114 @41665 has 5 MA's), (Start: 128 @41653 has 13 MA's), (165, 41485), (173, 41428), (190, 41359), (195, 41335), (203, 41290),

Gene: Norvs\_114 Start: 65981, Stop: 66385, Start Num: 115  
Candidate Starts for Norvs\_114:  
(Start: 115 @65981 has 16 MA's), (158, 66131), (198, 66338),

Gene: NothingSpecial\_64 Start: 42052, Stop: 41663, Start Num: 122

Candidate Starts for NothingSpecial\_64:  
(Start: 122 @42052 has 50 MA's), (158, 41917), (173, 41827),

Gene: NyleyClemson\_52 Start: 38280, Stop: 37873, Start Num: 115  
Candidate Starts for NyleyClemson\_52:  
(81, 38349), (Start: 104 @38295 has 1 MA's), (Start: 115 @38280 has 16 MA's), (138, 38244), (139, 38241), (164, 38103), (167, 38094), (180, 38013), (198, 37935), (199, 37932),

Gene: Odette\_118 Start: 65097, Stop: 65483, Start Num: 129  
Candidate Starts for Odette\_118:  
(105, 65061), (Start: 129 @65097 has 43 MA's), (139, 65118), (158, 65229), (173, 65319), (174, 65322), (175, 65331), (177, 65346), (183, 65367), (190, 65391), (192, 65400), (198, 65436),

Gene: Odin\_67 Start: 40646, Stop: 40233, Start Num: 106  
Candidate Starts for Odin\_67:  
(Start: 106 @40646 has 5 MA's), (Start: 124 @40622 has 115 MA's), (150, 40541), (158, 40484), (173, 40394), (190, 40325), (202, 40259), (204, 40247),

Gene: Odyssey395\_58 Start: 39882, Stop: 39460, Start Num: 112  
Candidate Starts for Odyssey395\_58:  
(63, 39978), (Start: 112 @39882 has 4 MA's), (Start: 127 @39867 has 10 MA's), (146, 39810), (147, 39807), (159, 39717), (164, 39690), (171, 39642), (190, 39564), (199, 39516), (200, 39513),

Gene: Olicious\_77 Start: 39590, Stop: 39165, Start Num: 122  
Candidate Starts for Olicious\_77:  
(Start: 122 @39590 has 50 MA's), (130, 39581), (142, 39545), (158, 39446), (159, 39443), (165, 39413), (173, 39362), (190, 39290), (197, 39257), (198, 39245),

Gene: OlinDD\_86 Start: 51622, Stop: 51209, Start Num: 124  
Candidate Starts for OlinDD\_86:  
(Start: 124 @51622 has 115 MA's), (166, 51436), (190, 51316), (191, 51310), (195, 51292),

Gene: Omega\_120 Start: 64897, Stop: 65280, Start Num: 129  
Candidate Starts for Omega\_120:  
(Start: 129 @64897 has 43 MA's), (140, 64921), (158, 65029), (173, 65119), (185, 65176), (190, 65188),

Gene: OneUp\_99 Start: 62464, Stop: 62868, Start Num: 110  
Candidate Starts for OneUp\_99:  
(74, 62383), (76, 62386), (Start: 110 @62464 has 2 MA's), (186, 62767), (188, 62770), (195, 62800),

Gene: Onglai\_68 Start: 39636, Stop: 39250, Start Num: 122  
Candidate Starts for Onglai\_68:  
(Start: 122 @39636 has 50 MA's), (140, 39609), (142, 39600), (158, 39501), (173, 39411), (190, 39342), (205, 39258),

Gene: Oofda\_73 Start: 40533, Stop: 40135, Start Num: 126  
Candidate Starts for Oofda\_73:  
(60, 40659), (62, 40656), (63, 40653), (81, 40617), (Start: 126 @40533 has 26 MA's), (158, 40392), (166, 40344), (195, 40203),

Gene: Opie\_54 Start: 36900, Stop: 37292, Start Num: 132  
Candidate Starts for Opie\_54:

(40, 36690), (Start: 118 @36885 has 2 MA's), (Start: 132 @36900 has 5 MA's), (150, 36987), (151, 36990),

Gene: Optimus\_108 Start: 63211, Stop: 63597, Start Num: 129

Candidate Starts for Optimus\_108:

(Start: 129 @63211 has 43 MA's), (139, 63232), (158, 63343), (173, 63433), (174, 63436), (175, 63445), (177, 63460), (183, 63481), (190, 63505), (192, 63514), (198, 63550),

Gene: Ottawa\_11 Start: 3851, Stop: 4243, Start Num: 127

Candidate Starts for Ottawa\_11:

(23, 3554), (24, 3557), (83, 3767), (Start: 127 @3851 has 10 MA's), (164, 4013), (168, 4040), (190, 4139), (200, 4190),

Gene: PackMan\_69 Start: 41307, Stop: 40921, Start Num: 122

Candidate Starts for PackMan\_69:

(Start: 122 @41307 has 50 MA's), (140, 41280), (142, 41271), (158, 41172), (173, 41082), (185, 41025), (190, 41013), (205, 40929),

Gene: PainterBoy\_68 Start: 41280, Stop: 40894, Start Num: 124

Candidate Starts for PainterBoy\_68:

(29, 41538), (Start: 124 @41280 has 115 MA's), (150, 41202), (158, 41145), (173, 41055), (190, 40986),

Gene: Patbob\_239 Start: 155772, Stop: 156194, Start Num: 107

Candidate Starts for Patbob\_239:

(Start: 107 @155772 has 2 MA's), (141, 155832), (167, 155973), (173, 156018), (195, 156114), (196, 156120),

Gene: Percastrophe\_77 Start: 39522, Stop: 39097, Start Num: 122

Candidate Starts for Percastrophe\_77:

(Start: 122 @39522 has 50 MA's), (130, 39513), (142, 39477), (158, 39378), (159, 39375), (165, 39345), (173, 39294), (190, 39222), (197, 39189), (198, 39177),

Gene: Perplexer\_62 Start: 41333, Stop: 40938, Start Num: 114

Candidate Starts for Perplexer\_62:

(Start: 114 @41333 has 5 MA's), (Start: 128 @41321 has 13 MA's), (173, 41099), (185, 41042), (190, 41030), (195, 41006), (199, 40982),

Gene: PetiteSangsue\_62 Start: 41324, Stop: 40941, Start Num: 128

Candidate Starts for PetiteSangsue\_62:

(Start: 114 @41336 has 5 MA's), (Start: 128 @41324 has 13 MA's), (173, 41102), (185, 41045), (190, 41033), (195, 41009), (199, 40985),

Gene: Petra\_63 Start: 40723, Stop: 41118, Start Num: 121

Candidate Starts for Petra\_63:

(96, 40675), (Start: 121 @40723 has 9 MA's), (159, 40873), (181, 40996), (185, 41014), (188, 41020), (189, 41023), (198, 41071), (204, 41104),

Gene: PetterN\_69 Start: 40942, Stop: 40559, Start Num: 124

Candidate Starts for PetterN\_69:

(Start: 124 @40942 has 115 MA's), (158, 40810), (173, 40720), (181, 40681), (190, 40651), (199, 40603),

Gene: Ph8s\_70 Start: 40729, Stop: 40316, Start Num: 106

Candidate Starts for Ph8s\_70:

(68, 40816), (Start: 75 @40804 has 6 MA's), (Start: 106 @40729 has 5 MA's), (Start: 124 @40705 has 115 MA's), (147, 40654), (150, 40624), (158, 40567), (173, 40477), (190, 40408), (198, 40363), (202, 40342), (204, 40330),

Gene: Phaded\_64 Start: 42459, Stop: 42076, Start Num: 124

Candidate Starts for Phaded\_64:

(Start: 124 @42459 has 115 MA's), (145, 42417), (150, 42384), (155, 42342), (158, 42327), (173, 42237), (190, 42168),

Gene: Phaeder\_70 Start: 41307, Stop: 40921, Start Num: 122

Candidate Starts for Phaeder\_70:

(Start: 122 @41307 has 50 MA's), (140, 41280), (142, 41271), (158, 41172), (173, 41082), (185, 41025), (190, 41013), (205, 40929),

Gene: Phillis\_73 Start: 41561, Stop: 41172, Start Num: 124

Candidate Starts for Phillis\_73:

(103, 41594), (Start: 124 @41561 has 115 MA's), (145, 41516), (150, 41480), (158, 41423), (173, 41333), (190, 41264),

Gene: PhinkBoden\_112 Start: 66255, Stop: 66659, Start Num: 115

Candidate Starts for PhinkBoden\_112:

(21, 65961), (26, 65991), (61, 66141), (Start: 115 @66255 has 16 MA's), (158, 66405), (175, 66510), (198, 66612),

Gene: Phlorence\_62 Start: 40412, Stop: 40023, Start Num: 124

Candidate Starts for Phlorence\_62:

(Start: 124 @40412 has 115 MA's), (147, 40361), (158, 40274), (173, 40184), (181, 40145), (190, 40115),

Gene: Phoebus\_117 Start: 66879, Stop: 67262, Start Num: 129

Candidate Starts for Phoebus\_117:

(105, 66843), (Start: 129 @66879 has 43 MA's), (139, 66900), (158, 67011), (173, 67101), (185, 67158), (190, 67170),

Gene: Phonnegut\_70 Start: 41377, Stop: 40991, Start Num: 122

Candidate Starts for Phonnegut\_70:

(Start: 122 @41377 has 50 MA's), (140, 41350), (142, 41341), (158, 41242), (173, 41152), (190, 41083), (205, 40999),

Gene: Phrampa\_233 Start: 156890, Stop: 157315, Start Num: 107

Candidate Starts for Phrampa\_233:

(Start: 107 @156890 has 2 MA's), (138, 156941), (141, 156950), (156, 157043), (172, 157136), (194, 157229), (196, 157241),

Gene: PickleBack\_64 Start: 40589, Stop: 40200, Start Num: 124

Candidate Starts for PickleBack\_64:

(Start: 124 @40589 has 115 MA's), (147, 40538), (158, 40451), (173, 40361), (181, 40322), (190, 40292),

Gene: Pioneer\_70 Start: 41377, Stop: 40991, Start Num: 122

Candidate Starts for Pioneer\_70:

(Start: 122 @41377 has 50 MA's), (140, 41350), (142, 41341), (158, 41242), (173, 41152), (190, 41083), (205, 40999),

Gene: Pioneer3\_86 Start: 51420, Stop: 51007, Start Num: 124

Candidate Starts for Pioneer3\_86:

(Start: 124 @51420 has 115 MA's), (166, 51234), (190, 51114), (191, 51108), (195, 51090),

Gene: Platte\_85 Start: 51188, Stop: 50775, Start Num: 124

Candidate Starts for Platte\_85:

(Start: 124 @51188 has 115 MA's), (150, 51095), (166, 51002), (190, 50882), (191, 50876), (195, 50858),

Gene: Pleakley\_24 Start: 9277, Stop: 9669, Start Num: 124

Candidate Starts for Pleakley\_24:

(Start: 124 @9277 has 115 MA's), (142, 9322), (146, 9334), (150, 9364), (159, 9424), (165, 9454), (166, 9457), (168, 9478), (181, 9547), (182, 9550), (185, 9565), (189, 9574), (198, 9622), (203, 9646), (204, 9655),

Gene: Pmask\_66 Start: 39655, Stop: 39269, Start Num: 124

Candidate Starts for Pmask\_66:

(Start: 124 @39655 has 115 MA's), (158, 39520), (173, 39430), (177, 39406), (180, 39394), (190, 39361),

Gene: Pointis\_54 Start: 39698, Stop: 39276, Start Num: 112

Candidate Starts for Pointis\_54:

(63, 39794), (Start: 112 @39698 has 4 MA's), (Start: 127 @39683 has 10 MA's), (146, 39626), (147, 39623), (159, 39533), (164, 39506), (171, 39458), (190, 39380), (199, 39332), (200, 39329),

Gene: Pomar16\_68 Start: 41890, Stop: 41504, Start Num: 122

Candidate Starts for Pomar16\_68:

(48, 42055), (64, 42007), (78, 41977), (Start: 102 @41920 has 5 MA's), (Start: 122 @41890 has 50 MA's), (147, 41839), (150, 41812), (158, 41755), (173, 41665), (190, 41596),

Gene: Porcelain\_111 Start: 61278, Stop: 61661, Start Num: 129

Candidate Starts for Porcelain\_111:

(Start: 129 @61278 has 43 MA's), (140, 61302), (158, 61410), (173, 61500), (185, 61557), (190, 61569),

Gene: Pound\_106 Start: 63557, Stop: 63943, Start Num: 129

Candidate Starts for Pound\_106:

(Start: 129 @63557 has 43 MA's), (139, 63578), (158, 63689), (173, 63779), (174, 63782), (175, 63791), (177, 63806), (183, 63827), (190, 63851), (192, 63860), (198, 63896),

Gene: Priamo\_69 Start: 39506, Stop: 39120, Start Num: 124

Candidate Starts for Priamo\_69:

(Start: 124 @39506 has 115 MA's), (158, 39371), (173, 39281), (177, 39257), (180, 39245), (190, 39212),

Gene: Priya\_68 Start: 41103, Stop: 40717, Start Num: 122

Candidate Starts for Priya\_68:

(Start: 122 @41103 has 50 MA's), (140, 41076), (142, 41067), (158, 40968), (173, 40878), (190, 40809), (205, 40725),



Gene: Pukovnik\_64 Start: 42126, Stop: 41743, Start Num: 124

Candidate Starts for Pukovnik\_64:

(Start: 124 @42126 has 115 MA's), (145, 42084), (150, 42051), (155, 42009), (158, 41994), (173, 41904), (190, 41835),

Gene: Pumpernickel\_256 Start: 148805, Stop: 149215, Start Num: 124

Candidate Starts for Pumpernickel\_256:

(Start: 124 @148805 has 115 MA's), (171, 149030), (173, 149036), (174, 149039), (188, 149102), (195, 149132),

Gene: Pureglobe5\_57 Start: 40129, Stop: 39707, Start Num: 112

Candidate Starts for Pureglobe5\_57:

(63, 40225), (Start: 112 @40129 has 4 MA's), (Start: 127 @40114 has 10 MA's), (146, 40057), (147, 40054), (159, 39964), (164, 39937), (171, 39889), (190, 39811), (199, 39763), (200, 39760),

Gene: Qobbit\_68 Start: 41065, Stop: 40679, Start Num: 122

Candidate Starts for Qobbit\_68:

(Start: 122 @41065 has 50 MA's), (140, 41038), (142, 41029), (158, 40930), (173, 40840), (190, 40771), (205, 40687),

Gene: Quokka\_69 Start: 41009, Stop: 40623, Start Num: 122

Candidate Starts for Quokka\_69:

(Start: 102 @41039 has 5 MA's), (Start: 122 @41009 has 50 MA's), (158, 40874), (173, 40784), (190, 40715), (192, 40706), (204, 40637),

Gene: REQ2\_61 Start: 40651, Stop: 41043, Start Num: 121

Candidate Starts for REQ2\_61:

(57, 40510), (60, 40519), (Start: 121 @40651 has 9 MA's), (168, 40852), (178, 40909), (190, 40951), (204, 41029),

Gene: Racecar\_241 Start: 155754, Stop: 156176, Start Num: 107

Candidate Starts for Racecar\_241:

(Start: 107 @155754 has 2 MA's), (141, 155814), (167, 155955), (173, 156000), (195, 156096), (196, 156102),

Gene: Rahalelujah\_68 Start: 40859, Stop: 40473, Start Num: 119

Candidate Starts for Rahalelujah\_68:

(69, 40964), (71, 40961), (73, 40958), (81, 40940), (Start: 119 @40859 has 13 MA's), (158, 40724), (173, 40634), (190, 40565),

Gene: Ranunculus\_51 Start: 42678, Stop: 42268, Start Num: 115

Candidate Starts for Ranunculus\_51:

(Start: 115 @42678 has 16 MA's), (138, 42642), (139, 42639), (164, 42498), (167, 42489), (180, 42408), (185, 42387), (186, 42384),

Gene: ReMo\_71 Start: 40417, Stop: 40019, Start Num: 126

Candidate Starts for ReMo\_71:

(60, 40543), (62, 40540), (63, 40537), (Start: 126 @40417 has 26 MA's), (158, 40276), (166, 40228), (195, 40087),

Gene: Redno2\_108 Start: 61893, Stop: 62276, Start Num: 129

Candidate Starts for Redno2\_108:

(105, 61857), (Start: 129 @61893 has 43 MA's), (139, 61914), (158, 62025), (181, 62154), (185, 62172), (190, 62184), (204, 62262),

Gene: Refuge\_64 Start: 42118, Stop: 41735, Start Num: 124

Candidate Starts for Refuge\_64:

(66, 42235), (67, 42232), (Start: 124 @42118 has 115 MA's), (155, 42001), (158, 41986), (173, 41896), (190, 41827), (202, 41761),

Gene: Remus\_73 Start: 40408, Stop: 40010, Start Num: 126

Candidate Starts for Remus\_73:

(82, 40489), (Start: 126 @40408 has 26 MA's), (158, 40267), (166, 40219), (175, 40159), (195, 40078),

Gene: Rey\_48 Start: 35434, Stop: 35039, Start Num: 119

Candidate Starts for Rey\_48:

(Start: 119 @35434 has 13 MA's), (170, 35218), (190, 35131), (195, 35107),

Gene: Rideau\_81 Start: 39950, Stop: 39525, Start Num: 122

Candidate Starts for Rideau\_81:

(72, 40052), (87, 40022), (93, 40010), (Start: 122 @39950 has 50 MA's), (140, 39914), (141, 39911), (150, 39860), (152, 39845), (155, 39818), (159, 39800), (165, 39770), (166, 39767), (185, 39659), (198, 39602),

Gene: Rifter\_68 Start: 39219, Stop: 38833, Start Num: 124

Candidate Starts for Rifter\_68:

(29, 39474), (Start: 124 @39219 has 115 MA's), (158, 39084), (173, 38994), (183, 38949), (190, 38925),

Gene: Roary\_77 Start: 42530, Stop: 42141, Start Num: 124

Candidate Starts for Roary\_77:

(103, 42563), (Start: 124 @42530 has 115 MA's), (145, 42485), (150, 42449), (173, 42302), (190, 42233), (201, 42170),

Gene: Roksolana\_69 Start: 40053, Stop: 39667, Start Num: 124

Candidate Starts for Roksolana\_69:

(29, 40308), (Start: 124 @40053 has 115 MA's), (158, 39918), (173, 39828), (183, 39783), (190, 39759),

Gene: Romero\_77 Start: 39583, Stop: 39158, Start Num: 122

Candidate Starts for Romero\_77:

(Start: 122 @39583 has 50 MA's), (130, 39574), (142, 39538), (158, 39439), (159, 39436), (165, 39406), (173, 39355), (190, 39283), (197, 39250), (198, 39238),

Gene: RootBeer\_42 Start: 29931, Stop: 30326, Start Num: 127

Candidate Starts for RootBeer\_42:

(8, 29454), (10, 29463), (Start: 127 @29931 has 10 MA's), (152, 30027), (172, 30147), (173, 30150),

Gene: Rosalind\_71 Start: 40575, Stop: 40177, Start Num: 126

Candidate Starts for Rosalind\_71:

(82, 40656), (Start: 126 @40575 has 26 MA's), (158, 40434), (166, 40386), (195, 40245),

Gene: RosePharie\_78 Start: 39755, Stop: 39327, Start Num: 122

Candidate Starts for RosePharie\_78:

(87, 39830), (92, 39821), (101, 39794), (Start: 122 @39755 has 50 MA's), (140, 39719), (150, 39665), (152, 39650), (159, 39605), (165, 39575), (171, 39530), (197, 39419), (198, 39407), (209, 39347),

Gene: RyeScarlet\_71 Start: 41352, Stop: 40966, Start Num: 122

Candidate Starts for RyeScarlet\_71:

(Start: 122 @41352 has 50 MA's), (140, 41325), (142, 41316), (158, 41217), (173, 41127), (190, 41058), (205, 40974),

Gene: SJReid\_250 Start: 150980, Stop: 151402, Start Num: 109

Candidate Starts for SJReid\_250:

(43, 150815), (53, 150842), (109, 150980), (166, 151178), (173, 151226), (196, 151328),

Gene: Sachima\_66 Start: 41333, Stop: 40947, Start Num: 122

Candidate Starts for Sachima\_66:

(Start: 122 @41333 has 50 MA's), (140, 41306), (142, 41297), (158, 41198), (173, 41108), (190, 41039), (205, 40955),

Gene: Saintus\_71 Start: 39194, Stop: 38805, Start Num: 124

Candidate Starts for Saintus\_71:

(103, 39227), (Start: 124 @39194 has 115 MA's), (145, 39149), (150, 39113), (158, 39056), (173, 38966), (190, 38897),

Gene: Samba\_63 Start: 43280, Stop: 43675, Start Num: 121

Candidate Starts for Samba\_63:

(6, 42755), (81, 43193), (Start: 121 @43280 has 9 MA's), (138, 43313), (159, 43430), (181, 43553), (185, 43571), (188, 43577), (189, 43580), (198, 43628), (204, 43661),

Gene: Schatzie\_111 Start: 63979, Stop: 64365, Start Num: 129

Candidate Starts for Schatzie\_111:

(105, 63943), (Start: 129 @63979 has 43 MA's), (139, 64000), (158, 64111), (173, 64201), (174, 64204), (175, 64213), (177, 64228), (183, 64249), (190, 64273), (192, 64282), (198, 64318),

Gene: Scherzo\_69 Start: 41596, Stop: 41210, Start Num: 122

Candidate Starts for Scherzo\_69:

(Start: 122 @41596 has 50 MA's), (140, 41569), (142, 41560), (158, 41461), (173, 41371), (190, 41302), (205, 41218),

Gene: Schnabeltier\_52 Start: 36133, Stop: 36540, Start Num: 118

Candidate Starts for Schnabeltier\_52:

(40, 35938), (Start: 118 @36133 has 2 MA's), (Start: 132 @36148 has 5 MA's), (150, 36235), (151, 36238), (195, 36472),

Gene: Scorpia\_66 Start: 41007, Stop: 40618, Start Num: 124

Candidate Starts for Scorpia\_66:

(Start: 124 @41007 has 115 MA's), (147, 40956), (158, 40869), (164, 40839), (173, 40779), (190, 40710),

Gene: Scruffy\_7 Start: 5375, Stop: 4974, Start Num: 136

Candidate Starts for Scruffy\_7:

(41, 5582), (58, 5528), (89, 5459), (Start: 136 @5375 has 1 MA's), (147, 5327), (153, 5279), (158, 5240), (174, 5150), (188, 5087), (206, 4994), (207, 4991),

Gene: Serenity\_71 Start: 41233, Stop: 40847, Start Num: 122

Candidate Starts for Serenity\_71:  
(Start: 122 @41233 has 50 MA's), (158, 41098), (173, 41008), (175, 40996), (190, 40939), (204, 40861),

Gene: ShakeltOph\_33 Start: 23314, Stop: 23712, Start Num: 127  
Candidate Starts for ShakeltOph\_33:  
(Start: 127 @23314 has 10 MA's),

Gene: ShayRa\_73 Start: 40604, Stop: 40206, Start Num: 126  
Candidate Starts for ShayRa\_73:  
(82, 40685), (Start: 126 @40604 has 26 MA's), (158, 40463), (166, 40415), (195, 40274),

Gene: SheaKeira\_64 Start: 40347, Stop: 39961, Start Num: 119  
Candidate Starts for SheaKeira\_64:  
(69, 40440), (71, 40437), (73, 40434), (Start: 119 @40347 has 13 MA's), (139, 40323), (164, 40185), (173, 40125),

Gene: Shinji\_77 Start: 51864, Stop: 52259, Start Num: 135  
Candidate Starts for Shinji\_77:  
(1, 51171), (3, 51240), (4, 51246), (50, 51681), (98, 51804), (Start: 135 @51864 has 8 MA's), (173, 52095), (185, 52155), (195, 52191), (198, 52212),

Gene: Shygu2\_62 Start: 41375, Stop: 40992, Start Num: 128  
Candidate Starts for Shygu2\_62:  
(Start: 114 @41387 has 5 MA's), (Start: 128 @41375 has 13 MA's), (150, 41300), (152, 41285), (173, 41153), (190, 41084), (199, 41036),

Gene: SilentRX\_46 Start: 38203, Stop: 37796, Start Num: 115  
Candidate Starts for SilentRX\_46:  
(46, 38362), (Start: 115 @38203 has 16 MA's), (173, 37972), (192, 37891),

Gene: SirPhilip\_55 Start: 39707, Stop: 40096, Start Num: 132  
Candidate Starts for SirPhilip\_55:  
(Start: 132 @39707 has 5 MA's), (141, 39740), (147, 39758), (149, 39764), (158, 39848), (173, 39932), (195, 40028), (198, 40049), (201, 40067), (203, 40073),

Gene: Smeadley\_76 Start: 42484, Stop: 42002, Start Num: 75  
Candidate Starts for Smeadley\_76:  
(Start: 75 @42484 has 6 MA's), (108, 42406), (150, 42310), (158, 42253), (173, 42163), (190, 42094), (201, 42031),

Gene: SmellyB\_67 Start: 39687, Stop: 39301, Start Num: 124  
Candidate Starts for SmellyB\_67:  
(Start: 124 @39687 has 115 MA's), (158, 39552), (173, 39462), (177, 39438), (180, 39426), (190, 39393),

Gene: Smoothie\_113 Start: 65966, Stop: 66370, Start Num: 115  
Candidate Starts for Smoothie\_113:  
(Start: 115 @65966 has 16 MA's), (158, 66116), (198, 66323),

Gene: SororFago\_68 Start: 42051, Stop: 41665, Start Num: 124  
Candidate Starts for SororFago\_68:

(65, 42168), (77, 42144), (85, 42126), (Start: 124 @42051 has 115 MA's), (150, 41973), (158, 41916), (173, 41826), (190, 41757), (198, 41712),

Gene: Soups\_73 Start: 40867, Stop: 40469, Start Num: 126

Candidate Starts for Soups\_73:

(60, 40993), (62, 40990), (63, 40987), (Start: 126 @40867 has 26 MA's), (158, 40726), (166, 40678), (195, 40537),

Gene: Spouty\_68 Start: 41102, Stop: 40716, Start Num: 122

Candidate Starts for Spouty\_68:

(Start: 122 @41102 has 50 MA's), (140, 41075), (142, 41066), (158, 40967), (173, 40877), (190, 40808), (205, 40724),

Gene: Squint\_109 Start: 61082, Stop: 61465, Start Num: 129

Candidate Starts for Squint\_109:

(Start: 129 @61082 has 43 MA's), (140, 61106), (158, 61214), (173, 61304), (185, 61361), (190, 61373),

Gene: StarStuff\_69 Start: 41852, Stop: 41466, Start Num: 122

Candidate Starts for StarStuff\_69:

(48, 42017), (64, 41969), (78, 41939), (Start: 102 @41882 has 5 MA's), (Start: 122 @41852 has 50 MA's), (147, 41801), (150, 41774), (158, 41717), (173, 41627), (190, 41558),

Gene: Stasia\_62 Start: 41257, Stop: 40871, Start Num: 128

Candidate Starts for Stasia\_62:

(Start: 114 @41269 has 5 MA's), (Start: 128 @41257 has 13 MA's), (165, 41089), (166, 41086), (173, 41032), (190, 40963), (195, 40939), (203, 40894),

Gene: Steamy\_64 Start: 40897, Stop: 40511, Start Num: 124

Candidate Starts for Steamy\_64:

(Start: 124 @40897 has 115 MA's), (150, 40819), (155, 40777), (158, 40762), (164, 40732), (173, 40672), (190, 40603),

Gene: Stella\_78 Start: 40191, Stop: 39766, Start Num: 122

Candidate Starts for Stella\_78:

(Start: 122 @40191 has 50 MA's), (140, 40155), (141, 40152), (152, 40086), (159, 40041), (165, 40011), (185, 39900), (198, 39843), (204, 39810),

Gene: Stephig9\_75 Start: 42420, Stop: 41938, Start Num: 75

Candidate Starts for Stephig9\_75:

(Start: 75 @42420 has 6 MA's), (108, 42342), (150, 42246), (158, 42189), (173, 42099), (190, 42030),

Gene: Stickynote\_66 Start: 48869, Stop: 48492, Start Num: 133

Candidate Starts for Stickynote\_66:

(Start: 133 @48869 has 5 MA's), (156, 48752), (165, 48707), (192, 48575), (195, 48560),

Gene: Stink\_61 Start: 41047, Stop: 40664, Start Num: 129

Candidate Starts for Stink\_61:

(51, 41212), (Start: 129 @41047 has 43 MA's), (147, 40999), (150, 40972), (155, 40930), (158, 40915), (173, 40825), (190, 40756),

Gene: Strosahl\_73 Start: 40408, Stop: 40010, Start Num: 126

Candidate Starts for Strosahl\_73:

(82, 40489), (Start: 126 @40408 has 26 MA's), (158, 40267), (166, 40219), (175, 40159), (195, 40078),

Gene: SuMoo\_38 Start: 24911, Stop: 25348, Start Num: 127

Candidate Starts for SuMoo\_38:

(Start: 127 @24911 has 10 MA's), (147, 24971), (158, 25058), (173, 25169), (193, 25253), (195, 25265), (206, 25328), (207, 25331),

Gene: Sunhee\_69 Start: 40391, Stop: 40002, Start Num: 124

Candidate Starts for Sunhee\_69:

(65, 40508), (77, 40484), (85, 40466), (Start: 124 @40391 has 115 MA's), (150, 40313), (158, 40256), (173, 40166), (190, 40094), (205, 40010),

Gene: SuperAwesome\_67 Start: 39692, Stop: 39306, Start Num: 124

Candidate Starts for SuperAwesome\_67:

(Start: 124 @39692 has 115 MA's), (158, 39557), (173, 39467), (183, 39422), (190, 39398),

Gene: SuperCallie99\_64 Start: 39539, Stop: 39153, Start Num: 124

Candidate Starts for SuperCallie99\_64:

(Start: 124 @39539 has 115 MA's), (158, 39404), (173, 39314), (177, 39290), (180, 39278), (190, 39245),

Gene: Superchunk\_68 Start: 40259, Stop: 39846, Start Num: 106

Candidate Starts for Superchunk\_68:

(Start: 75 @40334 has 6 MA's), (Start: 106 @40259 has 5 MA's), (Start: 124 @40235 has 115 MA's), (150, 40154), (158, 40097), (173, 40007), (190, 39938), (198, 39893), (202, 39872),

Gene: Superphikiman\_108 Start: 60173, Stop: 60556, Start Num: 129

Candidate Starts for Superphikiman\_108:

(Start: 129 @60173 has 43 MA's), (140, 60197), (158, 60305), (173, 60395), (185, 60452), (190, 60464),

Gene: SwirlSquare\_73 Start: 40983, Stop: 40594, Start Num: 124

Candidate Starts for SwirlSquare\_73:

(Start: 106 @41007 has 5 MA's), (Start: 124 @40983 has 115 MA's), (150, 40902), (158, 40845), (173, 40755), (190, 40686), (198, 40641), (202, 40620), (204, 40608),

Gene: Swirley\_63 Start: 40457, Stop: 40068, Start Num: 124

Candidate Starts for Swirley\_63:

(Start: 124 @40457 has 115 MA's), (158, 40319), (173, 40229), (181, 40190), (190, 40160),

Gene: Switzerland\_72 Start: 40743, Stop: 40345, Start Num: 126

Candidate Starts for Switzerland\_72:

(82, 40824), (Start: 126 @40743 has 26 MA's), (158, 40602), (166, 40554), (195, 40413),

Gene: Talia1610\_241 Start: 155784, Stop: 156206, Start Num: 107

Candidate Starts for Talia1610\_241:

(Start: 107 @155784 has 2 MA's), (141, 155844), (167, 155985), (173, 156030), (195, 156126), (196, 156132),

Gene: Tandem\_86 Start: 51500, Stop: 51087, Start Num: 124

Candidate Starts for Tandem\_86:

(Start: 124 @51500 has 115 MA's), (166, 51314), (190, 51194), (191, 51188), (195, 51170),

Gene: Tarynearal\_60 Start: 40052, Stop: 39663, Start Num: 124  
Candidate Starts for Tarynearal\_60:  
(Start: 124 @40052 has 115 MA's), (147, 40001), (158, 39914), (173, 39824), (181, 39785), (190, 39755),

Gene: Thibault\_97 Start: 59154, Stop: 59540, Start Num: 129  
Candidate Starts for Thibault\_97:  
(Start: 129 @59154 has 43 MA's), (139, 59175), (158, 59286), (173, 59376), (174, 59379), (175, 59388), (190, 59448), (192, 59457), (198, 59493),

Gene: ThreeRngTarjay\_113 Start: 66135, Stop: 66521, Start Num: 129  
Candidate Starts for ThreeRngTarjay\_113:  
(105, 66099), (Start: 129 @66135 has 43 MA's), (139, 66156), (158, 66267), (173, 66357), (174, 66360), (175, 66369), (183, 66405), (190, 66429), (192, 66438), (198, 66474),

Gene: Tiger\_63 Start: 40333, Stop: 39944, Start Num: 124  
Candidate Starts for Tiger\_63:  
(Start: 124 @40333 has 115 MA's), (147, 40282), (158, 40195), (173, 40105), (181, 40066), (190, 40036),

Gene: TingHuaYa\_54 Start: 37825, Stop: 38211, Start Num: 127  
Candidate Starts for TingHuaYa\_54:  
(Start: 127 @37825 has 10 MA's), (161, 37978), (177, 38074), (181, 38089), (185, 38107), (190, 38119), (198, 38164), (203, 38188),

Gene: TopsytheTRex\_67 Start: 41208, Stop: 40822, Start Num: 122  
Candidate Starts for TopsytheTRex\_67:  
(Start: 102 @41238 has 5 MA's), (Start: 122 @41208 has 50 MA's), (158, 41073), (173, 40983), (190, 40914), (192, 40905), (204, 40836),

Gene: Toaka\_69 Start: 41307, Stop: 40921, Start Num: 122  
Candidate Starts for Toaka\_69:  
(Start: 122 @41307 has 50 MA's), (158, 41172), (173, 41082), (190, 41013),

Gene: Tomathan\_69 Start: 41929, Stop: 41513, Start Num: 102  
Candidate Starts for Tomathan\_69:  
(76, 41986), (Start: 102 @41929 has 5 MA's), (Start: 122 @41899 has 50 MA's), (147, 41848), (150, 41821), (158, 41764), (173, 41674), (190, 41605),

Gene: ToneTone\_65 Start: 39618, Stop: 39232, Start Num: 124  
Candidate Starts for ToneTone\_65:  
(29, 39873), (Start: 124 @39618 has 115 MA's), (158, 39483), (173, 39393), (183, 39348), (190, 39324),

Gene: Toniann\_112 Start: 65356, Stop: 65760, Start Num: 115  
Candidate Starts for Toniann\_112:  
(Start: 115 @65356 has 16 MA's), (158, 65506), (198, 65713),

Gene: ToriToki\_77 Start: 39586, Stop: 39161, Start Num: 122  
Candidate Starts for ToriToki\_77:  
(Start: 122 @39586 has 50 MA's), (130, 39577), (142, 39541), (158, 39442), (159, 39439), (165, 39409), (173, 39358), (190, 39286), (197, 39253), (198, 39241),

Gene: Tortellini\_52 Start: 38411, Stop: 38797, Start Num: 134

Candidate Starts for Tortellini\_52:

(51, 38231), (55, 38252), (65, 38273), (80, 38306), (90, 38327), (105, 38366), (111, 38381), (113, 38384), (Start: 134 @38411 has 3 MA's), (141, 38441), (145, 38456), (150, 38489), (158, 38546), (166, 38582), (173, 38636), (190, 38705), (203, 38774), (204, 38783),

Gene: Travvers\_68 Start: 41879, Stop: 41463, Start Num: 102

Candidate Starts for Travvers\_68:

(38, 42053), (64, 41966), (76, 41942), (Start: 102 @41879 has 5 MA's), (Start: 122 @41849 has 50 MA's), (147, 41798), (150, 41771), (158, 41714), (173, 41624), (190, 41555),

Gene: Treat\_77 Start: 39461, Stop: 39036, Start Num: 122

Candidate Starts for Treat\_77:

(Start: 122 @39461 has 50 MA's), (130, 39452), (142, 39416), (158, 39317), (159, 39314), (165, 39284), (173, 39233), (190, 39161), (198, 39116),

Gene: Tubs\_70 Start: 41307, Stop: 40921, Start Num: 122

Candidate Starts for Tubs\_70:

(Start: 122 @41307 has 50 MA's), (140, 41280), (142, 41271), (158, 41172), (173, 41082), (185, 41025), (190, 41013), (205, 40929),

Gene: Tucker\_68 Start: 39821, Stop: 39435, Start Num: 124

Candidate Starts for Tucker\_68:

(29, 40076), (Start: 124 @39821 has 115 MA's), (158, 39686), (173, 39596), (183, 39551), (190, 39527),

Gene: Twigg\_59 Start: 40105, Stop: 39716, Start Num: 124

Candidate Starts for Twigg\_59:

(Start: 124 @40105 has 115 MA's), (158, 39967), (173, 39877), (181, 39838), (190, 39808),

Gene: Typhonomachy\_63 Start: 43067, Stop: 43453, Start Num: 121

Candidate Starts for Typhonomachy\_63:

(Start: 121 @43067 has 9 MA's), (138, 43100), (166, 43241), (178, 43319), (181, 43331), (188, 43355), (189, 43358), (195, 43385), (198, 43406),

Gene: Ugenie5\_65 Start: 41595, Stop: 41209, Start Num: 122

Candidate Starts for Ugenie5\_65:

(Start: 122 @41595 has 50 MA's), (140, 41568), (142, 41559), (158, 41460), (173, 41370), (190, 41301), (205, 41217),

Gene: UnionJack\_65 Start: 40489, Stop: 40100, Start Num: 124

Candidate Starts for UnionJack\_65:

(Start: 124 @40489 has 115 MA's), (147, 40438), (158, 40351), (173, 40261), (181, 40222), (190, 40192),

Gene: VanDeWege\_80 Start: 52520, Stop: 52915, Start Num: 135

Candidate Starts for VanDeWege\_80:

(39, 52313), (50, 52352), (98, 52460), (Start: 135 @52520 has 8 MA's), (173, 52751), (185, 52811), (195, 52847), (198, 52868),

Gene: Vanisoa\_67 Start: 41938, Stop: 41552, Start Num: 119

Candidate Starts for Vanisoa\_67:



(Start: 119 @41938 has 13 MA's), (140, 41911), (142, 41902), (158, 41803), (173, 41713), (190, 41644),

Gene: VohminGhazi\_67 Start: 39688, Stop: 39302, Start Num: 124

Candidate Starts for VohminGhazi\_67:

(Start: 124 @39688 has 115 MA's), (158, 39553), (173, 39463), (177, 39439), (180, 39427), (190, 39394),

Gene: VroomVroom\_32 Start: 23412, Stop: 23807, Start Num: 127

Candidate Starts for VroomVroom\_32:

(Start: 127 @23412 has 10 MA's), (173, 23634),

Gene: Waits\_73 Start: 40640, Stop: 40242, Start Num: 126

Candidate Starts for Waits\_73:

(82, 40721), (Start: 126 @40640 has 26 MA's), (158, 40499), (166, 40451), (175, 40391), (195, 40310),

Gene: Wakanda\_182 Start: 94429, Stop: 94854, Start Num: 125

Candidate Starts for Wakanda\_182:

(Start: 122 @94426 has 50 MA's), (Start: 125 @94429 has 7 MA's), (158, 94573), (198, 94774),

Gene: Wanda\_117 Start: 63537, Stop: 63923, Start Num: 129

Candidate Starts for Wanda\_117:

(Start: 129 @63537 has 43 MA's), (139, 63558), (158, 63669), (173, 63759), (174, 63762), (175, 63771), (183, 63807), (190, 63831), (192, 63840), (198, 63876),

Gene: Weasels2\_222 Start: 111777, Stop: 112169, Start Num: 126

Candidate Starts for Weasels2\_222:

(Start: 126 @111777 has 26 MA's), (205, 112161),

Gene: Wiks\_67 Start: 39689, Stop: 39303, Start Num: 124

Candidate Starts for Wiks\_67:

(29, 39944), (Start: 124 @39689 has 115 MA's), (158, 39554), (173, 39464), (183, 39419), (190, 39395),

Gene: Wile\_62 Start: 41367, Stop: 40972, Start Num: 114

Candidate Starts for Wile\_62:

(Start: 114 @41367 has 5 MA's), (Start: 128 @41355 has 13 MA's), (173, 41133), (185, 41076), (190, 41064), (195, 41040), (199, 41016),

Gene: WilliamBoone\_113 Start: 64363, Stop: 64770, Start Num: 115

Candidate Starts for WilliamBoone\_113:

(37, 64156), (44, 64192), (Start: 115 @64363 has 16 MA's), (154, 64495), (158, 64519), (160, 64525), (190, 64678),

Gene: Wrigley\_57 Start: 38811, Stop: 39200, Start Num: 124

Candidate Starts for Wrigley\_57:

(47, 38643), (Start: 124 @38811 has 115 MA's), (150, 38895), (159, 38955), (181, 39078), (185, 39096), (188, 39102), (189, 39105), (204, 39186),

Gene: WunderPhul\_68 Start: 39687, Stop: 39301, Start Num: 124

Candidate Starts for WunderPhul\_68:

(29, 39942), (Start: 124 @39687 has 115 MA's), (158, 39552), (173, 39462), (183, 39417), (190, 39393),

Gene: Xena\_61 Start: 41333, Stop: 40938, Start Num: 114

Candidate Starts for Xena\_61:

(Start: 114 @41333 has 5 MA's), (Start: 128 @41321 has 13 MA's), (173, 41099), (185, 41042), (190, 41030), (195, 41006), (199, 40982),

Gene: Xenomorph\_61 Start: 41580, Stop: 41993, Start Num: 124

Candidate Starts for Xenomorph\_61:

(89, 41523), (97, 41547), (Start: 124 @41580 has 115 MA's), (155, 41709), (162, 41745), (174, 41811), (208, 41979),

Gene: Yeet\_107 Start: 62917, Stop: 63303, Start Num: 129

Candidate Starts for Yeet\_107:

(Start: 129 @62917 has 43 MA's), (140, 62941), (147, 62965), (158, 63049), (173, 63139), (174, 63142), (175, 63151), (177, 63166), (183, 63187), (190, 63211), (192, 63220), (198, 63256),

Gene: Yeezy\_49 Start: 35466, Stop: 35855, Start Num: 124

Candidate Starts for Yeezy\_49:

(Start: 124 @35466 has 115 MA's), (150, 35550), (152, 35565), (159, 35610), (165, 35640), (181, 35733), (185, 35751), (188, 35757), (189, 35760), (204, 35841),

Gene: Yokurt\_67 Start: 39689, Stop: 39303, Start Num: 124

Candidate Starts for Yokurt\_67:

(29, 39944), (Start: 124 @39689 has 115 MA's), (158, 39554), (173, 39464), (183, 39419), (190, 39395),

Gene: ZAYM\_53 Start: 35447, Stop: 35839, Start Num: 132

Candidate Starts for ZAYM\_53:

(2, 34775), (5, 34901), (11, 35000), (13, 35021), (14, 35036), (15, 35048), (20, 35126), (40, 35237), (Start: 118 @35432 has 2 MA's), (Start: 132 @35447 has 5 MA's), (150, 35534), (151, 35537), (195, 35771),

Gene: Zaka\_68 Start: 39689, Stop: 39303, Start Num: 124

Candidate Starts for Zaka\_68:

(29, 39944), (Start: 124 @39689 has 115 MA's), (158, 39554), (173, 39464), (183, 39419), (190, 39395),

Gene: Zarbodnamra\_63 Start: 40466, Stop: 40861, Start Num: 121

Candidate Starts for Zarbodnamra\_63:

(6, 39941), (81, 40379), (Start: 121 @40466 has 9 MA's), (138, 40499), (159, 40616), (181, 40739), (185, 40757), (188, 40763), (189, 40766), (198, 40814), (204, 40847),

Gene: Zelink\_112 Start: 66082, Stop: 66468, Start Num: 129

Candidate Starts for Zelink\_112:

(105, 66046), (Start: 129 @66082 has 43 MA's), (139, 66103), (158, 66214), (173, 66304), (174, 66307), (175, 66316), (183, 66352), (190, 66376), (192, 66385), (198, 66421),

Gene: Zimmer\_64 Start: 41818, Stop: 41435, Start Num: 124

Candidate Starts for Zimmer\_64:

(66, 41935), (67, 41932), (Start: 124 @41818 has 115 MA's), (155, 41701), (158, 41686), (173, 41596), (190, 41527),

Gene: ZooBear\_77 Start: 39587, Stop: 39162, Start Num: 122

Candidate Starts for ZooBear\_77:

(Start: 122 @39587 has 50 MA's), (130, 39578), (142, 39542), (158, 39443), (159, 39440), (165, 39410), (173, 39359), (190, 39287), (197, 39254), (198, 39242),

Gene: Zulu\_69 Start: 40067, Stop: 39681, Start Num: 124

Candidate Starts for Zulu\_69:

(29, 40322), (Start: 124 @40067 has 115 MA's), (158, 39932), (173, 39842), (183, 39797), (190, 39773),