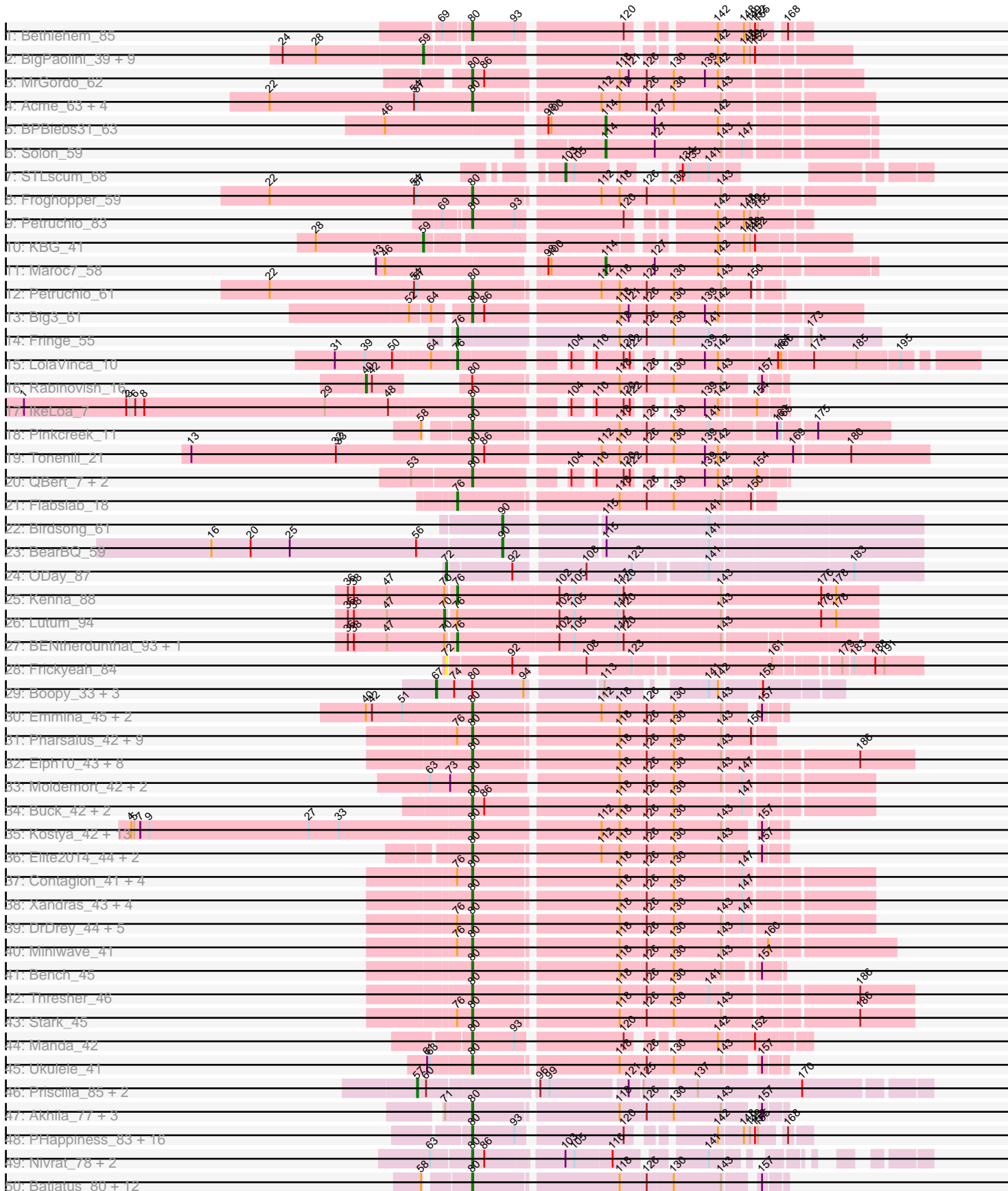
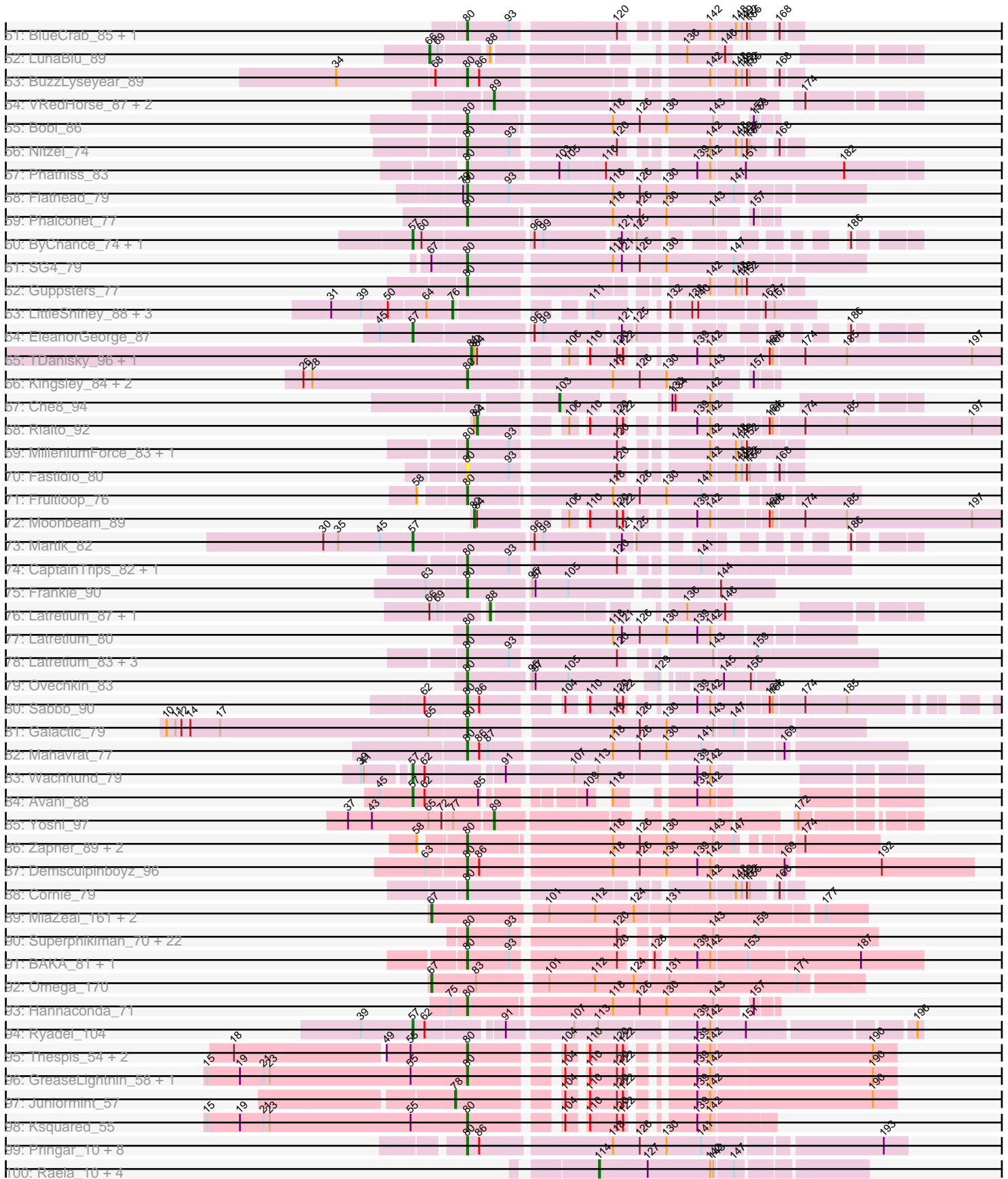


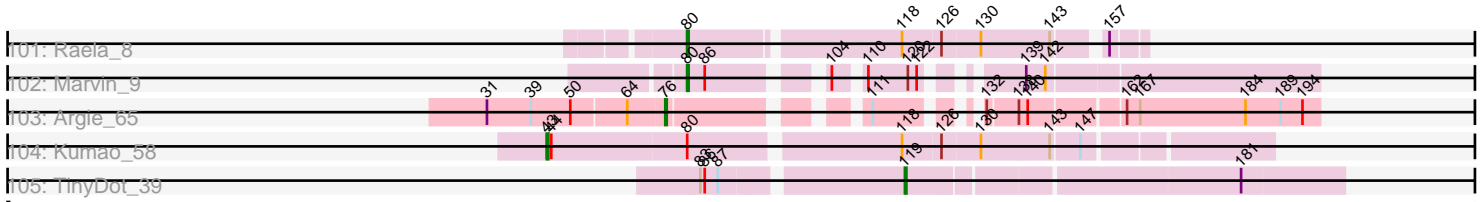
Pham 171165



Pham 171165



Pham 171165



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 171165 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171165 has 268 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Bethlehem\_85
- Track 2 : BigPaolini\_39, ILeeKay\_42, Cueylyss\_40, Eyeball\_40, Graduation\_42, Doom\_40, Licorice\_42, Wilkins\_39, Topgun\_39, Smairt\_41
- Track 3 : MrGordo\_62
- Track 4 : Acme\_63, Lesedi\_57, Fajezeel\_62, Bxb1\_55, Greg\_62
- Track 5 : BPBiebs31\_63
- Track 6 : Solon\_59
- Track 7 : STLscum\_68
- Track 8 : Froghopper\_59
- Track 9 : Petruccio\_83
- Track 10 : KBG\_41
- Track 11 : Maroc7\_58
- Track 12 : Petruccio\_61
- Track 13 : Big3\_61
- Track 14 : Fringe\_55
- Track 15 : LolaVinca\_10
- Track 16 : Rabinovich\_16
- Track 17 : IkeLoa\_7
- Track 18 : Pinkcreek\_11
- Track 19 : Tonenili\_21
- Track 20 : QBert\_7, RoMag\_6, JulietS\_7
- Track 21 : Flabslab\_18
- Track 22 : Birdsong\_61
- Track 23 : BearBQ\_59
- Track 24 : ODay\_87
- Track 25 : Kenna\_88
- Track 26 : Lutum\_94
- Track 27 : BENtherdunthat\_93, CheeseTouch\_100
- Track 28 : Frickyeah\_84
- Track 29 : Boopy\_33, Mareelih\_31, BlueNGold\_31, Forza\_32
- Track 30 : Emmina\_45, Teaspoon\_46, Porky\_43
- Track 31 : Pharsalus\_42, Paperbeatsrock\_43, SophKB\_41, BadStone\_42, Dumbo\_44, Tarkin\_43, Dusk\_42, Easy2Say\_45, NelitzaMV\_41, Henry\_43
- Track 32 : Elph10\_43, NoSleep\_45, Cjw1\_44, Lilac\_46, Lilizi\_43, Maxxinista\_45, Czyszczon1\_44, RiverMonster\_44, Murphy\_45
- Track 33 : Moldemort\_42, MadamMonkfish\_42, AmericanBeauty\_44
- Track 34 : Buck\_42, Rimmer\_42, Youngblood\_43

- Track 35 : Kostya\_42, FireRed\_44, PhatBacter\_44, Petra64142\_46, Phaux\_43, xkcd\_45, Palpatine\_44, HufflyPuff\_43, Nimrod\_44, Misfit\_43, Terminus\_43, Murica\_43, Policronamos\_46, BugsBunny\_42
- Track 36 : Elite2014\_44, Lilpickle\_44, ChosenOne\_45
- Track 37 : Contagion\_41, Cookies\_41, Mosby\_40, TeardropMSU\_40, Tomaszewski\_40
- Track 38 : Xandras\_43, JeTaime\_44, OrionPax\_43, Filch\_44, Pumpkin\_45
- Track 39 : DrDrey\_44, Phrux\_42, 244\_45, Hopey\_44, ShereKhan\_42, HanKaySha\_43
- Track 40 : Miniwave\_41
- Track 41 : Bench\_45
- Track 42 : Thresher\_46
- Track 43 : Stark\_45
- Track 44 : Manda\_42
- Track 45 : Ukulele\_41
- Track 46 : Priscilla\_85, Koella\_77, NormanBulbieJr\_83
- Track 47 : Akhila\_77, BlueCrab\_84, Pacc40\_78, MilanaBonita\_76
- Track 48 : PHappiness\_83, Zerg\_83, Nimbo\_75, RitaG\_83, Deb65\_76, JoeyJr\_83, DotProduct\_77, Daenerys\_82, Geralt\_76, Hamulus\_81, Fruitloop\_79, Filuzino\_83, Leperchaun\_81, Sandalphon\_76, Minnie\_78, OldBen\_80, StAnnes\_84
- Track 49 : Nivrat\_78, LilMoolah\_80, Che8\_85
- Track 50 : Batiatus\_80, Ardmore\_66, Ms6\_80, XFactor\_76, ScottMcG\_17, Chuckly\_78, Shifa\_12, HyRo\_13, DLane\_82, Stubby\_16, Eureka\_42, Goku\_42, Manda\_44
- Track 51 : BlueCrab\_85, Pacc40\_79
- Track 52 : LunaBlu\_89
- Track 53 : BuzzLyseyear\_89
- Track 54 : VRedHorse\_87, Estave1\_94, Avani\_91
- Track 55 : Bobi\_86
- Track 56 : Nitzel\_74
- Track 57 : Phatniss\_83
- Track 58 : Flathead\_79
- Track 59 : Phalconet\_77
- Track 60 : ByChance\_74, ShowerHandel\_83
- Track 61 : SG4\_79
- Track 62 : Guppsters\_77
- Track 63 : LittleShirley\_88, GigiOuiOui\_76, Totinger\_85, Starcevich\_82
- Track 64 : EleanorGeorge\_87
- Track 65 : TDanisky\_96, Sparkdehlily\_95
- Track 66 : Kingsley\_84, Phanphagia\_79, Shauna1\_80
- Track 67 : Che8\_94
- Track 68 : Rialto\_92
- Track 69 : MilleniumForce\_83, Pollywog\_81
- Track 70 : Fastidio\_80
- Track 71 : Fruitloop\_76
- Track 72 : Moonbeam\_89
- Track 73 : Martik\_82
- Track 74 : CaptainTrips\_82, MinionDave\_78
- Track 75 : Frankie\_90
- Track 76 : Latretium\_87, Dante\_84
- Track 77 : Latretium\_80
- Track 78 : Latretium\_83, Wanda\_76, Minerva\_78, Klein\_72
- Track 79 : Ovechkin\_83

- Track 80 : Sabbb\_90
- Track 81 : Galactic\_79
- Track 82 : Mahavrat\_77
- Track 83 : Wachhund\_79
- Track 84 : Avani\_88
- Track 85 : Yoshi\_97
- Track 86 : Zapner\_89, Blarby\_90, Jabbawokkie\_90
- Track 87 : Demsculpinboyz\_96
- Track 88 : Cornie\_79
- Track 89 : MiaZeal\_161, Porcelain\_158, Lucky2013\_154
- Track 90 : Superphikiman\_70, Halley\_74, HokkenD\_65, Kalah2\_67, Ejimix\_72, MiaZeal\_73, Squint\_73, Quallification\_42, JuicyJay\_71, Phoebus\_75, Beem\_72, Lucky2013\_70, Zelink\_70, DmpstrDiver\_72, Dallas\_71, Odette\_71, Porcelain\_72, ThreeRngTarjay\_70, NihilNomen\_73, Schatzie\_67, Redno2\_69, Hughesyang\_71, Ariel\_72
- Track 91 : BAKA\_81, Duke13\_79
- Track 92 : Omega\_170
- Track 93 : Hannaconda\_71
- Track 94 : Ryadel\_104
- Track 95 : Thespis\_54, Brusacoram\_54, Atcoo\_54
- Track 96 : GreaseLightnin\_58, StevieRay\_57
- Track 97 : Juniormint\_57
- Track 98 : Ksquared\_55
- Track 99 : Pringar\_10, Beelzebub\_13, Corazon\_10, FeliMaine\_10, Lilbit\_11, LittleLaf\_10, Clarkson\_11, JoieB\_11, Huphlepuuff\_11
- Track 100 : Raela\_10, SG4\_82, Blackbeetle\_10, Tesla\_10, Poise\_10
- Track 101 : Raela\_8
- Track 102 : Marvin\_9
- Track 103 : Argie\_65
- Track 104 : Kumao\_58
- Track 105 : TinyDot\_39

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

The start number called the most often in the published annotations is 80, it was called in 184 of the 252 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_45, Acme\_63, Akhila\_77, AmericanBeauty\_44, Ardmore\_66, Ariel\_72, Atcoo\_54, BAKA\_81, BadStone\_42, Batiatus\_80, Beelzebub\_13, Beem\_72, Bench\_45, Bethlehem\_85, Big3\_61, Blarby\_90, BlueCrab\_84, BlueCrab\_85, Bobi\_86, Brusacoram\_54, Buck\_42, BugsBunny\_42, BuzzLyseyear\_89, Bxb1\_55, CaptainTrips\_82, Che8\_85, ChosenOne\_45, Chuckly\_78, Cjw1\_44, Clarkson\_11, Contagion\_41, Cookies\_41, Corazon\_10, Cornie\_79, Czyszczonek\_44, DLane\_82, Daenerys\_82, Dallas\_71, Deb65\_76, Demsculpinboyz\_96, DmpstrDiver\_72, DotProduct\_77, DrDrey\_44, Duke13\_79, Dumbo\_44, Dusk\_42, Easy2Say\_45, Ejimix\_72, Elite2014\_44, Elph10\_43, Emmina\_45, Eureka\_42, Fajezeel\_62, Fastidio\_80, FeliMaine\_10, Filch\_44, Filuzino\_83, FireRed\_44, Flathead\_79, Frankie\_90, Froghopper\_59, Fruitloop\_76, Fruitloop\_79, Galactic\_79, Geralt\_76, Goku\_42, GreaseLightnin\_58, Greg\_62, Guppsters\_77, Halley\_74, Hamulus\_81,

HanKaySha\_43, Hannaconda\_71, Henry\_43, HokkenD\_65, Hopey\_44, HufflyPuff\_43, Hughesyang\_71, Huphlepuuff\_11, HyRo\_13, IkeLoa\_7, Jabbawokkie\_90, JeTaime\_44, JoeyJr\_83, JoieB\_11, JuicyJay\_71, JulietS\_7, Kalah2\_67, Kingsley\_84, Klein\_72, Kostya\_42, Ksquared\_55, Latretium\_80, Latretium\_83, Leperchaun\_81, Lesedi\_57, LilMoolah\_80, Lilac\_46, Lilbit\_11, Lilizi\_43, Lilpickle\_44, LittleLaf\_10, Lucky2013\_70, MadamMonkfish\_42, Mahavrat\_77, Manda\_42, Manda\_44, Marvin\_9, Maxxinista\_45, MiaZeal\_73, MilanaBonita\_76, MilleniumForce\_83, Minerva\_78, MinionDave\_78, Miniwave\_41, Minnie\_78, Misfit\_43, Moldemort\_42, Mosby\_40, MrGordo\_62, Ms6\_80, Murica\_43, Murphy\_45, NelitzaMV\_41, NihilNomen\_73, Nimbo\_75, Nimrod\_44, Nitzel\_74, Nivrat\_78, NoSleep\_45, Odette\_71, OldBen\_80, OrionPax\_43, Ovechkin\_83, PHappiness\_83, Pacc40\_78, Pacc40\_79, Palpatine\_44, Paperbeatsrock\_43, Petra64142\_46, Petruccio\_61, Petruccio\_83, Phalconet\_77, Phanphagia\_79, Pharsalus\_42, PhatBacter\_44, Phatniss\_83, Phaux\_43, Phoebus\_75, Phrux\_42, Pinkcreek\_11, Policronamos\_46, Pollywog\_81, Porcelain\_72, Porky\_43, Pringar\_10, Pumpkin\_45, QBert\_7, Quallification\_42, Raela\_8, Redno2\_69, Rimmer\_42, RitaG\_83, RiverMonster\_44, RoMag\_6, SG4\_79, Sabbb\_90, Sandalphon\_76, Schatzie\_67, ScottMcG\_17, Shauna1\_80, ShereKhan\_42, Shifa\_12, SophKB\_41, Squint\_73, StAnnes\_84, Stark\_45, StevieRay\_57, Stubby\_16, Superphikiman\_70, Tarkin\_43, TeardropMSU\_40, Teaspoon\_46, Terminus\_43, Thespis\_54, ThreeRngTarjay\_70, Thresher\_46, Tomaszewski\_40, Tonenili\_21, Ukulele\_41, Wanda\_76, XFactor\_76, Xandras\_43, Youngblood\_43, Zapner\_89, Zelink\_70, Zerg\_83, xkcd\_45,

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

- BlueNGold\_31, Boopy\_33, Forza\_32, Kumao\_58, Mareelih\_31, Rabinovish\_16,

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

- Argie\_65, Avani\_88, Avani\_91, BENtherdunthat\_93, BPBiabs31\_63, BearBQ\_59, BigPaolini\_39, Birdsong\_61, Blackbeetle\_10, ByChance\_74, Che8\_94, CheeseTouch\_100, Cueyllyss\_40, Dante\_84, Doom\_40, EleanorGeorge\_87, Estave1\_94, Eyeball\_40, Flabslab\_18, Frickyeah\_84, Fringe\_55, GigiOuiOui\_76, Graduation\_42, ILeeKay\_42, Juniormint\_57, KBG\_41, Kenna\_88, Koella\_77, Latretium\_87, Licorice\_42, LittleShirley\_88, LolaVinca\_10, Lucky2013\_154, LunaBlu\_89, Lutum\_94, Maroc7\_58, Martik\_82, MiaZeal\_161, Moonbeam\_89, NormanBulbieJr\_83, ODay\_87, Omega\_170, Poise\_10, Porcelain\_158, Priscilla\_85, Raela\_10, Rialto\_92, Ryadel\_104, SG4\_82, STLscum\_68, ShowerHandel\_83, Smairt\_41, Solon\_59, Sparkdehlily\_95, Starcevic\_82, TDanisky\_96, Tesla\_10, TinyDot\_39, Topgun\_39, Totinger\_85, VRedHorse\_87, Wachhund\_79, Wilkins\_39, Yoshi\_97,

### Summary by start number:

Start 40:

- Found in 4 of 268 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Rabinovish\_16 (C1),

Start 43:

- Found in 3 of 268 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 33.3% of time when present

- Phage (with cluster) where this start called: Kumao\_58 (singleton),

#### Start 57:

- Found in 17 of 268 ( 6.3% ) of genes in pham
- Manual Annotations of this start: 10 of 252
- Called 58.8% of time when present
- Phage (with cluster) where this start called: Avani\_88 (F2), ByChance\_74 (F1), EleanorGeorge\_87 (F1), Koella\_77 (F1), Martik\_82 (F1), NormanBulbieJr\_83 (F1), Priscilla\_85 (F1), Ryadel\_104 (O), ShowerHandel\_83 (F1), Wachhund\_79 (F1),

#### Start 59:

- Found in 11 of 268 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 11 of 252
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BigPaolini\_39 (A1), Cueyllyss\_40 (A1), Doom\_40 (A1), Eyeball\_40 (A1), Graduation\_42 (A1), ILeeKay\_42 (A1), KBG\_41 (A1), Licorice\_42 (A1), Smairt\_41 (A1), Topgun\_39 (A1), Wilkins\_39 (A1),

#### Start 66:

- Found in 3 of 268 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 33.3% of time when present
- Phage (with cluster) where this start called: LunaBlu\_89 (F1),

#### Start 67:

- Found in 9 of 268 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 8 of 252
- Called 88.9% of time when present
- Phage (with cluster) where this start called: BlueNGGold\_31 (DS), Boopy\_33 (DS), Forza\_32 (DS), Lucky2013\_154 (J), Mareelih\_31 (DS), MiaZeal\_161 (J), Omega\_170 (J), Porcelain\_158 (J),

#### Start 70:

- Found in 4 of 268 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Lutum\_94 (DN1),

#### Start 72:

- Found in 3 of 268 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Frickyeah\_84 (DN1), ODay\_87 (DN),

#### Start 76:

- Found in 35 of 268 ( 13.1% ) of genes in pham
- Manual Annotations of this start: 10 of 252
- Called 31.4% of time when present
- Phage (with cluster) where this start called: Argie\_65 (W), BENtherdunthat\_93 (DN1), CheeseTouch\_100 (DN1), Flabslab\_18 (C1), Fringe\_55 (B1), GigiOuiOui\_76 (F1), Kenna\_88 (DN1), LittleShirley\_88 (F1), LolaVinca\_10 (C1), Starcevich\_82 (F1), Totinger\_85 (F1),



Start 78:

- Found in 1 of 268 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Juniormint\_57 (P1),

Start 80:

- Found in 204 of 268 ( 76.1% ) of genes in pham
- Manual Annotations of this start: 184 of 252
- Called 97.1% of time when present
- Phage (with cluster) where this start called: 244\_45 (E), Acme\_63 (A1), Akhila\_77 (F1), AmericanBeauty\_44 (E), Ardmore\_66 (F1), Ariel\_72 (J), Atcoo\_54 (P1), BAKA\_81 (J), BadStone\_42 (E), Batiatus\_80 (F1), Beelzebub\_13 (S), Beem\_72 (J), Bench\_45 (E), Bethlehem\_85 (A1), Big3\_61 (A1), Blarby\_90 (F), BlueCrab\_84 (F1), BlueCrab\_85 (F1), Bobi\_86 (F1), Brusacoram\_54 (P1), Buck\_42 (E), BugsBunny\_42 (E), BuzzLyseyear\_89 (F1), Bxb1\_55 (A1), CaptainTrips\_82 (F1), Che8\_85 (F1), ChosenOne\_45 (E), Chuckly\_78 (F1), Cjw1\_44 (E), Clarkson\_11 (S), Contagion\_41 (E), Cookies\_41 (E), Corazon\_10 (S), Cornie\_79 (F5), Czystczon1\_44 (E), DLane\_82 (F1), Daenerys\_82 (F1), Dallas\_71 (J), Deb65\_76 (F1), Demsculpinboyz\_96 (F2), DmpstrDiver\_72 (J), DotProduct\_77 (F1), DrDrey\_44 (E), Duke13\_79 (J), Dumbo\_44 (E), Dusk\_42 (E), Easy2Say\_45 (E), Ejimix\_72 (J), Elite2014\_44 (E), Elph10\_43 (E), Emmina\_45 (E), Eureka\_42 (E), Fajezeel\_62 (A1), Fastidio\_80 (F1), FeliMaine\_10 (S), Filch\_44 (E), Filuzino\_83 (F1), FireRed\_44 (E), Flathead\_79 (F1), Frankie\_90 (F1), Froghopper\_59 (A1), Fruitloop\_76 (F1), Fruitloop\_79 (F1), Galactic\_79 (F1), Geralt\_76 (F1), Goku\_42 (E), GreaseLightnin\_58 (P1), Greg\_62 (A1), Guppsters\_77 (F1), Halley\_74 (J), Hamulus\_81 (F1), HanKaySha\_43 (E), Hannaconda\_71 (J), Henry\_43 (E), HokkenD\_65 (J), Hopey\_44 (E), HuffyPuff\_43 (E), Hughesyang\_71 (J), Huphlepufl\_11 (S), HyRo\_13 (C1), IkeLoa\_7 (C1), Jabbawokkie\_90 (F2), JeTaima\_44 (E), JoeyJr\_83 (F1), JoieB\_11 (S), JuicyJay\_71 (J), JulietS\_7 (C1), Kalah2\_67 (J), Kingsley\_84 (F1), Klein\_72 (J), Kostya\_42 (E), Ksquared\_55 (P1), Latretium\_80 (F1), Latretium\_83 (F1), Leperchaun\_81 (F1), Lesedi\_57 (A1), LiMoolah\_80 (F1), Lilac\_46 (E), Lilbit\_11 (S), Lilizi\_43 (E), Lilpickle\_44 (E), LittleLaf\_10 (S), Lucky2013\_70 (J), MadamMonkfish\_42 (E), Mahavrat\_77 (F1), Manda\_42 (E), Manda\_44 (E), Marvin\_9 (S), Maxxinsta\_45 (E), MiaZeal\_73 (J), MilanaBonita\_76 (F1), MilleniumForce\_83 (F1), Minerva\_78 (J), MinionDave\_78 (F1), Miniwave\_41 (E), Minnie\_78 (F1), Misfit\_43 (E), Moldemort\_42 (E), Mosby\_40 (E), MrGordo\_62 (A1), Ms6\_80 (F1), Murica\_43 (E), Murphy\_45 (E), NelitzaMV\_41 (E), NihilNomen\_73 (J), Nimbo\_75 (F1), Nimrod\_44 (E), Nitzel\_74 (F1), Nivrat\_78 (F1), NoSleep\_45 (E), Odette\_71 (J), OldBen\_80 (F1), OrionPax\_43 (E), Ovechkin\_83 (F1), PHappiness\_83 (F1), Pacc40\_78 (F1), Pacc40\_79 (F1), Palpatine\_44 (E), Paperbeatsrock\_43 (E), Petra64142\_46 (E), Petruccio\_61 (A1), Petruccio\_83 (A1), Phalconet\_77 (F1), Phanphagia\_79 (F1), Pharsalus\_42 (E), PhatBacter\_44 (E), Phatniss\_83 (F1), Paux\_43 (E), Phoebus\_75 (J), Phrux\_42 (E), Pinkcreek\_11 (C1), Policronamos\_46 (E), Pollywog\_81 (F1), Porcelain\_72 (J), Porky\_43 (E), Pringar\_10 (S), Pumpkin\_45 (E), QBert\_7 (C1), Quallification\_42 (E), Raela\_8 (S), Redno2\_69 (J), Rimmer\_42 (E), RitaG\_83 (F1), RiverMonster\_44 (E), RoMag\_6 (C1), SG4\_79 (F1), Sabbb\_90 (F1), Sandalphon\_76 (F1), Schatzie\_67 (J), ScottMcG\_17 (C1), Shauna1\_80 (F1), ShereKhan\_42 (E), Shifa\_12 (C1), SophKB\_41 (E), Squint\_73 (J), StAnnes\_84 (F1), Stark\_45 (E), StevieRay\_57 (P1), Stubby\_16 (C1), Superphikiman\_70 (J), Tarkin\_43 (E), TeardropMSU\_40 (E), Teaspoon\_46 (E), Terminus\_43 (E), Thespis\_54 (P1), ThreeRngTarjay\_70 (J), Thresher\_46 (E), Tomaszewski\_40 (E), Tonenili\_21 (C1), Ukulele\_41 (E), Wanda\_76 (J), XFactor\_76 (F1), Xandras\_43 (E), Youngblood\_43

(E), Zapner\_89 (F2), Zelink\_70 (J), Zerg\_83 (F1), xkcd\_45 (E),

Start 81:

- Found in 2 of 268 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 252
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sparkdehlily\_95 (F1), TDanisky\_96 (F1),

Start 82:

- Found in 4 of 268 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Moonbeam\_89 (F1),

Start 84:

- Found in 4 of 268 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Rialto\_92 (F1),

Start 88:

- Found in 3 of 268 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 252
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Dante\_84 (F1), Latretium\_87 (F1),

Start 89:

- Found in 4 of 268 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 4 of 252
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Avani\_91 (F2), Estave1\_94 (F1), VRedHorse\_87 (F1), Yoshi\_97 (F2),

Start 90:

- Found in 2 of 268 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 252
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BearBQ\_59 (DN), Birdsong\_61 (DN),

Start 103:

- Found in 6 of 268 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 2 of 252
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Che8\_94 (F1), STLscum\_68 (A1),

Start 114:

- Found in 8 of 268 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 8 of 252
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BPBiabs31\_63 (A1), Blackbeetle\_10 (S), Maroc7\_58 (A1), Poise\_10 (S), Raela\_10 (S), SG4\_82 (F1), Solon\_59 (A1), Tesla\_10 (S),

Start 119:

- Found in 1 of 268 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 252
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TinyDot\_39 (singleton),

### **Summary by clusters:**

There are 17 clusters represented in this pham: DN, F1, F2, P1, E, F5, F, J, singleton, O, A1, S, DN1, B1, W, C1, DS,

Info for manual annotations of cluster A1:

- Start number 59 was manually annotated 11 times for cluster A1.
- Start number 80 was manually annotated 11 times for cluster A1.
- Start number 103 was manually annotated 1 time for cluster A1.
- Start number 114 was manually annotated 3 times for cluster A1.

Info for manual annotations of cluster B1:

- Start number 76 was manually annotated 1 time for cluster B1.

Info for manual annotations of cluster C1:

- Start number 40 was manually annotated 1 time for cluster C1.
- Start number 76 was manually annotated 2 times for cluster C1.
- Start number 80 was manually annotated 9 times for cluster C1.

Info for manual annotations of cluster DN:

- Start number 72 was manually annotated 1 time for cluster DN.
- Start number 90 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 70 was manually annotated 1 time for cluster DN1.
- Start number 76 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster DS:

- Start number 67 was manually annotated 4 times for cluster DS.

Info for manual annotations of cluster E:

- Start number 80 was manually annotated 66 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 57 was manually annotated 8 times for cluster F1.
- Start number 66 was manually annotated 1 time for cluster F1.
- Start number 76 was manually annotated 3 times for cluster F1.
- Start number 80 was manually annotated 52 times for cluster F1.
- Start number 81 was manually annotated 2 times for cluster F1.
- Start number 82 was manually annotated 1 time for cluster F1.
- Start number 84 was manually annotated 1 time for cluster F1.
- Start number 88 was manually annotated 2 times for cluster F1.
- Start number 89 was manually annotated 2 times for cluster F1.
- Start number 103 was manually annotated 1 time for cluster F1.
- Start number 114 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 57 was manually annotated 1 time for cluster F2.
- Start number 80 was manually annotated 3 times for cluster F2.
- Start number 89 was manually annotated 2 times for cluster F2.

Info for manual annotations of cluster F5:

- Start number 80 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster J:

- Start number 67 was manually annotated 4 times for cluster J.
- Start number 80 was manually annotated 27 times for cluster J.

Info for manual annotations of cluster O:

- Start number 57 was manually annotated 1 time for cluster O.

Info for manual annotations of cluster P1:

- Start number 78 was manually annotated 1 time for cluster P1.
- Start number 80 was manually annotated 6 times for cluster P1.

Info for manual annotations of cluster S:

- Start number 80 was manually annotated 9 times for cluster S.
- Start number 114 was manually annotated 4 times for cluster S.

Info for manual annotations of cluster W:

- Start number 76 was manually annotated 1 time for cluster W.

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

Gene: 244\_45 Start: 35533, Stop: 35168, Start Num: 80

Candidate Starts for 244\_45:

(Start: 76 @35548 has 10 MA's), (Start: 80 @35533 has 184 MA's), (118, 35398), (126, 35374), (130, 35350), (143, 35305), (147, 35287),

Gene: Acme\_63 Start: 41329, Stop: 40964, Start Num: 80

Candidate Starts for Acme\_63:

(22, 41530), (54, 41386), (Start: 57 @41383 has 10 MA's), (Start: 80 @41329 has 184 MA's), (112, 41212), (118, 41194), (126, 41170), (130, 41146), (143, 41101),

Gene: Akhila\_77 Start: 47736, Stop: 48011, Start Num: 80

Candidate Starts for Akhila\_77:

(71, 47712), (Start: 80 @47736 has 184 MA's), (118, 47871), (126, 47895), (130, 47919), (143, 47964), (157, 47991),

Gene: AmericanBeauty\_44 Start: 35021, Stop: 34656, Start Num: 80

Candidate Starts for AmericanBeauty\_44:

(63, 35060), (73, 35042), (Start: 80 @35021 has 184 MA's), (118, 34886), (126, 34862), (130, 34838), (143, 34793), (147, 34775),

Gene: Ardmore\_66 Start: 43412, Stop: 43687, Start Num: 80

Candidate Starts for Ardmore\_66:

(58, 43376), (Start: 80 @43412 has 184 MA's), (118, 43547), (126, 43571), (130, 43595), (143, 43640), (157, 43667),

Gene: Argie\_65 Start: 48661, Stop: 49026, Start Num: 76

Candidate Starts for Argie\_65:

(31, 48544), (39, 48574), (50, 48601), (64, 48637), (Start: 76 @48661 has 10 MA's), (111, 48766), (132, 48814), (138, 48832), (140, 48838), (162, 48895), (167, 48904), (184, 48976), (189, 49000), (194, 49015),

Gene: Ariel\_72 Start: 46298, Stop: 45933, Start Num: 80

Candidate Starts for Ariel\_72:

(Start: 80 @46298 has 184 MA's), (93, 46256), (120, 46160), (143, 46091), (159, 46052),

Gene: Atcoo\_54 Start: 36879, Stop: 37241, Start Num: 80

Candidate Starts for Atcoo\_54:

(18, 36651), (49, 36798), (55, 36822), (Start: 80 @36879 has 184 MA's), (104, 36954), (110, 36969), (120, 36996), (122, 37002), (139, 37047), (142, 37059), (190, 37218),

Gene: Avani\_88 Start: 46792, Stop: 47127, Start Num: 57

Candidate Starts for Avani\_88:

(45, 46759), (Start: 57 @46792 has 10 MA's), (62, 46804), (85, 46852), (109, 46927), (118, 46936), (139, 46984), (142, 46996),

Gene: Avani\_91 Start: 47610, Stop: 47966, Start Num: 89

Candidate Starts for Avani\_91:

(Start: 89 @47610 has 4 MA's), (174, 47862),

Gene: BAKA\_81 Start: 52347, Stop: 51940, Start Num: 80

Candidate Starts for BAKA\_81:

(Start: 80 @52347 has 184 MA's), (93, 52305), (120, 52209), (128, 52188), (139, 52155), (142, 52143), (153, 52110), (187, 52002),

Gene: BENtherdunthat\_93 Start: 50252, Stop: 50641, Start Num: 76

Candidate Starts for BENtherdunthat\_93:

(36, 50147), (38, 50153), (47, 50186), (Start: 70 @50243 has 1 MA's), (Start: 76 @50252 has 10 MA's), (102, 50351), (105, 50366), (117, 50408), (120, 50414), (143, 50507),

Gene: BPBiebs31\_63 Start: 41560, Stop: 41312, Start Num: 114

Candidate Starts for BPBiebs31\_63:

(46, 41761), (98, 41617), (100, 41614), (Start: 114 @41560 has 8 MA's), (127, 41512), (142, 41452),

Gene: BadStone\_42 Start: 35749, Stop: 35474, Start Num: 80

Candidate Starts for BadStone\_42:

(Start: 76 @35764 has 10 MA's), (Start: 80 @35749 has 184 MA's), (118, 35614), (126, 35590), (130, 35566), (143, 35521), (150, 35494),

Gene: Batiatus\_80 Start: 48821, Stop: 49096, Start Num: 80

Candidate Starts for Batiatus\_80:

(58, 48785), (Start: 80 @48821 has 184 MA's), (118, 48956), (126, 48980), (130, 49004), (143, 49049), (157, 49076),

Gene: BearBQ\_59 Start: 40143, Stop: 40532, Start Num: 90

Candidate Starts for BearBQ\_59:

(16, 39858), (20, 39897), (25, 39936), (56, 40062), (Start: 90 @40143 has 2 MA's), (115, 40230), (141, 40329),

Gene: Beelzebub\_13 Start: 3753, Stop: 4160, Start Num: 80

Candidate Starts for Beelzebub\_13:

(Start: 80 @3753 has 184 MA's), (86, 3765), (118, 3891), (126, 3915), (130, 3939), (141, 3972), (193, 4137),

Gene: Beem\_72 Start: 50575, Stop: 50210, Start Num: 80

Candidate Starts for Beem\_72:

(Start: 80 @50575 has 184 MA's), (93, 50533), (120, 50437), (143, 50368), (159, 50329),

Gene: Bench\_45 Start: 35386, Stop: 35111, Start Num: 80

Candidate Starts for Bench\_45:

(Start: 80 @35386 has 184 MA's), (118, 35251), (126, 35227), (130, 35203), (143, 35158), (157, 35131),

Gene: Bethlehem\_85 Start: 50979, Stop: 50701, Start Num: 80

Candidate Starts for Bethlehem\_85:

(69, 51003), (Start: 80 @50979 has 184 MA's), (93, 50937), (120, 50841), (142, 50775), (148, 50754), (149, 50748), (152, 50745), (155, 50742), (168, 50721),

Gene: Big3\_61 Start: 41706, Stop: 41350, Start Num: 80

Candidate Starts for Big3\_61:

(52, 41754), (64, 41736), (Start: 80 @41706 has 184 MA's), (86, 41694), (118, 41568), (121, 41559), (126, 41544), (130, 41520), (139, 41490), (142, 41478),

Gene: BigPaolini\_39 Start: 30429, Stop: 30067, Start Num: 59

Candidate Starts for BigPaolini\_39:

(24, 30567), (28, 30534), (Start: 59 @30429 has 11 MA's), (142, 30186), (148, 30165), (149, 30159), (152, 30156),

Gene: Birdsong\_61 Start: 38810, Stop: 39199, Start Num: 90

Candidate Starts for Birdsong\_61:

(Start: 90 @38810 has 2 MA's), (115, 38897), (141, 38996),

Gene: Blackbeetle\_10 Start: 3064, Stop: 3315, Start Num: 114

Candidate Starts for Blackbeetle\_10:

(Start: 114 @3064 has 8 MA's), (127, 3112), (142, 3172), (143, 3175), (147, 3193),

Gene: Blarby\_90 Start: 47520, Stop: 47888, Start Num: 80

Candidate Starts for Blarby\_90:

(58, 47484), (Start: 80 @47520 has 184 MA's), (118, 47655), (126, 47679), (130, 47703), (143, 47748), (147, 47766), (174, 47814),

Gene: BlueCrab\_85 Start: 50477, Stop: 50755, Start Num: 80

Candidate Starts for BlueCrab\_85:

(Start: 80 @50477 has 184 MA's), (93, 50519), (120, 50615), (142, 50681), (148, 50702), (149, 50708), (152, 50711), (155, 50714), (168, 50735),

Gene: BlueCrab\_84 Start: 50205, Stop: 50480, Start Num: 80

Candidate Starts for BlueCrab\_84:

(71, 50181), (Start: 80 @50205 has 184 MA's), (118, 50340), (126, 50364), (130, 50388), (143, 50433), (157, 50460),

Gene: BlueNGold\_31 Start: 11220, Stop: 10870, Start Num: 67

Candidate Starts for BlueNGold\_31:

(Start: 67 @11220 has 8 MA's), (74, 11202), (Start: 80 @11184 has 184 MA's), (94, 11133), (113, 11067), (141, 10992), (142, 10983), (158, 10944),

Gene: Bobi\_86 Start: 50927, Stop: 51202, Start Num: 80

Candidate Starts for Bobi\_86:

(Start: 80 @50927 has 184 MA's), (118, 51062), (126, 51086), (130, 51110), (143, 51155), (157, 51182), (159, 51185),

Gene: Boopy\_33 Start: 11232, Stop: 10882, Start Num: 67

Candidate Starts for Boopy\_33:

(Start: 67 @11232 has 8 MA's), (74, 11214), (Start: 80 @11196 has 184 MA's), (94, 11145), (113, 11079), (141, 11004), (142, 10995), (158, 10956),

Gene: Brusacoram\_54 Start: 36385, Stop: 36747, Start Num: 80

Candidate Starts for Brusacoram\_54:

(18, 36157), (49, 36304), (55, 36328), (Start: 80 @36385 has 184 MA's), (104, 36460), (110, 36475), (120, 36502), (122, 36508), (139, 36553), (142, 36565), (190, 36724),

Gene: Buck\_42 Start: 35321, Stop: 34953, Start Num: 80

Candidate Starts for Buck\_42:

(Start: 80 @35321 has 184 MA's), (86, 35309), (118, 35183), (126, 35159), (130, 35135), (147, 35072),

Gene: BugsBunny\_42 Start: 35155, Stop: 34877, Start Num: 80

Candidate Starts for BugsBunny\_42:

(4, 35491), (5, 35488), (7, 35482), (9, 35473), (27, 35314), (33, 35284), (Start: 80 @35155 has 184 MA's), (112, 35035), (118, 35017), (126, 34993), (130, 34969), (143, 34924), (157, 34897),

Gene: BuzzLyseyear\_89 Start: 52060, Stop: 52338, Start Num: 80

Candidate Starts for BuzzLyseyear\_89:

(34, 51934), (68, 52030), (Start: 80 @52060 has 184 MA's), (86, 52072), (142, 52264), (148, 52285), (149, 52291), (152, 52294), (155, 52297), (168, 52318),

Gene: Bxb1\_55 Start: 39572, Stop: 39207, Start Num: 80

Candidate Starts for Bxb1\_55:

(22, 39773), (54, 39629), (Start: 57 @39626 has 10 MA's), (Start: 80 @39572 has 184 MA's), (112, 39455), (118, 39437), (126, 39413), (130, 39389), (143, 39344),

Gene: ByChance\_74 Start: 45038, Stop: 45421, Start Num: 57

Candidate Starts for ByChance\_74:

(Start: 57 @45038 has 10 MA's), (60, 45047), (96, 45149), (99, 45158), (121, 45230), (125, 45242), (186, 45368),

Gene: CaptainTrips\_82 Start: 48768, Stop: 49100, Start Num: 80

Candidate Starts for CaptainTrips\_82:

(Start: 80 @48768 has 184 MA's), (93, 48810), (120, 48906), (141, 48963),

Gene: Che8\_85 Start: 49488, Stop: 49877, Start Num: 80

Candidate Starts for Che8\_85:

(63, 49449), (Start: 80 @49488 has 184 MA's), (86, 49500), (Start: 103 @49572 has 2 MA's), (105, 49581), (116, 49617), (141, 49689),

Gene: Che8\_94 Start: 51968, Stop: 52192, Start Num: 103

Candidate Starts for Che8\_94:

(Start: 103 @51968 has 2 MA's), (133, 52028), (134, 52031), (142, 52064),

Gene: CheeseTouch\_100 Start: 49365, Stop: 49754, Start Num: 76

Candidate Starts for CheeseTouch\_100:

(36, 49260), (38, 49266), (47, 49299), (Start: 70 @49356 has 1 MA's), (Start: 76 @49365 has 10 MA's), (102, 49464), (105, 49479), (117, 49521), (120, 49527), (143, 49620),

Gene: ChosenOne\_45 Start: 34885, Stop: 34610, Start Num: 80

Candidate Starts for ChosenOne\_45:

(Start: 80 @34885 has 184 MA's), (112, 34768), (118, 34750), (126, 34726), (130, 34702), (143, 34657), (157, 34630),

Gene: Chuckly\_78 Start: 46153, Stop: 46428, Start Num: 80

Candidate Starts for Chuckly\_78:

(58, 46117), (Start: 80 @46153 has 184 MA's), (118, 46288), (126, 46312), (130, 46336), (143, 46381), (157, 46408),

Gene: Cjw1\_44 Start: 36482, Stop: 36078, Start Num: 80

Candidate Starts for Cjw1\_44:

(Start: 80 @36482 has 184 MA's), (118, 36347), (126, 36323), (130, 36299), (143, 36254), (186, 36131),

Gene: Clarkson\_11 Start: 3529, Stop: 3936, Start Num: 80

Candidate Starts for Clarkson\_11:

(Start: 80 @3529 has 184 MA's), (86, 3541), (118, 3667), (126, 3691), (130, 3715), (141, 3748), (193, 3913),

Gene: Contagion\_41 Start: 34707, Stop: 34342, Start Num: 80

Candidate Starts for Contagion\_41:

(Start: 76 @34722 has 10 MA's), (Start: 80 @34707 has 184 MA's), (118, 34572), (126, 34548), (130, 34524), (147, 34461),

Gene: Cookies\_41 Start: 35072, Stop: 34707, Start Num: 80

Candidate Starts for Cookies\_41:

(Start: 76 @35087 has 10 MA's), (Start: 80 @35072 has 184 MA's), (118, 34937), (126, 34913), (130, 34889), (147, 34826),

Gene: Corazon\_10 Start: 3482, Stop: 3889, Start Num: 80

Candidate Starts for Corazon\_10:

(Start: 80 @3482 has 184 MA's), (86, 3494), (118, 3620), (126, 3644), (130, 3668), (141, 3701), (193, 3866),

Gene: Cornie\_79 Start: 47817, Stop: 48095, Start Num: 80

Candidate Starts for Cornie\_79:

(Start: 80 @47817 has 184 MA's), (142, 48021), (148, 48042), (149, 48048), (152, 48051), (155, 48054), (168, 48075),



Gene: Cueyllyss\_40 Start: 32157, Stop: 31795, Start Num: 59  
Candidate Starts for Cueyllyss\_40:  
(24, 32295), (28, 32262), (Start: 59 @32157 has 11 MA's), (142, 31914), (148, 31893), (149, 31887),  
(152, 31884),

Gene: Czyszczone1\_44 Start: 35291, Stop: 34887, Start Num: 80  
Candidate Starts for Czyszczone1\_44:  
(Start: 80 @35291 has 184 MA's), (118, 35156), (126, 35132), (130, 35108), (143, 35063), (186,  
34940),

Gene: DLane\_82 Start: 50043, Stop: 50318, Start Num: 80  
Candidate Starts for DLane\_82:  
(58, 50007), (Start: 80 @50043 has 184 MA's), (118, 50178), (126, 50202), (130, 50226), (143,  
50271), (157, 50298),

Gene: Daenerys\_82 Start: 50903, Stop: 51181, Start Num: 80  
Candidate Starts for Daenerys\_82:  
(Start: 80 @50903 has 184 MA's), (93, 50945), (120, 51041), (142, 51107), (148, 51128), (149,  
51134), (152, 51137), (155, 51140), (168, 51161),

Gene: Dallas\_71 Start: 49496, Stop: 49131, Start Num: 80  
Candidate Starts for Dallas\_71:  
(Start: 80 @49496 has 184 MA's), (93, 49454), (120, 49358), (143, 49289), (159, 49250),

Gene: Dante\_84 Start: 51687, Stop: 51980, Start Num: 88  
Candidate Starts for Dante\_84:  
(Start: 66 @51639 has 1 MA's), (69, 51645), (Start: 88 @51687 has 2 MA's), (136, 51831), (146,  
51864),

Gene: Deb65\_76 Start: 48625, Stop: 48903, Start Num: 80  
Candidate Starts for Deb65\_76:  
(Start: 80 @48625 has 184 MA's), (93, 48667), (120, 48763), (142, 48829), (148, 48850), (149,  
48856), (152, 48859), (155, 48862), (168, 48883),

Gene: Demsculpinboyz\_96 Start: 48718, Stop: 49200, Start Num: 80  
Candidate Starts for Demsculpinboyz\_96:  
(63, 48679), (Start: 80 @48718 has 184 MA's), (86, 48730), (118, 48856), (126, 48880), (130, 48904),  
(139, 48934), (142, 48946), (169, 49018), (192, 49108),

Gene: DmpstrDiver\_72 Start: 49923, Stop: 49558, Start Num: 80  
Candidate Starts for DmpstrDiver\_72:  
(Start: 80 @49923 has 184 MA's), (93, 49881), (120, 49785), (143, 49716), (159, 49677),

Gene: Doom\_40 Start: 32350, Stop: 31988, Start Num: 59  
Candidate Starts for Doom\_40:  
(24, 32488), (28, 32455), (Start: 59 @32350 has 11 MA's), (142, 32107), (148, 32086), (149, 32080),  
(152, 32077),

Gene: DotProduct\_77 Start: 47382, Stop: 47660, Start Num: 80  
Candidate Starts for DotProduct\_77:  
(Start: 80 @47382 has 184 MA's), (93, 47424), (120, 47520), (142, 47586), (148, 47607), (149,  
47613), (152, 47616), (155, 47619), (168, 47640),

Gene: DrDrey\_44 Start: 36335, Stop: 35970, Start Num: 80  
Candidate Starts for DrDrey\_44:  
(Start: 76 @36350 has 10 MA's), (Start: 80 @36335 has 184 MA's), (118, 36200), (126, 36176), (130, 36152), (143, 36107), (147, 36089),

Gene: Duke13\_79 Start: 51559, Stop: 51152, Start Num: 80  
Candidate Starts for Duke13\_79:  
(Start: 80 @51559 has 184 MA's), (93, 51517), (120, 51421), (128, 51400), (139, 51367), (142, 51355), (153, 51322), (187, 51214),

Gene: Dumbo\_44 Start: 35105, Stop: 34830, Start Num: 80  
Candidate Starts for Dumbo\_44:  
(Start: 76 @35120 has 10 MA's), (Start: 80 @35105 has 184 MA's), (118, 34970), (126, 34946), (130, 34922), (143, 34877), (150, 34850),

Gene: Dusk\_42 Start: 35409, Stop: 35134, Start Num: 80  
Candidate Starts for Dusk\_42:  
(Start: 76 @35424 has 10 MA's), (Start: 80 @35409 has 184 MA's), (118, 35274), (126, 35250), (130, 35226), (143, 35181), (150, 35154),

Gene: Easy2Say\_45 Start: 36649, Stop: 36374, Start Num: 80  
Candidate Starts for Easy2Say\_45:  
(Start: 76 @36664 has 10 MA's), (Start: 80 @36649 has 184 MA's), (118, 36514), (126, 36490), (130, 36466), (143, 36421), (150, 36394),

Gene: Ejimix\_72 Start: 51361, Stop: 50996, Start Num: 80  
Candidate Starts for Ejimix\_72:  
(Start: 80 @51361 has 184 MA's), (93, 51319), (120, 51223), (143, 51154), (159, 51115),

Gene: EleanorGeorge\_87 Start: 51109, Stop: 51492, Start Num: 57  
Candidate Starts for EleanorGeorge\_87:  
(45, 51076), (Start: 57 @51109 has 10 MA's), (96, 51220), (99, 51229), (121, 51301), (125, 51313), (186, 51439),

Gene: Elite2014\_44 Start: 34884, Stop: 34609, Start Num: 80  
Candidate Starts for Elite2014\_44:  
(Start: 80 @34884 has 184 MA's), (112, 34767), (118, 34749), (126, 34725), (130, 34701), (143, 34656), (157, 34629),

Gene: Elph10\_43 Start: 34783, Stop: 34379, Start Num: 80  
Candidate Starts for Elph10\_43:  
(Start: 80 @34783 has 184 MA's), (118, 34648), (126, 34624), (130, 34600), (143, 34555), (186, 34432),

Gene: Emmina\_45 Start: 35184, Stop: 34909, Start Num: 80  
Candidate Starts for Emmina\_45:  
(Start: 40 @35286 has 1 MA's), (42, 35280), (51, 35250), (Start: 80 @35184 has 184 MA's), (112, 35067), (118, 35049), (126, 35025), (130, 35001), (143, 34956), (157, 34929),

Gene: Estave1\_94 Start: 53968, Stop: 54324, Start Num: 89  
Candidate Starts for Estave1\_94:  
(Start: 89 @53968 has 4 MA's), (174, 54220),

Gene: Eureka\_42 Start: 35560, Stop: 35285, Start Num: 80

Candidate Starts for Eureka\_42:

(58, 35596), (Start: 80 @35560 has 184 MA's), (118, 35425), (126, 35401), (130, 35377), (143, 35332), (157, 35305),

Gene: Eyeball\_40 Start: 31827, Stop: 31465, Start Num: 59

Candidate Starts for Eyeball\_40:

(24, 31965), (28, 31932), (Start: 59 @31827 has 11 MA's), (142, 31584), (148, 31563), (149, 31557), (152, 31554),

Gene: Fajezeel\_62 Start: 40619, Stop: 40254, Start Num: 80

Candidate Starts for Fajezeel\_62:

(22, 40820), (54, 40676), (Start: 57 @40673 has 10 MA's), (Start: 80 @40619 has 184 MA's), (112, 40502), (118, 40484), (126, 40460), (130, 40436), (143, 40391),

Gene: Fastidio\_80 Start: 46279, Stop: 46557, Start Num: 80

Candidate Starts for Fastidio\_80:

(Start: 80 @46279 has 184 MA's), (93, 46321), (120, 46417), (142, 46483), (148, 46504), (149, 46510), (152, 46513), (155, 46516), (168, 46537),

Gene: FeliMaine\_10 Start: 3530, Stop: 3937, Start Num: 80

Candidate Starts for FeliMaine\_10:

(Start: 80 @3530 has 184 MA's), (86, 3542), (118, 3668), (126, 3692), (130, 3716), (141, 3749), (193, 3914),

Gene: Filch\_44 Start: 35012, Stop: 34647, Start Num: 80

Candidate Starts for Filch\_44:

(Start: 80 @35012 has 184 MA's), (118, 34877), (126, 34853), (130, 34829), (147, 34766),

Gene: Filuzino\_83 Start: 51185, Stop: 51463, Start Num: 80

Candidate Starts for Filuzino\_83:

(Start: 80 @51185 has 184 MA's), (93, 51227), (120, 51323), (142, 51389), (148, 51410), (149, 51416), (152, 51419), (155, 51422), (168, 51443),

Gene: FireRed\_44 Start: 35594, Stop: 35316, Start Num: 80

Candidate Starts for FireRed\_44:

(4, 35930), (5, 35927), (7, 35921), (9, 35912), (27, 35753), (33, 35723), (Start: 80 @35594 has 184 MA's), (112, 35474), (118, 35456), (126, 35432), (130, 35408), (143, 35363), (157, 35336),

Gene: Flabslab\_18 Start: 6033, Stop: 6323, Start Num: 76

Candidate Starts for Flabslab\_18:

(Start: 76 @6033 has 10 MA's), (118, 6183), (126, 6207), (130, 6231), (143, 6276), (150, 6303),

Gene: Flathead\_79 Start: 48157, Stop: 48534, Start Num: 80

Candidate Starts for Flathead\_79:

(79, 48154), (Start: 80 @48157 has 184 MA's), (93, 48199), (118, 48304), (126, 48328), (130, 48352), (147, 48415),

Gene: Forza\_32 Start: 11148, Stop: 10798, Start Num: 67

Candidate Starts for Forza\_32:

(Start: 67 @11148 has 8 MA's), (74, 11130), (Start: 80 @11112 has 184 MA's), (94, 11061), (113, 10995), (141, 10920), (142, 10911), (158, 10872),

Gene: Frankie\_90 Start: 50801, Stop: 51076, Start Num: 80  
Candidate Starts for Frankie\_90:  
(63, 50762), (Start: 80 @50801 has 184 MA's), (95, 50861), (97, 50864), (105, 50897), (144, 51023),

Gene: Frickyeah\_84 Start: 46460, Stop: 46879, Start Num: 72  
Candidate Starts for Frickyeah\_84:  
(Start: 72 @46460 has 1 MA's), (92, 46517), (108, 46580), (123, 46625), (161, 46748), (179, 46802),  
(183, 46811), (188, 46832), (191, 46841),

Gene: Fringe\_55 Start: 47885, Stop: 47511, Start Num: 76  
Candidate Starts for Fringe\_55:  
(Start: 76 @47885 has 10 MA's), (118, 47735), (126, 47711), (130, 47687), (141, 47654), (173,  
47573),

Gene: Froghopper\_59 Start: 39967, Stop: 39602, Start Num: 80  
Candidate Starts for Froghopper\_59:  
(22, 40168), (54, 40024), (Start: 57 @40021 has 10 MA's), (Start: 80 @39967 has 184 MA's), (112,  
39850), (118, 39832), (126, 39808), (130, 39784), (143, 39739),

Gene: Fruitloop\_76 Start: 48252, Stop: 48602, Start Num: 80  
Candidate Starts for Fruitloop\_76:  
(58, 48216), (Start: 80 @48252 has 184 MA's), (118, 48387), (126, 48411), (130, 48435), (141,  
48468),

Gene: Fruitloop\_79 Start: 49022, Stop: 49300, Start Num: 80  
Candidate Starts for Fruitloop\_79:  
(Start: 80 @49022 has 184 MA's), (93, 49064), (120, 49160), (142, 49226), (148, 49247), (149,  
49253), (152, 49256), (155, 49259), (168, 49280),

Gene: Galactic\_79 Start: 48078, Stop: 48443, Start Num: 80  
Candidate Starts for Galactic\_79:  
(10, 47778), (11, 47787), (12, 47793), (14, 47802), (17, 47832), (65, 48042), (Start: 80 @48078 has  
184 MA's), (118, 48213), (126, 48237), (130, 48261), (143, 48306), (147, 48324),

Gene: Geralt\_76 Start: 48623, Stop: 48901, Start Num: 80  
Candidate Starts for Geralt\_76:  
(Start: 80 @48623 has 184 MA's), (93, 48665), (120, 48761), (142, 48827), (148, 48848), (149,  
48854), (152, 48857), (155, 48860), (168, 48881),

Gene: GigiOuiOui\_76 Start: 47877, Stop: 48161, Start Num: 76  
Candidate Starts for GigiOuiOui\_76:  
(31, 47760), (39, 47790), (50, 47817), (64, 47853), (Start: 76 @47877 has 10 MA's), (111, 47982),  
(132, 48030), (138, 48048), (140, 48054), (162, 48111), (167, 48120),

Gene: Goku\_42 Start: 35289, Stop: 35014, Start Num: 80  
Candidate Starts for Goku\_42:  
(58, 35325), (Start: 80 @35289 has 184 MA's), (118, 35154), (126, 35130), (130, 35106), (143,  
35061), (157, 35034),

Gene: Graduation\_42 Start: 32744, Stop: 32382, Start Num: 59  
Candidate Starts for Graduation\_42:  
(24, 32882), (28, 32849), (Start: 59 @32744 has 11 MA's), (142, 32501), (148, 32480), (149, 32474),  
(152, 32471),

Gene: GreaseLightnin\_58 Start: 38269, Stop: 38631, Start Num: 80

Candidate Starts for GreaseLightnin\_58:

(15, 38008), (19, 38041), (21, 38065), (23, 38071), (55, 38212), (Start: 80 @38269 has 184 MA's), (104, 38344), (110, 38359), (120, 38386), (122, 38392), (139, 38437), (142, 38449), (190, 38608),

Gene: Greg\_62 Start: 40619, Stop: 40254, Start Num: 80

Candidate Starts for Greg\_62:

(22, 40820), (54, 40676), (Start: 57 @40673 has 10 MA's), (Start: 80 @40619 has 184 MA's), (112, 40502), (118, 40484), (126, 40460), (130, 40436), (143, 40391),

Gene: Guppsters\_77 Start: 47008, Stop: 47292, Start Num: 80

Candidate Starts for Guppsters\_77:

(Start: 80 @47008 has 184 MA's), (142, 47212), (148, 47233), (149, 47239), (152, 47242),

Gene: Halley\_74 Start: 50575, Stop: 50210, Start Num: 80

Candidate Starts for Halley\_74:

(Start: 80 @50575 has 184 MA's), (93, 50533), (120, 50437), (143, 50368), (159, 50329),

Gene: Hamulus\_81 Start: 48864, Stop: 49142, Start Num: 80

Candidate Starts for Hamulus\_81:

(Start: 80 @48864 has 184 MA's), (93, 48906), (120, 49002), (142, 49068), (148, 49089), (149, 49095), (152, 49098), (155, 49101), (168, 49122),

Gene: HanKaySha\_43 Start: 34995, Stop: 34630, Start Num: 80

Candidate Starts for HanKaySha\_43:

(Start: 76 @35010 has 10 MA's), (Start: 80 @34995 has 184 MA's), (118, 34860), (126, 34836), (130, 34812), (143, 34767), (147, 34749),

Gene: Hannaconda\_71 Start: 46308, Stop: 46033, Start Num: 80

Candidate Starts for Hannaconda\_71:

(75, 46323), (Start: 80 @46308 has 184 MA's), (118, 46173), (126, 46149), (130, 46125), (143, 46080), (157, 46053),

Gene: Henry\_43 Start: 35628, Stop: 35353, Start Num: 80

Candidate Starts for Henry\_43:

(Start: 76 @35643 has 10 MA's), (Start: 80 @35628 has 184 MA's), (118, 35493), (126, 35469), (130, 35445), (143, 35400), (150, 35373),

Gene: HokkenD\_65 Start: 48844, Stop: 48479, Start Num: 80

Candidate Starts for HokkenD\_65:

(Start: 80 @48844 has 184 MA's), (93, 48802), (120, 48706), (143, 48637), (159, 48598),

Gene: Hopey\_44 Start: 35530, Stop: 35165, Start Num: 80

Candidate Starts for Hopey\_44:

(Start: 76 @35545 has 10 MA's), (Start: 80 @35530 has 184 MA's), (118, 35395), (126, 35371), (130, 35347), (143, 35302), (147, 35284),

Gene: HufflyPuff\_43 Start: 35550, Stop: 35272, Start Num: 80

Candidate Starts for HufflyPuff\_43:

(4, 35886), (5, 35883), (7, 35877), (9, 35868), (27, 35709), (33, 35679), (Start: 80 @35550 has 184 MA's), (112, 35430), (118, 35412), (126, 35388), (130, 35364), (143, 35319), (157, 35292),

Gene: Hughesyang\_71 Start: 50504, Stop: 50139, Start Num: 80  
Candidate Starts for Hughesyang\_71:  
(Start: 80 @50504 has 184 MA's), (93, 50462), (120, 50366), (143, 50297), (159, 50258),

Gene: Huphlepuuff\_11 Start: 3259, Stop: 3666, Start Num: 80  
Candidate Starts for Huphlepuuff\_11:  
(Start: 80 @3259 has 184 MA's), (86, 3271), (118, 3397), (126, 3421), (130, 3445), (141, 3478), (193, 3643),

Gene: HyRo\_13 Start: 5432, Stop: 5707, Start Num: 80  
Candidate Starts for HyRo\_13:  
(58, 5396), (Start: 80 @5432 has 184 MA's), (118, 5567), (126, 5591), (130, 5615), (143, 5660), (157, 5687),

Gene: ILeeKay\_42 Start: 32194, Stop: 31832, Start Num: 59  
Candidate Starts for ILeeKay\_42:  
(24, 32332), (28, 32299), (Start: 59 @32194 has 11 MA's), (142, 31951), (148, 31930), (149, 31924), (152, 31921),

Gene: IkeLoa\_7 Start: 3049, Stop: 3285, Start Num: 80  
Candidate Starts for IkeLoa\_7:  
(1, 2605), (2, 2707), (3, 2710), (6, 2716), (8, 2725), (29, 2905), (48, 2968), (Start: 80 @3049 has 184 MA's), (104, 3124), (110, 3139), (120, 3166), (122, 3172), (139, 3217), (142, 3229), (154, 3259),

Gene: Jabbawokkie\_90 Start: 47440, Stop: 47808, Start Num: 80  
Candidate Starts for Jabbawokkie\_90:  
(58, 47404), (Start: 80 @47440 has 184 MA's), (118, 47575), (126, 47599), (130, 47623), (143, 47668), (147, 47686), (174, 47734),

Gene: JeTaime\_44 Start: 36054, Stop: 35689, Start Num: 80  
Candidate Starts for JeTaime\_44:  
(Start: 80 @36054 has 184 MA's), (118, 35919), (126, 35895), (130, 35871), (147, 35808),

Gene: JoeyJr\_83 Start: 50528, Stop: 50806, Start Num: 80  
Candidate Starts for JoeyJr\_83:  
(Start: 80 @50528 has 184 MA's), (93, 50570), (120, 50666), (142, 50732), (148, 50753), (149, 50759), (152, 50762), (155, 50765), (168, 50786),

Gene: JoieB\_11 Start: 3478, Stop: 3885, Start Num: 80  
Candidate Starts for JoieB\_11:  
(Start: 80 @3478 has 184 MA's), (86, 3490), (118, 3616), (126, 3640), (130, 3664), (141, 3697), (193, 3862),

Gene: JuicyJay\_71 Start: 51709, Stop: 51344, Start Num: 80  
Candidate Starts for JuicyJay\_71:  
(Start: 80 @51709 has 184 MA's), (93, 51667), (120, 51571), (143, 51502), (159, 51463),

Gene: JulietS\_7 Start: 2148, Stop: 2384, Start Num: 80  
Candidate Starts for JulietS\_7:  
(53, 2091), (Start: 80 @2148 has 184 MA's), (104, 2223), (110, 2238), (120, 2265), (122, 2271), (139, 2316), (142, 2328), (154, 2358),

Gene: Juniormint\_57 Start: 37791, Stop: 38165, Start Num: 78

Candidate Starts for Juniormint\_57:

(Start: 78 @37791 has 1 MA's), (104, 37878), (110, 37893), (120, 37920), (122, 37926), (139, 37971), (142, 37983), (190, 38142),

Gene: KBG\_41 Start: 33134, Stop: 32772, Start Num: 59

Candidate Starts for KBG\_41:

(28, 33239), (Start: 59 @33134 has 11 MA's), (142, 32891), (148, 32870), (149, 32864), (152, 32861),

Gene: Kalah2\_67 Start: 49868, Stop: 49503, Start Num: 80

Candidate Starts for Kalah2\_67:

(Start: 80 @49868 has 184 MA's), (93, 49826), (120, 49730), (143, 49661), (159, 49622),

Gene: Kenna\_88 Start: 49368, Stop: 49775, Start Num: 76

Candidate Starts for Kenna\_88:

(36, 49263), (38, 49269), (47, 49302), (Start: 70 @49359 has 1 MA's), (Start: 76 @49368 has 10 MA's), (102, 49467), (105, 49482), (117, 49524), (120, 49530), (143, 49623), (176, 49719), (178, 49734),

Gene: Kingsley\_84 Start: 51337, Stop: 51612, Start Num: 80

Candidate Starts for Kingsley\_84:

(26, 51175), (28, 51184), (Start: 80 @51337 has 184 MA's), (118, 51472), (126, 51496), (130, 51520), (143, 51565), (157, 51592),

Gene: Klein\_72 Start: 49891, Stop: 49526, Start Num: 80

Candidate Starts for Klein\_72:

(Start: 80 @49891 has 184 MA's), (93, 49849), (120, 49753), (143, 49684), (159, 49645),

Gene: Koella\_77 Start: 46451, Stop: 46915, Start Num: 57

Candidate Starts for Koella\_77:

(Start: 57 @46451 has 10 MA's), (60, 46460), (96, 46562), (99, 46571), (121, 46643), (125, 46655), (137, 46697), (170, 46799),

Gene: Kostya\_42 Start: 35041, Stop: 34763, Start Num: 80

Candidate Starts for Kostya\_42:

(4, 35377), (5, 35374), (7, 35368), (9, 35359), (27, 35200), (33, 35170), (Start: 80 @35041 has 184 MA's), (112, 34921), (118, 34903), (126, 34879), (130, 34855), (143, 34810), (157, 34783),

Gene: Ksquared\_55 Start: 38040, Stop: 38279, Start Num: 80

Candidate Starts for Ksquared\_55:

(15, 37779), (19, 37812), (21, 37836), (23, 37842), (55, 37983), (Start: 80 @38040 has 184 MA's), (104, 38115), (110, 38130), (120, 38157), (122, 38163), (139, 38208), (142, 38220),

Gene: Kumao\_58 Start: 42552, Stop: 43010, Start Num: 43

Candidate Starts for Kumao\_58:

(Start: 43 @42552 has 1 MA's), (44, 42555), (Start: 80 @42645 has 184 MA's), (118, 42780), (126, 42804), (130, 42828), (143, 42873), (147, 42891),

Gene: Latretium\_87 Start: 49978, Stop: 50271, Start Num: 88

Candidate Starts for Latretium\_87:

(Start: 66 @49930 has 1 MA's), (69, 49936), (Start: 88 @49978 has 2 MA's), (136, 50122), (146, 50155),

Gene: Latretium\_80 Start: 47741, Stop: 48100, Start Num: 80

Candidate Starts for Latretium\_80:

(Start: 80 @47741 has 184 MA's), (118, 47879), (121, 47888), (126, 47903), (130, 47927), (139, 47957), (142, 47969),

Gene: Latretium\_83 Start: 48583, Stop: 48948, Start Num: 80

Candidate Starts for Latretium\_83:

(Start: 80 @48583 has 184 MA's), (93, 48625), (120, 48721), (143, 48790), (159, 48829),

Gene: Leperchaun\_81 Start: 49762, Stop: 50040, Start Num: 80

Candidate Starts for Leperchaun\_81:

(Start: 80 @49762 has 184 MA's), (93, 49804), (120, 49900), (142, 49966), (148, 49987), (149, 49993), (152, 49996), (155, 49999), (168, 50020),

Gene: Lesedi\_57 Start: 39252, Stop: 38887, Start Num: 80

Candidate Starts for Lesedi\_57:

(22, 39453), (54, 39309), (Start: 57 @39306 has 10 MA's), (Start: 80 @39252 has 184 MA's), (112, 39135), (118, 39117), (126, 39093), (130, 39069), (143, 39024),

Gene: Licorice\_42 Start: 33025, Stop: 32663, Start Num: 59

Candidate Starts for Licorice\_42:

(24, 33163), (28, 33130), (Start: 59 @33025 has 11 MA's), (142, 32782), (148, 32761), (149, 32755), (152, 32752),

Gene: LilMoolah\_80 Start: 49043, Stop: 49381, Start Num: 80

Candidate Starts for LilMoolah\_80:

(63, 49004), (Start: 80 @49043 has 184 MA's), (86, 49055), (Start: 103 @49127 has 2 MA's), (105, 49136), (116, 49172), (141, 49244),

Gene: Lilac\_46 Start: 35189, Stop: 34785, Start Num: 80

Candidate Starts for Lilac\_46:

(Start: 80 @35189 has 184 MA's), (118, 35054), (126, 35030), (130, 35006), (143, 34961), (186, 34838),

Gene: Lilbit\_11 Start: 3530, Stop: 3937, Start Num: 80

Candidate Starts for Lilbit\_11:

(Start: 80 @3530 has 184 MA's), (86, 3542), (118, 3668), (126, 3692), (130, 3716), (141, 3749), (193, 3914),

Gene: Lilizi\_43 Start: 34863, Stop: 34459, Start Num: 80

Candidate Starts for Lilizi\_43:

(Start: 80 @34863 has 184 MA's), (118, 34728), (126, 34704), (130, 34680), (143, 34635), (186, 34512),

Gene: Lilpickle\_44 Start: 34884, Stop: 34609, Start Num: 80

Candidate Starts for Lilpickle\_44:

(Start: 80 @34884 has 184 MA's), (112, 34767), (118, 34749), (126, 34725), (130, 34701), (143, 34656), (157, 34629),

Gene: LittleLaf\_10 Start: 3259, Stop: 3666, Start Num: 80

Candidate Starts for LittleLaf\_10:

(Start: 80 @3259 has 184 MA's), (86, 3271), (118, 3397), (126, 3421), (130, 3445), (141, 3478), (193, 3643),



Gene: LittleShirley\_88 Start: 49954, Stop: 50238, Start Num: 76

Candidate Starts for LittleShirley\_88:

(31, 49837), (39, 49867), (50, 49894), (64, 49930), (Start: 76 @49954 has 10 MA's), (111, 50059), (132, 50107), (138, 50125), (140, 50131), (162, 50188), (167, 50197),

Gene: LolaVinca\_10 Start: 2977, Stop: 3399, Start Num: 76

Candidate Starts for LolaVinca\_10:

(31, 2860), (39, 2890), (50, 2917), (64, 2953), (Start: 76 @2977 has 10 MA's), (104, 3064), (110, 3079), (120, 3106), (122, 3112), (139, 3157), (142, 3169), (164, 3220), (166, 3223), (174, 3253), (185, 3295), (195, 3334),

Gene: Lucky2013\_154 Start: 81047, Stop: 81454, Start Num: 67

Candidate Starts for Lucky2013\_154:

(Start: 67 @81047 has 8 MA's), (101, 81155), (112, 81200), (124, 81239), (131, 81272), (177, 81413),

Gene: Lucky2013\_70 Start: 46314, Stop: 45949, Start Num: 80

Candidate Starts for Lucky2013\_70:

(Start: 80 @46314 has 184 MA's), (93, 46272), (120, 46176), (143, 46107), (159, 46068),

Gene: LunaBlu\_89 Start: 51072, Stop: 51413, Start Num: 66

Candidate Starts for LunaBlu\_89:

(Start: 66 @51072 has 1 MA's), (69, 51078), (Start: 88 @51120 has 2 MA's), (136, 51264), (146, 51297),

Gene: Lutum\_94 Start: 50678, Stop: 51094, Start Num: 70

Candidate Starts for Lutum\_94:

(36, 50582), (38, 50588), (47, 50621), (Start: 70 @50678 has 1 MA's), (Start: 76 @50687 has 10 MA's), (102, 50786), (105, 50801), (117, 50843), (120, 50849), (143, 50942), (176, 51038), (178, 51053),

Gene: MadamMonkfish\_42 Start: 34547, Stop: 34182, Start Num: 80

Candidate Starts for MadamMonkfish\_42:

(63, 34586), (73, 34568), (Start: 80 @34547 has 184 MA's), (118, 34412), (126, 34388), (130, 34364), (143, 34319), (147, 34301),

Gene: Mahavrat\_77 Start: 46587, Stop: 46994, Start Num: 80

Candidate Starts for Mahavrat\_77:

(Start: 80 @46587 has 184 MA's), (86, 46599), (87, 46608), (118, 46725), (126, 46749), (130, 46773), (141, 46806), (169, 46878),

Gene: Manda\_44 Start: 36070, Stop: 35795, Start Num: 80

Candidate Starts for Manda\_44:

(58, 36106), (Start: 80 @36070 has 184 MA's), (118, 35935), (126, 35911), (130, 35887), (143, 35842), (157, 35815),

Gene: Manda\_42 Start: 35521, Stop: 35240, Start Num: 80

Candidate Starts for Manda\_42:

(Start: 80 @35521 has 184 MA's), (93, 35479), (120, 35383), (142, 35317), (152, 35287),

Gene: Mareelih\_31 Start: 10677, Stop: 10327, Start Num: 67

Candidate Starts for Mareelih\_31:

(Start: 67 @10677 has 8 MA's), (74, 10659), (Start: 80 @10641 has 184 MA's), (94, 10590), (113, 10524), (141, 10449), (142, 10440), (158, 10401),

Gene: Maroc7\_58 Start: 41045, Stop: 40797, Start Num: 114

Candidate Starts for Maroc7\_58:

(Start: 43 @41255 has 1 MA's), (46, 41246), (98, 41102), (100, 41099), (Start: 114 @41045 has 8 MA's), (127, 40997), (142, 40937),

Gene: Martik\_82 Start: 51049, Stop: 51432, Start Num: 57

Candidate Starts for Martik\_82:

(30, 50959), (35, 50974), (45, 51016), (Start: 57 @51049 has 10 MA's), (96, 51160), (99, 51169), (121, 51241), (125, 51253), (186, 51379),

Gene: Marvin\_9 Start: 3241, Stop: 3600, Start Num: 80

Candidate Starts for Marvin\_9:

(Start: 80 @3241 has 184 MA's), (86, 3253), (104, 3316), (110, 3331), (120, 3358), (122, 3364), (139, 3409), (142, 3421),

Gene: Maxxinista\_45 Start: 35159, Stop: 34755, Start Num: 80

Candidate Starts for Maxxinista\_45:

(Start: 80 @35159 has 184 MA's), (118, 35024), (126, 35000), (130, 34976), (143, 34931), (186, 34808),

Gene: MiaZeal\_161 Start: 82194, Stop: 82601, Start Num: 67

Candidate Starts for MiaZeal\_161:

(Start: 67 @82194 has 8 MA's), (101, 82302), (112, 82347), (124, 82386), (131, 82419), (177, 82560),

Gene: MiaZeal\_73 Start: 46970, Stop: 46605, Start Num: 80

Candidate Starts for MiaZeal\_73:

(Start: 80 @46970 has 184 MA's), (93, 46928), (120, 46832), (143, 46763), (159, 46724),

Gene: MilanaBonita\_76 Start: 47736, Stop: 48011, Start Num: 80

Candidate Starts for MilanaBonita\_76:

(71, 47712), (Start: 80 @47736 has 184 MA's), (118, 47871), (126, 47895), (130, 47919), (143, 47964), (157, 47991),

Gene: MilleniumForce\_83 Start: 50034, Stop: 50318, Start Num: 80

Candidate Starts for MilleniumForce\_83:

(Start: 80 @50034 has 184 MA's), (93, 50076), (120, 50172), (142, 50238), (148, 50259), (149, 50265), (152, 50268),

Gene: Minerva\_78 Start: 51991, Stop: 51626, Start Num: 80

Candidate Starts for Minerva\_78:

(Start: 80 @51991 has 184 MA's), (93, 51949), (120, 51853), (143, 51784), (159, 51745),

Gene: MinionDave\_78 Start: 48768, Stop: 49100, Start Num: 80

Candidate Starts for MinionDave\_78:

(Start: 80 @48768 has 184 MA's), (93, 48810), (120, 48906), (141, 48963),

Gene: Miniwave\_41 Start: 35246, Stop: 34860, Start Num: 80

Candidate Starts for Miniwave\_41:

(Start: 76 @35261 has 10 MA's), (Start: 80 @35246 has 184 MA's), (118, 35111), (126, 35087), (130, 35063), (143, 35018), (160, 34979),

Gene: Minnie\_78 Start: 50814, Stop: 51092, Start Num: 80

Candidate Starts for Minnie\_78:

(Start: 80 @50814 has 184 MA's), (93, 50856), (120, 50952), (142, 51018), (148, 51039), (149, 51045), (152, 51048), (155, 51051), (168, 51072),

Gene: Misfit\_43 Start: 35615, Stop: 35337, Start Num: 80

Candidate Starts for Misfit\_43:

(4, 35951), (5, 35948), (7, 35942), (9, 35933), (27, 35774), (33, 35744), (Start: 80 @35615 has 184 MA's), (112, 35495), (118, 35477), (126, 35453), (130, 35429), (143, 35384), (157, 35357),

Gene: Moldemort\_42 Start: 34776, Stop: 34411, Start Num: 80

Candidate Starts for Moldemort\_42:

(63, 34815), (73, 34797), (Start: 80 @34776 has 184 MA's), (118, 34641), (126, 34617), (130, 34593), (143, 34548), (147, 34530),

Gene: Moonbeam\_89 Start: 51150, Stop: 51629, Start Num: 82

Candidate Starts for Moonbeam\_89:

(Start: 82 @51150 has 1 MA's), (Start: 84 @51153 has 1 MA's), (106, 51222), (110, 51234), (120, 51261), (122, 51267), (139, 51312), (142, 51324), (164, 51375), (166, 51378), (174, 51408), (185, 51450), (197, 51576),

Gene: Mosby\_40 Start: 34707, Stop: 34342, Start Num: 80

Candidate Starts for Mosby\_40:

(Start: 76 @34722 has 10 MA's), (Start: 80 @34707 has 184 MA's), (118, 34572), (126, 34548), (130, 34524), (147, 34461),

Gene: MrGordo\_62 Start: 40946, Stop: 40590, Start Num: 80

Candidate Starts for MrGordo\_62:

(Start: 80 @40946 has 184 MA's), (86, 40934), (118, 40808), (121, 40799), (126, 40784), (130, 40760), (139, 40730), (142, 40718),

Gene: Ms6\_80 Start: 45220, Stop: 45495, Start Num: 80

Candidate Starts for Ms6\_80:

(58, 45184), (Start: 80 @45220 has 184 MA's), (118, 45355), (126, 45379), (130, 45403), (143, 45448), (157, 45475),

Gene: Murica\_43 Start: 35550, Stop: 35272, Start Num: 80

Candidate Starts for Murica\_43:

(4, 35886), (5, 35883), (7, 35877), (9, 35868), (27, 35709), (33, 35679), (Start: 80 @35550 has 184 MA's), (112, 35430), (118, 35412), (126, 35388), (130, 35364), (143, 35319), (157, 35292),

Gene: Murphy\_45 Start: 35671, Stop: 35267, Start Num: 80

Candidate Starts for Murphy\_45:

(Start: 80 @35671 has 184 MA's), (118, 35536), (126, 35512), (130, 35488), (143, 35443), (186, 35320),

Gene: NelitzaMV\_41 Start: 34995, Stop: 34720, Start Num: 80

Candidate Starts for NelitzaMV\_41:

(Start: 76 @35010 has 10 MA's), (Start: 80 @34995 has 184 MA's), (118, 34860), (126, 34836), (130, 34812), (143, 34767), (150, 34740),

Gene: NihilNomen\_73 Start: 50662, Stop: 50297, Start Num: 80

Candidate Starts for NihilNomen\_73:

(Start: 80 @50662 has 184 MA's), (93, 50620), (120, 50524), (143, 50455), (159, 50416),

Gene: Nimbo\_75 Start: 48626, Stop: 48904, Start Num: 80

Candidate Starts for Nimbo\_75:

(Start: 80 @48626 has 184 MA's), (93, 48668), (120, 48764), (142, 48830), (148, 48851), (149, 48857), (152, 48860), (155, 48863), (168, 48884),

Gene: Nimrod\_44 Start: 35808, Stop: 35530, Start Num: 80

Candidate Starts for Nimrod\_44:

(4, 36144), (5, 36141), (7, 36135), (9, 36126), (27, 35967), (33, 35937), (Start: 80 @35808 has 184 MA's), (112, 35688), (118, 35670), (126, 35646), (130, 35622), (143, 35577), (157, 35550),

Gene: Nitzel\_74 Start: 45944, Stop: 46222, Start Num: 80

Candidate Starts for Nitzel\_74:

(Start: 80 @45944 has 184 MA's), (93, 45986), (120, 46082), (142, 46148), (148, 46169), (149, 46175), (152, 46178), (155, 46181), (168, 46202),

Gene: Nivrat\_78 Start: 48916, Stop: 49254, Start Num: 80

Candidate Starts for Nivrat\_78:

(63, 48877), (Start: 80 @48916 has 184 MA's), (86, 48928), (Start: 103 @49000 has 2 MA's), (105, 49009), (116, 49045), (141, 49117),

Gene: NoSleep\_45 Start: 35431, Stop: 35027, Start Num: 80

Candidate Starts for NoSleep\_45:

(Start: 80 @35431 has 184 MA's), (118, 35296), (126, 35272), (130, 35248), (143, 35203), (186, 35080),

Gene: NormanBulbieJr\_83 Start: 50465, Stop: 50929, Start Num: 57

Candidate Starts for NormanBulbieJr\_83:

(Start: 57 @50465 has 10 MA's), (60, 50474), (96, 50576), (99, 50585), (121, 50657), (125, 50669), (137, 50711), (170, 50813),

Gene: ODay\_87 Start: 48574, Stop: 49005, Start Num: 72

Candidate Starts for ODay\_87:

(Start: 72 @48574 has 1 MA's), (92, 48631), (108, 48694), (123, 48739), (141, 48802), (183, 48937),

Gene: Odette\_71 Start: 49705, Stop: 49340, Start Num: 80

Candidate Starts for Odette\_71:

(Start: 80 @49705 has 184 MA's), (93, 49663), (120, 49567), (143, 49498), (159, 49459),

Gene: OldBen\_80 Start: 50018, Stop: 50296, Start Num: 80

Candidate Starts for OldBen\_80:

(Start: 80 @50018 has 184 MA's), (93, 50060), (120, 50156), (142, 50222), (148, 50243), (149, 50249), (152, 50252), (155, 50255), (168, 50276),

Gene: Omega\_170 Start: 87510, Stop: 87914, Start Num: 67

Candidate Starts for Omega\_170:

(Start: 67 @87510 has 8 MA's), (83, 87555), (101, 87618), (112, 87663), (124, 87702), (131, 87735), (171, 87855),

Gene: OrionPax\_43 Start: 35001, Stop: 34636, Start Num: 80

Candidate Starts for OrionPax\_43:

(Start: 80 @35001 has 184 MA's), (118, 34866), (126, 34842), (130, 34818), (147, 34755),

Gene: Ovechkin\_83 Start: 49406, Stop: 49663, Start Num: 80  
Candidate Starts for Ovechkin\_83:  
(Start: 80 @49406 has 184 MA's), (95, 49466), (97, 49469), (105, 49502), (129, 49574), (145, 49616),  
(156, 49643),

Gene: PHappiness\_83 Start: 50847, Stop: 51125, Start Num: 80  
Candidate Starts for PHappiness\_83:  
(Start: 80 @50847 has 184 MA's), (93, 50889), (120, 50985), (142, 51051), (148, 51072), (149,  
51078), (152, 51081), (155, 51084), (168, 51105),

Gene: Pacc40\_78 Start: 49990, Stop: 50265, Start Num: 80  
Candidate Starts for Pacc40\_78:  
(71, 49966), (Start: 80 @49990 has 184 MA's), (118, 50125), (126, 50149), (130, 50173), (143,  
50218), (157, 50245),

Gene: Pacc40\_79 Start: 50262, Stop: 50540, Start Num: 80  
Candidate Starts for Pacc40\_79:  
(Start: 80 @50262 has 184 MA's), (93, 50304), (120, 50400), (142, 50466), (148, 50487), (149,  
50493), (152, 50496), (155, 50499), (168, 50520),

Gene: Palpatine\_44 Start: 35580, Stop: 35302, Start Num: 80  
Candidate Starts for Palpatine\_44:  
(4, 35916), (5, 35913), (7, 35907), (9, 35898), (27, 35739), (33, 35709), (Start: 80 @35580 has 184  
MA's), (112, 35460), (118, 35442), (126, 35418), (130, 35394), (143, 35349), (157, 35322),

Gene: Paperbeatsrock\_43 Start: 35924, Stop: 35649, Start Num: 80  
Candidate Starts for Paperbeatsrock\_43:  
(Start: 76 @35939 has 10 MA's), (Start: 80 @35924 has 184 MA's), (118, 35789), (126, 35765), (130,  
35741), (143, 35696), (150, 35669),

Gene: Petra64142\_46 Start: 36044, Stop: 35766, Start Num: 80  
Candidate Starts for Petra64142\_46:  
(4, 36380), (5, 36377), (7, 36371), (9, 36362), (27, 36203), (33, 36173), (Start: 80 @36044 has 184  
MA's), (112, 35924), (118, 35906), (126, 35882), (130, 35858), (143, 35813), (157, 35786),

Gene: Petruccio\_83 Start: 47510, Stop: 47223, Start Num: 80  
Candidate Starts for Petruccio\_83:  
(69, 47534), (Start: 80 @47510 has 184 MA's), (93, 47468), (120, 47372), (142, 47306), (148, 47285),  
(149, 47279), (155, 47273),

Gene: Petruccio\_61 Start: 40438, Stop: 40163, Start Num: 80  
Candidate Starts for Petruccio\_61:  
(22, 40639), (54, 40495), (Start: 57 @40492 has 10 MA's), (Start: 80 @40438 has 184 MA's), (112,  
40321), (118, 40303), (126, 40279), (130, 40255), (143, 40210), (150, 40183),

Gene: Phalconet\_77 Start: 47759, Stop: 48034, Start Num: 80  
Candidate Starts for Phalconet\_77:  
(Start: 80 @47759 has 184 MA's), (118, 47894), (126, 47918), (130, 47942), (143, 47987), (157,  
48014),

Gene: Phanphagia\_79 Start: 49133, Stop: 49408, Start Num: 80  
Candidate Starts for Phanphagia\_79:

(26, 48971), (28, 48980), (Start: 80 @49133 has 184 MA's), (118, 49268), (126, 49292), (130, 49316), (143, 49361), (157, 49388),

Gene: Pharsalus\_42 Start: 35724, Stop: 35449, Start Num: 80

Candidate Starts for Pharsalus\_42:

(Start: 76 @35739 has 10 MA's), (Start: 80 @35724 has 184 MA's), (118, 35589), (126, 35565), (130, 35541), (143, 35496), (150, 35469),

Gene: PhatBacter\_44 Start: 35594, Stop: 35316, Start Num: 80

Candidate Starts for PhatBacter\_44:

(4, 35930), (5, 35927), (7, 35921), (9, 35912), (27, 35753), (33, 35723), (Start: 80 @35594 has 184 MA's), (112, 35474), (118, 35456), (126, 35432), (130, 35408), (143, 35363), (157, 35336),

Gene: Phatniss\_83 Start: 49365, Stop: 49781, Start Num: 80

Candidate Starts for Phatniss\_83:

(Start: 80 @49365 has 184 MA's), (Start: 103 @49449 has 2 MA's), (105, 49458), (116, 49494), (139, 49563), (142, 49575), (151, 49608), (182, 49707),

Gene: Phaux\_43 Start: 35592, Stop: 35314, Start Num: 80

Candidate Starts for Phaux\_43:

(4, 35928), (5, 35925), (7, 35919), (9, 35910), (27, 35751), (33, 35721), (Start: 80 @35592 has 184 MA's), (112, 35472), (118, 35454), (126, 35430), (130, 35406), (143, 35361), (157, 35334),

Gene: Phoebus\_75 Start: 51844, Stop: 51479, Start Num: 80

Candidate Starts for Phoebus\_75:

(Start: 80 @51844 has 184 MA's), (93, 51802), (120, 51706), (143, 51637), (159, 51598),

Gene: Phrux\_42 Start: 34994, Stop: 34629, Start Num: 80

Candidate Starts for Phrux\_42:

(Start: 76 @35009 has 10 MA's), (Start: 80 @34994 has 184 MA's), (118, 34859), (126, 34835), (130, 34811), (143, 34766), (147, 34748),

Gene: Pinkcreek\_11 Start: 4628, Stop: 5008, Start Num: 80

Candidate Starts for Pinkcreek\_11:

(58, 4592), (Start: 80 @4628 has 184 MA's), (118, 4763), (126, 4787), (130, 4811), (141, 4844), (163, 4904), (165, 4907), (175, 4937),

Gene: Poise\_10 Start: 3064, Stop: 3315, Start Num: 114

Candidate Starts for Poise\_10:

(Start: 114 @3064 has 8 MA's), (127, 3112), (142, 3172), (143, 3175), (147, 3193),

Gene: Policronamos\_46 Start: 35592, Stop: 35314, Start Num: 80

Candidate Starts for Policronamos\_46:

(4, 35928), (5, 35925), (7, 35919), (9, 35910), (27, 35751), (33, 35721), (Start: 80 @35592 has 184 MA's), (112, 35472), (118, 35454), (126, 35430), (130, 35406), (143, 35361), (157, 35334),

Gene: Pollywog\_81 Start: 49950, Stop: 50234, Start Num: 80

Candidate Starts for Pollywog\_81:

(Start: 80 @49950 has 184 MA's), (93, 49992), (120, 50088), (142, 50154), (148, 50175), (149, 50181), (152, 50184),

Gene: Porcelain\_158 Start: 81993, Stop: 82400, Start Num: 67

Candidate Starts for Porcelain\_158:

(Start: 67 @81993 has 8 MA's), (101, 82101), (112, 82146), (124, 82185), (131, 82218), (177, 82359),

Gene: Porcelain\_72 Start: 46970, Stop: 46605, Start Num: 80

Candidate Starts for Porcelain\_72:

(Start: 80 @46970 has 184 MA's), (93, 46928), (120, 46832), (143, 46763), (159, 46724),

Gene: Porky\_43 Start: 35192, Stop: 34917, Start Num: 80

Candidate Starts for Porky\_43:

(Start: 40 @35294 has 1 MA's), (42, 35288), (51, 35258), (Start: 80 @35192 has 184 MA's), (112, 35075), (118, 35057), (126, 35033), (130, 35009), (143, 34964), (157, 34937),

Gene: Pringar\_10 Start: 3084, Stop: 3491, Start Num: 80

Candidate Starts for Pringar\_10:

(Start: 80 @3084 has 184 MA's), (86, 3096), (118, 3222), (126, 3246), (130, 3270), (141, 3303), (193, 3468),

Gene: Priscilla\_85 Start: 50563, Stop: 51027, Start Num: 57

Candidate Starts for Priscilla\_85:

(Start: 57 @50563 has 10 MA's), (60, 50572), (96, 50674), (99, 50683), (121, 50755), (125, 50767), (137, 50809), (170, 50911),

Gene: Pumpkin\_45 Start: 35920, Stop: 35555, Start Num: 80

Candidate Starts for Pumpkin\_45:

(Start: 80 @35920 has 184 MA's), (118, 35785), (126, 35761), (130, 35737), (147, 35674),

Gene: QBert\_7 Start: 3151, Stop: 3387, Start Num: 80

Candidate Starts for QBert\_7:

(53, 3094), (Start: 80 @3151 has 184 MA's), (104, 3226), (110, 3241), (120, 3268), (122, 3274), (139, 3319), (142, 3331), (154, 3361),

Gene: Quallification\_42 Start: 35222, Stop: 34857, Start Num: 80

Candidate Starts for Quallification\_42:

(Start: 80 @35222 has 184 MA's), (93, 35180), (120, 35084), (143, 35015), (159, 34976),

Gene: Rabinovish\_16 Start: 6579, Stop: 6902, Start Num: 40

Candidate Starts for Rabinovish\_16:

(Start: 40 @6579 has 1 MA's), (42, 6585), (Start: 80 @6627 has 184 MA's), (118, 6762), (126, 6786), (130, 6810), (143, 6855), (157, 6882),

Gene: Raela\_10 Start: 3468, Stop: 3719, Start Num: 114

Candidate Starts for Raela\_10:

(Start: 114 @3468 has 8 MA's), (127, 3516), (142, 3576), (143, 3579), (147, 3597),

Gene: Raela\_8 Start: 2919, Stop: 3194, Start Num: 80

Candidate Starts for Raela\_8:

(Start: 80 @2919 has 184 MA's), (118, 3054), (126, 3078), (130, 3102), (143, 3147), (157, 3174),

Gene: Redno2\_69 Start: 47458, Stop: 47093, Start Num: 80

Candidate Starts for Redno2\_69:

(Start: 80 @47458 has 184 MA's), (93, 47416), (120, 47320), (143, 47251), (159, 47212),

Gene: Rialto\_92 Start: 51249, Stop: 51725, Start Num: 84

Candidate Starts for Rialto\_92:

(Start: 82 @51246 has 1 MA's), (Start: 84 @51249 has 1 MA's), (106, 51318), (110, 51330), (120, 51357), (122, 51363), (139, 51408), (142, 51420), (164, 51471), (166, 51474), (174, 51504), (185, 51546), (197, 51672),

Gene: Rimmer\_42 Start: 34931, Stop: 34563, Start Num: 80

Candidate Starts for Rimmer\_42:

(Start: 80 @34931 has 184 MA's), (86, 34919), (118, 34793), (126, 34769), (130, 34745), (147, 34682),

Gene: RitaG\_83 Start: 50649, Stop: 50927, Start Num: 80

Candidate Starts for RitaG\_83:

(Start: 80 @50649 has 184 MA's), (93, 50691), (120, 50787), (142, 50853), (148, 50874), (149, 50880), (152, 50883), (155, 50886), (168, 50907),

Gene: RiverMonster\_44 Start: 35447, Stop: 35043, Start Num: 80

Candidate Starts for RiverMonster\_44:

(Start: 80 @35447 has 184 MA's), (118, 35312), (126, 35288), (130, 35264), (143, 35219), (186, 35096),

Gene: RoMag\_6 Start: 3000, Stop: 3236, Start Num: 80

Candidate Starts for RoMag\_6:

(53, 2943), (Start: 80 @3000 has 184 MA's), (104, 3075), (110, 3090), (120, 3117), (122, 3123), (139, 3168), (142, 3180), (154, 3210),

Gene: Ryadel\_104 Start: 63381, Stop: 62932, Start Num: 57

Candidate Starts for Ryadel\_104:

(39, 63432), (Start: 57 @63381 has 10 MA's), (62, 63369), (91, 63303), (107, 63240), (113, 63216), (139, 63132), (142, 63120), (151, 63087), (196, 62937),

Gene: SG4\_82 Start: 49730, Stop: 49978, Start Num: 114

Candidate Starts for SG4\_82:

(Start: 114 @49730 has 8 MA's), (127, 49778), (142, 49838), (143, 49841), (147, 49859),

Gene: SG4\_79 Start: 48739, Stop: 49107, Start Num: 80

Candidate Starts for SG4\_79:

(Start: 67 @48706 has 8 MA's), (Start: 80 @48739 has 184 MA's), (118, 48877), (121, 48886), (126, 48901), (130, 48925), (147, 48988),

Gene: STLscum\_68 Start: 42547, Stop: 42314, Start Num: 103

Candidate Starts for STLscum\_68:

(Start: 103 @42547 has 2 MA's), (105, 42538), (134, 42475), (135, 42469), (141, 42451),

Gene: Sabbb\_90 Start: 48794, Stop: 49228, Start Num: 80

Candidate Starts for Sabbb\_90:

(62, 48755), (Start: 80 @48794 has 184 MA's), (86, 48806), (104, 48869), (110, 48884), (120, 48911), (122, 48917), (139, 48962), (142, 48974), (164, 49025), (166, 49028), (174, 49058), (185, 49100),

Gene: Sandalphon\_76 Start: 48799, Stop: 49077, Start Num: 80

Candidate Starts for Sandalphon\_76:

(Start: 80 @48799 has 184 MA's), (93, 48841), (120, 48937), (142, 49003), (148, 49024), (149, 49030), (152, 49033), (155, 49036), (168, 49057),

Gene: Schatzie\_67 Start: 49452, Stop: 49087, Start Num: 80



Candidate Starts for Schatzie\_67:

(Start: 80 @49452 has 184 MA's), (93, 49410), (120, 49314), (143, 49245), (159, 49206),

Gene: ScottMcG\_17 Start: 5737, Stop: 6012, Start Num: 80

Candidate Starts for ScottMcG\_17:

(58, 5701), (Start: 80 @5737 has 184 MA's), (118, 5872), (126, 5896), (130, 5920), (143, 5965), (157, 5992),

Gene: Shauna1\_80 Start: 49383, Stop: 49658, Start Num: 80

Candidate Starts for Shauna1\_80:

(26, 49221), (28, 49230), (Start: 80 @49383 has 184 MA's), (118, 49518), (126, 49542), (130, 49566), (143, 49611), (157, 49638),

Gene: ShereKhan\_42 Start: 35964, Stop: 35599, Start Num: 80

Candidate Starts for ShereKhan\_42:

(Start: 76 @35979 has 10 MA's), (Start: 80 @35964 has 184 MA's), (118, 35829), (126, 35805), (130, 35781), (143, 35736), (147, 35718),

Gene: Shifa\_12 Start: 4863, Stop: 5138, Start Num: 80

Candidate Starts for Shifa\_12:

(58, 4827), (Start: 80 @4863 has 184 MA's), (118, 4998), (126, 5022), (130, 5046), (143, 5091), (157, 5118),

Gene: ShowerHandel\_83 Start: 48976, Stop: 49359, Start Num: 57

Candidate Starts for ShowerHandel\_83:

(Start: 57 @48976 has 10 MA's), (60, 48985), (96, 49087), (99, 49096), (121, 49168), (125, 49180), (186, 49306),

Gene: Smairt\_41 Start: 32245, Stop: 31883, Start Num: 59

Candidate Starts for Smairt\_41:

(24, 32383), (28, 32350), (Start: 59 @32245 has 11 MA's), (142, 32002), (148, 31981), (149, 31975), (152, 31972),

Gene: Solon\_59 Start: 40107, Stop: 39859, Start Num: 114

Candidate Starts for Solon\_59:

(Start: 114 @40107 has 8 MA's), (127, 40059), (143, 39996), (147, 39978),

Gene: SophKB\_41 Start: 34943, Stop: 34668, Start Num: 80

Candidate Starts for SophKB\_41:

(Start: 76 @34958 has 10 MA's), (Start: 80 @34943 has 184 MA's), (118, 34808), (126, 34784), (130, 34760), (143, 34715), (150, 34688),

Gene: Sparkdehlily\_95 Start: 49514, Stop: 49996, Start Num: 81

Candidate Starts for Sparkdehlily\_95:

(Start: 81 @49514 has 2 MA's), (Start: 82 @49517 has 1 MA's), (Start: 84 @49520 has 1 MA's), (106, 49589), (110, 49601), (120, 49628), (122, 49634), (139, 49679), (142, 49691), (164, 49742), (166, 49745), (174, 49775), (185, 49817), (197, 49943),

Gene: Squint\_73 Start: 47089, Stop: 46724, Start Num: 80

Candidate Starts for Squint\_73:

(Start: 80 @47089 has 184 MA's), (93, 47047), (120, 46951), (143, 46882), (159, 46843),

Gene: StAnnes\_84 Start: 50390, Stop: 50668, Start Num: 80

Candidate Starts for StAnnes\_84:

(Start: 80 @50390 has 184 MA's), (93, 50432), (120, 50528), (142, 50594), (148, 50615), (149, 50621), (152, 50624), (155, 50627), (168, 50648),

Gene: Starcevich\_82 Start: 50235, Stop: 50519, Start Num: 76

Candidate Starts for Starcevich\_82:

(31, 50118), (39, 50148), (50, 50175), (64, 50211), (Start: 76 @50235 has 10 MA's), (111, 50340), (132, 50388), (138, 50406), (140, 50412), (162, 50469), (167, 50478),

Gene: Stark\_45 Start: 35450, Stop: 35046, Start Num: 80

Candidate Starts for Stark\_45:

(Start: 76 @35465 has 10 MA's), (Start: 80 @35450 has 184 MA's), (118, 35315), (126, 35291), (130, 35267), (143, 35222), (186, 35099),

Gene: StevieRay\_57 Start: 37992, Stop: 38351, Start Num: 80

Candidate Starts for StevieRay\_57:

(15, 37731), (19, 37764), (21, 37788), (23, 37794), (55, 37935), (Start: 80 @37992 has 184 MA's), (104, 38067), (110, 38082), (120, 38109), (122, 38115), (139, 38160), (142, 38172), (190, 38328),

Gene: Stubby\_16 Start: 5996, Stop: 6271, Start Num: 80

Candidate Starts for Stubby\_16:

(58, 5960), (Start: 80 @5996 has 184 MA's), (118, 6131), (126, 6155), (130, 6179), (143, 6224), (157, 6251),

Gene: Superphikiman\_70 Start: 46180, Stop: 45815, Start Num: 80

Candidate Starts for Superphikiman\_70:

(Start: 80 @46180 has 184 MA's), (93, 46138), (120, 46042), (143, 45973), (159, 45934),

Gene: TDanisky\_96 Start: 49514, Stop: 49996, Start Num: 81

Candidate Starts for TDanisky\_96:

(Start: 81 @49514 has 2 MA's), (Start: 82 @49517 has 1 MA's), (Start: 84 @49520 has 1 MA's), (106, 49589), (110, 49601), (120, 49628), (122, 49634), (139, 49679), (142, 49691), (164, 49742), (166, 49745), (174, 49775), (185, 49817), (197, 49943),

Gene: Tarkin\_43 Start: 35933, Stop: 35658, Start Num: 80

Candidate Starts for Tarkin\_43:

(Start: 76 @35948 has 10 MA's), (Start: 80 @35933 has 184 MA's), (118, 35798), (126, 35774), (130, 35750), (143, 35705), (150, 35678),

Gene: TeardropMSU\_40 Start: 34933, Stop: 34568, Start Num: 80

Candidate Starts for TeardropMSU\_40:

(Start: 76 @34948 has 10 MA's), (Start: 80 @34933 has 184 MA's), (118, 34798), (126, 34774), (130, 34750), (147, 34687),

Gene: Teaspoon\_46 Start: 35899, Stop: 35624, Start Num: 80

Candidate Starts for Teaspoon\_46:

(Start: 40 @36001 has 1 MA's), (42, 35995), (51, 35965), (Start: 80 @35899 has 184 MA's), (112, 35782), (118, 35764), (126, 35740), (130, 35716), (143, 35671), (157, 35644),

Gene: Terminus\_43 Start: 35615, Stop: 35337, Start Num: 80

Candidate Starts for Terminus\_43:

(4, 35951), (5, 35948), (7, 35942), (9, 35933), (27, 35774), (33, 35744), (Start: 80 @35615 has 184 MA's), (112, 35495), (118, 35477), (126, 35453), (130, 35429), (143, 35384), (157, 35357),

Gene: Tesla\_10 Start: 3055, Stop: 3306, Start Num: 114

Candidate Starts for Tesla\_10:

(Start: 114 @3055 has 8 MA's), (127, 3103), (142, 3163), (143, 3166), (147, 3184),

Gene: Thespis\_54 Start: 36385, Stop: 36747, Start Num: 80

Candidate Starts for Thespis\_54:

(18, 36157), (49, 36304), (55, 36328), (Start: 80 @36385 has 184 MA's), (104, 36460), (110, 36475), (120, 36502), (122, 36508), (139, 36553), (142, 36565), (190, 36724),

Gene: ThreeRngTarjay\_70 Start: 50738, Stop: 50373, Start Num: 80

Candidate Starts for ThreeRngTarjay\_70:

(Start: 80 @50738 has 184 MA's), (93, 50696), (120, 50600), (143, 50531), (159, 50492),

Gene: Thresher\_46 Start: 36685, Stop: 36281, Start Num: 80

Candidate Starts for Thresher\_46:

(Start: 80 @36685 has 184 MA's), (118, 36550), (126, 36526), (130, 36502), (141, 36469), (186, 36334),

Gene: TinyDot\_39 Start: 28787, Stop: 29068, Start Num: 119

Candidate Starts for TinyDot\_39:

(83, 28661), (86, 28664), (87, 28673), (Start: 119 @28787 has 1 MA's), (181, 29000),

Gene: Tomaszewski\_40 Start: 34800, Stop: 34435, Start Num: 80

Candidate Starts for Tomaszewski\_40:

(Start: 76 @34815 has 10 MA's), (Start: 80 @34800 has 184 MA's), (118, 34665), (126, 34641), (130, 34617), (147, 34554),

Gene: Tonenili\_21 Start: 6415, Stop: 6846, Start Num: 80

Candidate Starts for Tonenili\_21:

(13, 6136), (32, 6280), (33, 6283), (Start: 80 @6415 has 184 MA's), (86, 6427), (112, 6535), (118, 6553), (126, 6577), (130, 6601), (139, 6631), (142, 6643), (169, 6715), (180, 6769),

Gene: Topgun\_39 Start: 31551, Stop: 31189, Start Num: 59

Candidate Starts for Topgun\_39:

(24, 31689), (28, 31656), (Start: 59 @31551 has 11 MA's), (142, 31308), (148, 31287), (149, 31281), (152, 31278),

Gene: Totinger\_85 Start: 49031, Stop: 49315, Start Num: 76

Candidate Starts for Totinger\_85:

(31, 48914), (39, 48944), (50, 48971), (64, 49007), (Start: 76 @49031 has 10 MA's), (111, 49136), (132, 49184), (138, 49202), (140, 49208), (162, 49265), (167, 49274),

Gene: Ukulele\_41 Start: 34868, Stop: 34593, Start Num: 80

Candidate Starts for Ukulele\_41:

(61, 34910), (63, 34907), (Start: 80 @34868 has 184 MA's), (118, 34733), (126, 34709), (130, 34685), (143, 34640), (157, 34613),

Gene: VRedHorse\_87 Start: 48107, Stop: 48463, Start Num: 89

Candidate Starts for VRedHorse\_87:

(Start: 89 @48107 has 4 MA's), (174, 48359),

Gene: Wachhund\_79 Start: 46376, Stop: 46765, Start Num: 57

Candidate Starts for Wachhund\_79:

(39, 46334), (41, 46337), (Start: 57 @46376 has 10 MA's), (62, 46388), (91, 46454), (107, 46517), (113, 46541), (139, 46625), (142, 46637),

Gene: Wanda\_76 Start: 50200, Stop: 49835, Start Num: 80

Candidate Starts for Wanda\_76:

(Start: 80 @50200 has 184 MA's), (93, 50158), (120, 50062), (143, 49993), (159, 49954),

Gene: Wilkins\_39 Start: 31484, Stop: 31122, Start Num: 59

Candidate Starts for Wilkins\_39:

(24, 31622), (28, 31589), (Start: 59 @31484 has 11 MA's), (142, 31241), (148, 31220), (149, 31214), (152, 31211),

Gene: XFactor\_76 Start: 47957, Stop: 48232, Start Num: 80

Candidate Starts for XFactor\_76:

(58, 47921), (Start: 80 @47957 has 184 MA's), (118, 48092), (126, 48116), (130, 48140), (143, 48185), (157, 48212),

Gene: Xandras\_43 Start: 35049, Stop: 34684, Start Num: 80

Candidate Starts for Xandras\_43:

(Start: 80 @35049 has 184 MA's), (118, 34914), (126, 34890), (130, 34866), (147, 34803),

Gene: Yoshi\_97 Start: 50855, Stop: 51199, Start Num: 89

Candidate Starts for Yoshi\_97:

(37, 50720), (Start: 43 @50744 has 1 MA's), (65, 50801), (Start: 72 @50813 has 1 MA's), (77, 50822), (Start: 89 @50855 has 4 MA's), (172, 51101),

Gene: Youngblood\_43 Start: 35542, Stop: 35174, Start Num: 80

Candidate Starts for Youngblood\_43:

(Start: 80 @35542 has 184 MA's), (86, 35530), (118, 35404), (126, 35380), (130, 35356), (147, 35293),

Gene: Zapner\_89 Start: 47534, Stop: 47902, Start Num: 80

Candidate Starts for Zapner\_89:

(58, 47498), (Start: 80 @47534 has 184 MA's), (118, 47669), (126, 47693), (130, 47717), (143, 47762), (147, 47780), (174, 47828),

Gene: Zelink\_70 Start: 51051, Stop: 50686, Start Num: 80

Candidate Starts for Zelink\_70:

(Start: 80 @51051 has 184 MA's), (93, 51009), (120, 50913), (143, 50844), (159, 50805),

Gene: Zerg\_83 Start: 49449, Stop: 49727, Start Num: 80

Candidate Starts for Zerg\_83:

(Start: 80 @49449 has 184 MA's), (93, 49491), (120, 49587), (142, 49653), (148, 49674), (149, 49680), (152, 49683), (155, 49686), (168, 49707),

Gene: xkcd\_45 Start: 35735, Stop: 35457, Start Num: 80

Candidate Starts for xkcd\_45:

(4, 36071), (5, 36068), (7, 36062), (9, 36053), (27, 35894), (33, 35864), (Start: 80 @35735 has 184 MA's), (112, 35615), (118, 35597), (126, 35573), (130, 35549), (143, 35504), (157, 35477),