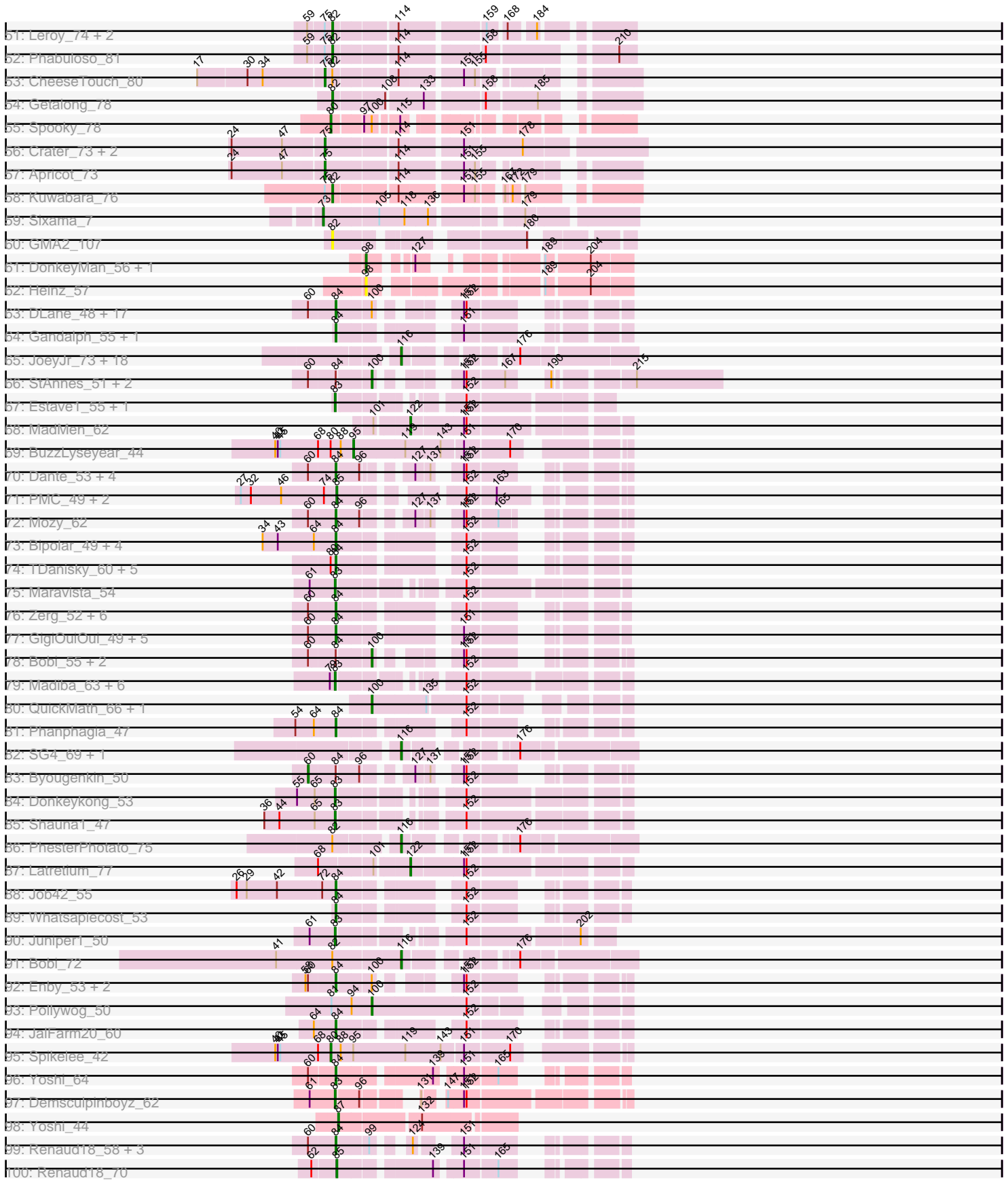
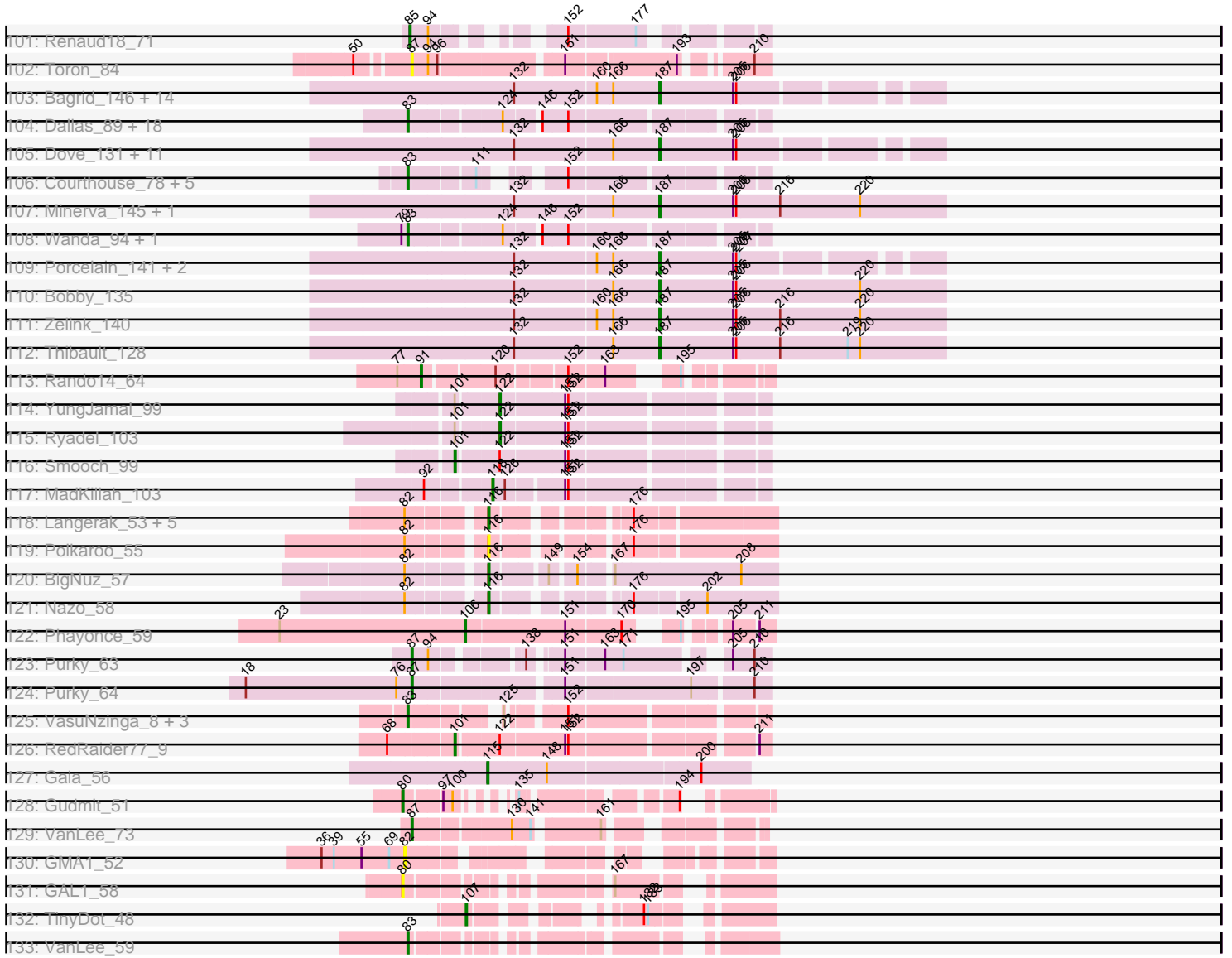




Pham 193653



Pham 193653



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 193653 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193653 has 385 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Fascinus\_60, Paraselene\_66, Carlyle\_66, CactusRose\_66, Maroc7\_64, Blue\_65, Makemake\_71, Graduation\_70, Bigfoot\_58
- Track 2 : Mule\_62, Smairt\_67, Aeneas\_68, PhrostyMug\_65, Sunshine924\_70, BaconJack\_70
- Track 3 : Jorgensen\_69
- Track 4 : Dreamboat\_67, PherrisBueller\_66, Jasper\_66
- Track 5 : Marsha\_65
- Track 6 : Bethlehem\_66
- Track 7 : HighStump\_55, Kahve\_53, Childish\_53, Soile\_54, Nicole21\_54, DaddyDaniels\_55, Craff\_56, Legolas\_55, Longacauda\_54, Brilliant\_55, HenryJackson\_53
- Track 8 : Fozzie\_52, CamL\_53, Mosaic\_52, Sophia\_52, Serendipity\_53, Cosmolli16\_54, TallGrassMM\_53, Surely\_53, Chorkpop\_53, Squid\_53, Morgushi\_53, Solosis\_52, Timmi\_52, MitKao\_53, Maru\_53, Lasso\_53, Potter\_52, Samaymay\_53, QueenBeane\_53, Mana\_52, Daffy\_53, LeeLot\_53, Oosterbaan\_53, Hertubise\_53, Zelda\_53, Cannibal\_53, Kwadwo\_52, Thora\_53, Haleema\_52, TomBombadil\_53, SassyCat97\_52, Vortex\_53, Puhltonio\_53, Xavier\_52, Held\_53, Banjo\_52
- Track 9 : Grand2040\_53, Lumine\_54, Mesh1\_54, Giraffe\_54
- Track 10 : Fringe\_57
- Track 11 : Abinghost\_51, Neos5\_51, SynergyX\_51, Baloo\_51, Audrey\_51, Nozo\_51, Daisy\_51, ChaChing\_51, GlenHope\_52, Philly\_50, Halfpint\_50, OrangeOswald\_51, Corofin\_51, Akoma\_51, Kamiyu\_51, Phlyer\_51, Athena\_52, Chandler\_51
- Track 12 : Phayeta\_53, Kronus\_51, Gervas\_52, Mortcellus\_51, Casbah\_51, Rita1961\_52, MmasiCarm\_52, Obutu\_52
- Track 13 : Sebata\_6, LinStu\_6
- Track 14 : InterFolia\_6, Tainan\_6, LordLeafolot\_6
- Track 15 : LolaVinca\_6
- Track 16 : DTDevon\_6, Pier\_6, Tyke\_6, Specks\_6, Dandelion\_5, Nappy\_5, Drazdys\_6
- Track 17 : Tonenili\_49
- Track 18 : NuevoMundo\_6
- Track 19 : Tonenili\_50
- Track 20 : FrayBell\_6
- Track 21 : JigglyPuff\_5
- Track 22 : JayJay\_5
- Track 23 : StephanieG\_6

- Track 24 : Trine\_55
- Track 25 : WilliamBoone\_96
- Track 26 : MissRona\_77, Blueberry\_76, Azula\_77, Gambino\_79
- Track 27 : William\_80
- Track 28 : Lton\_54
- Track 29 : Beenie\_54
- Track 30 : Clark\_59, Samman98\_60
- Track 31 : DobbysSock\_53
- Track 32 : Denise\_57
- Track 33 : Faith5x5\_53
- Track 34 : Moosehead\_58
- Track 35 : SirHarley\_86, Gumball\_84
- Track 36 : Troll4\_84
- Track 37 : Hawkeye\_97
- Track 38 : Morkie\_59, PhorbesPhlower\_55
- Track 39 : Lucky10\_55
- Track 40 : BearBQ\_75
- Track 41 : Ecliptus\_80, BENtherdunthat\_78, Frickyeah\_80, Asapag\_74, Birdsong\_73
- Track 42 : Budski\_80
- Track 43 : Budski\_68
- Track 44 : ODay\_82
- Track 45 : Periwinkle\_85
- Track 46 : LitninMcQueen\_77
- Track 47 : Whitney\_75
- Track 48 : Kamaru\_71
- Track 49 : Periwinkle\_62
- Track 50 : Lutum\_77, Kenna\_71
- Track 51 : Leroy\_74, Holliday\_79, OneDirection\_52
- Track 52 : Phabuloso\_81
- Track 53 : CheeseTouch\_80
- Track 54 : Getalong\_78
- Track 55 : Spooky\_78
- Track 56 : Crater\_73, Horus\_75, Phistory\_72
- Track 57 : Apricot\_73
- Track 58 : Kuwabara\_76
- Track 59 : Sixama\_7
- Track 60 : GMA2\_107
- Track 61 : DonkeyMan\_56, Tarzan\_58
- Track 62 : Heinz\_57
- Track 63 : DLane\_48, Mova\_53, VRedHorse\_52, XFactor\_50, PhesterPhotato\_54, Hamulus\_53, Ardmore\_44, Moonbeam\_48, Batiatus\_50, Melissauren88\_50, Emma\_52, Royals2015\_55, Phalconet\_51, MilleniumForce\_52, CaptainTrips\_49, MinionDave\_51, Tweety\_52, Madiba\_50
- Track 64 : Gandalph\_55, Polka14\_51
- Track 65 : JoeyJr\_73, PHappiness\_73, Leperchaun\_71, Empress\_71, Sassafras\_74, Doomphist\_76, Poenanya\_76, Nimbo\_65, Geralt\_66, Polka14\_77, Deb65\_66, RitaG\_73, Scottish\_71, Daenerys\_72, Dorothy\_74, KingMidas\_72, Inventum\_71, RedBird\_74, OldBen\_70
- Track 66 : StAnnes\_51, Filuzino\_50, IMpilo\_49
- Track 67 : Estave1\_55, Eish\_57
- Track 68 : MadMen\_62
- Track 69 : BuzzLyseyear\_44

- Track 70 : Dante\_53, Inventum\_47, DaWorst\_54, DaddyRickover\_52, Sassafras\_50
- Track 71 : PMC\_49, Boomer\_57, Rockne\_53
- Track 72 : Mozy\_62
- Track 73 : Bipolar\_49, SuperGrey\_52, ShroomBoi\_52, KristaRAM\_51, Kenuha5\_50
- Track 74 : TDanisky\_60, OgoPogo\_57, Chuckly\_55, Phasih\_51, Sparkdehlily\_60, Aubs\_53
- Track 75 : Maravista\_54
- Track 76 : Zerg\_52, Che8\_55, Firehouse51\_53, ArcusAngelus\_56, Chevrolet\_59, RockyHorror\_53, Doug\_55
- Track 77 : GigiOuiOui\_49, OwlsT2W\_53, Doomphist\_52, Poenanya\_52, Cornucopia\_55, DotProduct\_48
- Track 78 : Bobi\_55, Krakatau\_50, Harley\_54
- Track 79 : Madiba\_63, Minerva\_89, Optimus\_84, BAKA\_91, Mova\_66, EricMillard\_83, MadMen\_50
- Track 80 : QuickMath\_66, Kimberlium\_67
- Track 81 : Phanphagia\_47
- Track 82 : SG4\_69, Hegedechwinu\_72
- Track 83 : Byougenkin\_50
- Track 84 : Donkeykong\_53
- Track 85 : Shauna1\_47
- Track 86 : PhesterPhotato\_75
- Track 87 : Latretium\_77
- Track 88 : Job42\_55
- Track 89 : Whatsapiecost\_53
- Track 90 : Juniper1\_50
- Track 91 : Bobi\_72
- Track 92 : Enby\_53, SG4\_49, Lorde\_53
- Track 93 : Pollywog\_50
- Track 94 : JalFarm20\_60
- Track 95 : Spikelee\_42
- Track 96 : Yoshi\_64
- Track 97 : Demsculpinboyz\_62
- Track 98 : Yoshi\_44
- Track 99 : Renaud18\_58, Taj\_56, Wee\_55, DeadP\_58
- Track 100 : Renaud18\_70
- Track 101 : Renaud18\_71
- Track 102 : Toron\_84
- Track 103 : Bagrid\_146, ThreeRngTarjay\_140, Halley\_147, Pound\_137, Optimus\_136, DmpstrDiver\_146, Ejimix\_138, BAKA\_145, EricMillard\_137, Hughesyang\_144, Phoebus\_145, Constella\_139, Duke13\_141, Dallas\_146, Schatzie\_141
- Track 104 : Dallas\_89, Hughesyang\_90, DmpstrDiver\_90, ThreeRngTarjay\_87, Kalah2\_84, Yeet\_83, Zelink\_87, Dove\_75, Bagrid\_89, Phoebus\_92, Schatzie\_85, Bombitas\_78, Beem\_90, NihilNomen\_91, Halley\_91, JuicyJay\_87, Odette\_88, Constella\_75, HokkenD\_79
- Track 105 : Dove\_131, NihilNomen\_147, HokkenD\_138, Yeet\_139, Odette\_149, Kalah2\_136, Redno2\_140, JuicyJay\_141, Klein\_143, Beem\_147, KashFlow\_144, Bombitas\_133
- Track 106 : Courthouse\_78, MiaZeal\_83, Ariel\_82, Lucky2013\_80, Porcelain\_82, Squint\_83
- Track 107 : Minerva\_145, Wanda\_145
- Track 108 : Wanda\_94, Klein\_90
- Track 109 : Porcelain\_141, MiaZeal\_144, Lucky2013\_137

- Track 110 : Bobby\_135
- Track 111 : Zelink\_140
- Track 112 : Thibault\_128
- Track 113 : Rando14\_64
- Track 114 : YungJamal\_99
- Track 115 : Ryadel\_103
- Track 116 : Smooch\_99
- Track 117 : MadKillah\_103
- Track 118 : Langerak\_53, Fishburne\_52, FirstPlacePfu\_54, Bartholomew\_52, Venti\_53, Kari\_52
- Track 119 : Polkaroo\_55
- Track 120 : BigNuz\_57
- Track 121 : Nazo\_58
- Track 122 : Phayonce\_59
- Track 123 : Purky\_63
- Track 124 : Purky\_64
- Track 125 : VasuNzinga\_8, Pringar\_6, Beelzebub\_8, Clarkson\_7
- Track 126 : RedRaider77\_9
- Track 127 : Gaia\_56
- Track 128 : Gudmit\_51
- Track 129 : VanLee\_73
- Track 130 : GMA1\_52
- Track 131 : GAL1\_58
- Track 132 : TinyDot\_48
- Track 133 : VanLee\_59

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

The start number called the most often in the published annotations is 83, it was called in 79 of the 365 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Abinghost\_51, Akoma\_51, Ariel\_82, Athena\_52, Audrey\_51, BAKA\_91, Bagrid\_89, Baloo\_51, Beelzebub\_8, Beem\_90, Bigfoot\_58, Blue\_65, Bombitas\_78, CactusRose\_66, Carlyle\_66, Casbah\_51, ChaChing\_51, Chandler\_51, Clarkson\_7, Constella\_75, Corofin\_51, Courthouse\_78, Daisy\_51, Dallas\_89, Demsculpinboyz\_62, DmpstrDiver\_90, Donkeykong\_53, Dove\_75, Eish\_57, EricMillard\_83, Estave1\_55, Fascinus\_60, Gervas\_52, GlenHope\_52, Graduation\_70, Halfpint\_50, Halley\_91, HokkenD\_79, Hughesyang\_90, JuicyJay\_87, Juniper1\_50, Kalah2\_84, Kamiyu\_51, Klein\_90, Kronus\_51, Lucky2013\_80, MadMen\_50, Madiba\_63, Makemake\_71, Maravista\_54, Maroc7\_64, MiaZeal\_83, Minerva\_89, MmasiCarm\_52, Mortcellus\_51, Mova\_66, Neos5\_51, NihilNomen\_91, Nozo\_51, Obutu\_52, Odette\_88, Optimus\_84, OrangeOswald\_51, Paraselene\_66, Phayeta\_53, Philly\_50, Phlyer\_51, Phoebus\_92, Porcelain\_82, Pringar\_6, Rita1961\_52, Schatzie\_85, Shauna1\_47, Squint\_83, SynergyX\_51, ThreeRngTarjay\_87, VanLee\_59, VasuNzinga\_8, Wanda\_94, Yeet\_83, Zelink\_87,

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

-

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

• Aeneas\_68, Apricot\_73, ArcusAngelus\_56, Ardmore\_44, Asapag\_74, Aubs\_53, Azula\_77, BAKA\_145, BENtherdunthat\_78, BaconJack\_70, Bagrid\_146, Banjo\_52, Bartholomew\_52, Batiatus\_50, BearBQ\_75, Beem\_147, Beenie\_54, Bethlehem\_66, BigNuz\_57, Bipolar\_49, Birdsong\_73, Blueberry\_76, Bobby\_135, Bobi\_55, Bobi\_72, Bombitas\_133, Boomer\_57, Brilliant\_55, Budski\_68, Budski\_80, BuzzLyseyear\_44, Byougenkin\_50, CamL\_53, Cannibal\_53, CaptainTrips\_49, Che8\_55, CheeseTouch\_80, Chevrolet\_59, Childish\_53, Chorkpop\_53, Chuckly\_55, Clark\_59, Constella\_139, Cornucopia\_55, Cosmolli16\_54, Craff\_56, Crater\_73, DLane\_48, DTDevon\_6, DaWorst\_54, DaddyDaniels\_55, DaddyRickover\_52, Daenerys\_72, Daffy\_53, Dallas\_146, Dandelion\_5, Dante\_53, DeadP\_58, Deb65\_66, Denise\_57, DmpstrDiver\_146, DobbysSock\_53, DonkeyMan\_56, Doomphist\_52, Doomphist\_76, Dorothy\_74, DotProduct\_48, Doug\_55, Dove\_131, Drazdys\_6, Dreamboat\_67, Duke13\_141, Ecliptus\_80, Ejimix\_138, Emma\_52, Empress\_71, Enby\_53, EricMillard\_137, Faith5x5\_53, Filuzino\_50, Firehouse51\_53, FirstPlacePfu\_54, Fishburne\_52, Fozzie\_52, FrayBell\_6, Frickyeah\_80, Fringe\_57, GAL1\_58, GMA1\_52, GMA2\_107, Gaia\_56, Gambino\_79, Gandolph\_55, Geralt\_66, Getalong\_78, GigiOuiOui\_49, Giraffe\_54, Grand2040\_53, Gudmit\_51, Gumball\_84, Haleema\_52, Halley\_147, Hamulus\_53, Harley\_54, Hawkeye\_97, Hegedechwinu\_72, Heinz\_57, Held\_53, HenryJackson\_53, Hertubise\_53, HighStump\_55, HokkenD\_138, Holliday\_79, Horus\_75, Hughesyang\_144, IMpilo\_49, InterFolia\_6, Inventum\_47, Inventum\_71, JalFarm20\_60, Jasper\_66, JayJay\_5, JigglyPuff\_5, Job42\_55, JoeyJr\_73, Jorgensen\_69, JuicyJay\_141, Kahve\_53, Kalah2\_136, Kamaru\_71, Kari\_52, KashFlow\_144, Kenna\_71, Kenuha5\_50, Kimberlium\_67, KingMidas\_72, Klein\_143, Krakatau\_50, KristaRAM\_51, Kuwabara\_76, Kwadwo\_52, Langerak\_53, Lasso\_53, Latretium\_77, LeeLot\_53, Legolas\_55, Leperchaun\_71, Leroy\_74, LinStu\_6, LitninMcQueen\_77, LolaVinca\_6, Longacauda\_54, LordLeafolot\_6, Lorde\_53, Lton\_54, Lucky10\_55, Lucky2013\_137, Lumine\_54, Lutum\_77, MadKillah\_103, MadMen\_62, Madiba\_50, Mana\_52, Marsha\_65, Maru\_53, Melissauren88\_50, Mesh1\_54, MiaZeal\_144, MilleniumForce\_52, Minerva\_145, MinionDave\_51, MissRona\_77, MitKao\_53, Moonbeam\_48, Moosehead\_58, Morgushi\_53, Morkie\_59, Mosaic\_52, Mova\_53, Mozy\_62, Mule\_62, Nappy\_5, Nazo\_58, Nicole21\_54, NihilNomen\_147, Nimbo\_65, NuevoMundo\_6, ODay\_82, Odette\_149, Ogopogo\_57, OldBen\_70, OneDirection\_52, Oosterbaan\_53, Optimus\_136, OwlsT2W\_53, PHappiness\_73, PMC\_49, Periwinkle\_62, Periwinkle\_85, Phabuloso\_81, Phalconet\_51, Phanphagia\_47, Phasih\_51, Phayonce\_59, PherrisBueller\_66, PhesterPotato\_54, PhesterPotato\_75, Phistory\_72, Phoebus\_145, PhorbesPhlower\_55, PhrostyMug\_65, Pier\_6, Poenanya\_52, Poenanya\_76, Polka14\_51, Polka14\_77, Polkaroo\_55, Pollywog\_50, Porcelain\_141, Potter\_52, Pound\_137, Puhltonio\_53, Purky\_63, Purky\_64, QueenBeane\_53, QuickMath\_66, Rando14\_64, RedBird\_74, RedRaider77\_9, Redno2\_140, Renaud18\_58, Renaud18\_70, Renaud18\_71, RitaG\_73, Rockne\_53, RockyHorror\_53, Royals2015\_55, Ryadel\_103, SG4\_49, SG4\_69, Samaymay\_53, Samman98\_60, Sassafras\_50, Sassafras\_74, SassyCat97\_52, Schatzie\_141, Scottish\_71, Sebata\_6, Serendipity\_53, ShroomBoi\_52, SirHarley\_86, Sixama\_7, Smairt\_67, Smooch\_99, Soile\_54, Solosis\_52, Sophia\_52, Sparkdehlily\_60, Specks\_6, Spikelee\_42, Spooky\_78, Squid\_53, StAnnes\_51, StephanieG\_6, Sunshine924\_70, SuperGrey\_52, Surely\_53, TDanisky\_60, Tainan\_6, Taj\_56, TallGrassMM\_53, Tarzan\_58, Thibault\_128, Thora\_53, ThreeRngTarjay\_140, Timmi\_52, TinyDot\_48, TomBombadil\_53, Tonenili\_49, Tonenili\_50, Toron\_84, Trine\_55, Troll4\_84, Tweety\_52, Tyke\_6, VRedHorse\_52, VanLee\_73, Venti\_53, Vortex\_53, Wanda\_145, Wee\_55, Whatsapiecost\_53, Whitney\_75, WilliamBoone\_96, William\_80, XFactor\_50, Xavier\_52, Yeet\_139, Yoshi\_44,



Yoshi\_64, YungJamal\_99, Zelda\_53, Zelink\_140, Zerg\_52,

**Summary by start number:**

Start 48:

- Found in 1 of 385 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Denise\_57 (CZ5),

Start 60:

- Found in 52 of 385 ( 13.5% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 1.9% of time when present
- Phage (with cluster) where this start called: Byougenkin\_50 (F1),

Start 73:

- Found in 1 of 385 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sixama\_7 (DS),

Start 75:

- Found in 28 of 385 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 5 of 365
- Called 17.9% of time when present
- Phage (with cluster) where this start called: Apricot\_73 (DN3), CheeseTouch\_80 (DN1), Crater\_73 (DN3), Horus\_75 (DN1), Phistory\_72 (DN1),

Start 78:

- Found in 18 of 385 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 2 of 365
- Called 16.7% of time when present
- Phage (with cluster) where this start called: JayJay\_5 (C1), LolaVinca\_6 (C1), NuevoMundo\_6 (C1),

Start 80:

- Found in 14 of 385 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 6 of 365
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Clark\_59 (CZ4), DobbysSock\_53 (CZ4), GAL1\_58 (singleton), Gudmit\_51 (singleton), Samman98\_60 (CZ4), Spikelee\_42 (F1), Spooky\_78 (DN2),

Start 81:

- Found in 2 of 385 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Jorgensen\_69 (A1),

Start 82:

- Found in 92 of 385 ( 23.9% ) of genes in pham
- Manual Annotations of this start: 24 of 365

- Called 29.3% of time when present
- Phage (with cluster) where this start called: Asapag\_74 (DN1), BENtherdunthat\_78 (DN1), BearBQ\_75 (DN), Beenie\_54 (CZ4), Birdsong\_73 (DN), Budski\_80 (DN), Ecliptus\_80 (DN), Frickyeah\_80 (DN1), GMA1\_52 (singleton), GMA2\_107 (DS), Getalong\_78 (DN1), Holliday\_79 (DN1), Kamaru\_71 (DN1), Kenna\_71 (DN1), Kuwabara\_76 (DN4), Leroy\_74 (DN1), LitninMcQueen\_77 (DN1), Lton\_54 (CZ), Lucky10\_55 (DH), Lutum\_77 (DN1), Moosehead\_58 (CZ6), Morkie\_59 (DH), ODay\_82 (DN), OneDirection\_52 (CZ6), Phabuloso\_81 (DN1), PhorbesPhlower\_55 (DH), Whitney\_75 (DN1),

#### Start 83:

- Found in 81 of 385 ( 21.0% ) of genes in pham
- Manual Annotations of this start: 79 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abingghost\_51 (B3), Akoma\_51 (B3), Ariel\_82 (J), Athena\_52 (B3), Audrey\_51 (B3), BAKA\_91 (J), Bagrid\_89 (J), Baloo\_51 (B3), Beelzebub\_8 (S), Beem\_90 (J), Bigfoot\_58 (A1), Blue\_65 (A1), Bombitas\_78 (J), CactusRose\_66 (A1), Carlyle\_66 (A1), Casbah\_51 (B3), ChaChing\_51 (B3), Chandler\_51 (B3), Clarkson\_7 (S), Constella\_75 (J), Corofin\_51 (B3), Courthouse\_78 (J), Daisy\_51 (B3), Dallas\_89 (J), Demsculpinboyz\_62 (F2), DmpstrDiver\_90 (J), Donkeykong\_53 (F1), Dove\_75 (J), Eish\_57 (F1), EricMillard\_83 (J), Estave1\_55 (F1), Fascinus\_60 (A1), Gervas\_52 (B3), GlenHope\_52 (B3), Graduation\_70 (A1), Halfpint\_50 (B3), Halley\_91 (J), HokkenD\_79 (J), Hughesyang\_90 (J), JuicyJay\_87 (J), Juniper1\_50 (F1), Kalah2\_84 (J), Kamiyu\_51 (B3), Klein\_90 (J), Kronus\_51 (B3), Lucky2013\_80 (J), MadMen\_50 (F1), Madiba\_63 (F1), Makemake\_71 (A1), Maravista\_54 (F1), Maroc7\_64 (A1), MiaZeal\_83 (J), Minerva\_89 (J), MmasiCarm\_52 (B3), Mortcellus\_51 (B3), Mova\_66 (F1), Neos5\_51 (B3), NihilNomen\_91 (J), Nozo\_51 (B3), Obutu\_52 (B3), Odette\_88 (J), Optimus\_84 (J), OrangeOswald\_51 (B3), Paraselene\_66 (A1), Phayeta\_53 (B3), Philly\_50 (B3), Phlyer\_51 (B3), Phoebus\_92 (J), Porcelain\_82 (J), Pringar\_6 (S), Rita1961\_52 (B3), Schatzie\_85 (J), Shauna1\_47 (F1), Squint\_83 (J), SynergyX\_51 (B3), ThreeRngTarjay\_87 (J), VanLee\_59 (singleton), VasuNzinga\_8 (S), Wanda\_94 (J), Yeet\_83 (J), Zelink\_87 (J),

#### Start 84:

- Found in 74 of 385 ( 19.2% ) of genes in pham
- Manual Annotations of this start: 65 of 365
- Called 90.5% of time when present
- Phage (with cluster) where this start called: ArcusAngelus\_56 (F1), Ardmore\_44 (F1), Aubs\_53 (F1), Batiatus\_50 (F1), Bethlehem\_66 (A1), Bipolar\_49 (F1), CaptainTrips\_49 (F1), Che8\_55 (F1), Chevrolet\_59 (F1), Chuckly\_55 (F1), Cornucopia\_55 (F1), DLane\_48 (F1), DaWorst\_54 (F1), DaddyRickover\_52 (F1), Dante\_53 (F1), DeadP\_58 (F1), Doomphist\_52 (F1), DotProduct\_48 (F1), Doug\_55 (F1), Emma\_52 (F1), Enby\_53 (F1), Firehouse51\_53 (F1), Gandalph\_55 (F1), GigiOuiOui\_49 (F1), Gumball\_84 (D1), Hamulus\_53 (F1), Inventum\_47 (F1), JalFarm20\_60 (F1), Job42\_55 (F1), Kenuha5\_50 (F1), KristaRAM\_51 (F1), Lorde\_53 (F1), Madiba\_50 (F1), Melissauren88\_50 (F1), MilleniumForce\_52 (F1), MinionDave\_51 (F1), Moonbeam\_48 (F1), Mova\_53 (F1), Mozy\_62 (F1), Ogoopogo\_57 (F1), OwlsT2W\_53 (F1), Phalconet\_51 (F1), Phanphagia\_47 (F1), Phasih\_51 (F1), PhesterPhotato\_54 (F1), Poenanya\_52 (F1), Polka14\_51 (F1), Renaud18\_58 (F4), RockyHorror\_53 (F1), Royals2015\_55 (F1), SG4\_49 (F1), Sassafras\_50 (F1), ShroomBoi\_52 (F1), SirHarley\_86 (D1), Sparkdehily\_60 (F1), SuperGrey\_52 (F1), TDanisky\_60 (F1), Taj\_56 (F1), Tonenili\_49 (C1), Troll4\_84 (D1), Tweety\_52 (F1), VRedHorse\_52 (F1), Wee\_55 (F1), Whatsapiecost\_53 (F1),

XFactor\_50 (F1), Yoshi\_64 (F2), Zerg\_52 (F1),

Start 85:

- Found in 30 of 385 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 22 of 365
- Called 73.3% of time when present
- Phage (with cluster) where this start called: Aeneas\_68 (A1), BaconJack\_70 (A1), Boomer\_57 (F1), DTDevon\_6 (C1), Dandelion\_5 (C1), Drazdys\_6 (C1), FrayBell\_6 (C1), LinStu\_6 (C1), Marsha\_65 (A1), Mule\_62 (A1), Nappy\_5 (C1), PMC\_49 (F1), PhrostyMug\_65 (A1), Pier\_6 (C1), Renaud18\_70 (F4), Renaud18\_71 (F4), Rockne\_53 (F1), Sebata\_6 (C1), Smairt\_67 (A1), Specks\_6 (C1), Sunshine924\_70 (A1), Tyke\_6 (C1),

Start 86:

- Found in 57 of 385 ( 14.8% ) of genes in pham
- Manual Annotations of this start: 5 of 365
- Called 8.8% of time when present
- Phage (with cluster) where this start called: Dreamboat\_67 (A1), Jasper\_66 (A1), PherrisBueller\_66 (A1), Trine\_55 (CD), William\_80 (CV),

Start 87:

- Found in 7 of 385 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 6 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Budski\_68 (DN), Purky\_63 (P6), Purky\_64 (P6), Toron\_84 (F6), VanLee\_73 (singleton), WilliamBoone\_96 (CQ1), Yoshi\_44 (F2),

Start 89:

- Found in 1 of 385 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Periwinkle\_62 (DN1),

Start 91:

- Found in 1 of 385 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rando14\_64 (K5),

Start 95:

- Found in 2 of 385 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 50.0% of time when present
- Phage (with cluster) where this start called: BuzzLyseyear\_44 (F1),

Start 98:

- Found in 3 of 385 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DonkeyMan\_56 (DY), Heinz\_57 (DY), Tarzan\_58 (DY),

Start 100:

- Found in 53 of 385 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 9 of 365
- Called 22.6% of time when present
- Phage (with cluster) where this start called: Bobi\_55 (F1), Filuzino\_50 (F1), Harley\_54 (F1), IMpilo\_49 (F1), InterFolia\_6 (C1), Kimberlium\_67 (F1), Krakatau\_50 (F1), LordLeafolot\_6 (C1), Pollywog\_50 (F1), QuickMath\_66 (F1), StAnnes\_51 (F1), Tainan\_6 (C1),

Start 101:

- Found in 6 of 385 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 365
- Called 33.3% of time when present
- Phage (with cluster) where this start called: RedRaider77\_9 (S), Smooch\_99 (O),

Start 104:

- Found in 53 of 385 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 53 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Banjo\_52 (B1), Brilliant\_55 (B1), CamL\_53 (B1), Cannibal\_53 (B1), Childish\_53 (B1), Chorkpop\_53 (B1), Cosmolli16\_54 (B1), Craff\_56 (B1), DaddyDaniels\_55 (B1), Daffy\_53 (B1), Fozzie\_52 (B1), Fringe\_57 (B1), Giraffe\_54 (B1), Grand2040\_53 (B1), Haleema\_52 (B1), Hawkeye\_97 (D2), Held\_53 (B1), HenryJackson\_53 (B1), Hertubise\_53 (B1), HighStump\_55 (B1), Kahve\_53 (B1), Kwadwo\_52 (B1), Lasso\_53 (B1), LeeLot\_53 (B1), Legolas\_55 (B1), Longacauda\_54 (B1), Lumine\_54 (B1), Mana\_52 (B1), Maru\_53 (B1), Mesh1\_54 (B1), MitKao\_53 (B1), Morgushi\_53 (B1), Mosaic\_52 (B1), Nicole21\_54 (B1), Oosterbaan\_53 (B1), Potter\_52 (B1), Puhltonio\_53 (B1), QueenBeane\_53 (B1), Samaymay\_53 (B1), SassyCat97\_52 (B1), Serendipity\_53 (B1), Soile\_54 (B1), Solosis\_52 (B1), Sophia\_52 (B1), Squid\_53 (B1), Surely\_53 (B1), TallGrassMM\_53 (B1), Thora\_53 (B1), Timmi\_52 (B1), TomBombadil\_53 (B1), Vortex\_53 (B1), Xavier\_52 (B1), Zelda\_53 (B1),

Start 105:

- Found in 7 of 385 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Faith5x5\_53 (CZ6),

Start 106:

- Found in 2 of 385 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phayonce\_59 (P5), Tonenili\_50 (C1),

Start 107:

- Found in 2 of 385 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Periwinkle\_85 (DN1), TinyDot\_48 (singleton),

Start 110:

- Found in 21 of 385 ( 5.5% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 9.5% of time when present
- Phage (with cluster) where this start called: JigglyPuff\_5 (C1), StephanieG\_6 (C1),

#### Start 115:

- Found in 54 of 385 ( 14.0% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 1.9% of time when present
- Phage (with cluster) where this start called: Gaia\_56 (X),

#### Start 116:

- Found in 32 of 385 ( 8.3% ) of genes in pham
- Manual Annotations of this start: 30 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bartholomew\_52 (P1), BigNuz\_57 (P4), Bobi\_72 (F1), Daenerys\_72 (F1), Deb65\_66 (F1), Doomphist\_76 (F1), Dorothy\_74 (F1), Empress\_71 (F1), FirstPlacePfu\_54 (P1), Fishburne\_52 (P1), Geralt\_66 (F1), Hegedechwinu\_72 (F1), Inventum\_71 (F1), JoeyJr\_73 (F1), Kari\_52 (P1), KingMidas\_72 (F1), Langerak\_53 (P1), Leperchaun\_71 (F1), Nazo\_58 (P4), Nimbo\_65 (F1), OldBen\_70 (F1), PHappiness\_73 (F1), PhesterPhotato\_75 (F1), Poenanya\_76 (F1), Polka14\_77 (F1), Polkaroo\_55 (P1), RedBird\_74 (F1), RitaG\_73 (F1), SG4\_69 (F1), Sassafras\_74 (F1), Scottish\_71 (F1), Venti\_53 (P1),

#### Start 118:

- Found in 3 of 385 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 365
- Called 33.3% of time when present
- Phage (with cluster) where this start called: MadKillah\_103 (O),

#### Start 122:

- Found in 6 of 385 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 4 of 365
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Latretium\_77 (F1), MadMen\_62 (F1), Ryadel\_103 (O), YungJamal\_99 (O),

#### Start 187:

- Found in 35 of 385 ( 9.1% ) of genes in pham
- Manual Annotations of this start: 33 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BAKA\_145 (J), Bagrid\_146 (J), Beem\_147 (J), Bobby\_135 (J), Bombitas\_133 (J), Constella\_139 (J), Dallas\_146 (J), DmpstrDiver\_146 (J), Dove\_131 (J), Duke13\_141 (J), Ejimix\_138 (J), EricMillard\_137 (J), Halley\_147 (J), HokkenD\_138 (J), Hughesyang\_144 (J), JuicyJay\_141 (J), Kalah2\_136 (J), KashFlow\_144 (J), Klein\_143 (J), Lucky2013\_137 (J), MiaZeal\_144 (J), Minerva\_145 (J), NihilNomen\_147 (J), Odette\_149 (J), Optimus\_136 (J), Phoebus\_145 (J), Porcelain\_141 (J), Pound\_137 (J), Redno2\_140 (J), Schatzie\_141 (J), Thibault\_128 (J), ThreeRngTarjay\_140 (J), Wanda\_145 (J), Yeet\_139 (J), Zelink\_140 (J),

#### Start 223:

- Found in 4 of 385 ( 1.0% ) of genes in pham

- Manual Annotations of this start: 4 of 365
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azula\_77 (CV), Blueberry\_76 (CV), Gambino\_79 (CV), MissRona\_77 (CV),

### **Summary by clusters:**

There are 35 clusters represented in this pham: DN, singleton, CQ1, DH, CZ6, CZ4, CZ5, K5, DY, DS, A1, DN4, DN1, DN3, DN2, C1, P1, P6, P4, P5, J, O, CD, CZ, S, X, CV, F1, F2, F4, F6, B1, B3, D2, D1,

Info for manual annotations of cluster A1:

- Start number 81 was manually annotated 1 time for cluster A1.
- Start number 83 was manually annotated 9 times for cluster A1.
- Start number 84 was manually annotated 1 time for cluster A1.
- Start number 85 was manually annotated 7 times for cluster A1.
- Start number 86 was manually annotated 3 times for cluster A1.

Info for manual annotations of cluster B1:

- Start number 104 was manually annotated 52 times for cluster B1.

Info for manual annotations of cluster B3:

- Start number 83 was manually annotated 26 times for cluster B3.

Info for manual annotations of cluster C1:

- Start number 78 was manually annotated 2 times for cluster C1.
- Start number 84 was manually annotated 1 time for cluster C1.
- Start number 85 was manually annotated 10 times for cluster C1.
- Start number 100 was manually annotated 1 time for cluster C1.
- Start number 106 was manually annotated 1 time for cluster C1.
- Start number 110 was manually annotated 1 time for cluster C1.

Info for manual annotations of cluster CD:

- Start number 86 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CQ1:

- Start number 87 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster CV:

- Start number 86 was manually annotated 1 time for cluster CV.
- Start number 223 was manually annotated 4 times for cluster CV.

Info for manual annotations of cluster CZ:

- Start number 82 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ4:

- Start number 80 was manually annotated 3 times for cluster CZ4.
- Start number 82 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 48 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 82 was manually annotated 2 times for cluster CZ6.
- Start number 105 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster D1:

- Start number 84 was manually annotated 3 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 104 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DH:

- Start number 82 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 82 was manually annotated 5 times for cluster DN.
- Start number 87 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 75 was manually annotated 3 times for cluster DN1.
- Start number 82 was manually annotated 11 times for cluster DN1.
- Start number 89 was manually annotated 1 time for cluster DN1.
- Start number 107 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 80 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 75 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 82 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DS:

- Start number 73 was manually annotated 1 time for cluster DS.

Info for manual annotations of cluster DY:

- Start number 98 was manually annotated 1 time for cluster DY.

Info for manual annotations of cluster F1:

- Start number 60 was manually annotated 1 time for cluster F1.
- Start number 80 was manually annotated 1 time for cluster F1.
- Start number 83 was manually annotated 9 times for cluster F1.
- Start number 84 was manually annotated 58 times for cluster F1.
- Start number 85 was manually annotated 3 times for cluster F1.
- Start number 95 was manually annotated 1 time for cluster F1.
- Start number 100 was manually annotated 8 times for cluster F1.
- Start number 116 was manually annotated 23 times for cluster F1.
- Start number 122 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 83 was manually annotated 1 time for cluster F2.
- Start number 84 was manually annotated 1 time for cluster F2.
- Start number 87 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster F4:

- Start number 84 was manually annotated 1 time for cluster F4.
- Start number 85 was manually annotated 2 times for cluster F4.

Info for manual annotations of cluster J:

- Start number 83 was manually annotated 29 times for cluster J.
- Start number 187 was manually annotated 33 times for cluster J.

Info for manual annotations of cluster K5:

- Start number 91 was manually annotated 1 time for cluster K5.

Info for manual annotations of cluster O:

- Start number 101 was manually annotated 1 time for cluster O.
- Start number 118 was manually annotated 1 time for cluster O.
- Start number 122 was manually annotated 2 times for cluster O.

Info for manual annotations of cluster P1:

- Start number 116 was manually annotated 5 times for cluster P1.

Info for manual annotations of cluster P4:

- Start number 116 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 106 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster P6:

- Start number 87 was manually annotated 2 times for cluster P6.

Info for manual annotations of cluster S:

- Start number 83 was manually annotated 4 times for cluster S.
- Start number 101 was manually annotated 1 time for cluster S.

Info for manual annotations of cluster X:

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

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

Gene: Abinghost\_51 Start: 45404, Stop: 45135, Start Num: 83

Candidate Starts for Abinghost\_51:

(Start: 83 @45404 has 79 MA's), (111, 45350), (152, 45302),

Gene: Aeneas\_68 Start: 44278, Stop: 44033, Start Num: 85

Candidate Starts for Aeneas\_68:

(Start: 85 @44278 has 22 MA's), (Start: 110 @44236 has 1 MA's), (124, 44224), (127, 44221), (152, 44182), (157, 44164),

Gene: Akoma\_51 Start: 45415, Stop: 45146, Start Num: 83

Candidate Starts for Akoma\_51:

(Start: 83 @45415 has 79 MA's), (111, 45361), (152, 45313),



Gene: Apricot\_73 Start: 42951, Stop: 43250, Start Num: 75  
Candidate Starts for Apricot\_73:  
(24, 42846), (47, 42906), (Start: 75 @42951 has 5 MA's), (114, 43029), (151, 43095), (155, 43107),

Gene: ArcusAngelus\_56 Start: 38441, Stop: 38683, Start Num: 84  
Candidate Starts for ArcusAngelus\_56:  
(Start: 60 @38411 has 1 MA's), (Start: 84 @38441 has 65 MA's), (152, 38552),

Gene: Ardmore\_44 Start: 35217, Stop: 35447, Start Num: 84  
Candidate Starts for Ardmore\_44:  
(Start: 60 @35187 has 1 MA's), (Start: 84 @35217 has 65 MA's), (Start: 100 @35253 has 9 MA's),  
(151, 35313), (152, 35316),

Gene: Ariel\_82 Start: 49253, Stop: 48984, Start Num: 83  
Candidate Starts for Ariel\_82:  
(Start: 83 @49253 has 79 MA's), (111, 49199), (152, 49151),

Gene: Asapag\_74 Start: 43606, Stop: 43938, Start Num: 82  
Candidate Starts for Asapag\_74:  
(59, 43579), (Start: 75 @43597 has 5 MA's), (Start: 82 @43606 has 24 MA's), (186, 43819),

Gene: Athena\_52 Start: 46162, Stop: 45893, Start Num: 83  
Candidate Starts for Athena\_52:  
(Start: 83 @46162 has 79 MA's), (111, 46108), (152, 46060),

Gene: Aubs\_53 Start: 37222, Stop: 37464, Start Num: 84  
Candidate Starts for Aubs\_53:  
(Start: 80 @37216 has 6 MA's), (Start: 84 @37222 has 65 MA's), (152, 37333),

Gene: Audrey\_51 Start: 45410, Stop: 45141, Start Num: 83  
Candidate Starts for Audrey\_51:  
(Start: 83 @45410 has 79 MA's), (111, 45356), (152, 45308),

Gene: Azula\_77 Start: 48141, Stop: 48380, Start Num: 223  
Candidate Starts for Azula\_77:  
(12, 47394), (13, 47400), (14, 47406), (16, 47451), (203, 47889), (209, 47916), (217, 47979), (218, 48003), (221, 48078), (222, 48087), (Start: 223 @48141 has 4 MA's), (224, 48168), (225, 48306),  
(226, 48327), (227, 48375),

Gene: BAKA\_145 Start: 76447, Stop: 76692, Start Num: 187  
Candidate Starts for BAKA\_145:  
(132, 76312), (160, 76387), (166, 76402), (Start: 187 @76447 has 33 MA's), (205, 76519), (206, 76522),

Gene: BAKA\_91 Start: 56921, Stop: 57199, Start Num: 83  
Candidate Starts for BAKA\_91:  
(79, 56915), (Start: 83 @56921 has 79 MA's), (152, 57032),

Gene: BENtherdunthat\_78 Start: 44652, Stop: 44984, Start Num: 82  
Candidate Starts for BENtherdunthat\_78:  
(59, 44625), (Start: 75 @44643 has 5 MA's), (Start: 82 @44652 has 24 MA's), (186, 44865),

Gene: BaconJack\_70 Start: 45368, Stop: 45123, Start Num: 85

Candidate Starts for BaconJack\_70:

(Start: 85 @45368 has 22 MA's), (Start: 110 @45326 has 1 MA's), (124, 45314), (127, 45311), (152, 45272), (157, 45254),

Gene: Bagrid\_146 Start: 77142, Stop: 77387, Start Num: 187

Candidate Starts for Bagrid\_146:

(132, 77007), (160, 77082), (166, 77097), (Start: 187 @77142 has 33 MA's), (205, 77214), (206, 77217),

Gene: Bagrid\_89 Start: 55770, Stop: 56066, Start Num: 83

Candidate Starts for Bagrid\_89:

(Start: 83 @55770 has 79 MA's), (124, 55848), (146, 55875), (152, 55899),

Gene: Baloo\_51 Start: 45413, Stop: 45144, Start Num: 83

Candidate Starts for Baloo\_51:

(Start: 83 @45413 has 79 MA's), (111, 45359), (152, 45311),

Gene: Banjo\_52 Start: 47062, Stop: 46769, Start Num: 104

Candidate Starts for Banjo\_52:

(28, 47221), (52, 47164), (65, 47137), (Start: 82 @47116 has 24 MA's), (Start: 86 @47110 has 5 MA's), (Start: 104 @47062 has 53 MA's), (Start: 115 @47038 has 1 MA's), (143, 46990), (146, 46984), (152, 46960),

Gene: Bartholomew\_52 Start: 36036, Stop: 36263, Start Num: 116

Candidate Starts for Bartholomew\_52:

(Start: 82 @35973 has 24 MA's), (Start: 116 @36036 has 30 MA's), (176, 36135),

Gene: Batiatus\_50 Start: 37046, Stop: 37276, Start Num: 84

Candidate Starts for Batiatus\_50:

(Start: 60 @37016 has 1 MA's), (Start: 84 @37046 has 65 MA's), (Start: 100 @37082 has 9 MA's), (151, 37142), (152, 37145),

Gene: BearBQ\_75 Start: 45677, Stop: 45961, Start Num: 82

Candidate Starts for BearBQ\_75:

(37, 45602), (72, 45665), (Start: 75 @45668 has 5 MA's), (Start: 82 @45677 has 24 MA's), (114, 45743), (151, 45809), (155, 45821),

Gene: Beelzebub\_8 Start: 2535, Stop: 2807, Start Num: 83

Candidate Starts for Beelzebub\_8:

(Start: 83 @2535 has 79 MA's), (125, 2598), (152, 2640),

Gene: Beem\_90 Start: 56631, Stop: 56927, Start Num: 83

Candidate Starts for Beem\_90:

(Start: 83 @56631 has 79 MA's), (124, 56709), (146, 56736), (152, 56760),

Gene: Beem\_147 Start: 78045, Stop: 78290, Start Num: 187

Candidate Starts for Beem\_147:

(132, 77910), (166, 78000), (Start: 187 @78045 has 33 MA's), (205, 78117), (206, 78120),

Gene: Beenie\_54 Start: 39845, Stop: 40141, Start Num: 82

Candidate Starts for Beenie\_54:

(10, 39605), (11, 39608), (Start: 82 @39845 has 24 MA's), (Start: 105 @39893 has 1 MA's), (113, 39911), (173, 40007), (182, 40025), (192, 40049), (210, 40085), (213, 40097),

Gene: Bethlehem\_66 Start: 44024, Stop: 43779, Start Num: 84  
Candidate Starts for Bethlehem\_66:  
(Start: 84 @44024 has 65 MA's), (151, 43916),

Gene: BigNuz\_57 Start: 39875, Stop: 40117, Start Num: 116  
Candidate Starts for BigNuz\_57:  
(Start: 82 @39812 has 24 MA's), (Start: 116 @39875 has 30 MA's), (149, 39920), (154, 39941), (167, 39965), (208, 40085),

Gene: Bigfoot\_58 Start: 41545, Stop: 41276, Start Num: 83  
Candidate Starts for Bigfoot\_58:  
(Start: 83 @41545 has 79 MA's), (111, 41491), (152, 41443),

Gene: Bipolar\_49 Start: 36854, Stop: 37099, Start Num: 84  
Candidate Starts for Bipolar\_49:  
(34, 36770), (43, 36788), (64, 36830), (Start: 84 @36854 has 65 MA's), (152, 36965),

Gene: Birdsong\_73 Start: 43342, Stop: 43674, Start Num: 82  
Candidate Starts for Birdsong\_73:  
(59, 43315), (Start: 75 @43333 has 5 MA's), (Start: 82 @43342 has 24 MA's), (186, 43555),

Gene: Blue\_65 Start: 43245, Stop: 42976, Start Num: 83  
Candidate Starts for Blue\_65:  
(Start: 83 @43245 has 79 MA's), (111, 43191), (152, 43143),

Gene: Blueberry\_76 Start: 48141, Stop: 48380, Start Num: 223  
Candidate Starts for Blueberry\_76:  
(12, 47394), (13, 47400), (14, 47406), (16, 47451), (203, 47889), (209, 47916), (217, 47979), (218, 48003), (221, 48078), (222, 48087), (Start: 223 @48141 has 4 MA's), (224, 48168), (225, 48306), (226, 48327), (227, 48375),

Gene: Bobby\_135 Start: 77882, Stop: 78160, Start Num: 187  
Candidate Starts for Bobby\_135:  
(132, 77747), (166, 77837), (Start: 187 @77882 has 33 MA's), (205, 77954), (206, 77957), (220, 78077),

Gene: Bobi\_55 Start: 38256, Stop: 38450, Start Num: 100  
Candidate Starts for Bobi\_55:  
(Start: 60 @38190 has 1 MA's), (Start: 84 @38220 has 65 MA's), (Start: 100 @38256 has 9 MA's), (151, 38316), (152, 38319),

Gene: Bobi\_72 Start: 44458, Stop: 44685, Start Num: 116  
Candidate Starts for Bobi\_72:  
(41, 44317), (Start: 82 @44383 has 24 MA's), (Start: 116 @44458 has 30 MA's), (176, 44557),

Gene: Bombitas\_78 Start: 53794, Stop: 54090, Start Num: 83  
Candidate Starts for Bombitas\_78:  
(Start: 83 @53794 has 79 MA's), (124, 53872), (146, 53899), (152, 53923),

Gene: Bombitas\_133 Start: 75456, Stop: 75701, Start Num: 187  
Candidate Starts for Bombitas\_133:  
(132, 75321), (166, 75411), (Start: 187 @75456 has 33 MA's), (205, 75528), (206, 75531),

Gene: Boomer\_57 Start: 38978, Stop: 39235, Start Num: 85

Candidate Starts for Boomer\_57:

(27, 38864), (32, 38876), (46, 38912), (74, 38963), (Start: 85 @38978 has 22 MA's), (152, 39089), (163, 39119),

Gene: Brilliant\_55 Start: 47604, Stop: 47335, Start Num: 104

Candidate Starts for Brilliant\_55:

(28, 47763), (52, 47706), (65, 47679), (Start: 82 @47658 has 24 MA's), (Start: 86 @47652 has 5 MA's), (Start: 104 @47604 has 53 MA's), (Start: 115 @47580 has 1 MA's), (143, 47532), (146, 47526), (152, 47502), (211, 47346),

Gene: Budski\_80 Start: 45490, Stop: 45795, Start Num: 82

Candidate Starts for Budski\_80:

(59, 45463), (Start: 75 @45481 has 5 MA's), (Start: 82 @45490 has 24 MA's), (112, 45553), (114, 45556), (136, 45589), (151, 45622), (181, 45685), (188, 45703),

Gene: Budski\_68 Start: 41006, Stop: 41320, Start Num: 87

Candidate Starts for Budski\_68:

(1, 40640), (3, 40646), (6, 40685), (15, 40799), (38, 40925), (Start: 87 @41006 has 6 MA's), (103, 41048), (Start: 105 @41051 has 1 MA's), (121, 41087), (150, 41138), (162, 41174), (184, 41216), (196, 41249), (206, 41285),

Gene: BuzzLyseyear\_44 Start: 32289, Stop: 32008, Start Num: 95

Candidate Starts for BuzzLyseyear\_44:

(40, 32382), (43, 32379), (45, 32376), (68, 32331), (Start: 80 @32316 has 6 MA's), (88, 32304), (Start: 95 @32289 has 1 MA's), (119, 32229), (143, 32187), (151, 32163), (170, 32115),

Gene: Byougenkin\_50 Start: 36870, Stop: 37133, Start Num: 60

Candidate Starts for Byougenkin\_50:

(Start: 60 @36870 has 1 MA's), (Start: 84 @36900 has 65 MA's), (96, 36924), (127, 36966), (137, 36981), (151, 36999), (152, 37002),

Gene: CactusRose\_66 Start: 42565, Stop: 42296, Start Num: 83

Candidate Starts for CactusRose\_66:

(Start: 83 @42565 has 79 MA's), (111, 42511), (152, 42463),

Gene: CamL\_53 Start: 47369, Stop: 47076, Start Num: 104

Candidate Starts for CamL\_53:

(28, 47528), (52, 47471), (65, 47444), (Start: 82 @47423 has 24 MA's), (Start: 86 @47417 has 5 MA's), (Start: 104 @47369 has 53 MA's), (Start: 115 @47345 has 1 MA's), (143, 47297), (146, 47291), (152, 47267),

Gene: Cannibal\_53 Start: 47352, Stop: 47059, Start Num: 104

Candidate Starts for Cannibal\_53:

(28, 47511), (52, 47454), (65, 47427), (Start: 82 @47406 has 24 MA's), (Start: 86 @47400 has 5 MA's), (Start: 104 @47352 has 53 MA's), (Start: 115 @47328 has 1 MA's), (143, 47280), (146, 47274), (152, 47250),

Gene: CaptainTrips\_49 Start: 36066, Stop: 36296, Start Num: 84

Candidate Starts for CaptainTrips\_49:

(Start: 60 @36036 has 1 MA's), (Start: 84 @36066 has 65 MA's), (Start: 100 @36102 has 9 MA's), (151, 36162), (152, 36165),

Gene: Carlyle\_66 Start: 41351, Stop: 41082, Start Num: 83  
Candidate Starts for Carlyle\_66:  
(Start: 83 @41351 has 79 MA's), (111, 41297), (152, 41249),

Gene: Casbah\_51 Start: 45725, Stop: 45456, Start Num: 83  
Candidate Starts for Casbah\_51:  
(Start: 83 @45725 has 79 MA's), (111, 45671), (152, 45623), (211, 45467),

Gene: ChaChing\_51 Start: 45427, Stop: 45158, Start Num: 83  
Candidate Starts for ChaChing\_51:  
(Start: 83 @45427 has 79 MA's), (111, 45373), (152, 45325),

Gene: Chandler\_51 Start: 46194, Stop: 45925, Start Num: 83  
Candidate Starts for Chandler\_51:  
(Start: 83 @46194 has 79 MA's), (111, 46140), (152, 46092),

Gene: Che8\_55 Start: 38308, Stop: 38550, Start Num: 84  
Candidate Starts for Che8\_55:  
(Start: 60 @38278 has 1 MA's), (Start: 84 @38308 has 65 MA's), (152, 38419),

Gene: CheeseTouch\_80 Start: 40886, Stop: 41182, Start Num: 75  
Candidate Starts for CheeseTouch\_80:  
(17, 40742), (30, 40799), (34, 40817), (Start: 75 @40886 has 5 MA's), (Start: 82 @40895 has 24 MA's), (114, 40961), (151, 41027), (155, 41039),

Gene: Chevrolet\_59 Start: 38442, Stop: 38684, Start Num: 84  
Candidate Starts for Chevrolet\_59:  
(Start: 60 @38412 has 1 MA's), (Start: 84 @38442 has 65 MA's), (152, 38553),

Gene: Childish\_53 Start: 47631, Stop: 47362, Start Num: 104  
Candidate Starts for Childish\_53:  
(28, 47790), (52, 47733), (65, 47706), (Start: 82 @47685 has 24 MA's), (Start: 86 @47679 has 5 MA's), (Start: 104 @47631 has 53 MA's), (Start: 115 @47607 has 1 MA's), (143, 47559), (146, 47553), (152, 47529), (211, 47373),

Gene: Chorkpop\_53 Start: 47108, Stop: 46815, Start Num: 104  
Candidate Starts for Chorkpop\_53:  
(28, 47267), (52, 47210), (65, 47183), (Start: 82 @47162 has 24 MA's), (Start: 86 @47156 has 5 MA's), (Start: 104 @47108 has 53 MA's), (Start: 115 @47084 has 1 MA's), (143, 47036), (146, 47030), (152, 47006),

Gene: Chuckly\_55 Start: 37799, Stop: 38041, Start Num: 84  
Candidate Starts for Chuckly\_55:  
(Start: 80 @37793 has 6 MA's), (Start: 84 @37799 has 65 MA's), (152, 37910),

Gene: Clark\_59 Start: 39693, Stop: 39938, Start Num: 80  
Candidate Starts for Clark\_59:  
(Start: 80 @39693 has 6 MA's), (Start: 100 @39732 has 9 MA's), (194, 39882),

Gene: Clarkson\_7 Start: 2311, Stop: 2583, Start Num: 83  
Candidate Starts for Clarkson\_7:  
(Start: 83 @2311 has 79 MA's), (125, 2374), (152, 2416),

Gene: Constella\_139 Start: 76698, Stop: 76943, Start Num: 187  
Candidate Starts for Constella\_139:  
(132, 76563), (160, 76638), (166, 76653), (Start: 187 @76698 has 33 MA's), (205, 76770), (206, 76773),

Gene: Constella\_75 Start: 50768, Stop: 51064, Start Num: 83  
Candidate Starts for Constella\_75:  
(Start: 83 @50768 has 79 MA's), (124, 50846), (146, 50873), (152, 50897),

Gene: Cornucopia\_55 Start: 38144, Stop: 38386, Start Num: 84  
Candidate Starts for Cornucopia\_55:  
(Start: 60 @38114 has 1 MA's), (Start: 84 @38144 has 65 MA's), (151, 38252),

Gene: Corofin\_51 Start: 45437, Stop: 45168, Start Num: 83  
Candidate Starts for Corofin\_51:  
(Start: 83 @45437 has 79 MA's), (111, 45383), (152, 45335),

Gene: Cosmolli16\_54 Start: 47811, Stop: 47542, Start Num: 104  
Candidate Starts for Cosmolli16\_54:  
(28, 47970), (52, 47913), (65, 47886), (Start: 82 @47865 has 24 MA's), (Start: 86 @47859 has 5 MA's), (Start: 104 @47811 has 53 MA's), (Start: 115 @47787 has 1 MA's), (143, 47739), (146, 47733), (152, 47709),

Gene: Courthouse\_78 Start: 48853, Stop: 48584, Start Num: 83  
Candidate Starts for Courthouse\_78:  
(Start: 83 @48853 has 79 MA's), (111, 48799), (152, 48751),

Gene: Craff\_56 Start: 48056, Stop: 47787, Start Num: 104  
Candidate Starts for Craff\_56:  
(28, 48215), (52, 48158), (65, 48131), (Start: 82 @48110 has 24 MA's), (Start: 86 @48104 has 5 MA's), (Start: 104 @48056 has 53 MA's), (Start: 115 @48032 has 1 MA's), (143, 47984), (146, 47978), (152, 47954), (211, 47798),

Gene: Crater\_73 Start: 43346, Stop: 43687, Start Num: 75  
Candidate Starts for Crater\_73:  
(24, 43241), (47, 43301), (Start: 75 @43346 has 5 MA's), (114, 43424), (151, 43490), (178, 43553),

Gene: DLane\_48 Start: 36148, Stop: 36381, Start Num: 84  
Candidate Starts for DLane\_48:  
(Start: 60 @36118 has 1 MA's), (Start: 84 @36148 has 65 MA's), (Start: 100 @36184 has 9 MA's), (151, 36244), (152, 36247),

Gene: DTDevon\_6 Start: 1888, Stop: 2115, Start Num: 85  
Candidate Starts for DTDevon\_6:  
(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: DaWorst\_54 Start: 38043, Stop: 38276, Start Num: 84  
Candidate Starts for DaWorst\_54:  
(Start: 60 @38013 has 1 MA's), (Start: 84 @38043 has 65 MA's), (96, 38067), (127, 38109), (137, 38124), (151, 38142), (152, 38145),

Gene: DaddyDaniels\_55 Start: 47588, Stop: 47319, Start Num: 104  
Candidate Starts for DaddyDaniels\_55:  
(28, 47747), (52, 47690), (65, 47663), (Start: 82 @47642 has 24 MA's), (Start: 86 @47636 has 5 MA's), (Start: 104 @47588 has 53 MA's), (Start: 115 @47564 has 1 MA's), (143, 47516), (146, 47510), (152, 47486), (211, 47330),

Gene: DaddyRickover\_52 Start: 37670, Stop: 37903, Start Num: 84  
Candidate Starts for DaddyRickover\_52:  
(Start: 60 @37640 has 1 MA's), (Start: 84 @37670 has 65 MA's), (96, 37694), (127, 37736), (137, 37751), (151, 37769), (152, 37772),

Gene: Daenerys\_72 Start: 47067, Stop: 47294, Start Num: 116  
Candidate Starts for Daenerys\_72:  
(Start: 116 @47067 has 30 MA's), (176, 47166),

Gene: Daffy\_53 Start: 47094, Stop: 46801, Start Num: 104  
Candidate Starts for Daffy\_53:  
(28, 47253), (52, 47196), (65, 47169), (Start: 82 @47148 has 24 MA's), (Start: 86 @47142 has 5 MA's), (Start: 104 @47094 has 53 MA's), (Start: 115 @47070 has 1 MA's), (143, 47022), (146, 47016), (152, 46992),

Gene: Daisy\_51 Start: 45439, Stop: 45170, Start Num: 83  
Candidate Starts for Daisy\_51:  
(Start: 83 @45439 has 79 MA's), (111, 45385), (152, 45337),

Gene: Dallas\_89 Start: 55552, Stop: 55848, Start Num: 83  
Candidate Starts for Dallas\_89:  
(Start: 83 @55552 has 79 MA's), (124, 55630), (146, 55657), (152, 55681),

Gene: Dallas\_146 Start: 77512, Stop: 77757, Start Num: 187  
Candidate Starts for Dallas\_146:  
(132, 77377), (160, 77452), (166, 77467), (Start: 187 @77512 has 33 MA's), (205, 77584), (206, 77587),

Gene: Dandelion\_5 Start: 1888, Stop: 2115, Start Num: 85  
Candidate Starts for Dandelion\_5:  
(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Dante\_53 Start: 37036, Stop: 37266, Start Num: 84  
Candidate Starts for Dante\_53:  
(Start: 60 @37006 has 1 MA's), (Start: 84 @37036 has 65 MA's), (96, 37060), (127, 37099), (137, 37114), (151, 37132), (152, 37135),

Gene: DeadP\_58 Start: 38932, Stop: 39159, Start Num: 84  
Candidate Starts for DeadP\_58:  
(Start: 60 @38902 has 1 MA's), (Start: 84 @38932 has 65 MA's), (99, 38965), (124, 38989), (151, 39022),

Gene: Deb65\_66 Start: 44788, Stop: 45015, Start Num: 116  
Candidate Starts for Deb65\_66:  
(Start: 116 @44788 has 30 MA's), (176, 44887),

Gene: Demsculpinboyz\_62 Start: 36874, Stop: 37140, Start Num: 83  
Candidate Starts for Demsculpinboyz\_62:  
(61, 36844), (Start: 83 @36874 has 79 MA's), (96, 36898), (131, 36940), (147, 36955), (151, 36973),  
(152, 36976),

Gene: Denise\_57 Start: 36623, Stop: 36913, Start Num: 48  
Candidate Starts for Denise\_57:  
(Start: 48 @36623 has 1 MA's), (66, 36659), (173, 36815), (210, 36896),

Gene: DmpstrDiver\_90 Start: 55966, Stop: 56262, Start Num: 83  
Candidate Starts for DmpstrDiver\_90:  
(Start: 83 @55966 has 79 MA's), (124, 56044), (146, 56071), (152, 56095),

Gene: DmpstrDiver\_146 Start: 77431, Stop: 77676, Start Num: 187  
Candidate Starts for DmpstrDiver\_146:  
(132, 77296), (160, 77371), (166, 77386), (Start: 187 @77431 has 33 MA's), (205, 77503), (206,  
77506),

Gene: DobbysSock\_53 Start: 39107, Stop: 39373, Start Num: 80  
Candidate Starts for DobbysSock\_53:  
(Start: 80 @39107 has 6 MA's), (117, 39173), (Start: 118 @39176 has 1 MA's),

Gene: DonkeyMan\_56 Start: 38401, Stop: 38625, Start Num: 98  
Candidate Starts for DonkeyMan\_56:  
(Start: 98 @38401 has 1 MA's), (127, 38437), (189, 38530), (204, 38578),

Gene: Donkeykong\_53 Start: 39067, Stop: 39345, Start Num: 83  
Candidate Starts for Donkeykong\_53:  
(55, 39022), (65, 39043), (Start: 83 @39067 has 79 MA's), (152, 39178),

Gene: Doomphist\_76 Start: 46880, Stop: 47107, Start Num: 116  
Candidate Starts for Doomphist\_76:  
(Start: 116 @46880 has 30 MA's), (176, 46979),

Gene: Doomphist\_52 Start: 38179, Stop: 38421, Start Num: 84  
Candidate Starts for Doomphist\_52:  
(Start: 60 @38149 has 1 MA's), (Start: 84 @38179 has 65 MA's), (151, 38287),

Gene: Dorothy\_74 Start: 45505, Stop: 45732, Start Num: 116  
Candidate Starts for Dorothy\_74:  
(Start: 116 @45505 has 30 MA's), (176, 45604),

Gene: DotProduct\_48 Start: 36209, Stop: 36451, Start Num: 84  
Candidate Starts for DotProduct\_48:  
(Start: 60 @36179 has 1 MA's), (Start: 84 @36209 has 65 MA's), (151, 36317),

Gene: Doug\_55 Start: 38300, Stop: 38542, Start Num: 84  
Candidate Starts for Doug\_55:  
(Start: 60 @38270 has 1 MA's), (Start: 84 @38300 has 65 MA's), (152, 38411),

Gene: Dove\_131 Start: 73030, Stop: 73275, Start Num: 187  
Candidate Starts for Dove\_131:  
(132, 72895), (166, 72985), (Start: 187 @73030 has 33 MA's), (205, 73102), (206, 73105),



Gene: Dove\_75 Start: 52060, Stop: 52356, Start Num: 83  
Candidate Starts for Dove\_75:  
(Start: 83 @52060 has 79 MA's), (124, 52138), (146, 52165), (152, 52189),

Gene: Drazdys\_6 Start: 1888, Stop: 2115, Start Num: 85  
Candidate Starts for Drazdys\_6:  
(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Dreamboat\_67 Start: 41780, Stop: 41553, Start Num: 86  
Candidate Starts for Dreamboat\_67:  
(Start: 86 @41780 has 5 MA's), (152, 41720),

Gene: Duke13\_141 Start: 74732, Stop: 74977, Start Num: 187  
Candidate Starts for Duke13\_141:  
(132, 74597), (160, 74672), (166, 74687), (Start: 187 @74732 has 33 MA's), (205, 74804), (206, 74807),

Gene: Ecliptus\_80 Start: 46255, Stop: 46587, Start Num: 82  
Candidate Starts for Ecliptus\_80:  
(59, 46228), (Start: 75 @46246 has 5 MA's), (Start: 82 @46255 has 24 MA's), (186, 46468),

Gene: Eish\_57 Start: 38353, Stop: 38628, Start Num: 83  
Candidate Starts for Eish\_57:  
(Start: 83 @38353 has 79 MA's), (152, 38464),

Gene: Ejimix\_138 Start: 77580, Stop: 77825, Start Num: 187  
Candidate Starts for Ejimix\_138:  
(132, 77445), (160, 77520), (166, 77535), (Start: 187 @77580 has 33 MA's), (205, 77652), (206, 77655),

Gene: Emma\_52 Start: 36405, Stop: 36638, Start Num: 84  
Candidate Starts for Emma\_52:  
(Start: 60 @36375 has 1 MA's), (Start: 84 @36405 has 65 MA's), (Start: 100 @36441 has 9 MA's), (151, 36501), (152, 36504),

Gene: Empress\_71 Start: 45691, Stop: 45918, Start Num: 116  
Candidate Starts for Empress\_71:  
(Start: 116 @45691 has 30 MA's), (176, 45790),

Gene: Enby\_53 Start: 35552, Stop: 35782, Start Num: 84  
Candidate Starts for Enby\_53:  
(58, 35519), (Start: 60 @35522 has 1 MA's), (Start: 84 @35552 has 65 MA's), (Start: 100 @35588 has 9 MA's), (151, 35648), (152, 35651),

Gene: EricMillard\_137 Start: 76084, Stop: 76329, Start Num: 187  
Candidate Starts for EricMillard\_137:  
(132, 75949), (160, 76024), (166, 76039), (Start: 187 @76084 has 33 MA's), (205, 76156), (206, 76159),

Gene: EricMillard\_83 Start: 55716, Stop: 55994, Start Num: 83  
Candidate Starts for EricMillard\_83:

(79, 55710), (Start: 83 @55716 has 79 MA's), (152, 55827),

Gene: Estave1\_55 Start: 37717, Stop: 37980, Start Num: 83

Candidate Starts for Estave1\_55:

(Start: 83 @37717 has 79 MA's), (152, 37828),

Gene: Faith5x5\_53 Start: 34268, Stop: 34585, Start Num: 105

Candidate Starts for Faith5x5\_53:

(19, 34076), (45, 34163), (49, 34169), (53, 34178), (56, 34184), (57, 34187), (71, 34208), (Start: 75 @34211 has 5 MA's), (Start: 82 @34220 has 24 MA's), (Start: 100 @34259 has 9 MA's), (Start: 105 @34268 has 1 MA's), (214, 34496),

Gene: Fascinus\_60 Start: 42059, Stop: 41790, Start Num: 83

Candidate Starts for Fascinus\_60:

(Start: 83 @42059 has 79 MA's), (111, 42005), (152, 41957),

Gene: Filuzino\_50 Start: 36021, Stop: 36323, Start Num: 100

Candidate Starts for Filuzino\_50:

(Start: 60 @35955 has 1 MA's), (Start: 84 @35985 has 65 MA's), (Start: 100 @36021 has 9 MA's), (151, 36081), (152, 36084), (167, 36123), (190, 36144), (215, 36222),

Gene: Firehouse51\_53 Start: 39958, Stop: 40203, Start Num: 84

Candidate Starts for Firehouse51\_53:

(Start: 60 @39928 has 1 MA's), (Start: 84 @39958 has 65 MA's), (152, 40069),

Gene: FirstPlacePfu\_54 Start: 36068, Stop: 36295, Start Num: 116

Candidate Starts for FirstPlacePfu\_54:

(Start: 82 @36005 has 24 MA's), (Start: 116 @36068 has 30 MA's), (176, 36167),

Gene: Fishburne\_52 Start: 36036, Stop: 36263, Start Num: 116

Candidate Starts for Fishburne\_52:

(Start: 82 @35973 has 24 MA's), (Start: 116 @36036 has 30 MA's), (176, 36135),

Gene: Fozzie\_52 Start: 47398, Stop: 47105, Start Num: 104

Candidate Starts for Fozzie\_52:

(28, 47557), (52, 47500), (65, 47473), (Start: 82 @47452 has 24 MA's), (Start: 86 @47446 has 5 MA's), (Start: 104 @47398 has 53 MA's), (Start: 115 @47374 has 1 MA's), (143, 47326), (146, 47320), (152, 47296),

Gene: FrayBell\_6 Start: 1888, Stop: 2115, Start Num: 85

Candidate Starts for FrayBell\_6:

(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Frickyeah\_80 Start: 44783, Stop: 45115, Start Num: 82

Candidate Starts for Frickyeah\_80:

(59, 44756), (Start: 75 @44774 has 5 MA's), (Start: 82 @44783 has 24 MA's), (186, 44996),

Gene: Fringe\_57 Start: 48533, Stop: 48264, Start Num: 104

Candidate Starts for Fringe\_57:

(28, 48692), (52, 48635), (Start: 82 @48587 has 24 MA's), (Start: 86 @48581 has 5 MA's), (Start: 104 @48533 has 53 MA's), (Start: 115 @48509 has 1 MA's), (143, 48461), (146, 48455), (152, 48431), (211, 48275),

Gene: GAL1\_58 Start: 39448, Stop: 39708, Start Num: 80  
Candidate Starts for GAL1\_58:  
(Start: 80 @39448 has 6 MA's), (167, 39592),

Gene: GMA1\_52 Start: 32897, Stop: 33145, Start Num: 82  
Candidate Starts for GMA1\_52:  
(36, 32816), (39, 32828), (55, 32855), (69, 32882), (Start: 82 @32897 has 24 MA's),

Gene: GMA2\_107 Start: 94211, Stop: 93939, Start Num: 82  
Candidate Starts for GMA2\_107:  
(Start: 82 @94211 has 24 MA's), (180, 94031),

Gene: Gaia\_56 Start: 40287, Stop: 40042, Start Num: 115  
Candidate Starts for Gaia\_56:  
(Start: 115 @40287 has 1 MA's), (148, 40230), (200, 40089),

Gene: Gambino\_79 Start: 48141, Stop: 48380, Start Num: 223  
Candidate Starts for Gambino\_79:  
(12, 47394), (13, 47400), (14, 47406), (16, 47451), (203, 47889), (209, 47916), (217, 47979), (218, 48003), (221, 48078), (222, 48087), (Start: 223 @48141 has 4 MA's), (224, 48168), (225, 48306), (226, 48327), (227, 48375),

Gene: Gandolph\_55 Start: 37415, Stop: 37660, Start Num: 84  
Candidate Starts for Gandolph\_55:  
(Start: 84 @37415 has 65 MA's), (151, 37523),

Gene: Geralt\_66 Start: 44787, Stop: 45014, Start Num: 116  
Candidate Starts for Geralt\_66:  
(Start: 116 @44787 has 30 MA's), (176, 44886),

Gene: Gervas\_52 Start: 45854, Stop: 45585, Start Num: 83  
Candidate Starts for Gervas\_52:  
(Start: 83 @45854 has 79 MA's), (111, 45800), (152, 45752), (211, 45596),

Gene: Getalong\_78 Start: 45864, Stop: 46163, Start Num: 82  
Candidate Starts for Getalong\_78:  
(Start: 82 @45864 has 24 MA's), (108, 45918), (133, 45957), (158, 46014), (185, 46071),

Gene: GigiOuiOui\_49 Start: 36354, Stop: 36596, Start Num: 84  
Candidate Starts for GigiOuiOui\_49:  
(Start: 60 @36324 has 1 MA's), (Start: 84 @36354 has 65 MA's), (151, 36462),

Gene: Giraffe\_54 Start: 47592, Stop: 47323, Start Num: 104  
Candidate Starts for Giraffe\_54:  
(28, 47751), (52, 47694), (Start: 82 @47646 has 24 MA's), (Start: 86 @47640 has 5 MA's), (Start: 104 @47592 has 53 MA's), (Start: 115 @47568 has 1 MA's), (143, 47520), (146, 47514), (152, 47490),

Gene: GlenHope\_52 Start: 45405, Stop: 45136, Start Num: 83  
Candidate Starts for GlenHope\_52:  
(Start: 83 @45405 has 79 MA's), (111, 45351), (152, 45303),

Gene: Graduation\_70 Start: 43891, Stop: 43622, Start Num: 83

Candidate Starts for Graduation\_70:  
(Start: 83 @43891 has 79 MA's), (111, 43837), (152, 43789),

Gene: Grand2040\_53 Start: 47586, Stop: 47317, Start Num: 104  
Candidate Starts for Grand2040\_53:  
(28, 47745), (52, 47688), (Start: 82 @47640 has 24 MA's), (Start: 86 @47634 has 5 MA's), (Start: 104 @47586 has 53 MA's), (Start: 115 @47562 has 1 MA's), (143, 47514), (146, 47508), (152, 47484),

Gene: Gudmit\_51 Start: 32451, Stop: 32681, Start Num: 80  
Candidate Starts for Gudmit\_51:  
(Start: 80 @32451 has 6 MA's), (97, 32481), (Start: 100 @32490 has 9 MA's), (135, 32514), (194, 32625),

Gene: Gumball\_84 Start: 60133, Stop: 60360, Start Num: 84  
Candidate Starts for Gumball\_84:  
(22, 60010), (Start: 84 @60133 has 65 MA's), (Start: 100 @60169 has 9 MA's), (109, 60178), (141, 60232),

Gene: Haleema\_52 Start: 47090, Stop: 46797, Start Num: 104  
Candidate Starts for Haleema\_52:  
(28, 47249), (52, 47192), (65, 47165), (Start: 82 @47144 has 24 MA's), (Start: 86 @47138 has 5 MA's), (Start: 104 @47090 has 53 MA's), (Start: 115 @47066 has 1 MA's), (143, 47018), (146, 47012), (152, 46988),

Gene: Halfpint\_50 Start: 45230, Stop: 44961, Start Num: 83  
Candidate Starts for Halfpint\_50:  
(Start: 83 @45230 has 79 MA's), (111, 45176), (152, 45128),

Gene: Halley\_147 Start: 77896, Stop: 78141, Start Num: 187  
Candidate Starts for Halley\_147:  
(132, 77761), (160, 77836), (166, 77851), (Start: 187 @77896 has 33 MA's), (205, 77968), (206, 77971),

Gene: Halley\_91 Start: 56631, Stop: 56927, Start Num: 83  
Candidate Starts for Halley\_91:  
(Start: 83 @56631 has 79 MA's), (124, 56709), (146, 56736), (152, 56760),

Gene: Hamulus\_53 Start: 37796, Stop: 38026, Start Num: 84  
Candidate Starts for Hamulus\_53:  
(Start: 60 @37766 has 1 MA's), (Start: 84 @37796 has 65 MA's), (Start: 100 @37832 has 9 MA's), (151, 37892), (152, 37895),

Gene: Harley\_54 Start: 37188, Stop: 37382, Start Num: 100  
Candidate Starts for Harley\_54:  
(Start: 60 @37122 has 1 MA's), (Start: 84 @37152 has 65 MA's), (Start: 100 @37188 has 9 MA's), (151, 37248), (152, 37251),

Gene: Hawkeye\_97 Start: 61659, Stop: 61895, Start Num: 104  
Candidate Starts for Hawkeye\_97:  
(51, 61557), (90, 61620), (93, 61626), (Start: 104 @61659 has 53 MA's), (142, 61728), (152, 61758), (190, 61809), (200, 61830), (212, 61872),

Gene: Hegedechwinu\_72 Start: 43105, Stop: 43332, Start Num: 116

Candidate Starts for Hegedechwinu\_72:  
(Start: 116 @43105 has 30 MA's), (176, 43204),

Gene: Heinz\_57 Start: 37331, Stop: 37591, Start Num: 98  
Candidate Starts for Heinz\_57:  
(Start: 98 @37331 has 1 MA's), (189, 37496), (204, 37544),

Gene: Held\_53 Start: 47095, Stop: 46802, Start Num: 104  
Candidate Starts for Held\_53:  
(28, 47254), (52, 47197), (65, 47170), (Start: 82 @47149 has 24 MA's), (Start: 86 @47143 has 5 MA's), (Start: 104 @47095 has 53 MA's), (Start: 115 @47071 has 1 MA's), (143, 47023), (146, 47017), (152, 46993),

Gene: HenryJackson\_53 Start: 47620, Stop: 47351, Start Num: 104  
Candidate Starts for HenryJackson\_53:  
(28, 47779), (52, 47722), (65, 47695), (Start: 82 @47674 has 24 MA's), (Start: 86 @47668 has 5 MA's), (Start: 104 @47620 has 53 MA's), (Start: 115 @47596 has 1 MA's), (143, 47548), (146, 47542), (152, 47518), (211, 47362),

Gene: Hertubise\_53 Start: 47387, Stop: 47094, Start Num: 104  
Candidate Starts for Hertubise\_53:  
(28, 47546), (52, 47489), (65, 47462), (Start: 82 @47441 has 24 MA's), (Start: 86 @47435 has 5 MA's), (Start: 104 @47387 has 53 MA's), (Start: 115 @47363 has 1 MA's), (143, 47315), (146, 47309), (152, 47285),

Gene: HighStump\_55 Start: 48156, Stop: 47887, Start Num: 104  
Candidate Starts for HighStump\_55:  
(28, 48315), (52, 48258), (65, 48231), (Start: 82 @48210 has 24 MA's), (Start: 86 @48204 has 5 MA's), (Start: 104 @48156 has 53 MA's), (Start: 115 @48132 has 1 MA's), (143, 48084), (146, 48078), (152, 48054), (211, 47898),

Gene: HokkenD\_138 Start: 77055, Stop: 77300, Start Num: 187  
Candidate Starts for HokkenD\_138:  
(132, 76920), (166, 77010), (Start: 187 @77055 has 33 MA's), (205, 77127), (206, 77130),

Gene: HokkenD\_79 Start: 54900, Stop: 55196, Start Num: 83  
Candidate Starts for HokkenD\_79:  
(Start: 83 @54900 has 79 MA's), (124, 54978), (146, 55005), (152, 55029),

Gene: Holliday\_79 Start: 47725, Stop: 48021, Start Num: 82  
Candidate Starts for Holliday\_79:  
(59, 47698), (Start: 75 @47716 has 5 MA's), (Start: 82 @47725 has 24 MA's), (114, 47791), (159, 47878), (168, 47896), (184, 47923),

Gene: Horus\_75 Start: 45413, Stop: 45754, Start Num: 75  
Candidate Starts for Horus\_75:  
(24, 45308), (47, 45368), (Start: 75 @45413 has 5 MA's), (114, 45491), (151, 45557), (178, 45620),

Gene: Hughesyang\_90 Start: 56589, Stop: 56885, Start Num: 83  
Candidate Starts for Hughesyang\_90:  
(Start: 83 @56589 has 79 MA's), (124, 56667), (146, 56694), (152, 56718),

Gene: Hughesyang\_144 Start: 77666, Stop: 77911, Start Num: 187

Candidate Starts for Hughesyang\_144:

(132, 77531), (160, 77606), (166, 77621), (Start: 187 @77666 has 33 MA's), (205, 77738), (206, 77741),

Gene: IMpilo\_49 Start: 35464, Stop: 35766, Start Num: 100

Candidate Starts for IMpilo\_49:

(Start: 60 @35398 has 1 MA's), (Start: 84 @35428 has 65 MA's), (Start: 100 @35464 has 9 MA's), (151, 35524), (152, 35527), (167, 35566), (190, 35587), (215, 35665),

Gene: InterFolia\_6 Start: 1924, Stop: 2115, Start Num: 100

Candidate Starts for InterFolia\_6:

(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Inventum\_47 Start: 36162, Stop: 36395, Start Num: 84

Candidate Starts for Inventum\_47:

(Start: 60 @36132 has 1 MA's), (Start: 84 @36162 has 65 MA's), (96, 36186), (127, 36228), (137, 36243), (151, 36261), (152, 36264),

Gene: Inventum\_71 Start: 45703, Stop: 45930, Start Num: 116

Candidate Starts for Inventum\_71:

(Start: 116 @45703 has 30 MA's), (176, 45802),

Gene: JalFarm20\_60 Start: 39595, Stop: 39840, Start Num: 84

Candidate Starts for JalFarm20\_60:

(64, 39571), (Start: 84 @39595 has 65 MA's), (152, 39706),

Gene: Jasper\_66 Start: 41666, Stop: 41439, Start Num: 86

Candidate Starts for Jasper\_66:

(Start: 86 @41666 has 5 MA's), (152, 41606),

Gene: JayJay\_5 Start: 1730, Stop: 1996, Start Num: 78

Candidate Starts for JayJay\_5:

(Start: 78 @1730 has 2 MA's), (Start: 85 @1739 has 22 MA's), (96, 1763), (127, 1805), (137, 1820), (151, 1838), (152, 1841), (199, 1937),

Gene: JigglyPuff\_5 Start: 1776, Stop: 1985, Start Num: 110

Candidate Starts for JigglyPuff\_5:

(Start: 78 @1722 has 2 MA's), (Start: 85 @1731 has 22 MA's), (Start: 100 @1767 has 9 MA's), (Start: 110 @1776 has 1 MA's), (151, 1827), (152, 1830), (199, 1926),

Gene: Job42\_55 Start: 39394, Stop: 39636, Start Num: 84

Candidate Starts for Job42\_55:

(26, 39280), (29, 39292), (42, 39328), (72, 39379), (Start: 84 @39394 has 65 MA's), (152, 39505),

Gene: JoeyJr\_73 Start: 46692, Stop: 46919, Start Num: 116

Candidate Starts for JoeyJr\_73:

(Start: 116 @46692 has 30 MA's), (176, 46791),

Gene: Jorgensen\_69 Start: 42799, Stop: 42503, Start Num: 81

Candidate Starts for Jorgensen\_69:

(Start: 81 @42799 has 1 MA's), (124, 42721), (146, 42694), (151, 42673), (152, 42670),

Gene: JuicyJay\_141 Start: 79181, Stop: 79426, Start Num: 187  
Candidate Starts for JuicyJay\_141:  
(132, 79046), (166, 79136), (Start: 187 @79181 has 33 MA's), (205, 79253), (206, 79256),

Gene: JuicyJay\_87 Start: 57765, Stop: 58061, Start Num: 83  
Candidate Starts for JuicyJay\_87:  
(Start: 83 @57765 has 79 MA's), (124, 57843), (146, 57870), (152, 57894),

Gene: Juniper1\_50 Start: 36588, Stop: 36851, Start Num: 83  
Candidate Starts for Juniper1\_50:  
(61, 36558), (Start: 83 @36588 has 79 MA's), (152, 36699), (202, 36819),

Gene: Kahve\_53 Start: 47617, Stop: 47348, Start Num: 104  
Candidate Starts for Kahve\_53:  
(28, 47776), (52, 47719), (65, 47692), (Start: 82 @47671 has 24 MA's), (Start: 86 @47665 has 5 MA's), (Start: 104 @47617 has 53 MA's), (Start: 115 @47593 has 1 MA's), (143, 47545), (146, 47539), (152, 47515), (211, 47359),

Gene: Kalah2\_84 Start: 55924, Stop: 56220, Start Num: 83  
Candidate Starts for Kalah2\_84:  
(Start: 83 @55924 has 79 MA's), (124, 56002), (146, 56029), (152, 56053),

Gene: Kalah2\_136 Start: 76787, Stop: 77032, Start Num: 187  
Candidate Starts for Kalah2\_136:  
(132, 76652), (166, 76742), (Start: 187 @76787 has 33 MA's), (205, 76859), (206, 76862),

Gene: Kamaru\_71 Start: 43317, Stop: 43604, Start Num: 82  
Candidate Starts for Kamaru\_71:  
(2, 42969), (4, 42972), (8, 43032), (20, 43176), (21, 43179), (72, 43305), (Start: 75 @43308 has 5 MA's), (Start: 82 @43317 has 24 MA's), (114, 43383), (151, 43449), (155, 43461),

Gene: Kamiyu\_51 Start: 45383, Stop: 45114, Start Num: 83  
Candidate Starts for Kamiyu\_51:  
(Start: 83 @45383 has 79 MA's), (111, 45329), (152, 45281),

Gene: Kari\_52 Start: 36033, Stop: 36260, Start Num: 116  
Candidate Starts for Kari\_52:  
(Start: 82 @35970 has 24 MA's), (Start: 116 @36033 has 30 MA's), (176, 36132),

Gene: KashFlow\_144 Start: 76087, Stop: 76332, Start Num: 187  
Candidate Starts for KashFlow\_144:  
(132, 75952), (166, 76042), (Start: 187 @76087 has 33 MA's), (205, 76159), (206, 76162),

Gene: Kenna\_71 Start: 43390, Stop: 43677, Start Num: 82  
Candidate Starts for Kenna\_71:  
(58, 43363), (Start: 75 @43381 has 5 MA's), (Start: 82 @43390 has 24 MA's), (114, 43456), (151, 43522), (155, 43534),

Gene: Kenuha5\_50 Start: 36123, Stop: 36365, Start Num: 84  
Candidate Starts for Kenuha5\_50:  
(34, 36039), (43, 36057), (64, 36099), (Start: 84 @36123 has 65 MA's), (152, 36234),

Gene: Kimberlium\_67 Start: 43095, Stop: 43343, Start Num: 100

Candidate Starts for Kimberlium\_67:  
(Start: 100 @43095 has 9 MA's), (135, 43158), (152, 43200),

Gene: KingMidas\_72 Start: 46106, Stop: 46333, Start Num: 116  
Candidate Starts for KingMidas\_72:  
(Start: 116 @46106 has 30 MA's), (176, 46205),

Gene: Klein\_90 Start: 55600, Stop: 55896, Start Num: 83  
Candidate Starts for Klein\_90:  
(79, 55594), (Start: 83 @55600 has 79 MA's), (124, 55678), (146, 55705), (152, 55729),

Gene: Klein\_143 Start: 75389, Stop: 75634, Start Num: 187  
Candidate Starts for Klein\_143:  
(132, 75254), (166, 75344), (Start: 187 @75389 has 33 MA's), (205, 75461), (206, 75464),

Gene: Krakatau\_50 Start: 36883, Stop: 37077, Start Num: 100  
Candidate Starts for Krakatau\_50:  
(Start: 60 @36817 has 1 MA's), (Start: 84 @36847 has 65 MA's), (Start: 100 @36883 has 9 MA's),  
(151, 36943), (152, 36946),

Gene: KristaRAM\_51 Start: 38223, Stop: 38468, Start Num: 84  
Candidate Starts for KristaRAM\_51:  
(34, 38139), (43, 38157), (64, 38199), (Start: 84 @38223 has 65 MA's), (152, 38334),

Gene: Kronus\_51 Start: 46457, Stop: 46188, Start Num: 83  
Candidate Starts for Kronus\_51:  
(Start: 83 @46457 has 79 MA's), (111, 46403), (152, 46355), (211, 46199),

Gene: Kuwabara\_76 Start: 45678, Stop: 45968, Start Num: 82  
Candidate Starts for Kuwabara\_76:  
(Start: 75 @45669 has 5 MA's), (Start: 82 @45678 has 24 MA's), (114, 45744), (151, 45810), (155,  
45822), (167, 45843), (172, 45849), (179, 45858),

Gene: Kwadwo\_52 Start: 47069, Stop: 46776, Start Num: 104  
Candidate Starts for Kwadwo\_52:  
(28, 47228), (52, 47171), (65, 47144), (Start: 82 @47123 has 24 MA's), (Start: 86 @47117 has 5  
MA's), (Start: 104 @47069 has 53 MA's), (Start: 115 @47045 has 1 MA's), (143, 46997), (146, 46991),  
(152, 46967),

Gene: Langerak\_53 Start: 36052, Stop: 36279, Start Num: 116  
Candidate Starts for Langerak\_53:  
(Start: 82 @35989 has 24 MA's), (Start: 116 @36052 has 30 MA's), (176, 36151),

Gene: Lasso\_53 Start: 47344, Stop: 47051, Start Num: 104  
Candidate Starts for Lasso\_53:  
(28, 47503), (52, 47446), (65, 47419), (Start: 82 @47398 has 24 MA's), (Start: 86 @47392 has 5  
MA's), (Start: 104 @47344 has 53 MA's), (Start: 115 @47320 has 1 MA's), (143, 47272), (146, 47266),  
(152, 47242),

Gene: Latretium\_77 Start: 46947, Stop: 47177, Start Num: 122  
Candidate Starts for Latretium\_77:  
(68, 46854), (Start: 101 @46911 has 2 MA's), (Start: 122 @46947 has 4 MA's), (151, 47007), (152,  
47010),



Gene: LeeLot\_53 Start: 47396, Stop: 47103, Start Num: 104

Candidate Starts for LeeLot\_53:

(28, 47555), (52, 47498), (65, 47471), (Start: 82 @47450 has 24 MA's), (Start: 86 @47444 has 5 MA's), (Start: 104 @47396 has 53 MA's), (Start: 115 @47372 has 1 MA's), (143, 47324), (146, 47318), (152, 47294),

Gene: Legolas\_55 Start: 48053, Stop: 47784, Start Num: 104

Candidate Starts for Legolas\_55:

(28, 48212), (52, 48155), (65, 48128), (Start: 82 @48107 has 24 MA's), (Start: 86 @48101 has 5 MA's), (Start: 104 @48053 has 53 MA's), (Start: 115 @48029 has 1 MA's), (143, 47981), (146, 47975), (152, 47951), (211, 47795),

Gene: Leperchaun\_71 Start: 45926, Stop: 46153, Start Num: 116

Candidate Starts for Leperchaun\_71:

(Start: 116 @45926 has 30 MA's), (176, 46025),

Gene: Leroy\_74 Start: 43665, Stop: 43955, Start Num: 82

Candidate Starts for Leroy\_74:

(59, 43638), (Start: 75 @43656 has 5 MA's), (Start: 82 @43665 has 24 MA's), (114, 43731), (159, 43818), (168, 43836), (184, 43863),

Gene: LinStu\_6 Start: 2738, Stop: 2995, Start Num: 85

Candidate Starts for LinStu\_6:

(Start: 78 @2729 has 2 MA's), (Start: 85 @2738 has 22 MA's), (96, 2762), (127, 2804), (137, 2819), (151, 2837), (152, 2840), (199, 2936),

Gene: LitninMcQueen\_77 Start: 44377, Stop: 44670, Start Num: 82

Candidate Starts for LitninMcQueen\_77:

(Start: 75 @44368 has 5 MA's), (Start: 82 @44377 has 24 MA's), (112, 44440), (114, 44443), (168, 44548),

Gene: LolaVınca\_6 Start: 1879, Stop: 2115, Start Num: 78

Candidate Starts for LolaVınca\_6:

(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Longacauda\_54 Start: 48016, Stop: 47747, Start Num: 104

Candidate Starts for Longacauda\_54:

(28, 48175), (52, 48118), (65, 48091), (Start: 82 @48070 has 24 MA's), (Start: 86 @48064 has 5 MA's), (Start: 104 @48016 has 53 MA's), (Start: 115 @47992 has 1 MA's), (143, 47944), (146, 47938), (152, 47914), (211, 47758),

Gene: LordLeafolot\_6 Start: 1924, Stop: 2115, Start Num: 100

Candidate Starts for LordLeafolot\_6:

(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Lorde\_53 Start: 35527, Stop: 35757, Start Num: 84

Candidate Starts for Lorde\_53:

(58, 35494), (Start: 60 @35497 has 1 MA's), (Start: 84 @35527 has 65 MA's), (Start: 100 @35563 has 9 MA's), (151, 35623), (152, 35626),

Gene: Lton\_54 Start: 33162, Stop: 33458, Start Num: 82

Candidate Starts for Lton\_54:

(Start: 75 @33153 has 5 MA's), (Start: 82 @33162 has 24 MA's), (114, 33228), (151, 33294), (155, 33306), (168, 33333), (184, 33360),

Gene: Lucky10\_55 Start: 35945, Stop: 36226, Start Num: 82

Candidate Starts for Lucky10\_55:

(Start: 82 @35945 has 24 MA's), (Start: 105 @35993 has 1 MA's), (114, 36011), (128, 36032), (151, 36068), (155, 36080), (167, 36101), (172, 36107), (179, 36116),

Gene: Lucky2013\_137 Start: 73141, Stop: 73386, Start Num: 187

Candidate Starts for Lucky2013\_137:

(132, 73006), (160, 73081), (166, 73096), (Start: 187 @73141 has 33 MA's), (205, 73213), (206, 73216), (207, 73219),

Gene: Lucky2013\_80 Start: 49269, Stop: 49000, Start Num: 83

Candidate Starts for Lucky2013\_80:

(Start: 83 @49269 has 79 MA's), (111, 49215), (152, 49167),

Gene: Lumine\_54 Start: 47804, Stop: 47535, Start Num: 104

Candidate Starts for Lumine\_54:

(28, 47963), (52, 47906), (Start: 82 @47858 has 24 MA's), (Start: 86 @47852 has 5 MA's), (Start: 104 @47804 has 53 MA's), (Start: 115 @47780 has 1 MA's), (143, 47732), (146, 47726), (152, 47702),

Gene: Lutum\_77 Start: 44553, Stop: 44840, Start Num: 82

Candidate Starts for Lutum\_77:

(58, 44526), (Start: 75 @44544 has 5 MA's), (Start: 82 @44553 has 24 MA's), (114, 44619), (151, 44685), (155, 44697),

Gene: MadKillah\_103 Start: 62045, Stop: 61815, Start Num: 118

Candidate Starts for MadKillah\_103:

(92, 62096), (Start: 118 @62045 has 1 MA's), (126, 62033), (151, 61985), (152, 61982),

Gene: MadMen\_62 Start: 41080, Stop: 41310, Start Num: 122

Candidate Starts for MadMen\_62:

(Start: 101 @41044 has 2 MA's), (Start: 122 @41080 has 4 MA's), (151, 41140), (152, 41143),

Gene: MadMen\_50 Start: 36869, Stop: 37144, Start Num: 83

Candidate Starts for MadMen\_50:

(79, 36863), (Start: 83 @36869 has 79 MA's), (152, 36980),

Gene: Madiba\_63 Start: 40537, Stop: 40815, Start Num: 83

Candidate Starts for Madiba\_63:

(79, 40531), (Start: 83 @40537 has 79 MA's), (152, 40648),

Gene: Madiba\_50 Start: 35664, Stop: 35894, Start Num: 84

Candidate Starts for Madiba\_50:

(Start: 60 @35634 has 1 MA's), (Start: 84 @35664 has 65 MA's), (Start: 100 @35700 has 9 MA's), (151, 35760), (152, 35763),

Gene: Makemake\_71 Start: 44586, Stop: 44317, Start Num: 83

Candidate Starts for Makemake\_71:

(Start: 83 @44586 has 79 MA's), (111, 44532), (152, 44484),

Gene: Mana\_52 Start: 47084, Stop: 46791, Start Num: 104

Candidate Starts for Mana\_52:

(28, 47243), (52, 47186), (65, 47159), (Start: 82 @47138 has 24 MA's), (Start: 86 @47132 has 5 MA's), (Start: 104 @47084 has 53 MA's), (Start: 115 @47060 has 1 MA's), (143, 47012), (146, 47006), (152, 46982),

Gene: Maravista\_54 Start: 38807, Stop: 39082, Start Num: 83

Candidate Starts for Maravista\_54:

(61, 38777), (Start: 83 @38807 has 79 MA's), (152, 38918),

Gene: Maroc7\_64 Start: 43049, Stop: 42780, Start Num: 83

Candidate Starts for Maroc7\_64:

(Start: 83 @43049 has 79 MA's), (111, 42995), (152, 42947),

Gene: Marsha\_65 Start: 43596, Stop: 43360, Start Num: 85

Candidate Starts for Marsha\_65:

(Start: 85 @43596 has 22 MA's), (125, 43536),

Gene: Maru\_53 Start: 47523, Stop: 47254, Start Num: 104

Candidate Starts for Maru\_53:

(28, 47682), (52, 47625), (65, 47598), (Start: 82 @47577 has 24 MA's), (Start: 86 @47571 has 5 MA's), (Start: 104 @47523 has 53 MA's), (Start: 115 @47499 has 1 MA's), (143, 47451), (146, 47445), (152, 47421),

Gene: Melissauren88\_50 Start: 36304, Stop: 36534, Start Num: 84

Candidate Starts for Melissauren88\_50:

(Start: 60 @36274 has 1 MA's), (Start: 84 @36304 has 65 MA's), (Start: 100 @36340 has 9 MA's), (151, 36400), (152, 36403),

Gene: Mesh1\_54 Start: 47616, Stop: 47323, Start Num: 104

Candidate Starts for Mesh1\_54:

(28, 47775), (52, 47718), (Start: 82 @47670 has 24 MA's), (Start: 86 @47664 has 5 MA's), (Start: 104 @47616 has 53 MA's), (Start: 115 @47592 has 1 MA's), (143, 47544), (146, 47538), (152, 47514),

Gene: MiaZeal\_144 Start: 74280, Stop: 74525, Start Num: 187

Candidate Starts for MiaZeal\_144:

(132, 74145), (160, 74220), (166, 74235), (Start: 187 @74280 has 33 MA's), (205, 74352), (206, 74355), (207, 74358),

Gene: MiaZeal\_83 Start: 49925, Stop: 49656, Start Num: 83

Candidate Starts for MiaZeal\_83:

(Start: 83 @49925 has 79 MA's), (111, 49871), (152, 49823),

Gene: MilleniumForce\_52 Start: 38325, Stop: 38558, Start Num: 84

Candidate Starts for MilleniumForce\_52:

(Start: 60 @38295 has 1 MA's), (Start: 84 @38325 has 65 MA's), (Start: 100 @38361 has 9 MA's), (151, 38421), (152, 38424),

Gene: Minerva\_145 Start: 76838, Stop: 77116, Start Num: 187

Candidate Starts for Minerva\_145:

(132, 76703), (166, 76793), (Start: 187 @76838 has 33 MA's), (205, 76910), (206, 76913), (216, 76955), (220, 77033),

Gene: Minerva\_89 Start: 56566, Stop: 56844, Start Num: 83

Candidate Starts for Minerva\_89:

(79, 56560), (Start: 83 @56566 has 79 MA's), (152, 56677),

Gene: MinionDave\_51 Start: 36841, Stop: 37071, Start Num: 84

Candidate Starts for MinionDave\_51:

(Start: 60 @36811 has 1 MA's), (Start: 84 @36841 has 65 MA's), (Start: 100 @36877 has 9 MA's), (151, 36937), (152, 36940),

Gene: MissRona\_77 Start: 48142, Stop: 48381, Start Num: 223

Candidate Starts for MissRona\_77:

(12, 47395), (13, 47401), (14, 47407), (16, 47452), (203, 47890), (209, 47917), (217, 47980), (218, 48004), (221, 48079), (222, 48088), (Start: 223 @48142 has 4 MA's), (224, 48169), (225, 48307), (226, 48328), (227, 48376),

Gene: MitKao\_53 Start: 47094, Stop: 46801, Start Num: 104

Candidate Starts for MitKao\_53:

(28, 47253), (52, 47196), (65, 47169), (Start: 82 @47148 has 24 MA's), (Start: 86 @47142 has 5 MA's), (Start: 104 @47094 has 53 MA's), (Start: 115 @47070 has 1 MA's), (143, 47022), (146, 47016), (152, 46992),

Gene: MmasiCarm\_52 Start: 45904, Stop: 45635, Start Num: 83

Candidate Starts for MmasiCarm\_52:

(Start: 83 @45904 has 79 MA's), (111, 45850), (152, 45802), (211, 45646),

Gene: Moonbeam\_48 Start: 36361, Stop: 36591, Start Num: 84

Candidate Starts for Moonbeam\_48:

(Start: 60 @36331 has 1 MA's), (Start: 84 @36361 has 65 MA's), (Start: 100 @36397 has 9 MA's), (151, 36457), (152, 36460),

Gene: Moosehead\_58 Start: 34673, Stop: 34924, Start Num: 82

Candidate Starts for Moosehead\_58:

(49, 34622), (53, 34631), (56, 34637), (57, 34640), (71, 34661), (Start: 75 @34664 has 5 MA's), (Start: 82 @34673 has 24 MA's), (159, 34805), (171, 34823),

Gene: Morgushi\_53 Start: 47083, Stop: 46790, Start Num: 104

Candidate Starts for Morgushi\_53:

(28, 47242), (52, 47185), (65, 47158), (Start: 82 @47137 has 24 MA's), (Start: 86 @47131 has 5 MA's), (Start: 104 @47083 has 53 MA's), (Start: 115 @47059 has 1 MA's), (143, 47011), (146, 47005), (152, 46981),

Gene: Morkie\_59 Start: 36074, Stop: 36376, Start Num: 82

Candidate Starts for Morkie\_59:

(35, 36002), (51, 36032), (61, 36050), (71, 36062), (Start: 75 @36065 has 5 MA's), (Start: 82 @36074 has 24 MA's), (Start: 105 @36122 has 1 MA's), (113, 36140), (134, 36161), (193, 36284),

Gene: Mortcellus\_51 Start: 46511, Stop: 46242, Start Num: 83

Candidate Starts for Mortcellus\_51:

(Start: 83 @46511 has 79 MA's), (111, 46457), (152, 46409), (211, 46253),

Gene: Mosaic\_52 Start: 47088, Stop: 46795, Start Num: 104

Candidate Starts for Mosaic\_52:

(28, 47247), (52, 47190), (65, 47163), (Start: 82 @47142 has 24 MA's), (Start: 86 @47136 has 5 MA's), (Start: 104 @47088 has 53 MA's), (Start: 115 @47064 has 1 MA's), (143, 47016), (146, 47010), (152, 46986),

Gene: Mova\_53 Start: 36684, Stop: 36917, Start Num: 84

Candidate Starts for Mova\_53:

(Start: 60 @36654 has 1 MA's), (Start: 84 @36684 has 65 MA's), (Start: 100 @36720 has 9 MA's), (151, 36780), (152, 36783),

Gene: Mova\_66 Start: 41041, Stop: 41319, Start Num: 83

Candidate Starts for Mova\_66:

(79, 41035), (Start: 83 @41041 has 79 MA's), (152, 41152),

Gene: Mozy\_62 Start: 39946, Stop: 40173, Start Num: 84

Candidate Starts for Mozy\_62:

(Start: 60 @39916 has 1 MA's), (Start: 84 @39946 has 65 MA's), (96, 39970), (127, 40012), (137, 40027), (151, 40045), (152, 40048), (165, 40078),

Gene: Mule\_62 Start: 41651, Stop: 41406, Start Num: 85

Candidate Starts for Mule\_62:

(Start: 85 @41651 has 22 MA's), (Start: 110 @41609 has 1 MA's), (124, 41597), (127, 41594), (152, 41555), (157, 41537),

Gene: Nappy\_5 Start: 1734, Stop: 1961, Start Num: 85

Candidate Starts for Nappy\_5:

(Start: 78 @1725 has 2 MA's), (Start: 85 @1734 has 22 MA's), (Start: 100 @1770 has 9 MA's), (Start: 110 @1779 has 1 MA's), (152, 1833), (169, 1872),

Gene: Nazo\_58 Start: 40075, Stop: 40302, Start Num: 116

Candidate Starts for Nazo\_58:

(Start: 82 @40012 has 24 MA's), (Start: 116 @40075 has 30 MA's), (176, 40174), (202, 40237),

Gene: Neos5\_51 Start: 46209, Stop: 45940, Start Num: 83

Candidate Starts for Neos5\_51:

(Start: 83 @46209 has 79 MA's), (111, 46155), (152, 46107),

Gene: Nicole21\_54 Start: 47889, Stop: 47620, Start Num: 104

Candidate Starts for Nicole21\_54:

(28, 48048), (52, 47991), (65, 47964), (Start: 82 @47943 has 24 MA's), (Start: 86 @47937 has 5 MA's), (Start: 104 @47889 has 53 MA's), (Start: 115 @47865 has 1 MA's), (143, 47817), (146, 47811), (152, 47787), (211, 47631),

Gene: NihilNomen\_147 Start: 77126, Stop: 77371, Start Num: 187

Candidate Starts for NihilNomen\_147:

(132, 76991), (166, 77081), (Start: 187 @77126 has 33 MA's), (205, 77198), (206, 77201),

Gene: NihilNomen\_91 Start: 56718, Stop: 57014, Start Num: 83

Candidate Starts for NihilNomen\_91:

(Start: 83 @56718 has 79 MA's), (124, 56796), (146, 56823), (152, 56847),

Gene: Nimbo\_65 Start: 44790, Stop: 45017, Start Num: 116

Candidate Starts for Nimbo\_65:

(Start: 116 @44790 has 30 MA's), (176, 44889),

Gene: Nozo\_51 Start: 46173, Stop: 45904, Start Num: 83

Candidate Starts for Nozo\_51:

(Start: 83 @46173 has 79 MA's), (111, 46119), (152, 46071),

Gene: NuevoMundo\_6 Start: 1876, Stop: 2112, Start Num: 78

Candidate Starts for NuevoMundo\_6:

(Start: 78 @1876 has 2 MA's), (Start: 85 @1885 has 22 MA's), (Start: 100 @1921 has 9 MA's), (Start: 110 @1930 has 1 MA's), (152, 1984), (169, 2023),

Gene: ODay\_82 Start: 46976, Stop: 47251, Start Num: 82

Candidate Starts for ODay\_82:

(33, 46892), (38, 46904), (45, 46916), (67, 46958), (Start: 75 @46967 has 5 MA's), (Start: 82 @46976 has 24 MA's), (103, 47021), (112, 47036), (129, 47057), (153, 47099), (156, 47111),

Gene: Obutu\_52 Start: 45859, Stop: 45590, Start Num: 83

Candidate Starts for Obutu\_52:

(Start: 83 @45859 has 79 MA's), (111, 45805), (152, 45757), (211, 45601),

Gene: Odette\_149 Start: 79269, Stop: 79514, Start Num: 187

Candidate Starts for Odette\_149:

(132, 79134), (166, 79224), (Start: 187 @79269 has 33 MA's), (205, 79341), (206, 79344),

Gene: Odette\_88 Start: 55760, Stop: 56056, Start Num: 83

Candidate Starts for Odette\_88:

(Start: 83 @55760 has 79 MA's), (124, 55838), (146, 55865), (152, 55889),

Gene: Ogopogo\_57 Start: 37928, Stop: 38170, Start Num: 84

Candidate Starts for Ogopogo\_57:

(Start: 80 @37922 has 6 MA's), (Start: 84 @37928 has 65 MA's), (152, 38039),

Gene: OldBen\_70 Start: 46182, Stop: 46409, Start Num: 116

Candidate Starts for OldBen\_70:

(Start: 116 @46182 has 30 MA's), (176, 46281),

Gene: OneDirection\_52 Start: 33066, Stop: 33362, Start Num: 82

Candidate Starts for OneDirection\_52:

(59, 33039), (Start: 75 @33057 has 5 MA's), (Start: 82 @33066 has 24 MA's), (114, 33132), (159, 33219), (168, 33237), (184, 33264),

Gene: Oosterbaan\_53 Start: 47374, Stop: 47081, Start Num: 104

Candidate Starts for Oosterbaan\_53:

(28, 47533), (52, 47476), (65, 47449), (Start: 82 @47428 has 24 MA's), (Start: 86 @47422 has 5 MA's), (Start: 104 @47374 has 53 MA's), (Start: 115 @47350 has 1 MA's), (143, 47302), (146, 47296), (152, 47272),

Gene: Optimus\_136 Start: 74406, Stop: 74651, Start Num: 187

Candidate Starts for Optimus\_136:

(132, 74271), (160, 74346), (166, 74361), (Start: 187 @74406 has 33 MA's), (205, 74478), (206, 74481),

Gene: Optimus\_84 Start: 55270, Stop: 55548, Start Num: 83

Candidate Starts for Optimus\_84:

(79, 55264), (Start: 83 @55270 has 79 MA's), (152, 55381),

Gene: OrangeOswald\_51 Start: 45414, Stop: 45145, Start Num: 83

Candidate Starts for OrangeOswald\_51:

(Start: 83 @45414 has 79 MA's), (111, 45360), (152, 45312),

Gene: OwlsT2W\_53 Start: 37646, Stop: 37888, Start Num: 84

Candidate Starts for OwlsT2W\_53:

(Start: 60 @37616 has 1 MA's), (Start: 84 @37646 has 65 MA's), (151, 37754),

Gene: PHappiness\_73 Start: 47011, Stop: 47238, Start Num: 116

Candidate Starts for PHappiness\_73:

(Start: 116 @47011 has 30 MA's), (176, 47110),

Gene: PMC\_49 Start: 37214, Stop: 37471, Start Num: 85

Candidate Starts for PMC\_49:

(27, 37100), (32, 37112), (46, 37148), (74, 37199), (Start: 85 @37214 has 22 MA's), (152, 37325), (163, 37355),

Gene: Paraselene\_66 Start: 43378, Stop: 43109, Start Num: 83

Candidate Starts for Paraselene\_66:

(Start: 83 @43378 has 79 MA's), (111, 43324), (152, 43276),

Gene: Periwinkle\_85 Start: 46796, Stop: 47035, Start Num: 107

Candidate Starts for Periwinkle\_85:

(31, 46643), (55, 46700), (63, 46718), (102, 46787), (Start: 107 @46796 has 2 MA's), (140, 46853), (151, 46880), (155, 46892),

Gene: Periwinkle\_62 Start: 38089, Stop: 38367, Start Num: 89

Candidate Starts for Periwinkle\_62:

(Start: 89 @38089 has 1 MA's), (152, 38185), (181, 38251), (206, 38329),

Gene: Phabuloso\_81 Start: 45523, Stop: 45816, Start Num: 82

Candidate Starts for Phabuloso\_81:

(59, 45496), (Start: 75 @45514 has 5 MA's), (Start: 82 @45523 has 24 MA's), (114, 45589), (158, 45676), (210, 45799),

Gene: Phalconet\_51 Start: 36608, Stop: 36838, Start Num: 84

Candidate Starts for Phalconet\_51:

(Start: 60 @36578 has 1 MA's), (Start: 84 @36608 has 65 MA's), (Start: 100 @36644 has 9 MA's), (151, 36704), (152, 36707),

Gene: Phanphagia\_47 Start: 36555, Stop: 36800, Start Num: 84

Candidate Starts for Phanphagia\_47:

(54, 36510), (64, 36531), (Start: 84 @36555 has 65 MA's), (152, 36666),

Gene: Phasih\_51 Start: 37693, Stop: 37935, Start Num: 84

Candidate Starts for Phasih\_51:

(Start: 80 @37687 has 6 MA's), (Start: 84 @37693 has 65 MA's), (152, 37804),

Gene: Phayeta\_53 Start: 45741, Stop: 45472, Start Num: 83

Candidate Starts for Phayeta\_53:

(Start: 83 @45741 has 79 MA's), (111, 45687), (152, 45639), (211, 45483),

Gene: Phayonce\_59 Start: 40788, Stop: 41024, Start Num: 106  
Candidate Starts for Phayonce\_59:  
(23, 40608), (Start: 106 @40788 has 2 MA's), (151, 40881), (170, 40929), (195, 40959), (205, 40989),  
(211, 41010),

Gene: PherrisBueller\_66 Start: 41317, Stop: 41090, Start Num: 86  
Candidate Starts for PherrisBueller\_66:  
(Start: 86 @41317 has 5 MA's), (152, 41257),

Gene: PhesterPhotato\_75 Start: 45749, Stop: 45976, Start Num: 116  
Candidate Starts for PhesterPhotato\_75:  
(Start: 82 @45686 has 24 MA's), (Start: 116 @45749 has 30 MA's), (176, 45848),

Gene: PhesterPhotato\_54 Start: 37593, Stop: 37826, Start Num: 84  
Candidate Starts for PhesterPhotato\_54:  
(Start: 60 @37563 has 1 MA's), (Start: 84 @37593 has 65 MA's), (Start: 100 @37629 has 9 MA's),  
(151, 37689), (152, 37692),

Gene: Philly\_50 Start: 45265, Stop: 44996, Start Num: 83  
Candidate Starts for Philly\_50:  
(Start: 83 @45265 has 79 MA's), (111, 45211), (152, 45163),

Gene: Phistory\_72 Start: 42511, Stop: 42852, Start Num: 75  
Candidate Starts for Phistory\_72:  
(24, 42406), (47, 42466), (Start: 75 @42511 has 5 MA's), (114, 42589), (151, 42655), (178, 42718),

Gene: Phlyer\_51 Start: 46154, Stop: 45885, Start Num: 83  
Candidate Starts for Phlyer\_51:  
(Start: 83 @46154 has 79 MA's), (111, 46100), (152, 46052),

Gene: Phoebus\_92 Start: 57900, Stop: 58196, Start Num: 83  
Candidate Starts for Phoebus\_92:  
(Start: 83 @57900 has 79 MA's), (124, 57978), (146, 58005), (152, 58029),

Gene: Phoebus\_145 Start: 79020, Stop: 79265, Start Num: 187  
Candidate Starts for Phoebus\_145:  
(132, 78885), (160, 78960), (166, 78975), (Start: 187 @79020 has 33 MA's), (205, 79092), (206,  
79095),

Gene: PhorbesPhlower\_55 Start: 35141, Stop: 35443, Start Num: 82  
Candidate Starts for PhorbesPhlower\_55:  
(35, 35069), (51, 35099), (61, 35117), (71, 35129), (Start: 75 @35132 has 5 MA's), (Start: 82 @35141  
has 24 MA's), (Start: 105 @35189 has 1 MA's), (113, 35207), (134, 35228), (193, 35351),

Gene: PhrostyMug\_65 Start: 43825, Stop: 43580, Start Num: 85  
Candidate Starts for PhrostyMug\_65:  
(Start: 85 @43825 has 22 MA's), (Start: 110 @43783 has 1 MA's), (124, 43771), (127, 43768), (152,  
43729), (157, 43711),

Gene: Pier\_6 Start: 1888, Stop: 2115, Start Num: 85  
Candidate Starts for Pier\_6:



(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Poenanya\_76 Start: 46880, Stop: 47107, Start Num: 116  
Candidate Starts for Poenanya\_76:  
(Start: 116 @46880 has 30 MA's), (176, 46979),

Gene: Poenanya\_52 Start: 38179, Stop: 38421, Start Num: 84  
Candidate Starts for Poenanya\_52:  
(Start: 60 @38149 has 1 MA's), (Start: 84 @38179 has 65 MA's), (151, 38287),

Gene: Polka14\_77 Start: 47670, Stop: 47897, Start Num: 116  
Candidate Starts for Polka14\_77:  
(Start: 116 @47670 has 30 MA's), (176, 47769),

Gene: Polka14\_51 Start: 36782, Stop: 37027, Start Num: 84  
Candidate Starts for Polka14\_51:  
(Start: 84 @36782 has 65 MA's), (151, 36890),

Gene: Polkaroo\_55 Start: 37375, Stop: 37602, Start Num: 116  
Candidate Starts for Polkaroo\_55:  
(Start: 82 @37312 has 24 MA's), (Start: 116 @37375 has 30 MA's), (176, 37474),

Gene: Pollywog\_50 Start: 37066, Stop: 37320, Start Num: 100  
Candidate Starts for Pollywog\_50:  
(Start: 81 @37018 has 1 MA's), (94, 37042), (Start: 100 @37066 has 9 MA's), (152, 37177),

Gene: Porcelain\_141 Start: 74087, Stop: 74332, Start Num: 187  
Candidate Starts for Porcelain\_141:  
(132, 73952), (160, 74027), (166, 74042), (Start: 187 @74087 has 33 MA's), (205, 74159), (206, 74162), (207, 74165),

Gene: Porcelain\_82 Start: 49925, Stop: 49656, Start Num: 83  
Candidate Starts for Porcelain\_82:  
(Start: 83 @49925 has 79 MA's), (111, 49871), (152, 49823),

Gene: Potter\_52 Start: 47105, Stop: 46812, Start Num: 104  
Candidate Starts for Potter\_52:  
(28, 47264), (52, 47207), (65, 47180), (Start: 82 @47159 has 24 MA's), (Start: 86 @47153 has 5 MA's), (Start: 104 @47105 has 53 MA's), (Start: 115 @47081 has 1 MA's), (143, 47033), (146, 47027), (152, 47003),

Gene: Pound\_137 Start: 76839, Stop: 77084, Start Num: 187  
Candidate Starts for Pound\_137:  
(132, 76704), (160, 76779), (166, 76794), (Start: 187 @76839 has 33 MA's), (205, 76911), (206, 76914),

Gene: Pringar\_6 Start: 1866, Stop: 2138, Start Num: 83  
Candidate Starts for Pringar\_6:  
(Start: 83 @1866 has 79 MA's), (125, 1929), (152, 1971),

Gene: Puhltonio\_53 Start: 47379, Stop: 47086, Start Num: 104  
Candidate Starts for Puhltonio\_53:

(28, 47538), (52, 47481), (65, 47454), (Start: 82 @47433 has 24 MA's), (Start: 86 @47427 has 5 MA's), (Start: 104 @47379 has 53 MA's), (Start: 115 @47355 has 1 MA's), (143, 47307), (146, 47301), (152, 47277),

Gene: Purky\_63 Start: 41280, Stop: 41552, Start Num: 87

Candidate Starts for Purky\_63:

(Start: 87 @41280 has 6 MA's), (94, 41295), (138, 41364), (151, 41388), (163, 41421), (171, 41439), (205, 41517), (210, 41538),

Gene: Purky\_64 Start: 41545, Stop: 41862, Start Num: 87

Candidate Starts for Purky\_64:

(18, 41383), (76, 41530), (Start: 87 @41545 has 6 MA's), (151, 41677), (197, 41794), (210, 41848),

Gene: QueenBeane\_53 Start: 47369, Stop: 47076, Start Num: 104

Candidate Starts for QueenBeane\_53:

(28, 47528), (52, 47471), (65, 47444), (Start: 82 @47423 has 24 MA's), (Start: 86 @47417 has 5 MA's), (Start: 104 @47369 has 53 MA's), (Start: 115 @47345 has 1 MA's), (143, 47297), (146, 47291), (152, 47267),

Gene: QuickMath\_66 Start: 43318, Stop: 43566, Start Num: 100

Candidate Starts for QuickMath\_66:

(Start: 100 @43318 has 9 MA's), (135, 43381), (152, 43423),

Gene: Rando14\_64 Start: 42240, Stop: 42497, Start Num: 91

Candidate Starts for Rando14\_64:

(77, 42219), (Start: 91 @42240 has 1 MA's), (120, 42300), (152, 42360), (163, 42390), (195, 42435),

Gene: RedBird\_74 Start: 45372, Stop: 45599, Start Num: 116

Candidate Starts for RedBird\_74:

(Start: 116 @45372 has 30 MA's), (176, 45471),

Gene: RedRaider77\_9 Start: 2886, Stop: 3152, Start Num: 101

Candidate Starts for RedRaider77\_9:

(68, 2829), (Start: 101 @2886 has 2 MA's), (Start: 122 @2922 has 4 MA's), (151, 2982), (152, 2985), (211, 3141),

Gene: Redno2\_140 Start: 75128, Stop: 75373, Start Num: 187

Candidate Starts for Redno2\_140:

(132, 74993), (166, 75083), (Start: 187 @75128 has 33 MA's), (205, 75200), (206, 75203),

Gene: Renaud18\_58 Start: 38221, Stop: 38445, Start Num: 84

Candidate Starts for Renaud18\_58:

(Start: 60 @38191 has 1 MA's), (Start: 84 @38221 has 65 MA's), (99, 38254), (124, 38278), (151, 38311),

Gene: Renaud18\_70 Start: 41973, Stop: 42221, Start Num: 85

Candidate Starts for Renaud18\_70:

(62, 41946), (Start: 85 @41973 has 22 MA's), (139, 42069), (151, 42093), (165, 42126),

Gene: Renaud18\_71 Start: 42261, Stop: 42503, Start Num: 85

Candidate Starts for Renaud18\_71:

(Start: 85 @42261 has 22 MA's), (94, 42276), (152, 42354), (177, 42414),

Gene: Rita1961\_52 Start: 45860, Stop: 45591, Start Num: 83  
Candidate Starts for Rita1961\_52:  
(Start: 83 @45860 has 79 MA's), (111, 45806), (152, 45758), (211, 45602),

Gene: RitaG\_73 Start: 46813, Stop: 47040, Start Num: 116  
Candidate Starts for RitaG\_73:  
(Start: 116 @46813 has 30 MA's), (176, 46912),

Gene: Rockne\_53 Start: 37214, Stop: 37471, Start Num: 85  
Candidate Starts for Rockne\_53:  
(27, 37100), (32, 37112), (46, 37148), (74, 37199), (Start: 85 @37214 has 22 MA's), (152, 37325),  
(163, 37355),

Gene: RockyHorror\_53 Start: 37057, Stop: 37299, Start Num: 84  
Candidate Starts for RockyHorror\_53:  
(Start: 60 @37027 has 1 MA's), (Start: 84 @37057 has 65 MA's), (152, 37168),

Gene: Royals2015\_55 Start: 37315, Stop: 37545, Start Num: 84  
Candidate Starts for Royals2015\_55:  
(Start: 60 @37285 has 1 MA's), (Start: 84 @37315 has 65 MA's), (Start: 100 @37351 has 9 MA's),  
(151, 37411), (152, 37414),

Gene: Ryadel\_103 Start: 62455, Stop: 62225, Start Num: 122  
Candidate Starts for Ryadel\_103:  
(Start: 101 @62491 has 2 MA's), (Start: 122 @62455 has 4 MA's), (151, 62395), (152, 62392),

Gene: SG4\_69 Start: 43478, Stop: 43705, Start Num: 116  
Candidate Starts for SG4\_69:  
(Start: 116 @43478 has 30 MA's), (176, 43577),

Gene: SG4\_49 Start: 36037, Stop: 36267, Start Num: 84  
Candidate Starts for SG4\_49:  
(58, 36004), (Start: 60 @36007 has 1 MA's), (Start: 84 @36037 has 65 MA's), (Start: 100 @36073 has  
9 MA's), (151, 36133), (152, 36136),

Gene: Samaymay\_53 Start: 47369, Stop: 47076, Start Num: 104  
Candidate Starts for Samaymay\_53:  
(28, 47528), (52, 47471), (65, 47444), (Start: 82 @47423 has 24 MA's), (Start: 86 @47417 has 5  
MA's), (Start: 104 @47369 has 53 MA's), (Start: 115 @47345 has 1 MA's), (143, 47297), (146, 47291),  
(152, 47267),

Gene: Samman98\_60 Start: 39796, Stop: 40041, Start Num: 80  
Candidate Starts for Samman98\_60:  
(Start: 80 @39796 has 6 MA's), (Start: 100 @39835 has 9 MA's), (194, 39985),

Gene: Sassafras\_74 Start: 45702, Stop: 45929, Start Num: 116  
Candidate Starts for Sassafras\_74:  
(Start: 116 @45702 has 30 MA's), (176, 45801),

Gene: Sassafras\_50 Start: 36161, Stop: 36394, Start Num: 84  
Candidate Starts for Sassafras\_50:  
(Start: 60 @36131 has 1 MA's), (Start: 84 @36161 has 65 MA's), (96, 36185), (127, 36227), (137,  
36242), (151, 36260), (152, 36263),

Gene: SassyCat97\_52 Start: 47096, Stop: 46803, Start Num: 104

Candidate Starts for SassyCat97\_52:

(28, 47255), (52, 47198), (65, 47171), (Start: 82 @47150 has 24 MA's), (Start: 86 @47144 has 5 MA's), (Start: 104 @47096 has 53 MA's), (Start: 115 @47072 has 1 MA's), (143, 47024), (146, 47018), (152, 46994),

Gene: Schatzie\_85 Start: 55507, Stop: 55803, Start Num: 83

Candidate Starts for Schatzie\_85:

(Start: 83 @55507 has 79 MA's), (124, 55585), (146, 55612), (152, 55636),

Gene: Schatzie\_141 Start: 77688, Stop: 77933, Start Num: 187

Candidate Starts for Schatzie\_141:

(132, 77553), (160, 77628), (166, 77643), (Start: 187 @77688 has 33 MA's), (205, 77760), (206, 77763),

Gene: Scottish\_71 Start: 45361, Stop: 45588, Start Num: 116

Candidate Starts for Scottish\_71:

(Start: 116 @45361 has 30 MA's), (176, 45460),

Gene: Sebata\_6 Start: 2738, Stop: 2995, Start Num: 85

Candidate Starts for Sebata\_6:

(Start: 78 @2729 has 2 MA's), (Start: 85 @2738 has 22 MA's), (96, 2762), (127, 2804), (137, 2819), (151, 2837), (152, 2840), (199, 2936),

Gene: Serendipity\_53 Start: 47393, Stop: 47100, Start Num: 104

Candidate Starts for Serendipity\_53:

(28, 47552), (52, 47495), (65, 47468), (Start: 82 @47447 has 24 MA's), (Start: 86 @47441 has 5 MA's), (Start: 104 @47393 has 53 MA's), (Start: 115 @47369 has 1 MA's), (143, 47321), (146, 47315), (152, 47291),

Gene: Shauna1\_47 Start: 36503, Stop: 36781, Start Num: 83

Candidate Starts for Shauna1\_47:

(36, 36419), (44, 36437), (65, 36479), (Start: 83 @36503 has 79 MA's), (152, 36614),

Gene: ShroomBoi\_52 Start: 36993, Stop: 37238, Start Num: 84

Candidate Starts for ShroomBoi\_52:

(34, 36909), (43, 36927), (64, 36969), (Start: 84 @36993 has 65 MA's), (152, 37104),

Gene: SirHarley\_86 Start: 60117, Stop: 60344, Start Num: 84

Candidate Starts for SirHarley\_86:

(22, 59994), (Start: 84 @60117 has 65 MA's), (Start: 100 @60153 has 9 MA's), (109, 60162), (141, 60216),

Gene: Sixama\_7 Start: 2706, Stop: 2383, Start Num: 73

Candidate Starts for Sixama\_7:

(Start: 73 @2706 has 1 MA's), (Start: 105 @2649 has 1 MA's), (Start: 118 @2619 has 1 MA's), (136, 2592), (179, 2502),

Gene: Smairt\_67 Start: 44819, Stop: 44574, Start Num: 85

Candidate Starts for Smairt\_67:

(Start: 85 @44819 has 22 MA's), (Start: 110 @44777 has 1 MA's), (124, 44765), (127, 44762), (152, 44723), (157, 44705),

Gene: Smooch\_99 Start: 62468, Stop: 62202, Start Num: 101

Candidate Starts for Smooch\_99:

(Start: 101 @62468 has 2 MA's), (Start: 122 @62432 has 4 MA's), (151, 62372), (152, 62369),

Gene: Soile\_54 Start: 47617, Stop: 47348, Start Num: 104

Candidate Starts for Soile\_54:

(28, 47776), (52, 47719), (65, 47692), (Start: 82 @47671 has 24 MA's), (Start: 86 @47665 has 5 MA's), (Start: 104 @47617 has 53 MA's), (Start: 115 @47593 has 1 MA's), (143, 47545), (146, 47539), (152, 47515), (211, 47359),

Gene: Solosis\_52 Start: 47090, Stop: 46797, Start Num: 104

Candidate Starts for Solosis\_52:

(28, 47249), (52, 47192), (65, 47165), (Start: 82 @47144 has 24 MA's), (Start: 86 @47138 has 5 MA's), (Start: 104 @47090 has 53 MA's), (Start: 115 @47066 has 1 MA's), (143, 47018), (146, 47012), (152, 46988),

Gene: Sophia\_52 Start: 47084, Stop: 46791, Start Num: 104

Candidate Starts for Sophia\_52:

(28, 47243), (52, 47186), (65, 47159), (Start: 82 @47138 has 24 MA's), (Start: 86 @47132 has 5 MA's), (Start: 104 @47084 has 53 MA's), (Start: 115 @47060 has 1 MA's), (143, 47012), (146, 47006), (152, 46982),

Gene: Sparkdehlily\_60 Start: 38797, Stop: 39039, Start Num: 84

Candidate Starts for Sparkdehlily\_60:

(Start: 80 @38791 has 6 MA's), (Start: 84 @38797 has 65 MA's), (152, 38908),

Gene: Specks\_6 Start: 1888, Stop: 2115, Start Num: 85

Candidate Starts for Specks\_6:

(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Spikelee\_42 Start: 31774, Stop: 31466, Start Num: 80

Candidate Starts for Spikelee\_42:

(40, 31840), (43, 31837), (45, 31834), (68, 31789), (Start: 80 @31774 has 6 MA's), (88, 31762), (Start: 95 @31747 has 1 MA's), (119, 31687), (143, 31645), (151, 31621), (170, 31573),

Gene: Spooky\_78 Start: 45719, Stop: 45976, Start Num: 80

Candidate Starts for Spooky\_78:

(Start: 80 @45719 has 6 MA's), (97, 45749), (Start: 100 @45758 has 9 MA's), (Start: 115 @45782 has 1 MA's),

Gene: Squid\_53 Start: 47096, Stop: 46803, Start Num: 104

Candidate Starts for Squid\_53:

(28, 47255), (52, 47198), (65, 47171), (Start: 82 @47150 has 24 MA's), (Start: 86 @47144 has 5 MA's), (Start: 104 @47096 has 53 MA's), (Start: 115 @47072 has 1 MA's), (143, 47024), (146, 47018), (152, 46994),

Gene: Squint\_83 Start: 50044, Stop: 49775, Start Num: 83

Candidate Starts for Squint\_83:

(Start: 83 @50044 has 79 MA's), (111, 49990), (152, 49942),

Gene: StAnnes\_51 Start: 37319, Stop: 37621, Start Num: 100

Candidate Starts for StAnnes\_51:

(Start: 60 @37253 has 1 MA's), (Start: 84 @37283 has 65 MA's), (Start: 100 @37319 has 9 MA's), (151, 37379), (152, 37382), (167, 37421), (190, 37442), (215, 37520),

Gene: StephanieG\_6 Start: 1933, Stop: 2115, Start Num: 110

Candidate Starts for StephanieG\_6:

(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Sunshine924\_70 Start: 43095, Stop: 42850, Start Num: 85

Candidate Starts for Sunshine924\_70:

(Start: 85 @43095 has 22 MA's), (Start: 110 @43053 has 1 MA's), (124, 43041), (127, 43038), (152, 42999), (157, 42981),

Gene: SuperGrey\_52 Start: 37962, Stop: 38207, Start Num: 84

Candidate Starts for SuperGrey\_52:

(34, 37878), (43, 37896), (64, 37938), (Start: 84 @37962 has 65 MA's), (152, 38073),

Gene: Surely\_53 Start: 47386, Stop: 47093, Start Num: 104

Candidate Starts for Surely\_53:

(28, 47545), (52, 47488), (65, 47461), (Start: 82 @47440 has 24 MA's), (Start: 86 @47434 has 5 MA's), (Start: 104 @47386 has 53 MA's), (Start: 115 @47362 has 1 MA's), (143, 47314), (146, 47308), (152, 47284),

Gene: SynergyX\_51 Start: 45415, Stop: 45146, Start Num: 83

Candidate Starts for SynergyX\_51:

(Start: 83 @45415 has 79 MA's), (111, 45361), (152, 45313),

Gene: TDanisky\_60 Start: 38797, Stop: 39039, Start Num: 84

Candidate Starts for TDanisky\_60:

(Start: 80 @38791 has 6 MA's), (Start: 84 @38797 has 65 MA's), (152, 38908),

Gene: Tainan\_6 Start: 1924, Stop: 2115, Start Num: 100

Candidate Starts for Tainan\_6:

(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start: 110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: Taj\_56 Start: 38142, Stop: 38369, Start Num: 84

Candidate Starts for Taj\_56:

(Start: 60 @38112 has 1 MA's), (Start: 84 @38142 has 65 MA's), (99, 38175), (124, 38199), (151, 38232),

Gene: TallGrassMM\_53 Start: 47000, Stop: 46707, Start Num: 104

Candidate Starts for TallGrassMM\_53:

(28, 47159), (52, 47102), (65, 47075), (Start: 82 @47054 has 24 MA's), (Start: 86 @47048 has 5 MA's), (Start: 104 @47000 has 53 MA's), (Start: 115 @46976 has 1 MA's), (143, 46928), (146, 46922), (152, 46898),

Gene: Tarzan\_58 Start: 37656, Stop: 37880, Start Num: 98

Candidate Starts for Tarzan\_58:

(Start: 98 @37656 has 1 MA's), (127, 37692), (189, 37785), (204, 37833),

Gene: Thibault\_128 Start: 74023, Stop: 74301, Start Num: 187

Candidate Starts for Thibault\_128:

(132, 73888), (166, 73978), (Start: 187 @74023 has 33 MA's), (205, 74095), (206, 74098), (216, 74140), (219, 74206), (220, 74218),

Gene: Thora\_53 Start: 47382, Stop: 47089, Start Num: 104

Candidate Starts for Thora\_53:

(28, 47541), (52, 47484), (65, 47457), (Start: 82 @47436 has 24 MA's), (Start: 86 @47430 has 5 MA's), (Start: 104 @47382 has 53 MA's), (Start: 115 @47358 has 1 MA's), (143, 47310), (146, 47304), (152, 47280),

Gene: ThreeRngTarjay\_140 Start: 77611, Stop: 77856, Start Num: 187

Candidate Starts for ThreeRngTarjay\_140:

(132, 77476), (160, 77551), (166, 77566), (Start: 187 @77611 has 33 MA's), (205, 77683), (206, 77686),

Gene: ThreeRngTarjay\_87 Start: 56792, Stop: 57088, Start Num: 83

Candidate Starts for ThreeRngTarjay\_87:

(Start: 83 @56792 has 79 MA's), (124, 56870), (146, 56897), (152, 56921),

Gene: Timmi\_52 Start: 47085, Stop: 46792, Start Num: 104

Candidate Starts for Timmi\_52:

(28, 47244), (52, 47187), (65, 47160), (Start: 82 @47139 has 24 MA's), (Start: 86 @47133 has 5 MA's), (Start: 104 @47085 has 53 MA's), (Start: 115 @47061 has 1 MA's), (143, 47013), (146, 47007), (152, 46983),

Gene: TinyDot\_48 Start: 31963, Stop: 32163, Start Num: 107

Candidate Starts for TinyDot\_48:

(Start: 107 @31963 has 2 MA's), (182, 32071), (183, 32074),

Gene: TomBombadil\_53 Start: 47370, Stop: 47077, Start Num: 104

Candidate Starts for TomBombadil\_53:

(28, 47529), (52, 47472), (65, 47445), (Start: 82 @47424 has 24 MA's), (Start: 86 @47418 has 5 MA's), (Start: 104 @47370 has 53 MA's), (Start: 115 @47346 has 1 MA's), (143, 47298), (146, 47292), (152, 47268),

Gene: Tonenili\_49 Start: 15568, Stop: 15810, Start Num: 84

Candidate Starts for Tonenili\_49:

(70, 15550), (Start: 84 @15568 has 65 MA's), (96, 15592), (127, 15634), (137, 15649), (152, 15670), (164, 15700), (172, 15718), (196, 15739),

Gene: Tonenili\_50 Start: 15803, Stop: 16036, Start Num: 106

Candidate Starts for Tonenili\_50:

(103, 15797), (Start: 106 @15803 has 2 MA's), (123, 15839), (144, 15875), (151, 15896), (191, 15962), (198, 15971),

Gene: Toron\_84 Start: 50886, Stop: 51176, Start Num: 87

Candidate Starts for Toron\_84:

(50, 50841), (Start: 87 @50886 has 6 MA's), (94, 50901), (96, 50910), (151, 51018), (193, 51111), (210, 51162),

Gene: Trine\_55 Start: 39935, Stop: 39684, Start Num: 86

Candidate Starts for Trine\_55:

(Start: 86 @39935 has 5 MA's), (145, 39860), (175, 39788),

Gene: Troll4\_84 Start: 59937, Stop: 60161, Start Num: 84  
Candidate Starts for Troll4\_84:  
(22, 59811), (25, 59820), (Start: 84 @59937 has 65 MA's), (139, 60033), (152, 60060), (201, 60111),

Gene: Tweety\_52 Start: 37774, Stop: 38004, Start Num: 84  
Candidate Starts for Tweety\_52:  
(Start: 60 @37744 has 1 MA's), (Start: 84 @37774 has 65 MA's), (Start: 100 @37810 has 9 MA's),  
(151, 37870), (152, 37873),

Gene: Tyke\_6 Start: 1888, Stop: 2115, Start Num: 85  
Candidate Starts for Tyke\_6:  
(Start: 78 @1879 has 2 MA's), (Start: 85 @1888 has 22 MA's), (Start: 100 @1924 has 9 MA's), (Start:  
110 @1933 has 1 MA's), (152, 1987), (169, 2026),

Gene: VRedHorse\_52 Start: 36525, Stop: 36758, Start Num: 84  
Candidate Starts for VRedHorse\_52:  
(Start: 60 @36495 has 1 MA's), (Start: 84 @36525 has 65 MA's), (Start: 100 @36561 has 9 MA's),  
(151, 36621), (152, 36624),

Gene: VanLee\_73 Start: 43882, Stop: 44154, Start Num: 87  
Candidate Starts for VanLee\_73:  
(Start: 87 @43882 has 6 MA's), (130, 43969), (141, 43987), (161, 44041),

Gene: VanLee\_59 Start: 39559, Stop: 39819, Start Num: 83  
Candidate Starts for VanLee\_59:  
(Start: 83 @39559 has 79 MA's),

Gene: VasuNzinga\_8 Start: 2535, Stop: 2807, Start Num: 83  
Candidate Starts for VasuNzinga\_8:  
(Start: 83 @2535 has 79 MA's), (125, 2598), (152, 2640),

Gene: Venti\_53 Start: 36036, Stop: 36263, Start Num: 116  
Candidate Starts for Venti\_53:  
(Start: 82 @35973 has 24 MA's), (Start: 116 @36036 has 30 MA's), (176, 36135),

Gene: Vortex\_53 Start: 47080, Stop: 46787, Start Num: 104  
Candidate Starts for Vortex\_53:  
(28, 47239), (52, 47182), (65, 47155), (Start: 82 @47134 has 24 MA's), (Start: 86 @47128 has 5  
MA's), (Start: 104 @47080 has 53 MA's), (Start: 115 @47056 has 1 MA's), (143, 47008), (146, 47002),  
(152, 46978),

Gene: Wanda\_94 Start: 55909, Stop: 56205, Start Num: 83  
Candidate Starts for Wanda\_94:  
(79, 55903), (Start: 83 @55909 has 79 MA's), (124, 55987), (146, 56014), (152, 56038),

Gene: Wanda\_145 Start: 75318, Stop: 75596, Start Num: 187  
Candidate Starts for Wanda\_145:  
(132, 75183), (166, 75273), (Start: 187 @75318 has 33 MA's), (205, 75390), (206, 75393), (216,  
75435), (220, 75513),

Gene: Wee\_55 Start: 38414, Stop: 38641, Start Num: 84  
Candidate Starts for Wee\_55:



(Start: 60 @38384 has 1 MA's), (Start: 84 @38414 has 65 MA's), (99, 38447), (124, 38471), (151, 38504),

Gene: Whatsapiecost\_53 Start: 36689, Stop: 36931, Start Num: 84

Candidate Starts for Whatsapiecost\_53:

(Start: 84 @36689 has 65 MA's), (152, 36800),

Gene: Whitney\_75 Start: 45513, Stop: 45800, Start Num: 82

Candidate Starts for Whitney\_75:

(72, 45501), (Start: 75 @45504 has 5 MA's), (Start: 82 @45513 has 24 MA's), (114, 45579), (151, 45645), (155, 45657),

Gene: William\_80 Start: 49369, Stop: 49632, Start Num: 86

Candidate Starts for William\_80:

(5, 49048), (7, 49063), (9, 49099), (Start: 86 @49369 has 5 MA's), (Start: 100 @49405 has 9 MA's), (134, 49456),

Gene: WilliamBoone\_96 Start: 57383, Stop: 57652, Start Num: 87

Candidate Starts for WilliamBoone\_96:

(Start: 87 @57383 has 6 MA's), (141, 57488), (174, 57554),

Gene: XFactor\_50 Start: 36012, Stop: 36242, Start Num: 84

Candidate Starts for XFactor\_50:

(Start: 60 @35982 has 1 MA's), (Start: 84 @36012 has 65 MA's), (Start: 100 @36048 has 9 MA's), (151, 36108), (152, 36111),

Gene: Xavier\_52 Start: 47087, Stop: 46794, Start Num: 104

Candidate Starts for Xavier\_52:

(28, 47246), (52, 47189), (65, 47162), (Start: 82 @47141 has 24 MA's), (Start: 86 @47135 has 5 MA's), (Start: 104 @47087 has 53 MA's), (Start: 115 @47063 has 1 MA's), (143, 47015), (146, 47009), (152, 46985),

Gene: Yeet\_83 Start: 55009, Stop: 55305, Start Num: 83

Candidate Starts for Yeet\_83:

(Start: 83 @55009 has 79 MA's), (124, 55087), (146, 55114), (152, 55138),

Gene: Yeet\_139 Start: 77084, Stop: 77329, Start Num: 187

Candidate Starts for Yeet\_139:

(132, 76949), (166, 77039), (Start: 187 @77084 has 33 MA's), (205, 77156), (206, 77159),

Gene: Yoshi\_64 Start: 38747, Stop: 38995, Start Num: 84

Candidate Starts for Yoshi\_64:

(Start: 60 @38717 has 1 MA's), (Start: 84 @38747 has 65 MA's), (139, 38843), (151, 38867), (165, 38900),

Gene: Yoshi\_44 Start: 30151, Stop: 29960, Start Num: 87

Candidate Starts for Yoshi\_44:

(Start: 87 @30151 has 6 MA's), (132, 30061),

Gene: YungJamal\_99 Start: 61508, Stop: 61278, Start Num: 122

Candidate Starts for YungJamal\_99:

(Start: 101 @61544 has 2 MA's), (Start: 122 @61508 has 4 MA's), (151, 61448), (152, 61445),

Gene: Zelda\_53 Start: 47424, Stop: 47131, Start Num: 104

Candidate Starts for Zelda\_53:

(28, 47583), (52, 47526), (65, 47499), (Start: 82 @47478 has 24 MA's), (Start: 86 @47472 has 5 MA's), (Start: 104 @47424 has 53 MA's), (Start: 115 @47400 has 1 MA's), (143, 47352), (146, 47346), (152, 47322),

Gene: Zelink\_87 Start: 57104, Stop: 57400, Start Num: 83

Candidate Starts for Zelink\_87:

(Start: 83 @57104 has 79 MA's), (124, 57182), (146, 57209), (152, 57233),

Gene: Zelink\_140 Start: 78130, Stop: 78408, Start Num: 187

Candidate Starts for Zelink\_140:

(132, 77995), (160, 78070), (166, 78085), (Start: 187 @78130 has 33 MA's), (205, 78202), (206, 78205), (216, 78247), (220, 78325),

Gene: Zerg\_52 Start: 37166, Stop: 37408, Start Num: 84

Candidate Starts for Zerg\_52:

(Start: 60 @37136 has 1 MA's), (Start: 84 @37166 has 65 MA's), (152, 37277),