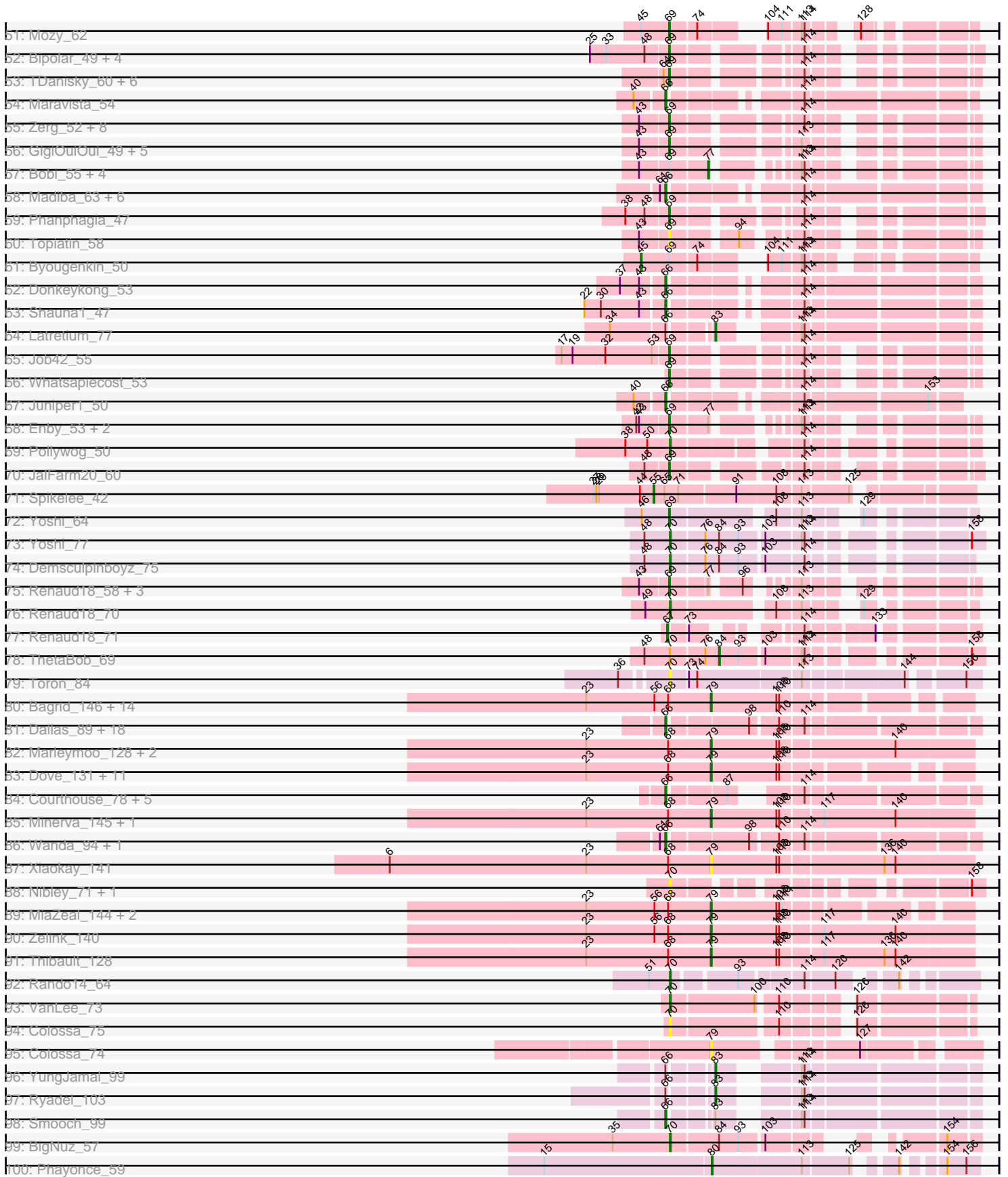
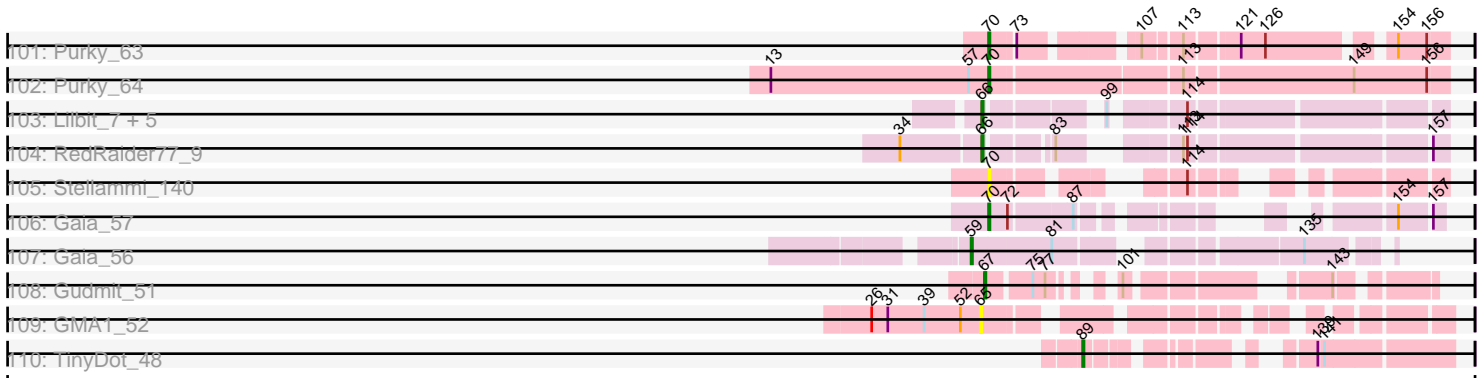


Pham 294356



Pham 294356



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 294356 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294356 has 353 members, 27 are drafts.

Phages represented in each track:

- Track 1 : Fascinus\_60, Paraselene\_66, Carlyle\_66, CactusRose\_66, Maroc7\_64, Blue\_65, Makemake\_71, Bigfoot\_58, Raid\_64, Graduation\_70
- 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 : Hami1\_60
- Track 7 : Pelly\_67
- Track 8 : Bethlehem\_66
- Track 9 : HighStump\_55, Kahve\_53, Orwigg\_53, Childish\_53, Soile\_54, Nicole21\_54, DaddyDaniels\_55, Iridessa\_54, Craff\_56, Legolas\_55, Longacauda\_54, Brilliant\_55, HenryJackson\_53
- Track 10 : Fozzie\_52, CamL\_53, Mosaic\_52, Sophia\_52, Serendipity\_53, Cosmolli16\_54, TallGrassMM\_53, Surely\_53, Chorkpop\_53, Squid\_53, Daffy\_53, MrPhizzler\_55, Morgushi\_53, Solosis\_52, Timmi\_52, MitKao\_53, Maru\_53, Rimu\_54, Lasso\_53, Potter\_52, QueenBeane\_53, Mana\_52, LeeLot\_53, Puhltonio\_53, Haleema\_52, Oosterbaan\_53, TomBombadil\_53, Hertubise\_53, Zelda\_53, Cannibal\_53, Kwadwo\_52, Thora\_53, Samaymay\_53, SassyCat97\_52, Vortex\_53, Xavier\_52, Held\_53, Banjo\_52
- Track 11 : Grand2040\_53, LeiMonet\_55, Mesh1\_54, Lumine\_54, Giraffe\_54
- Track 12 : Fringe\_57
- Track 13 : Abinghost\_51, Neos5\_51, SynergyX\_51, Baloo\_51, GlenHope\_52, Audrey\_51, Nozo\_51, Daisy\_51, Athena\_52, ChaChing\_51, Philly\_50, Corofin\_51, Glubnar\_52, Halfpint\_50, OrangeOswald\_51, Akoma\_51, Kamiyu\_51, Phlyer\_51, Chandler\_51
- Track 14 : Phayeta\_53, Chentzyk\_52, Kronus\_51, Gervas\_52, Ben11\_51, Mortcellus\_51, Casbah\_51, TinyTerror\_52, Rita1961\_52, MmasiCarm\_52, Obutu\_52
- Track 15 : Sebata\_6, LinStu\_6
- Track 16 : InterFolia\_6, Tainan\_6, PharkleMinkus\_6, Pupusa\_6
- Track 17 : LordLeafolot\_6, FrayBell\_6
- Track 18 : LolaVinca\_6
- Track 19 : DTDevon\_6, Pier\_6, Tyke\_6, Specks\_6, Dandelion\_5, Nappy\_5, Drazdys\_6
- Track 20 : Tonenili\_49
- Track 21 : NuevoMundo\_6
- Track 22 : Vortrix\_51

- Track 23 : Vortrix\_52
- Track 24 : Tonenili\_50
- Track 25 : JayJay\_6
- Track 26 : WilliamBoone\_96
- Track 27 : MissRona\_77, Blueberry\_76, Azula\_77, Gambino\_79
- Track 28 : William\_80
- Track 29 : Beenie\_54
- Track 30 : Clark\_59, Invectra\_62, Samman98\_60
- Track 31 : DobbysSock\_53
- Track 32 : Denise\_57
- Track 33 : Hawkeye\_97
- Track 34 : Lucky10\_55
- Track 35 : Periwinkle\_85
- Track 36 : LitninMcQueen\_77
- Track 37 : Periwinkle\_62
- Track 38 : Leroy\_74, Holliday\_79, OneDirection\_52
- Track 39 : Spooky\_78
- Track 40 : GMA2\_107
- Track 41 : DonkeyMan\_58, Tarzan\_58
- Track 42 : Heinz\_57
- Track 43 : DLane\_48, Mova\_53, VRedHorse\_52, XFactor\_50, PhesterPhotato\_54, Hamulus\_53, Ardmore\_44, Moonbeam\_48, Batiatus\_50, Melissau88\_50, Emma\_52, Royals2015\_55, Phalconet\_51, MilleniumForce\_52, CaptainTrips\_49, MinionDave\_51, Tweety\_52, Madiba\_50
- Track 44 : Gandalph\_55, Polka14\_51
- Track 45 : Estave1\_55, Eish\_57, DoRead\_54
- Track 46 : MadMen\_62
- Track 47 : BuzzLyseyear\_44
- Track 48 : Dante\_53, Inventum\_47, Demsculpinboyz\_62, DaWorst\_54, DaddyRickover\_52, Sassafras\_50
- Track 49 : MulchExplorer\_66, QuickMath\_66, Kimberlium\_67
- Track 50 : PMC\_49, Boomer\_57, Rockne\_53
- Track 51 : Mozy\_62
- Track 52 : Bipolar\_49, SuperGrey\_52, ShroomBoi\_52, KristaRAM\_51, Kenuha5\_50
- Track 53 : TDanisky\_60, OgoPogo\_57, Chuckly\_55, Phasih\_51, Clank\_57, Sparkdehlily\_60, Aubs\_53
- Track 54 : Maravista\_54
- Track 55 : Zerg\_52, Che8\_55, Firehouse51\_53, ArcusAngelus\_56, Mwanjiwa\_58, Chevrolet\_59, Marker\_53, RockyHorror\_53, Doug\_55
- Track 56 : GigiOuiOui\_49, OwlsT2W\_53, Doomphist\_52, Poenanya\_52, Cornucopia\_55, DotProduct\_48
- Track 57 : Bobi\_55, Jant\_56, Krakatau\_50, Okabe\_47, Harley\_54
- Track 58 : Madiba\_63, Optimus\_84, Minerva\_89, BAKA\_91, Mova\_66, EricMillard\_83, MadMen\_50
- Track 59 : Phanphagia\_47
- Track 60 : Topiatin\_58
- Track 61 : Byougenkin\_50
- Track 62 : Donkeykong\_53
- Track 63 : Shauna1\_47
- Track 64 : Latretium\_77
- Track 65 : Job42\_55
- Track 66 : Whatsapiecost\_53
- Track 67 : Juniper1\_50

- Track 68 : Enby\_53, SG4\_49, Lorde\_53
- Track 69 : Pollywog\_50
- Track 70 : JalFarm20\_60
- Track 71 : Spikelee\_42
- Track 72 : Yoshi\_64
- Track 73 : Yoshi\_77
- Track 74 : Demsculpinboyz\_75
- Track 75 : Renaud18\_58, Taj\_56, Wee\_55, DeadP\_58
- Track 76 : Renaud18\_70
- Track 77 : Renaud18\_71
- Track 78 : ThetaBob\_69
- Track 79 : Toron\_84
- Track 80 : Bagrid\_146, ThreeRngTarjay\_140, Halley\_147, Pound\_137, DmpstrDiver\_146, Ejimix\_138, Phoebus\_145, Optimus\_136, BAKA\_145, EricMillard\_137, Hughesyang\_144, Constella\_139, Duke13\_141, Dallas\_146, Schatzie\_141
- Track 81 : Dallas\_89, DmpstrDiver\_90, ThreeRngTarjay\_87, Hughesyang\_90, Kalah2\_84, Yeet\_83, Zelink\_87, Dove\_75, Bagrid\_89, Phoebus\_92, Schatzie\_85, NihilNomen\_91, Halley\_91, Bombitas\_78, Beem\_90, JuicyJay\_87, Odette\_88, Constella\_75, HokkenD\_79
- Track 82 : Marleymoo\_128, Bobby\_135, Hidrated\_131
- Track 83 : 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 84 : Courthouse\_78, MiaZeal\_83, Ariel\_82, Lucky2013\_80, Porcelain\_82, Squint\_83
- Track 85 : Minerva\_145, Wanda\_145
- Track 86 : Wanda\_94, Klein\_90
- Track 87 : Xiaokay\_141
- Track 88 : Nibley\_71, Nekros\_77
- Track 89 : MiaZeal\_144, Porcelain\_141, Lucky2013\_137
- Track 90 : Zelink\_140
- Track 91 : Thibault\_128
- Track 92 : Rando14\_64
- Track 93 : VanLee\_73
- Track 94 : Colossa\_75
- Track 95 : Colossa\_74
- Track 96 : YungJamal\_99
- Track 97 : Ryadel\_103
- Track 98 : Smooch\_99
- Track 99 : BigNuz\_57
- Track 100 : Phayonce\_59
- Track 101 : Purky\_63
- Track 102 : Purky\_64
- Track 103 : Lilbit\_7, VasuNzinga\_8, Pringar\_6, Beelzebub\_8, FeliMaine\_7, Clarkson\_7
- Track 104 : RedRaider77\_9
- Track 105 : Stellammi\_140
- Track 106 : Gaia\_57
- Track 107 : Gaia\_56
- Track 108 : Gudmit\_51
- Track 109 : GMA1\_52
- Track 110 : TinyDot\_48

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

The start number called the most often in the published annotations is 69, it was called in 128 of the 326 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ArcusAngelus\_56, Ardmore\_44, Aubs\_53, Banjo\_52, Batiatus\_50, Bethlehem\_66, Bipolar\_49, Boomer\_57, Brilliant\_55, CamL\_53, Cannibal\_53, CaptainTrips\_49, Che8\_55, Chevrolet\_59, Childish\_53, Chorkpop\_53, Chuckly\_55, Clank\_57, Cornucopia\_55, Cosmolli16\_54, Craff\_56, DLane\_48, DaWorst\_54, DaddyDaniels\_55, DaddyRickover\_52, Daffy\_53, Dante\_53, DeadP\_58, Demsculpinboyz\_62, Doomphist\_52, DotProduct\_48, Doug\_55, Emma\_52, Enby\_53, Firehouse51\_53, Fozzie\_52, Fringe\_57, Gandolph\_55, GigiOuiOui\_49, Giraffe\_54, Grand2040\_53, Haleema\_52, Hamulus\_53, Hawkeye\_97, Held\_53, HenryJackson\_53, Hertubise\_53, HighStump\_55, Inventum\_47, Iridessa\_54, JalFarm20\_60, Job42\_55, Kahve\_53, Kenuha5\_50, KristaRAM\_51, Kwadwo\_52, Lasso\_53, LeeLot\_53, Legolas\_55, LeiMonet\_55, LinStu\_6, Longacauda\_54, Lorde\_53, Lumine\_54, Madiba\_50, Mana\_52, Marker\_53, Maru\_53, Melissauren88\_50, Mesh1\_54, MilleniumForce\_52, MinionDave\_51, MitKao\_53, Moonbeam\_48, Morgushi\_53, Mosaic\_52, Mova\_53, Mozy\_62, MrPhizzler\_55, Mwanjiwa\_58, Nicole21\_54, Ogopogo\_57, Oosterbaan\_53, Orwigg\_53, OwlsT2W\_53, PMC\_49, Periwinkle\_62, Phalconet\_51, Phanphagia\_47, Phasih\_51, PhesterPotato\_54, Poenanya\_52, Polka14\_51, Potter\_52, Puhltonio\_53, QueenBeane\_53, Renaud18\_58, Rimu\_54, Rockne\_53, RockyHorror\_53, Royals2015\_55, SG4\_49, Samaymay\_53, Sassafras\_50, SassyCat97\_52, Sebata\_6, Serendipity\_53, ShroomBoi\_52, Soile\_54, Solosis\_52, Sophia\_52, Sparkdehlily\_60, Squid\_53, SuperGrey\_52, Surely\_53, TDanisky\_60, Taj\_56, TallGrassMM\_53, Thora\_53, Timmi\_52, TomBombadil\_53, Tonenili\_49, Topiatin\_58, Tweety\_52, VRedHorse\_52, Vortex\_53, Vortrix\_51, Wee\_55, Whatsapiecost\_53, XFactor\_50, Xavier\_52, Yoshi\_64, Zelda\_53, Zerg\_52,

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

- Bobi\_55, Byougenkin\_50, Harley\_54, Jant\_56, JayJay\_6, Krakatau\_50, Okabe\_47,

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

- Abinghost\_51, Aeneas\_68, Akoma\_51, Ariel\_82, Athena\_52, Audrey\_51, Azula\_77, BAKA\_145, BAKA\_91, BaconJack\_70, Bagrid\_146, Bagrid\_89, Baloo\_51, Beelzebub\_8, Beem\_147, Beem\_90, Beenie\_54, Ben11\_51, BigNuz\_57, Bigfoot\_58, Blue\_65, Blueberry\_76, Bobby\_135, Bombitas\_133, Bombitas\_78, BuzzLyseyear\_44, CactusRose\_66, Carlyle\_66, Casbah\_51, ChaChing\_51, Chandler\_51, Chentzyk\_52, Clark\_59, Clarkson\_7, Colossa\_74, Colossa\_75, Constella\_139, Constella\_75, Corofin\_51, Courthouse\_78, DTDevon\_6, Daisy\_51, Dallas\_146, Dallas\_89, Dandelion\_5, Demsculpinboyz\_75, Denise\_57, DmpstrDiver\_146, DmpstrDiver\_90, DoRead\_54, DobbysSock\_53, DonkeyMan\_58, Donkeykong\_53, Dove\_131, Dove\_75, Drazdys\_6, Dreamboat\_67, Duke13\_141, Eish\_57, Ejimix\_138, EricMillard\_137, EricMillard\_83, Estave1\_55, Fascinus\_60, FeliMaine\_7, FrayBell\_6, GMA1\_52, GMA2\_107, Gaia\_56, Gaia\_57, Gambino\_79, Gervas\_52, GlenHope\_52, Glubnar\_52, Graduation\_70, Gudmit\_51, Halfpint\_50, Halley\_147, Halley\_91, Hami1\_60, Heinz\_57, Hidrated\_131, HokkenD\_138, HokkenD\_79, Holliday\_79,

Hughesyang\_144, Hughesyang\_90, InterFolia\_6, Invecetra\_62, Jasper\_66, Jorgensen\_69, JuicyJay\_141, JuicyJay\_87, Juniper1\_50, Kalah2\_136, Kalah2\_84, Kamiyu\_51, KashFlow\_144, Kimberlium\_67, Klein\_143, Klein\_90, Kronus\_51, Latretium\_77, Leroy\_74, Lilbit\_7, LitninMcQueen\_77, LolaVinca\_6, LordLeafolot\_6, Lucky10\_55, Lucky2013\_137, Lucky2013\_80, MadMen\_50, MadMen\_62, Madiba\_63, Makemake\_71, Maravista\_54, Marleymoo\_128, Maroc7\_64, Marsha\_65, MiaZeal\_144, MiaZeal\_83, Minerva\_145, Minerva\_89, MissRona\_77, MmasiCarm\_52, Mortcellus\_51, Mova\_66, MulchExplorer\_66, Mule\_62, Nappy\_5, Nekros\_77, Neos5\_51, Nibley\_71, NihilNomen\_147, NihilNomen\_91, Nozo\_51, NuevoMundo\_6, Obutu\_52, Odette\_149, Odette\_88, OneDirection\_52, Optimus\_136, Optimus\_84, OrangeOswald\_51, Paraselene\_66, Pelly\_67, Periwinkle\_85, PharkleMinkus\_6, Phayeta\_53, Phayonce\_59, PherrisBueller\_66, Philly\_50, Phlyer\_51, Phoebus\_145, Phoebus\_92, PhrostyMug\_65, Pier\_6, Pollywog\_50, Porcelain\_141, Porcelain\_82, Pound\_137, Pringar\_6, Pupusa\_6, Purky\_63, Purky\_64, QuickMath\_66, Raid\_64, Rando14\_64, RedRaider77\_9, Redno2\_140, Renaud18\_70, Renaud18\_71, Rita1961\_52, Ryadel\_103, Samman98\_60, Schatzie\_141, Schatzie\_85, Shauna1\_47, Smairt\_67, Smooch\_99, Specks\_6, Spikelee\_42, Spooky\_78, Squint\_83, Stellammi\_140, Sunshine924\_70, SynergyX\_51, Tainan\_6, Tarzan\_58, ThetaBob\_69, Thibault\_128, ThreeRngTarjay\_140, ThreeRngTarjay\_87, TinyDot\_48, TinyTerror\_52, Tonenili\_50, Toron\_84, Tyke\_6, VanLee\_73, VasuNzinga\_8, Vortrix\_52, Wanda\_145, Wanda\_94, WilliamBoone\_96, William\_80, Xiaokay\_141, Yeet\_139, Yeet\_83, Yoshi\_77, YungJamal\_99, Zelink\_140, Zelink\_87,

### Summary by start number:

#### Start 45:

- Found in 8 of 353 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 1 of 326
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Byougenkin\_50 (F1),

#### Start 55:

- Found in 2 of 353 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 326
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Spikelee\_42 (F1),

#### Start 59:

- Found in 2 of 353 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 326
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Gaia\_56 (X),

#### Start 62:

- Found in 3 of 353 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 326
- Called 33.3% of time when present
- Phage (with cluster) where this start called: JayJay\_6 (C1),

#### Start 63:

- Found in 16 of 353 ( 4.5% ) of genes in pham
- Manual Annotations of this start: 3 of 326

- Called 18.8% of time when present
- Phage (with cluster) where this start called: Jorgensen\_69 (A1), LolaVinca\_6 (C1), NuevoMundo\_6 (C1),

#### Start 65:

- Found in 4 of 353 ( 1.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: GMA1\_52 (singleton), GMA2\_107 (DS),

#### Start 66:

- Found in 97 of 353 ( 27.5% ) of genes in pham
- Manual Annotations of this start: 87 of 326
- Called 91.8% of time when present
- Phage (with cluster) where this start called: Abinghost\_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), Ben11\_51 (B3), Bigfoot\_58 (A1), Blue\_65 (A1), Bombitas\_78 (J), CactusRose\_66 (A1), Carlyle\_66 (A1), Casbah\_51 (B3), ChaChing\_51 (B3), Chandler\_51 (B3), Chentzyk\_52 (B3), Clarkson\_7 (S), Constella\_75 (J), Corofin\_51 (B3), Courthouse\_78 (J), Daisy\_51 (B3), Dallas\_89 (J), DmpstrDiver\_90 (J), DoRead\_54 (F1), Donkeykong\_53 (F1), Dove\_75 (J), Eish\_57 (F1), EricMillard\_83 (J), Estave1\_55 (F1), Fascinus\_60 (A1), FeliMaine\_7 (S), Gervas\_52 (B3), GlenHope\_52 (B3), Glubnar\_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), Lilbit\_7 (S), 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), Raid\_64 (A1), RedRaider77\_9 (S), Rita1961\_52 (B3), Schatzie\_85 (J), Shauna1\_47 (F1), Smooch\_99 (O), Squint\_83 (J), SynergyX\_51 (B3), ThreeRngTarjay\_87 (J), TinyTerror\_52 (B3), VasuNzinga\_8 (S), Wanda\_94 (J), Yeet\_83 (J), Zelink\_87 (J),

#### Start 67:

- Found in 15 of 353 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 15 of 326
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beenie\_54 (CZ4), Clark\_59 (CZ4), DobbysSock\_53 (CZ4), Gudmit\_51 (singleton), Hami1\_60 (A1), Holliday\_79 (DN1), Invectra\_62 (CZ4), Leroy\_74 (DN1), LitninMcQueen\_77 (DN1), Lucky10\_55 (DH), OneDirection\_52 (CZ6), Pelly\_67 (A1), Renaud18\_71 (F4), Samman98\_60 (CZ4), Spooky\_78 (DN2),

#### Start 68:

- Found in 41 of 353 ( 11.6% ) of genes in pham
- Manual Annotations of this start: 3 of 326
- Called 7.3% of time when present
- Phage (with cluster) where this start called: Dreamboat\_67 (A1), Jasper\_66 (A1), PherrisBueller\_66 (A1),

#### Start 69:

- Found in 141 of 353 ( 39.9% ) of genes in pham
- Manual Annotations of this start: 128 of 326
- Called 95.0% of time when present
- Phage (with cluster) where this start called: ArcusAngelus\_56 (F1), Ardmore\_44 (F1), Aubs\_53 (F1), Banjo\_52 (B1), Batiatus\_50 (F1), Bethlehem\_66 (A1), Bipolar\_49 (F1), Boomer\_57 (F1), Brilliant\_55 (B1), CamL\_53 (B1), Cannibal\_53 (B1), CaptainTrips\_49 (F1), Che8\_55 (F1), Chevrolet\_59 (F1), Childish\_53 (B1), Chorkpop\_53 (B1), Chuckly\_55 (F1), Clank\_57 (F), Cornucopia\_55 (F1), Cosmolli16\_54 (B1), Craff\_56 (B1), DLane\_48 (F1), DaWorst\_54 (F1), DaddyDaniels\_55 (B1), DaddyRickover\_52 (F1), Daffy\_53 (B1), Dante\_53 (F1), DeadP\_58 (F1), Demsculpinboyz\_62 (F2), Doomphist\_52 (F1), DotProduct\_48 (F1), Doug\_55 (F1), Emma\_52 (F1), Enby\_53 (F1), Firehouse51\_53 (F1), Fozzie\_52 (B1), Fringe\_57 (B1), Gandolph\_55 (F1), GigiOuiOui\_49 (F1), Giraffe\_54 (B1), Grand2040\_53 (B1), Haleema\_52 (B1), Hamulus\_53 (F1), Hawkeye\_97 (D2), Held\_53 (B1), HenryJackson\_53 (B1), Hertubise\_53 (B1), HighStump\_55 (B1), Inventum\_47 (F1), Iridessa\_54 (B1), JalFarm20\_60 (F1), Job42\_55 (F1), Kahve\_53 (B1), Kenuha5\_50 (F1), KristaRAM\_51 (F1), Kwadwo\_52 (B1), Lasso\_53 (B1), LeeLot\_53 (B1), Legolas\_55 (B1), LeiMonet\_55 (B1), LinStu\_6 (C1), Longacauda\_54 (B1), Lorde\_53 (F1), Lumine\_54 (B1), Madiba\_50 (F1), Mana\_52 (B1), Marker\_53 (F1), Maru\_53 (B1), Melissauren88\_50 (F1), Mesh1\_54 (B1), MilleniumForce\_52 (F1), MinionDave\_51 (F1), MitKao\_53 (B1), Moonbeam\_48 (F1), Morgushi\_53 (B1), Mosaic\_52 (B1), Mova\_53 (F1), Mozy\_62 (F1), MrPhizzler\_55 (B1), Mwanjiwa\_58 (F1), Nicole21\_54 (B1), Ogopogo\_57 (F1), Oosterbaan\_53 (B1), Orwigg\_53 (B1), OwlsT2W\_53 (F1), PMC\_49 (F1), Periwinkle\_62 (DN1), Phalconet\_51 (F1), Phanphagia\_47 (F1), Phasih\_51 (F1), PhesterPhotato\_54 (F1), Poenanya\_52 (F1), Polka14\_51 (F1), Potter\_52 (B1), Puhltonio\_53 (B1), QueenBeane\_53 (B1), Renaud18\_58 (F4), Rimu\_54 (B1), Rockne\_53 (F1), RockyHorror\_53 (F1), Royals2015\_55 (F1), SG4\_49 (F1), Samaymay\_53 (B1), Sassafras\_50 (F1), SassyCat97\_52 (B1), Sebata\_6 (C1), Serendipity\_53 (B1), ShroomBoi\_52 (F1), Soile\_54 (B1), Solosis\_52 (B1), Sophia\_52 (B1), Sparkdehlily\_60 (F1), Squid\_53 (B1), SuperGrey\_52 (F1), Surely\_53 (B1), TDanisky\_60 (F1), Taj\_56 (F1), TallGrassMM\_53 (B1), Thora\_53 (B1), Timmi\_52 (B1), TomBombadil\_53 (B1), Tonenili\_49 (C1), Topiatin\_58 (F1), Tweety\_52 (F1), VRedHorse\_52 (F1), Vortex\_53 (B1), Vortrix\_51 (C1), Wee\_55 (F1), Whatsapiecost\_53 (F1), XFactor\_50 (F1), Xavier\_52 (B1), Yoshi\_64 (F2), Zelda\_53 (B1), Zerg\_52 (F1),

#### Start 70:

- Found in 49 of 353 ( 13.9% ) of genes in pham
- Manual Annotations of this start: 36 of 326
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Aeneas\_68 (A1), BaconJack\_70 (A1), BigNuz\_57 (P4), Colossa\_75 (KA), DTDevon\_6 (C1), Dandelion\_5 (C1), Demsculpinboyz\_75 (F2), Denise\_57 (CZ5), DonkeyMan\_58 (DY), Drazdys\_6 (C1), FrayBell\_6 (C1), Gaia\_57 (X), Heinz\_57 (DY), Kimberlium\_67 (F1), LordLeafolot\_6 (C1), Marsha\_65 (A1), MulchExplorer\_66 (F1), Mule\_62 (A1), Nappy\_5 (C1), Nekros\_77 (J), Nibley\_71 (J), PhrostyMug\_65 (A1), Pier\_6 (C1), Pollywog\_50 (F1), Purky\_63 (P6), Purky\_64 (P6), QuickMath\_66 (F1), Rando14\_64 (K5), Renaud18\_70 (F4), Smairt\_67 (A1), Specks\_6 (C1), Stellammi\_140 (UNK), Sunshine924\_70 (A1), Tarzan\_58 (DY), Tonenili\_50 (C1), Toron\_84 (F6), Tyke\_6 (C1), VanLee\_73 (KA), Vortrix\_52 (C1), WilliamBoone\_96 (CQ1), William\_80 (CV), Yoshi\_77 (F2),

#### Start 71:

- Found in 2 of 353 ( 0.6% ) of genes in pham

- Manual Annotations of this start: 1 of 326
- Called 50.0% of time when present
- Phage (with cluster) where this start called: BuzzLyseyear\_44 (F1),

#### Start 77:

- Found in 52 of 353 ( 14.7% ) of genes in pham
- Manual Annotations of this start: 4 of 326
- Called 17.3% of time when present
- Phage (with cluster) where this start called: Bobi\_55 (F1), Harley\_54 (F1), InterFolia\_6 (C1), Jant\_56 (F1), Krakatau\_50 (F1), Okabe\_47 (F8), PharkleMinkus\_6 (C1), Pupusa\_6 (C1), Tainan\_6 (C1),

#### Start 79:

- Found in 39 of 353 ( 11.0% ) of genes in pham
- Manual Annotations of this start: 33 of 326
- 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), Colossa\_74 (KA), Constella\_139 (J), Dallas\_146 (J), DmpstrDiver\_146 (J), Dove\_131 (J), Duke13\_141 (J), Ejimix\_138 (J), EricMillard\_137 (J), Halley\_147 (J), Hidrated\_131 (J), HokkenD\_138 (J), Hughesyang\_144 (J), JuicyJay\_141 (J), Kalah2\_136 (J), KashFlow\_144 (J), Klein\_143 (J), Lucky2013\_137 (J), Marleymoo\_128 (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), Xiaokay\_141 (J), Yeet\_139 (J), Zelink\_140 (J),

#### Start 80:

- Found in 1 of 353 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 326
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phayonce\_59 (P5),

#### Start 83:

- Found in 10 of 353 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 8 of 326
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Azula\_77 (CV), Blueberry\_76 (CV), Gambino\_79 (CV), Latretium\_77 (F1), MadMen\_62 (F1), MissRona\_77 (CV), Ryadel\_103 (O), YungJamal\_99 (O),

#### Start 84:

- Found in 6 of 353 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 326
- Called 16.7% of time when present
- Phage (with cluster) where this start called: ThetaBob\_69 (F4),

#### Start 89:

- Found in 6 of 353 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 2 of 326
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Periwinkle\_85 (DN1), TinyDot\_48 (singleton),

## Summary by clusters:

There are 32 clusters represented in this pham: singleton, CQ1, DH, CZ6, CZ4, CZ5, K5, DY, DS, F, A1, DN1, DN2, C1, P6, P4, P5, J, F2, O, S, X, UNK, CV, F1, KA, F4, F6, F8, B1, B3, D2,

Info for manual annotations of cluster A1:

- Start number 63 was manually annotated 1 time for cluster A1.
- Start number 66 was manually annotated 10 times for cluster A1.
- Start number 67 was manually annotated 2 times for cluster A1.
- Start number 68 was manually annotated 3 times for cluster A1.
- Start number 69 was manually annotated 1 time for cluster A1.
- Start number 70 was manually annotated 7 times for cluster A1.

Info for manual annotations of cluster B1:

- Start number 69 was manually annotated 57 times for cluster B1.

Info for manual annotations of cluster B3:

- Start number 66 was manually annotated 30 times for cluster B3.

Info for manual annotations of cluster C1:

- Start number 62 was manually annotated 1 time for cluster C1.
- Start number 63 was manually annotated 2 times for cluster C1.
- Start number 69 was manually annotated 3 times for cluster C1.
- Start number 70 was manually annotated 10 times for cluster C1.
- Start number 77 was manually annotated 1 time for cluster C1.

Info for manual annotations of cluster CQ1:

- Start number 70 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster CV:

- Start number 70 was manually annotated 1 time for cluster CV.
- Start number 83 was manually annotated 4 times for cluster CV.

Info for manual annotations of cluster CZ4:

- Start number 67 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 70 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 67 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster D2:

- Start number 69 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DH:

- Start number 67 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN1:

- Start number 67 was manually annotated 3 times for cluster DN1.
- Start number 69 was manually annotated 1 time for cluster DN1.

- Start number 89 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 67 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DY:

- Start number 70 was manually annotated 3 times for cluster DY.

Info for manual annotations of cluster F1:

- Start number 45 was manually annotated 1 time for cluster F1.
- Start number 55 was manually annotated 1 time for cluster F1.
- Start number 66 was manually annotated 10 times for cluster F1.
- Start number 69 was manually annotated 62 times for cluster F1.
- Start number 70 was manually annotated 4 times for cluster F1.
- Start number 71 was manually annotated 1 time for cluster F1.
- Start number 77 was manually annotated 3 times for cluster F1.
- Start number 83 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 69 was manually annotated 2 times for cluster F2.
- Start number 70 was manually annotated 2 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 67 was manually annotated 1 time for cluster F4.
- Start number 69 was manually annotated 1 time for cluster F4.
- Start number 70 was manually annotated 1 time for cluster F4.
- Start number 84 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster J:

- Start number 66 was manually annotated 29 times for cluster J.
- Start number 79 was manually annotated 33 times for cluster J.

Info for manual annotations of cluster K5:

- Start number 70 was manually annotated 1 time for cluster K5.

Info for manual annotations of cluster KA:

- Start number 70 was manually annotated 1 time for cluster KA.

Info for manual annotations of cluster O:

- Start number 66 was manually annotated 1 time for cluster O.
- Start number 83 was manually annotated 2 times for cluster O.

Info for manual annotations of cluster P4:

- Start number 70 was manually annotated 1 time for cluster P4.

Info for manual annotations of cluster P5:

- Start number 80 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster P6:

- Start number 70 was manually annotated 2 times for cluster P6.

Info for manual annotations of cluster S:

- Start number 66 was manually annotated 7 times for cluster S.

Info for manual annotations of cluster X:

- Start number 59 was manually annotated 1 time for cluster X.
- Start number 70 was manually annotated 1 time for cluster X.

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

Gene: Abinghost\_51 Start: 45404, Stop: 45135, Start Num: 66

Candidate Starts for Abinghost\_51:

(Start: 66 @45404 has 87 MA's), (87, 45350), (114, 45302),

Gene: Aeneas\_68 Start: 44278, Stop: 44033, Start Num: 70

Candidate Starts for Aeneas\_68:

(Start: 70 @44278 has 36 MA's), (88, 44236), (98, 44224), (102, 44221), (114, 44182), (118, 44164),

Gene: Akoma\_51 Start: 45415, Stop: 45146, Start Num: 66

Candidate Starts for Akoma\_51:

(Start: 66 @45415 has 87 MA's), (87, 45361), (114, 45313),

Gene: ArcusAngelus\_56 Start: 38441, Stop: 38683, Start Num: 69

Candidate Starts for ArcusAngelus\_56:

(43, 38411), (Start: 69 @38441 has 128 MA's), (114, 38552),

Gene: Ardmore\_44 Start: 35217, Stop: 35447, Start Num: 69

Candidate Starts for Ardmore\_44:

(43, 35187), (Start: 69 @35217 has 128 MA's), (Start: 77 @35253 has 4 MA's), (113, 35313), (114, 35316),

Gene: Ariel\_82 Start: 49253, Stop: 48984, Start Num: 66

Candidate Starts for Ariel\_82:

(Start: 66 @49253 has 87 MA's), (87, 49199), (114, 49151),

Gene: Athena\_52 Start: 46162, Stop: 45893, Start Num: 66

Candidate Starts for Athena\_52:

(Start: 66 @46162 has 87 MA's), (87, 46108), (114, 46060),

Gene: Aubs\_53 Start: 37222, Stop: 37464, Start Num: 69

Candidate Starts for Aubs\_53:

(64, 37216), (Start: 69 @37222 has 128 MA's), (114, 37333),

Gene: Audrey\_51 Start: 45410, Stop: 45141, Start Num: 66

Candidate Starts for Audrey\_51:

(Start: 66 @45410 has 87 MA's), (87, 45356), (114, 45308),

Gene: Azula\_77 Start: 48141, Stop: 48380, Start Num: 83

Candidate Starts for Azula\_77:

(1, 47394), (2, 47400), (3, 47406), (4, 47451), (11, 47889), (12, 47916), (18, 47979), (24, 48003), (58, 48078), (Start: 66 @48087 has 87 MA's), (Start: 83 @48141 has 8 MA's), (95, 48168), (142, 48306), (150, 48327), (156, 48375),

Gene: BAKA\_145 Start: 76447, Stop: 76692, Start Num: 79

Candidate Starts for BAKA\_145:

(23, 76312), (56, 76387), (Start: 68 @76402 has 3 MA's), (Start: 79 @76447 has 33 MA's), (108, 76519), (110, 76522),

Gene: BAKA\_91 Start: 56921, Stop: 57199, Start Num: 66

Candidate Starts for BAKA\_91:

(61, 56915), (Start: 66 @56921 has 87 MA's), (114, 57032),

Gene: BaconJack\_70 Start: 45368, Stop: 45123, Start Num: 70

Candidate Starts for BaconJack\_70:

(Start: 70 @45368 has 36 MA's), (88, 45326), (98, 45314), (102, 45311), (114, 45272), (118, 45254),

Gene: Bagrid\_146 Start: 77142, Stop: 77387, Start Num: 79

Candidate Starts for Bagrid\_146:

(23, 77007), (56, 77082), (Start: 68 @77097 has 3 MA's), (Start: 79 @77142 has 33 MA's), (108, 77214), (110, 77217),

Gene: Bagrid\_89 Start: 55770, Stop: 56066, Start Num: 66

Candidate Starts for Bagrid\_89:

(Start: 66 @55770 has 87 MA's), (98, 55848), (110, 55875), (114, 55899),

Gene: Baloo\_51 Start: 45413, Stop: 45144, Start Num: 66

Candidate Starts for Baloo\_51:

(Start: 66 @45413 has 87 MA's), (87, 45359), (114, 45311),

Gene: Banjo\_52 Start: 47062, Stop: 46769, Start Num: 69

Candidate Starts for Banjo\_52:

(14, 47221), (20, 47164), (30, 47137), (37, 47116), (38, 47110), (Start: 69 @47062 has 128 MA's), (74, 47038), (106, 46990), (109, 46984), (114, 46960),

Gene: Batiatus\_50 Start: 37046, Stop: 37276, Start Num: 69

Candidate Starts for Batiatus\_50:

(43, 37016), (Start: 69 @37046 has 128 MA's), (Start: 77 @37082 has 4 MA's), (113, 37142), (114, 37145),

Gene: Beelzebub\_8 Start: 2535, Stop: 2807, Start Num: 66

Candidate Starts for Beelzebub\_8:

(Start: 66 @2535 has 87 MA's), (99, 2598), (114, 2640),

Gene: Beem\_90 Start: 56631, Stop: 56927, Start Num: 66

Candidate Starts for Beem\_90:

(Start: 66 @56631 has 87 MA's), (98, 56709), (110, 56736), (114, 56760),

Gene: Beem\_147 Start: 78045, Stop: 78290, Start Num: 79

Candidate Starts for Beem\_147:

(23, 77910), (Start: 68 @78000 has 3 MA's), (Start: 79 @78045 has 33 MA's), (108, 78117), (110, 78120),

Gene: Beenie\_54 Start: 39845, Stop: 40141, Start Num: 67  
Candidate Starts for Beenie\_54:  
(9, 39605), (10, 39608), (Start: 67 @39845 has 15 MA's), (85, 39893), (96, 39911), (121, 40007), (126, 40025), (134, 40049), (148, 40085), (152, 40097),

Gene: Ben11\_51 Start: 45695, Stop: 45426, Start Num: 66  
Candidate Starts for Ben11\_51:  
(Start: 66 @45695 has 87 MA's), (87, 45641), (114, 45593), (157, 45437),

Gene: Bethlehem\_66 Start: 44024, Stop: 43779, Start Num: 69  
Candidate Starts for Bethlehem\_66:  
(Start: 69 @44024 has 128 MA's), (113, 43916),

Gene: BigNuz\_57 Start: 39875, Stop: 40117, Start Num: 70  
Candidate Starts for BigNuz\_57:  
(35, 39812), (Start: 70 @39875 has 36 MA's), (Start: 84 @39920 has 1 MA's), (93, 39941), (103, 39965), (154, 40085),

Gene: Bigfoot\_58 Start: 41545, Stop: 41276, Start Num: 66  
Candidate Starts for Bigfoot\_58:  
(Start: 66 @41545 has 87 MA's), (87, 41491), (114, 41443),

Gene: Bipolar\_49 Start: 36854, Stop: 37099, Start Num: 69  
Candidate Starts for Bipolar\_49:  
(25, 36770), (33, 36788), (48, 36830), (Start: 69 @36854 has 128 MA's), (114, 36965),

Gene: Blue\_65 Start: 43245, Stop: 42976, Start Num: 66  
Candidate Starts for Blue\_65:  
(Start: 66 @43245 has 87 MA's), (87, 43191), (114, 43143),

Gene: Blueberry\_76 Start: 48141, Stop: 48380, Start Num: 83  
Candidate Starts for Blueberry\_76:  
(1, 47394), (2, 47400), (3, 47406), (4, 47451), (11, 47889), (12, 47916), (18, 47979), (24, 48003), (58, 48078), (Start: 66 @48087 has 87 MA's), (Start: 83 @48141 has 8 MA's), (95, 48168), (142, 48306), (150, 48327), (156, 48375),

Gene: Bobby\_135 Start: 77882, Stop: 78160, Start Num: 79  
Candidate Starts for Bobby\_135:  
(23, 77747), (Start: 68 @77837 has 3 MA's), (Start: 79 @77882 has 33 MA's), (108, 77954), (110, 77957), (140, 78077),

Gene: Bobi\_55 Start: 38256, Stop: 38450, Start Num: 77  
Candidate Starts for Bobi\_55:  
(43, 38190), (Start: 69 @38220 has 128 MA's), (Start: 77 @38256 has 4 MA's), (113, 38316), (114, 38319),

Gene: Bombitas\_78 Start: 53794, Stop: 54090, Start Num: 66  
Candidate Starts for Bombitas\_78:  
(Start: 66 @53794 has 87 MA's), (98, 53872), (110, 53899), (114, 53923),

Gene: Bombitas\_133 Start: 75456, Stop: 75701, Start Num: 79  
Candidate Starts for Bombitas\_133:

(23, 75321), (Start: 68 @75411 has 3 MA's), (Start: 79 @75456 has 33 MA's), (108, 75528), (110, 75531),

Gene: Boomer\_57 Start: 38978, Stop: 39235, Start Num: 69

Candidate Starts for Boomer\_57:

(17, 38864), (19, 38876), (32, 38912), (53, 38963), (Start: 69 @38978 has 128 MA's), (114, 39089), (124, 39119),

Gene: Brilliant\_55 Start: 47604, Stop: 47335, Start Num: 69

Candidate Starts for Brilliant\_55:

(14, 47763), (20, 47706), (30, 47679), (37, 47658), (38, 47652), (Start: 69 @47604 has 128 MA's), (74, 47580), (106, 47532), (109, 47526), (114, 47502), (157, 47346),

Gene: BuzzLyseyear\_44 Start: 32289, Stop: 32008, Start Num: 71

Candidate Starts for BuzzLyseyear\_44:

(27, 32382), (28, 32379), (29, 32376), (44, 32331), (Start: 55 @32316 has 1 MA's), (65, 32304), (Start: 71 @32289 has 1 MA's), (91, 32229), (108, 32187), (113, 32163), (125, 32115),

Gene: Byougenkin\_50 Start: 36870, Stop: 37133, Start Num: 45

Candidate Starts for Byougenkin\_50:

(Start: 45 @36870 has 1 MA's), (Start: 69 @36900 has 128 MA's), (74, 36924), (104, 36966), (111, 36981), (113, 36999), (114, 37002),

Gene: CactusRose\_66 Start: 42565, Stop: 42296, Start Num: 66

Candidate Starts for CactusRose\_66:

(Start: 66 @42565 has 87 MA's), (87, 42511), (114, 42463),

Gene: CamL\_53 Start: 47369, Stop: 47076, Start Num: 69

Candidate Starts for CamL\_53:

(14, 47528), (20, 47471), (30, 47444), (37, 47423), (38, 47417), (Start: 69 @47369 has 128 MA's), (74, 47345), (106, 47297), (109, 47291), (114, 47267),

Gene: Cannibal\_53 Start: 47352, Stop: 47059, Start Num: 69

Candidate Starts for Cannibal\_53:

(14, 47511), (20, 47454), (30, 47427), (37, 47406), (38, 47400), (Start: 69 @47352 has 128 MA's), (74, 47328), (106, 47280), (109, 47274), (114, 47250),

Gene: CaptainTrips\_49 Start: 36066, Stop: 36296, Start Num: 69

Candidate Starts for CaptainTrips\_49:

(43, 36036), (Start: 69 @36066 has 128 MA's), (Start: 77 @36102 has 4 MA's), (113, 36162), (114, 36165),

Gene: Carlyle\_66 Start: 41351, Stop: 41082, Start Num: 66

Candidate Starts for Carlyle\_66:

(Start: 66 @41351 has 87 MA's), (87, 41297), (114, 41249),

Gene: Casbah\_51 Start: 45725, Stop: 45456, Start Num: 66

Candidate Starts for Casbah\_51:

(Start: 66 @45725 has 87 MA's), (87, 45671), (114, 45623), (157, 45467),

Gene: ChaChing\_51 Start: 45427, Stop: 45158, Start Num: 66

Candidate Starts for ChaChing\_51:

(Start: 66 @45427 has 87 MA's), (87, 45373), (114, 45325),

Gene: Chandler\_51 Start: 46194, Stop: 45925, Start Num: 66

Candidate Starts for Chandler\_51:

(Start: 66 @46194 has 87 MA's), (87, 46140), (114, 46092),

Gene: Che8\_55 Start: 38308, Stop: 38550, Start Num: 69

Candidate Starts for Che8\_55:

(43, 38278), (Start: 69 @38308 has 128 MA's), (114, 38419),

Gene: Chentzyk\_52 Start: 46237, Stop: 45968, Start Num: 66

Candidate Starts for Chentzyk\_52:

(Start: 66 @46237 has 87 MA's), (87, 46183), (114, 46135), (157, 45979),

Gene: Chevrolet\_59 Start: 38442, Stop: 38684, Start Num: 69

Candidate Starts for Chevrolet\_59:

(43, 38412), (Start: 69 @38442 has 128 MA's), (114, 38553),

Gene: Childish\_53 Start: 47631, Stop: 47362, Start Num: 69

Candidate Starts for Childish\_53:

(14, 47790), (20, 47733), (30, 47706), (37, 47685), (38, 47679), (Start: 69 @47631 has 128 MA's), (74, 47607), (106, 47559), (109, 47553), (114, 47529), (157, 47373),

Gene: Chorkpop\_53 Start: 47108, Stop: 46815, Start Num: 69

Candidate Starts for Chorkpop\_53:

(14, 47267), (20, 47210), (30, 47183), (37, 47162), (38, 47156), (Start: 69 @47108 has 128 MA's), (74, 47084), (106, 47036), (109, 47030), (114, 47006),

Gene: Chuckly\_55 Start: 37799, Stop: 38041, Start Num: 69

Candidate Starts for Chuckly\_55:

(64, 37793), (Start: 69 @37799 has 128 MA's), (114, 37910),

Gene: Clank\_57 Start: 38129, Stop: 38371, Start Num: 69

Candidate Starts for Clank\_57:

(64, 38123), (Start: 69 @38129 has 128 MA's), (114, 38240),

Gene: Clark\_59 Start: 39693, Stop: 39938, Start Num: 67

Candidate Starts for Clark\_59:

(Start: 67 @39693 has 15 MA's), (Start: 77 @39732 has 4 MA's), (143, 39882),

Gene: Clarkson\_7 Start: 2311, Stop: 2583, Start Num: 66

Candidate Starts for Clarkson\_7:

(Start: 66 @2311 has 87 MA's), (99, 2374), (114, 2416),

Gene: Colossa\_75 Start: 44073, Stop: 44345, Start Num: 70

Candidate Starts for Colossa\_75:

(Start: 70 @44073 has 36 MA's), (110, 44178), (126, 44232),

Gene: Colossa\_74 Start: 43841, Stop: 44080, Start Num: 79

Candidate Starts for Colossa\_74:

(Start: 79 @43841 has 33 MA's), (127, 43973),

Gene: Constella\_139 Start: 76698, Stop: 76943, Start Num: 79

Candidate Starts for Constella\_139:

(23, 76563), (56, 76638), (Start: 68 @76653 has 3 MA's), (Start: 79 @76698 has 33 MA's), (108, 76770), (110, 76773),

Gene: Constella\_75 Start: 50768, Stop: 51064, Start Num: 66  
Candidate Starts for Constella\_75:  
(Start: 66 @50768 has 87 MA's), (98, 50846), (110, 50873), (114, 50897),

Gene: Cornucopia\_55 Start: 38144, Stop: 38386, Start Num: 69  
Candidate Starts for Cornucopia\_55:  
(43, 38114), (Start: 69 @38144 has 128 MA's), (113, 38252),

Gene: Corofin\_51 Start: 45437, Stop: 45168, Start Num: 66  
Candidate Starts for Corofin\_51:  
(Start: 66 @45437 has 87 MA's), (87, 45383), (114, 45335),

Gene: Cosmolli16\_54 Start: 47811, Stop: 47542, Start Num: 69  
Candidate Starts for Cosmolli16\_54:  
(14, 47970), (20, 47913), (30, 47886), (37, 47865), (38, 47859), (Start: 69 @47811 has 128 MA's), (74, 47787), (106, 47739), (109, 47733), (114, 47709),

Gene: Courthouse\_78 Start: 48853, Stop: 48584, Start Num: 66  
Candidate Starts for Courthouse\_78:  
(Start: 66 @48853 has 87 MA's), (87, 48799), (114, 48751),

Gene: Craff\_56 Start: 48056, Stop: 47787, Start Num: 69  
Candidate Starts for Craff\_56:  
(14, 48215), (20, 48158), (30, 48131), (37, 48110), (38, 48104), (Start: 69 @48056 has 128 MA's), (74, 48032), (106, 47984), (109, 47978), (114, 47954), (157, 47798),

Gene: DLane\_48 Start: 36148, Stop: 36381, Start Num: 69  
Candidate Starts for DLane\_48:  
(43, 36118), (Start: 69 @36148 has 128 MA's), (Start: 77 @36184 has 4 MA's), (113, 36244), (114, 36247),

Gene: DTDevon\_6 Start: 1888, Stop: 2115, Start Num: 70  
Candidate Starts for DTDevon\_6:  
(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: DaWorst\_54 Start: 38043, Stop: 38276, Start Num: 69  
Candidate Starts for DaWorst\_54:  
(Start: 45 @38013 has 1 MA's), (Start: 69 @38043 has 128 MA's), (74, 38067), (104, 38109), (111, 38124), (113, 38142), (114, 38145),

Gene: DaddyDaniels\_55 Start: 47588, Stop: 47319, Start Num: 69  
Candidate Starts for DaddyDaniels\_55:  
(14, 47747), (20, 47690), (30, 47663), (37, 47642), (38, 47636), (Start: 69 @47588 has 128 MA's), (74, 47564), (106, 47516), (109, 47510), (114, 47486), (157, 47330),

Gene: DaddyRickover\_52 Start: 37670, Stop: 37903, Start Num: 69  
Candidate Starts for DaddyRickover\_52:  
(Start: 45 @37640 has 1 MA's), (Start: 69 @37670 has 128 MA's), (74, 37694), (104, 37736), (111, 37751), (113, 37769), (114, 37772),

Gene: Daffy\_53 Start: 47094, Stop: 46801, Start Num: 69

Candidate Starts for Daffy\_53:

(14, 47253), (20, 47196), (30, 47169), (37, 47148), (38, 47142), (Start: 69 @47094 has 128 MA's), (74, 47070), (106, 47022), (109, 47016), (114, 46992),

Gene: Daisy\_51 Start: 45439, Stop: 45170, Start Num: 66

Candidate Starts for Daisy\_51:

(Start: 66 @45439 has 87 MA's), (87, 45385), (114, 45337),

Gene: Dallas\_89 Start: 55552, Stop: 55848, Start Num: 66

Candidate Starts for Dallas\_89:

(Start: 66 @55552 has 87 MA's), (98, 55630), (110, 55657), (114, 55681),

Gene: Dallas\_146 Start: 77512, Stop: 77757, Start Num: 79

Candidate Starts for Dallas\_146:

(23, 77377), (56, 77452), (Start: 68 @77467 has 3 MA's), (Start: 79 @77512 has 33 MA's), (108, 77584), (110, 77587),

Gene: Dandelion\_5 Start: 1888, Stop: 2115, Start Num: 70

Candidate Starts for Dandelion\_5:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Dante\_53 Start: 37036, Stop: 37266, Start Num: 69

Candidate Starts for Dante\_53:

(Start: 45 @37006 has 1 MA's), (Start: 69 @37036 has 128 MA's), (74, 37060), (104, 37099), (111, 37114), (113, 37132), (114, 37135),

Gene: DeadP\_58 Start: 38932, Stop: 39159, Start Num: 69

Candidate Starts for DeadP\_58:

(43, 38902), (Start: 69 @38932 has 128 MA's), (Start: 77 @38965 has 4 MA's), (96, 38989), (113, 39022),

Gene: Demsculpinboyz\_62 Start: 36874, Stop: 37140, Start Num: 69

Candidate Starts for Demsculpinboyz\_62:

(Start: 45 @36844 has 1 MA's), (Start: 69 @36874 has 128 MA's), (74, 36898), (104, 36940), (111, 36955), (113, 36973), (114, 36976),

Gene: Demsculpinboyz\_75 Start: 41100, Stop: 41363, Start Num: 70

Candidate Starts for Demsculpinboyz\_75:

(48, 41073), (Start: 70 @41100 has 36 MA's), (76, 41133), (Start: 84 @41145 has 1 MA's), (93, 41166), (103, 41190), (114, 41229),

Gene: Denise\_57 Start: 36623, Stop: 36913, Start Num: 70

Candidate Starts for Denise\_57:

(Start: 70 @36623 has 36 MA's), (Start: 77 @36659 has 4 MA's), (134, 36815), (156, 36896),

Gene: DmpstrDiver\_90 Start: 55966, Stop: 56262, Start Num: 66

Candidate Starts for DmpstrDiver\_90:

(Start: 66 @55966 has 87 MA's), (98, 56044), (110, 56071), (114, 56095),

Gene: DmpstrDiver\_146 Start: 77431, Stop: 77676, Start Num: 79

Candidate Starts for DmpstrDiver\_146:  
(23, 77296), (56, 77371), (Start: 68 @77386 has 3 MA's), (Start: 79 @77431 has 33 MA's), (108, 77503), (110, 77506),

Gene: DoRead\_54 Start: 36172, Stop: 36447, Start Num: 66  
Candidate Starts for DoRead\_54:  
(Start: 66 @36172 has 87 MA's), (114, 36283),

Gene: DobbysSock\_53 Start: 39107, Stop: 39373, Start Num: 67  
Candidate Starts for DobbysSock\_53:  
(Start: 67 @39107 has 15 MA's), (92, 39173), (96, 39176),

Gene: DonkeyMan\_58 Start: 38401, Stop: 38625, Start Num: 70  
Candidate Starts for DonkeyMan\_58:  
(Start: 70 @38401 has 36 MA's), (82, 38437), (123, 38530), (146, 38578),

Gene: Donkeykong\_53 Start: 39067, Stop: 39345, Start Num: 66  
Candidate Starts for Donkeykong\_53:  
(37, 39022), (43, 39043), (Start: 66 @39067 has 87 MA's), (114, 39178),

Gene: Doomphist\_52 Start: 38179, Stop: 38421, Start Num: 69  
Candidate Starts for Doomphist\_52:  
(43, 38149), (Start: 69 @38179 has 128 MA's), (113, 38287),

Gene: DotProduct\_48 Start: 36209, Stop: 36451, Start Num: 69  
Candidate Starts for DotProduct\_48:  
(43, 36179), (Start: 69 @36209 has 128 MA's), (113, 36317),

Gene: Doug\_55 Start: 38300, Stop: 38542, Start Num: 69  
Candidate Starts for Doug\_55:  
(43, 38270), (Start: 69 @38300 has 128 MA's), (114, 38411),

Gene: Dove\_131 Start: 73030, Stop: 73275, Start Num: 79  
Candidate Starts for Dove\_131:  
(23, 72895), (Start: 68 @72985 has 3 MA's), (Start: 79 @73030 has 33 MA's), (108, 73102), (110, 73105),

Gene: Dove\_75 Start: 52060, Stop: 52356, Start Num: 66  
Candidate Starts for Dove\_75:  
(Start: 66 @52060 has 87 MA's), (98, 52138), (110, 52165), (114, 52189),

Gene: Drazdys\_6 Start: 1888, Stop: 2115, Start Num: 70  
Candidate Starts for Drazdys\_6:  
(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Dreamboat\_67 Start: 41780, Stop: 41553, Start Num: 68  
Candidate Starts for Dreamboat\_67:  
(Start: 68 @41780 has 3 MA's), (114, 41720),

Gene: Duke13\_141 Start: 74732, Stop: 74977, Start Num: 79  
Candidate Starts for Duke13\_141:

(23, 74597), (56, 74672), (Start: 68 @74687 has 3 MA's), (Start: 79 @74732 has 33 MA's), (108, 74804), (110, 74807),

Gene: Eish\_57 Start: 38353, Stop: 38628, Start Num: 66

Candidate Starts for Eish\_57:

(Start: 66 @38353 has 87 MA's), (114, 38464),

Gene: Ejimix\_138 Start: 77580, Stop: 77825, Start Num: 79

Candidate Starts for Ejimix\_138:

(23, 77445), (56, 77520), (Start: 68 @77535 has 3 MA's), (Start: 79 @77580 has 33 MA's), (108, 77652), (110, 77655),

Gene: Emma\_52 Start: 36405, Stop: 36638, Start Num: 69

Candidate Starts for Emma\_52:

(43, 36375), (Start: 69 @36405 has 128 MA's), (Start: 77 @36441 has 4 MA's), (113, 36501), (114, 36504),

Gene: Enby\_53 Start: 35552, Stop: 35782, Start Num: 69

Candidate Starts for Enby\_53:

(42, 35519), (43, 35522), (Start: 69 @35552 has 128 MA's), (Start: 77 @35588 has 4 MA's), (113, 35648), (114, 35651),

Gene: EricMillard\_137 Start: 76084, Stop: 76329, Start Num: 79

Candidate Starts for EricMillard\_137:

(23, 75949), (56, 76024), (Start: 68 @76039 has 3 MA's), (Start: 79 @76084 has 33 MA's), (108, 76156), (110, 76159),

Gene: EricMillard\_83 Start: 55716, Stop: 55994, Start Num: 66

Candidate Starts for EricMillard\_83:

(61, 55710), (Start: 66 @55716 has 87 MA's), (114, 55827),

Gene: Estave1\_55 Start: 37717, Stop: 37980, Start Num: 66

Candidate Starts for Estave1\_55:

(Start: 66 @37717 has 87 MA's), (114, 37828),

Gene: Fascinus\_60 Start: 42059, Stop: 41790, Start Num: 66

Candidate Starts for Fascinus\_60:

(Start: 66 @42059 has 87 MA's), (87, 42005), (114, 41957),

Gene: FeliMaine\_7 Start: 2312, Stop: 2584, Start Num: 66

Candidate Starts for FeliMaine\_7:

(Start: 66 @2312 has 87 MA's), (99, 2375), (114, 2417),

Gene: Firehouse51\_53 Start: 39958, Stop: 40203, Start Num: 69

Candidate Starts for Firehouse51\_53:

(43, 39928), (Start: 69 @39958 has 128 MA's), (114, 40069),

Gene: Fozzie\_52 Start: 47398, Stop: 47105, Start Num: 69

Candidate Starts for Fozzie\_52:

(14, 47557), (20, 47500), (30, 47473), (37, 47452), (38, 47446), (Start: 69 @47398 has 128 MA's), (74, 47374), (106, 47326), (109, 47320), (114, 47296),

Gene: FrayBell\_6 Start: 1888, Stop: 2115, Start Num: 70

Candidate Starts for FrayBell\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Fringe\_57 Start: 48533, Stop: 48264, Start Num: 69

Candidate Starts for Fringe\_57:

(14, 48692), (20, 48635), (37, 48587), (38, 48581), (Start: 69 @48533 has 128 MA's), (74, 48509), (106, 48461), (109, 48455), (114, 48431), (157, 48275),

Gene: GMA1\_52 Start: 32897, Stop: 33145, Start Num: 65

Candidate Starts for GMA1\_52:

(26, 32816), (31, 32828), (39, 32855), (52, 32882), (65, 32897),

Gene: GMA2\_107 Start: 94211, Stop: 93939, Start Num: 65

Candidate Starts for GMA2\_107:

(65, 94211), (132, 94031),

Gene: Gaia\_57 Start: 40635, Stop: 40414, Start Num: 70

Candidate Starts for Gaia\_57:

(Start: 70 @40635 has 36 MA's), (72, 40623), (87, 40581), (154, 40443), (157, 40422),

Gene: Gaia\_56 Start: 40287, Stop: 40042, Start Num: 59

Candidate Starts for Gaia\_56:

(Start: 59 @40287 has 1 MA's), (81, 40230), (135, 40089),

Gene: Gambino\_79 Start: 48141, Stop: 48380, Start Num: 83

Candidate Starts for Gambino\_79:

(1, 47394), (2, 47400), (3, 47406), (4, 47451), (11, 47889), (12, 47916), (18, 47979), (24, 48003), (58, 48078), (Start: 66 @48087 has 87 MA's), (Start: 83 @48141 has 8 MA's), (95, 48168), (142, 48306), (150, 48327), (156, 48375),

Gene: Gandolph\_55 Start: 37415, Stop: 37660, Start Num: 69

Candidate Starts for Gandolph\_55:

(Start: 69 @37415 has 128 MA's), (113, 37523),

Gene: Gervas\_52 Start: 45854, Stop: 45585, Start Num: 66

Candidate Starts for Gervas\_52:

(Start: 66 @45854 has 87 MA's), (87, 45800), (114, 45752), (157, 45596),

Gene: GigiOuiOui\_49 Start: 36354, Stop: 36596, Start Num: 69

Candidate Starts for GigiOuiOui\_49:

(43, 36324), (Start: 69 @36354 has 128 MA's), (113, 36462),

Gene: Giraffe\_54 Start: 47592, Stop: 47323, Start Num: 69

Candidate Starts for Giraffe\_54:

(14, 47751), (20, 47694), (37, 47646), (38, 47640), (Start: 69 @47592 has 128 MA's), (74, 47568), (106, 47520), (109, 47514), (114, 47490),

Gene: GlenHope\_52 Start: 45405, Stop: 45136, Start Num: 66

Candidate Starts for GlenHope\_52:

(Start: 66 @45405 has 87 MA's), (87, 45351), (114, 45303),

Gene: Glubnar\_52 Start: 45405, Stop: 45136, Start Num: 66

Candidate Starts for Glubnar\_52:  
(Start: 66 @45405 has 87 MA's), (87, 45351), (114, 45303),

Gene: Graduation\_70 Start: 43891, Stop: 43622, Start Num: 66  
Candidate Starts for Graduation\_70:  
(Start: 66 @43891 has 87 MA's), (87, 43837), (114, 43789),

Gene: Grand2040\_53 Start: 47586, Stop: 47317, Start Num: 69  
Candidate Starts for Grand2040\_53:  
(14, 47745), (20, 47688), (37, 47640), (38, 47634), (Start: 69 @47586 has 128 MA's), (74, 47562),  
(106, 47514), (109, 47508), (114, 47484),

Gene: Gudmit\_51 Start: 32451, Stop: 32681, Start Num: 67  
Candidate Starts for Gudmit\_51:  
(Start: 67 @32451 has 15 MA's), (75, 32481), (Start: 77 @32490 has 4 MA's), (101, 32514), (143,  
32625),

Gene: Haleema\_52 Start: 47090, Stop: 46797, Start Num: 69  
Candidate Starts for Haleema\_52:  
(14, 47249), (20, 47192), (30, 47165), (37, 47144), (38, 47138), (Start: 69 @47090 has 128 MA's), (74,  
47066), (106, 47018), (109, 47012), (114, 46988),

Gene: Halfpint\_50 Start: 45230, Stop: 44961, Start Num: 66  
Candidate Starts for Halfpint\_50:  
(Start: 66 @45230 has 87 MA's), (87, 45176), (114, 45128),

Gene: Halley\_147 Start: 77896, Stop: 78141, Start Num: 79  
Candidate Starts for Halley\_147:  
(23, 77761), (56, 77836), (Start: 68 @77851 has 3 MA's), (Start: 79 @77896 has 33 MA's), (108,  
77968), (110, 77971),

Gene: Halley\_91 Start: 56631, Stop: 56927, Start Num: 66  
Candidate Starts for Halley\_91:  
(Start: 66 @56631 has 87 MA's), (98, 56709), (110, 56736), (114, 56760),

Gene: Hami1\_60 Start: 38171, Stop: 37893, Start Num: 67  
Candidate Starts for Hami1\_60:  
(Start: 67 @38171 has 15 MA's), (76, 38138), (Start: 84 @38126 has 1 MA's), (93, 38105), (103,  
38081), (113, 38045), (114, 38042), (133, 37982),

Gene: Hamulus\_53 Start: 37796, Stop: 38026, Start Num: 69  
Candidate Starts for Hamulus\_53:  
(43, 37766), (Start: 69 @37796 has 128 MA's), (Start: 77 @37832 has 4 MA's), (113, 37892), (114,  
37895),

Gene: Harley\_54 Start: 37188, Stop: 37382, Start Num: 77  
Candidate Starts for Harley\_54:  
(43, 37122), (Start: 69 @37152 has 128 MA's), (Start: 77 @37188 has 4 MA's), (113, 37248), (114,  
37251),

Gene: Hawkeye\_97 Start: 61659, Stop: 61895, Start Num: 69  
Candidate Starts for Hawkeye\_97:

(20, 61557), (40, 61620), (43, 61626), (Start: 69 @61659 has 128 MA's), (104, 61728), (114, 61758), (138, 61809), (151, 61830), (158, 61872),

Gene: Heinz\_57 Start: 37331, Stop: 37591, Start Num: 70

Candidate Starts for Heinz\_57:

(Start: 70 @37331 has 36 MA's), (123, 37496), (146, 37544),

Gene: Held\_53 Start: 47095, Stop: 46802, Start Num: 69

Candidate Starts for Held\_53:

(14, 47254), (20, 47197), (30, 47170), (37, 47149), (38, 47143), (Start: 69 @47095 has 128 MA's), (74, 47071), (106, 47023), (109, 47017), (114, 46993),

Gene: HenryJackson\_53 Start: 47620, Stop: 47351, Start Num: 69

Candidate Starts for HenryJackson\_53:

(14, 47779), (20, 47722), (30, 47695), (37, 47674), (38, 47668), (Start: 69 @47620 has 128 MA's), (74, 47596), (106, 47548), (109, 47542), (114, 47518), (157, 47362),

Gene: Hertubise\_53 Start: 47387, Stop: 47094, Start Num: 69

Candidate Starts for Hertubise\_53:

(14, 47546), (20, 47489), (30, 47462), (37, 47441), (38, 47435), (Start: 69 @47387 has 128 MA's), (74, 47363), (106, 47315), (109, 47309), (114, 47285),

Gene: Hidrated\_131 Start: 76215, Stop: 76493, Start Num: 79

Candidate Starts for Hidrated\_131:

(23, 76080), (Start: 68 @76170 has 3 MA's), (Start: 79 @76215 has 33 MA's), (108, 76287), (110, 76290), (140, 76410),

Gene: HighStump\_55 Start: 48156, Stop: 47887, Start Num: 69

Candidate Starts for HighStump\_55:

(14, 48315), (20, 48258), (30, 48231), (37, 48210), (38, 48204), (Start: 69 @48156 has 128 MA's), (74, 48132), (106, 48084), (109, 48078), (114, 48054), (157, 47898),

Gene: HokkenD\_138 Start: 77055, Stop: 77300, Start Num: 79

Candidate Starts for HokkenD\_138:

(23, 76920), (Start: 68 @77010 has 3 MA's), (Start: 79 @77055 has 33 MA's), (108, 77127), (110, 77130),

Gene: HokkenD\_79 Start: 54900, Stop: 55196, Start Num: 66

Candidate Starts for HokkenD\_79:

(Start: 66 @54900 has 87 MA's), (98, 54978), (110, 55005), (114, 55029),

Gene: Holliday\_79 Start: 47725, Stop: 48021, Start Num: 67

Candidate Starts for Holliday\_79:

(47, 47698), (60, 47716), (Start: 67 @47725 has 15 MA's), (Start: 89 @47791 has 2 MA's), (117, 47878), (122, 47896), (137, 47923),

Gene: Hughesyang\_90 Start: 56589, Stop: 56885, Start Num: 66

Candidate Starts for Hughesyang\_90:

(Start: 66 @56589 has 87 MA's), (98, 56667), (110, 56694), (114, 56718),

Gene: Hughesyang\_144 Start: 77666, Stop: 77911, Start Num: 79

Candidate Starts for Hughesyang\_144:

(23, 77531), (56, 77606), (Start: 68 @77621 has 3 MA's), (Start: 79 @77666 has 33 MA's), (108, 77738), (110, 77741),

Gene: InterFolia\_6 Start: 1924, Stop: 2115, Start Num: 77

Candidate Starts for InterFolia\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Invectra\_62 Start: 41266, Stop: 41511, Start Num: 67

Candidate Starts for Invectra\_62:

(Start: 67 @41266 has 15 MA's), (Start: 77 @41305 has 4 MA's), (143, 41455),

Gene: Inventum\_47 Start: 36162, Stop: 36395, Start Num: 69

Candidate Starts for Inventum\_47:

(Start: 45 @36132 has 1 MA's), (Start: 69 @36162 has 128 MA's), (74, 36186), (104, 36228), (111, 36243), (113, 36261), (114, 36264),

Gene: Iridessa\_54 Start: 47600, Stop: 47331, Start Num: 69

Candidate Starts for Iridessa\_54:

(14, 47759), (20, 47702), (30, 47675), (37, 47654), (38, 47648), (Start: 69 @47600 has 128 MA's), (74, 47576), (106, 47528), (109, 47522), (114, 47498), (157, 47342),

Gene: JalFarm20\_60 Start: 39595, Stop: 39840, Start Num: 69

Candidate Starts for JalFarm20\_60:

(48, 39571), (Start: 69 @39595 has 128 MA's), (114, 39706),

Gene: Jant\_56 Start: 38892, Stop: 39086, Start Num: 77

Candidate Starts for Jant\_56:

(43, 38826), (Start: 69 @38856 has 128 MA's), (Start: 77 @38892 has 4 MA's), (113, 38952), (114, 38955),

Gene: Jasper\_66 Start: 41666, Stop: 41439, Start Num: 68

Candidate Starts for Jasper\_66:

(Start: 68 @41666 has 3 MA's), (114, 41606),

Gene: JayJay\_6 Start: 1730, Stop: 1996, Start Num: 62

Candidate Starts for JayJay\_6:

(Start: 62 @1730 has 1 MA's), (Start: 69 @1739 has 128 MA's), (74, 1763), (104, 1805), (111, 1820), (113, 1838), (114, 1841), (149, 1937),

Gene: Job42\_55 Start: 39394, Stop: 39636, Start Num: 69

Candidate Starts for Job42\_55:

(17, 39280), (19, 39292), (32, 39328), (53, 39379), (Start: 69 @39394 has 128 MA's), (114, 39505),

Gene: Jorgensen\_69 Start: 42799, Stop: 42503, Start Num: 63

Candidate Starts for Jorgensen\_69:

(Start: 63 @42799 has 3 MA's), (98, 42721), (110, 42694), (113, 42673), (114, 42670),

Gene: JuicyJay\_141 Start: 79181, Stop: 79426, Start Num: 79

Candidate Starts for JuicyJay\_141:

(23, 79046), (Start: 68 @79136 has 3 MA's), (Start: 79 @79181 has 33 MA's), (108, 79253), (110, 79256),

Gene: JuicyJay\_87 Start: 57765, Stop: 58061, Start Num: 66  
Candidate Starts for JuicyJay\_87:  
(Start: 66 @57765 has 87 MA's), (98, 57843), (110, 57870), (114, 57894),

Gene: Juniper1\_50 Start: 36588, Stop: 36851, Start Num: 66  
Candidate Starts for Juniper1\_50:  
(40, 36558), (Start: 66 @36588 has 87 MA's), (114, 36699), (153, 36819),

Gene: Kahve\_53 Start: 47617, Stop: 47348, Start Num: 69  
Candidate Starts for Kahve\_53:  
(14, 47776), (20, 47719), (30, 47692), (37, 47671), (38, 47665), (Start: 69 @47617 has 128 MA's), (74, 47593), (106, 47545), (109, 47539), (114, 47515), (157, 47359),

Gene: Kalah2\_84 Start: 55924, Stop: 56220, Start Num: 66  
Candidate Starts for Kalah2\_84:  
(Start: 66 @55924 has 87 MA's), (98, 56002), (110, 56029), (114, 56053),

Gene: Kalah2\_136 Start: 76787, Stop: 77032, Start Num: 79  
Candidate Starts for Kalah2\_136:  
(23, 76652), (Start: 68 @76742 has 3 MA's), (Start: 79 @76787 has 33 MA's), (108, 76859), (110, 76862),

Gene: Kamiyu\_51 Start: 45383, Stop: 45114, Start Num: 66  
Candidate Starts for Kamiyu\_51:  
(Start: 66 @45383 has 87 MA's), (87, 45329), (114, 45281),

Gene: KashFlow\_144 Start: 76087, Stop: 76332, Start Num: 79  
Candidate Starts for KashFlow\_144:  
(23, 75952), (Start: 68 @76042 has 3 MA's), (Start: 79 @76087 has 33 MA's), (108, 76159), (110, 76162),

Gene: Kenuha5\_50 Start: 36123, Stop: 36365, Start Num: 69  
Candidate Starts for Kenuha5\_50:  
(25, 36039), (33, 36057), (48, 36099), (Start: 69 @36123 has 128 MA's), (114, 36234),

Gene: Kimberlium\_67 Start: 43095, Stop: 43343, Start Num: 70  
Candidate Starts for Kimberlium\_67:  
(Start: 70 @43095 has 36 MA's), (97, 43158), (114, 43200),

Gene: Klein\_90 Start: 55600, Stop: 55896, Start Num: 66  
Candidate Starts for Klein\_90:  
(61, 55594), (Start: 66 @55600 has 87 MA's), (98, 55678), (110, 55705), (114, 55729),

Gene: Klein\_143 Start: 75389, Stop: 75634, Start Num: 79  
Candidate Starts for Klein\_143:  
(23, 75254), (Start: 68 @75344 has 3 MA's), (Start: 79 @75389 has 33 MA's), (108, 75461), (110, 75464),

Gene: Krakatau\_50 Start: 36883, Stop: 37077, Start Num: 77  
Candidate Starts for Krakatau\_50:  
(43, 36817), (Start: 69 @36847 has 128 MA's), (Start: 77 @36883 has 4 MA's), (113, 36943), (114, 36946),

Gene: KristaRAM\_51 Start: 38223, Stop: 38468, Start Num: 69  
Candidate Starts for KristaRAM\_51:  
(25, 38139), (33, 38157), (48, 38199), (Start: 69 @38223 has 128 MA's), (114, 38334),

Gene: Kronus\_51 Start: 46457, Stop: 46188, Start Num: 66  
Candidate Starts for Kronus\_51:  
(Start: 66 @46457 has 87 MA's), (87, 46403), (114, 46355), (157, 46199),

Gene: Kwadwo\_52 Start: 47069, Stop: 46776, Start Num: 69  
Candidate Starts for Kwadwo\_52:  
(14, 47228), (20, 47171), (30, 47144), (37, 47123), (38, 47117), (Start: 69 @47069 has 128 MA's), (74, 47045), (106, 46997), (109, 46991), (114, 46967),

Gene: Lasso\_53 Start: 47344, Stop: 47051, Start Num: 69  
Candidate Starts for Lasso\_53:  
(14, 47503), (20, 47446), (30, 47419), (37, 47398), (38, 47392), (Start: 69 @47344 has 128 MA's), (74, 47320), (106, 47272), (109, 47266), (114, 47242),

Gene: Latretium\_77 Start: 46947, Stop: 47177, Start Num: 83  
Candidate Starts for Latretium\_77:  
(34, 46854), (Start: 66 @46911 has 87 MA's), (Start: 83 @46947 has 8 MA's), (113, 47007), (114, 47010),

Gene: LeeLot\_53 Start: 47396, Stop: 47103, Start Num: 69  
Candidate Starts for LeeLot\_53:  
(14, 47555), (20, 47498), (30, 47471), (37, 47450), (38, 47444), (Start: 69 @47396 has 128 MA's), (74, 47372), (106, 47324), (109, 47318), (114, 47294),

Gene: Legolas\_55 Start: 48053, Stop: 47784, Start Num: 69  
Candidate Starts for Legolas\_55:  
(14, 48212), (20, 48155), (30, 48128), (37, 48107), (38, 48101), (Start: 69 @48053 has 128 MA's), (74, 48029), (106, 47981), (109, 47975), (114, 47951), (157, 47795),

Gene: LeiMonet\_55 Start: 47572, Stop: 47303, Start Num: 69  
Candidate Starts for LeiMonet\_55:  
(14, 47731), (20, 47674), (37, 47626), (38, 47620), (Start: 69 @47572 has 128 MA's), (74, 47548), (106, 47500), (109, 47494), (114, 47470),

Gene: Leroy\_74 Start: 43665, Stop: 43955, Start Num: 67  
Candidate Starts for Leroy\_74:  
(47, 43638), (60, 43656), (Start: 67 @43665 has 15 MA's), (Start: 89 @43731 has 2 MA's), (117, 43818), (122, 43836), (137, 43863),

Gene: Lilbit\_7 Start: 2312, Stop: 2584, Start Num: 66  
Candidate Starts for Lilbit\_7:  
(Start: 66 @2312 has 87 MA's), (99, 2375), (114, 2417),

Gene: LinStu\_6 Start: 2738, Stop: 2995, Start Num: 69  
Candidate Starts for LinStu\_6:  
(Start: 62 @2729 has 1 MA's), (Start: 69 @2738 has 128 MA's), (74, 2762), (104, 2804), (111, 2819), (113, 2837), (114, 2840), (149, 2936),

Gene: LitninMcQueen\_77 Start: 44377, Stop: 44670, Start Num: 67

Candidate Starts for LitninMcQueen\_77:

(60, 44368), (Start: 67 @44377 has 15 MA's), (88, 44440), (Start: 89 @44443 has 2 MA's), (122, 44548),

Gene: LolaVinca\_6 Start: 1879, Stop: 2115, Start Num: 63

Candidate Starts for LolaVinca\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Longacauda\_54 Start: 48016, Stop: 47747, Start Num: 69

Candidate Starts for Longacauda\_54:

(14, 48175), (20, 48118), (30, 48091), (37, 48070), (38, 48064), (Start: 69 @48016 has 128 MA's), (74, 47992), (106, 47944), (109, 47938), (114, 47914), (157, 47758),

Gene: LordLeafolot\_6 Start: 1888, Stop: 2115, Start Num: 70

Candidate Starts for LordLeafolot\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Lorde\_53 Start: 35527, Stop: 35757, Start Num: 69

Candidate Starts for Lorde\_53:

(42, 35494), (43, 35497), (Start: 69 @35527 has 128 MA's), (Start: 77 @35563 has 4 MA's), (113, 35623), (114, 35626),

Gene: Lucky10\_55 Start: 35945, Stop: 36226, Start Num: 67

Candidate Starts for Lucky10\_55:

(Start: 67 @35945 has 15 MA's), (85, 35993), (96, 36011), (103, 36032), (113, 36068), (115, 36080), (120, 36101), (121, 36107), (125, 36116),

Gene: Lucky2013\_137 Start: 73141, Stop: 73386, Start Num: 79

Candidate Starts for Lucky2013\_137:

(23, 73006), (56, 73081), (Start: 68 @73096 has 3 MA's), (Start: 79 @73141 has 33 MA's), (108, 73213), (110, 73216), (111, 73219),

Gene: Lucky2013\_80 Start: 49269, Stop: 49000, Start Num: 66

Candidate Starts for Lucky2013\_80:

(Start: 66 @49269 has 87 MA's), (87, 49215), (114, 49167),

Gene: Lumine\_54 Start: 47804, Stop: 47535, Start Num: 69

Candidate Starts for Lumine\_54:

(14, 47963), (20, 47906), (37, 47858), (38, 47852), (Start: 69 @47804 has 128 MA's), (74, 47780), (106, 47732), (109, 47726), (114, 47702),

Gene: MadMen\_62 Start: 41080, Stop: 41310, Start Num: 83

Candidate Starts for MadMen\_62:

(Start: 66 @41044 has 87 MA's), (Start: 83 @41080 has 8 MA's), (113, 41140), (114, 41143),

Gene: MadMen\_50 Start: 36869, Stop: 37144, Start Num: 66

Candidate Starts for MadMen\_50:

(61, 36863), (Start: 66 @36869 has 87 MA's), (114, 36980),

Gene: Madiba\_63 Start: 40537, Stop: 40815, Start Num: 66

Candidate Starts for Madiba\_63:

(61, 40531), (Start: 66 @40537 has 87 MA's), (114, 40648),

Gene: Madiba\_50 Start: 35664, Stop: 35894, Start Num: 69

Candidate Starts for Madiba\_50:

(43, 35634), (Start: 69 @35664 has 128 MA's), (Start: 77 @35700 has 4 MA's), (113, 35760), (114, 35763),

Gene: Makemake\_71 Start: 44586, Stop: 44317, Start Num: 66

Candidate Starts for Makemake\_71:

(Start: 66 @44586 has 87 MA's), (87, 44532), (114, 44484),

Gene: Mana\_52 Start: 47084, Stop: 46791, Start Num: 69

Candidate Starts for Mana\_52:

(14, 47243), (20, 47186), (30, 47159), (37, 47138), (38, 47132), (Start: 69 @47084 has 128 MA's), (74, 47060), (106, 47012), (109, 47006), (114, 46982),

Gene: Maravista\_54 Start: 38807, Stop: 39082, Start Num: 66

Candidate Starts for Maravista\_54:

(40, 38777), (Start: 66 @38807 has 87 MA's), (114, 38918),

Gene: Marker\_53 Start: 37153, Stop: 37359, Start Num: 69

Candidate Starts for Marker\_53:

(43, 37123), (Start: 69 @37153 has 128 MA's), (114, 37264),

Gene: Marleymoo\_128 Start: 73628, Stop: 73906, Start Num: 79

Candidate Starts for Marleymoo\_128:

(23, 73493), (Start: 68 @73583 has 3 MA's), (Start: 79 @73628 has 33 MA's), (108, 73700), (110, 73703), (140, 73823),

Gene: Maroc7\_64 Start: 43049, Stop: 42780, Start Num: 66

Candidate Starts for Maroc7\_64:

(Start: 66 @43049 has 87 MA's), (87, 42995), (114, 42947),

Gene: Marsha\_65 Start: 43596, Stop: 43360, Start Num: 70

Candidate Starts for Marsha\_65:

(Start: 70 @43596 has 36 MA's), (102, 43536),

Gene: Maru\_53 Start: 47523, Stop: 47254, Start Num: 69

Candidate Starts for Maru\_53:

(14, 47682), (20, 47625), (30, 47598), (37, 47577), (38, 47571), (Start: 69 @47523 has 128 MA's), (74, 47499), (106, 47451), (109, 47445), (114, 47421),

Gene: Melissauren88\_50 Start: 36304, Stop: 36534, Start Num: 69

Candidate Starts for Melissauren88\_50:

(43, 36274), (Start: 69 @36304 has 128 MA's), (Start: 77 @36340 has 4 MA's), (113, 36400), (114, 36403),

Gene: Mesh1\_54 Start: 47616, Stop: 47323, Start Num: 69

Candidate Starts for Mesh1\_54:

(14, 47775), (20, 47718), (37, 47670), (38, 47664), (Start: 69 @47616 has 128 MA's), (74, 47592), (106, 47544), (109, 47538), (114, 47514),

Gene: MiaZeal\_144 Start: 74280, Stop: 74525, Start Num: 79

Candidate Starts for MiaZeal\_144:  
(23, 74145), (56, 74220), (Start: 68 @74235 has 3 MA's), (Start: 79 @74280 has 33 MA's), (108, 74352), (110, 74355), (111, 74358),

Gene: MiaZeal\_83 Start: 49925, Stop: 49656, Start Num: 66  
Candidate Starts for MiaZeal\_83:  
(Start: 66 @49925 has 87 MA's), (87, 49871), (114, 49823),

Gene: MilleniumForce\_52 Start: 38325, Stop: 38558, Start Num: 69  
Candidate Starts for MilleniumForce\_52:  
(43, 38295), (Start: 69 @38325 has 128 MA's), (Start: 77 @38361 has 4 MA's), (113, 38421), (114, 38424),

Gene: Minerva\_145 Start: 76838, Stop: 77116, Start Num: 79  
Candidate Starts for Minerva\_145:  
(23, 76703), (Start: 68 @76793 has 3 MA's), (Start: 79 @76838 has 33 MA's), (108, 76910), (110, 76913), (117, 76955), (140, 77033),

Gene: Minerva\_89 Start: 56566, Stop: 56844, Start Num: 66  
Candidate Starts for Minerva\_89:  
(61, 56560), (Start: 66 @56566 has 87 MA's), (114, 56677),

Gene: MinionDave\_51 Start: 36841, Stop: 37071, Start Num: 69  
Candidate Starts for MinionDave\_51:  
(43, 36811), (Start: 69 @36841 has 128 MA's), (Start: 77 @36877 has 4 MA's), (113, 36937), (114, 36940),

Gene: MissRona\_77 Start: 48142, Stop: 48381, Start Num: 83  
Candidate Starts for MissRona\_77:  
(1, 47395), (2, 47401), (3, 47407), (4, 47452), (11, 47890), (12, 47917), (18, 47980), (24, 48004), (58, 48079), (Start: 66 @48088 has 87 MA's), (Start: 83 @48142 has 8 MA's), (95, 48169), (142, 48307), (150, 48328), (156, 48376),

Gene: MitKao\_53 Start: 47094, Stop: 46801, Start Num: 69  
Candidate Starts for MitKao\_53:  
(14, 47253), (20, 47196), (30, 47169), (37, 47148), (38, 47142), (Start: 69 @47094 has 128 MA's), (74, 47070), (106, 47022), (109, 47016), (114, 46992),

Gene: MmasiCarm\_52 Start: 45904, Stop: 45635, Start Num: 66  
Candidate Starts for MmasiCarm\_52:  
(Start: 66 @45904 has 87 MA's), (87, 45850), (114, 45802), (157, 45646),

Gene: Moonbeam\_48 Start: 36361, Stop: 36591, Start Num: 69  
Candidate Starts for Moonbeam\_48:  
(43, 36331), (Start: 69 @36361 has 128 MA's), (Start: 77 @36397 has 4 MA's), (113, 36457), (114, 36460),

Gene: Morgushi\_53 Start: 47083, Stop: 46790, Start Num: 69  
Candidate Starts for Morgushi\_53:  
(14, 47242), (20, 47185), (30, 47158), (37, 47137), (38, 47131), (Start: 69 @47083 has 128 MA's), (74, 47059), (106, 47011), (109, 47005), (114, 46981),

Gene: Mortcellus\_51 Start: 46511, Stop: 46242, Start Num: 66

Candidate Starts for Mortcellus\_51:

(Start: 66 @46511 has 87 MA's), (87, 46457), (114, 46409), (157, 46253),

Gene: Mosaic\_52 Start: 47088, Stop: 46795, Start Num: 69

Candidate Starts for Mosaic\_52:

(14, 47247), (20, 47190), (30, 47163), (37, 47142), (38, 47136), (Start: 69 @47088 has 128 MA's), (74, 47064), (106, 47016), (109, 47010), (114, 46986),

Gene: Mova\_53 Start: 36684, Stop: 36917, Start Num: 69

Candidate Starts for Mova\_53:

(43, 36654), (Start: 69 @36684 has 128 MA's), (Start: 77 @36720 has 4 MA's), (113, 36780), (114, 36783),

Gene: Mova\_66 Start: 41041, Stop: 41319, Start Num: 66

Candidate Starts for Mova\_66:

(61, 41035), (Start: 66 @41041 has 87 MA's), (114, 41152),

Gene: Mozy\_62 Start: 39946, Stop: 40173, Start Num: 69

Candidate Starts for Mozy\_62:

(Start: 45 @39916 has 1 MA's), (Start: 69 @39946 has 128 MA's), (74, 39970), (104, 40012), (111, 40027), (113, 40045), (114, 40048), (128, 40078),

Gene: MrPhizzler\_55 Start: 47550, Stop: 47281, Start Num: 69

Candidate Starts for MrPhizzler\_55:

(14, 47709), (20, 47652), (30, 47625), (37, 47604), (38, 47598), (Start: 69 @47550 has 128 MA's), (74, 47526), (106, 47478), (109, 47472), (114, 47448),

Gene: MulchExplorer\_66 Start: 43094, Stop: 43342, Start Num: 70

Candidate Starts for MulchExplorer\_66:

(Start: 70 @43094 has 36 MA's), (97, 43157), (114, 43199),

Gene: Mule\_62 Start: 41651, Stop: 41406, Start Num: 70

Candidate Starts for Mule\_62:

(Start: 70 @41651 has 36 MA's), (88, 41609), (98, 41597), (102, 41594), (114, 41555), (118, 41537),

Gene: Mwanjiwa\_58 Start: 37785, Stop: 38027, Start Num: 69

Candidate Starts for Mwanjiwa\_58:

(43, 37755), (Start: 69 @37785 has 128 MA's), (114, 37896),

Gene: Nappy\_5 Start: 1734, Stop: 1961, Start Num: 70

Candidate Starts for Nappy\_5:

(Start: 63 @1725 has 3 MA's), (Start: 70 @1734 has 36 MA's), (Start: 77 @1770 has 4 MA's), (87, 1779), (114, 1833), (130, 1872),

Gene: Nekros\_77 Start: 50383, Stop: 50132, Start Num: 70

Candidate Starts for Nekros\_77:

(Start: 70 @50383 has 36 MA's), (158, 50146),

Gene: Neos5\_51 Start: 46209, Stop: 45940, Start Num: 66

Candidate Starts for Neos5\_51:

(Start: 66 @46209 has 87 MA's), (87, 46155), (114, 46107),

Gene: Nibley\_71 Start: 47231, Stop: 46980, Start Num: 70

Candidate Starts for Nibley\_71:  
(Start: 70 @47231 has 36 MA's), (158, 46994),

Gene: Nicole21\_54 Start: 47889, Stop: 47620, Start Num: 69  
Candidate Starts for Nicole21\_54:  
(14, 48048), (20, 47991), (30, 47964), (37, 47943), (38, 47937), (Start: 69 @47889 has 128 MA's), (74, 47865), (106, 47817), (109, 47811), (114, 47787), (157, 47631),

Gene: NihilNomen\_147 Start: 77126, Stop: 77371, Start Num: 79  
Candidate Starts for NihilNomen\_147:  
(23, 76991), (Start: 68 @77081 has 3 MA's), (Start: 79 @77126 has 33 MA's), (108, 77198), (110, 77201),

Gene: NihilNomen\_91 Start: 56718, Stop: 57014, Start Num: 66  
Candidate Starts for NihilNomen\_91:  
(Start: 66 @56718 has 87 MA's), (98, 56796), (110, 56823), (114, 56847),

Gene: Nozo\_51 Start: 46173, Stop: 45904, Start Num: 66  
Candidate Starts for Nozo\_51:  
(Start: 66 @46173 has 87 MA's), (87, 46119), (114, 46071),

Gene: NuevoMundo\_6 Start: 1876, Stop: 2112, Start Num: 63  
Candidate Starts for NuevoMundo\_6:  
(Start: 63 @1876 has 3 MA's), (Start: 70 @1885 has 36 MA's), (Start: 77 @1921 has 4 MA's), (87, 1930), (114, 1984), (130, 2023),

Gene: Obutu\_52 Start: 45859, Stop: 45590, Start Num: 66  
Candidate Starts for Obutu\_52:  
(Start: 66 @45859 has 87 MA's), (87, 45805), (114, 45757), (157, 45601),

Gene: Odette\_149 Start: 79269, Stop: 79514, Start Num: 79  
Candidate Starts for Odette\_149:  
(23, 79134), (Start: 68 @79224 has 3 MA's), (Start: 79 @79269 has 33 MA's), (108, 79341), (110, 79344),

Gene: Odette\_88 Start: 55760, Stop: 56056, Start Num: 66  
Candidate Starts for Odette\_88:  
(Start: 66 @55760 has 87 MA's), (98, 55838), (110, 55865), (114, 55889),

Gene: Ogopogo\_57 Start: 37928, Stop: 38170, Start Num: 69  
Candidate Starts for Ogopogo\_57:  
(64, 37922), (Start: 69 @37928 has 128 MA's), (114, 38039),

Gene: Okabe\_47 Start: 33316, Stop: 33510, Start Num: 77  
Candidate Starts for Okabe\_47:  
(43, 33250), (Start: 69 @33280 has 128 MA's), (Start: 77 @33316 has 4 MA's), (113, 33376), (114, 33379),

Gene: OneDirection\_52 Start: 33066, Stop: 33362, Start Num: 67  
Candidate Starts for OneDirection\_52:  
(47, 33039), (60, 33057), (Start: 67 @33066 has 15 MA's), (Start: 89 @33132 has 2 MA's), (117, 33219), (122, 33237), (137, 33264),

Gene: Oosterbaan\_53 Start: 47374, Stop: 47081, Start Num: 69

Candidate Starts for Oosterbaan\_53:

(14, 47533), (20, 47476), (30, 47449), (37, 47428), (38, 47422), (Start: 69 @47374 has 128 MA's), (74, 47350), (106, 47302), (109, 47296), (114, 47272),

Gene: Optimus\_136 Start: 74406, Stop: 74651, Start Num: 79

Candidate Starts for Optimus\_136:

(23, 74271), (56, 74346), (Start: 68 @74361 has 3 MA's), (Start: 79 @74406 has 33 MA's), (108, 74478), (110, 74481),

Gene: Optimus\_84 Start: 55270, Stop: 55548, Start Num: 66

Candidate Starts for Optimus\_84:

(61, 55264), (Start: 66 @55270 has 87 MA's), (114, 55381),

Gene: OrangeOswald\_51 Start: 45414, Stop: 45145, Start Num: 66

Candidate Starts for OrangeOswald\_51:

(Start: 66 @45414 has 87 MA's), (87, 45360), (114, 45312),

Gene: Orwigg\_53 Start: 47574, Stop: 47305, Start Num: 69

Candidate Starts for Orwigg\_53:

(14, 47733), (20, 47676), (30, 47649), (37, 47628), (38, 47622), (Start: 69 @47574 has 128 MA's), (74, 47550), (106, 47502), (109, 47496), (114, 47472), (157, 47316),

Gene: OwlsT2W\_53 Start: 37646, Stop: 37888, Start Num: 69

Candidate Starts for OwlsT2W\_53:

(43, 37616), (Start: 69 @37646 has 128 MA's), (113, 37754),

Gene: PMC\_49 Start: 37214, Stop: 37471, Start Num: 69

Candidate Starts for PMC\_49:

(17, 37100), (19, 37112), (32, 37148), (53, 37199), (Start: 69 @37214 has 128 MA's), (114, 37325), (124, 37355),

Gene: Paraselene\_66 Start: 43378, Stop: 43109, Start Num: 66

Candidate Starts for Paraselene\_66:

(Start: 66 @43378 has 87 MA's), (87, 43324), (114, 43276),

Gene: Pelly\_67 Start: 44535, Stop: 44257, Start Num: 67

Candidate Starts for Pelly\_67:

(Start: 67 @44535 has 15 MA's), (76, 44502), (Start: 84 @44490 has 1 MA's), (93, 44469), (103, 44445), (113, 44409), (114, 44406),

Gene: Periwinkle\_85 Start: 46796, Stop: 47035, Start Num: 89

Candidate Starts for Periwinkle\_85:

(21, 46643), (41, 46700), (53, 46718), (86, 46787), (Start: 89 @46796 has 2 MA's), (112, 46853), (116, 46880), (119, 46892),

Gene: Periwinkle\_62 Start: 38089, Stop: 38367, Start Num: 69

Candidate Starts for Periwinkle\_62:

(Start: 69 @38089 has 128 MA's), (114, 38185), (132, 38251), (155, 38329),

Gene: Phalconet\_51 Start: 36608, Stop: 36838, Start Num: 69

Candidate Starts for Phalconet\_51:

(43, 36578), (Start: 69 @36608 has 128 MA's), (Start: 77 @36644 has 4 MA's), (113, 36704), (114, 36707),

Gene: Phanphagia\_47 Start: 36555, Stop: 36800, Start Num: 69  
Candidate Starts for Phanphagia\_47:  
(38, 36510), (48, 36531), (Start: 69 @36555 has 128 MA's), (114, 36666),

Gene: PharkleMinkus\_6 Start: 1924, Stop: 2115, Start Num: 77  
Candidate Starts for PharkleMinkus\_6:  
(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Phasih\_51 Start: 37693, Stop: 37935, Start Num: 69  
Candidate Starts for Phasih\_51:  
(64, 37687), (Start: 69 @37693 has 128 MA's), (114, 37804),

Gene: Phayeta\_53 Start: 45741, Stop: 45472, Start Num: 66  
Candidate Starts for Phayeta\_53:  
(Start: 66 @45741 has 87 MA's), (87, 45687), (114, 45639), (157, 45483),

Gene: Phayonce\_59 Start: 40788, Stop: 41024, Start Num: 80  
Candidate Starts for Phayonce\_59:  
(15, 40608), (Start: 80 @40788 has 1 MA's), (113, 40881), (125, 40929), (142, 40959), (154, 40989), (156, 41010),

Gene: PherrisBueller\_66 Start: 41317, Stop: 41090, Start Num: 68  
Candidate Starts for PherrisBueller\_66:  
(Start: 68 @41317 has 3 MA's), (114, 41257),

Gene: PhesterPhotato\_54 Start: 37593, Stop: 37826, Start Num: 69  
Candidate Starts for PhesterPhotato\_54:  
(43, 37563), (Start: 69 @37593 has 128 MA's), (Start: 77 @37629 has 4 MA's), (113, 37689), (114, 37692),

Gene: Philly\_50 Start: 45265, Stop: 44996, Start Num: 66  
Candidate Starts for Philly\_50:  
(Start: 66 @45265 has 87 MA's), (87, 45211), (114, 45163),

Gene: Phlyer\_51 Start: 46154, Stop: 45885, Start Num: 66  
Candidate Starts for Phlyer\_51:  
(Start: 66 @46154 has 87 MA's), (87, 46100), (114, 46052),

Gene: Phoebus\_92 Start: 57900, Stop: 58196, Start Num: 66  
Candidate Starts for Phoebus\_92:  
(Start: 66 @57900 has 87 MA's), (98, 57978), (110, 58005), (114, 58029),

Gene: Phoebus\_145 Start: 79020, Stop: 79265, Start Num: 79  
Candidate Starts for Phoebus\_145:  
(23, 78885), (56, 78960), (Start: 68 @78975 has 3 MA's), (Start: 79 @79020 has 33 MA's), (108, 79092), (110, 79095),

Gene: PhrostyMug\_65 Start: 43825, Stop: 43580, Start Num: 70  
Candidate Starts for PhrostyMug\_65:

(Start: 70 @43825 has 36 MA's), (88, 43783), (98, 43771), (102, 43768), (114, 43729), (118, 43711),

Gene: Pier\_6 Start: 1888, Stop: 2115, Start Num: 70

Candidate Starts for Pier\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Poenanya\_52 Start: 38179, Stop: 38421, Start Num: 69

Candidate Starts for Poenanya\_52:

(43, 38149), (Start: 69 @38179 has 128 MA's), (113, 38287),

Gene: Polka14\_51 Start: 36782, Stop: 37027, Start Num: 69

Candidate Starts for Polka14\_51:

(Start: 69 @36782 has 128 MA's), (113, 36890),

Gene: Pollywog\_50 Start: 37066, Stop: 37320, Start Num: 70

Candidate Starts for Pollywog\_50:

(38, 37018), (50, 37042), (Start: 70 @37066 has 36 MA's), (114, 37177),

Gene: Porcelain\_141 Start: 74087, Stop: 74332, Start Num: 79

Candidate Starts for Porcelain\_141:

(23, 73952), (56, 74027), (Start: 68 @74042 has 3 MA's), (Start: 79 @74087 has 33 MA's), (108, 74159), (110, 74162), (111, 74165),

Gene: Porcelain\_82 Start: 49925, Stop: 49656, Start Num: 66

Candidate Starts for Porcelain\_82:

(Start: 66 @49925 has 87 MA's), (87, 49871), (114, 49823),

Gene: Potter\_52 Start: 47105, Stop: 46812, Start Num: 69

Candidate Starts for Potter\_52:

(14, 47264), (20, 47207), (30, 47180), (37, 47159), (38, 47153), (Start: 69 @47105 has 128 MA's), (74, 47081), (106, 47033), (109, 47027), (114, 47003),

Gene: Pound\_137 Start: 76839, Stop: 77084, Start Num: 79

Candidate Starts for Pound\_137:

(23, 76704), (56, 76779), (Start: 68 @76794 has 3 MA's), (Start: 79 @76839 has 33 MA's), (108, 76911), (110, 76914),

Gene: Pringar\_6 Start: 1866, Stop: 2138, Start Num: 66

Candidate Starts for Pringar\_6:

(Start: 66 @1866 has 87 MA's), (99, 1929), (114, 1971),

Gene: Puhltonio\_53 Start: 47379, Stop: 47086, Start Num: 69

Candidate Starts for Puhltonio\_53:

(14, 47538), (20, 47481), (30, 47454), (37, 47433), (38, 47427), (Start: 69 @47379 has 128 MA's), (74, 47355), (106, 47307), (109, 47301), (114, 47277),

Gene: Pupusa\_6 Start: 1924, Stop: 2115, Start Num: 77

Candidate Starts for Pupusa\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Purky\_63 Start: 41280, Stop: 41552, Start Num: 70

Candidate Starts for Purky\_63:

(Start: 70 @41280 has 36 MA's), (73, 41295), (107, 41364), (113, 41388), (121, 41421), (126, 41439), (154, 41517), (156, 41538),

Gene: Purky\_64 Start: 41545, Stop: 41862, Start Num: 70

Candidate Starts for Purky\_64:

(13, 41383), (57, 41530), (Start: 70 @41545 has 36 MA's), (113, 41677), (149, 41794), (156, 41848),

Gene: QueenBeane\_53 Start: 47369, Stop: 47076, Start Num: 69

Candidate Starts for QueenBeane\_53:

(14, 47528), (20, 47471), (30, 47444), (37, 47423), (38, 47417), (Start: 69 @47369 has 128 MA's), (74, 47345), (106, 47297), (109, 47291), (114, 47267),

Gene: QuickMath\_66 Start: 43318, Stop: 43566, Start Num: 70

Candidate Starts for QuickMath\_66:

(Start: 70 @43318 has 36 MA's), (97, 43381), (114, 43423),

Gene: Raid\_64 Start: 42642, Stop: 42373, Start Num: 66

Candidate Starts for Raid\_64:

(Start: 66 @42642 has 87 MA's), (87, 42588), (114, 42540),

Gene: Rando14\_64 Start: 42240, Stop: 42497, Start Num: 70

Candidate Starts for Rando14\_64:

(51, 42219), (Start: 70 @42240 has 36 MA's), (93, 42300), (114, 42360), (120, 42390), (142, 42435),

Gene: RedRaider77\_9 Start: 2886, Stop: 3152, Start Num: 66

Candidate Starts for RedRaider77\_9:

(34, 2829), (Start: 66 @2886 has 87 MA's), (Start: 83 @2922 has 8 MA's), (113, 2982), (114, 2985), (157, 3141),

Gene: Redno2\_140 Start: 75128, Stop: 75373, Start Num: 79

Candidate Starts for Redno2\_140:

(23, 74993), (Start: 68 @75083 has 3 MA's), (Start: 79 @75128 has 33 MA's), (108, 75200), (110, 75203),

Gene: Renaud18\_58 Start: 38221, Stop: 38445, Start Num: 69

Candidate Starts for Renaud18\_58:

(43, 38191), (Start: 69 @38221 has 128 MA's), (Start: 77 @38254 has 4 MA's), (96, 38278), (113, 38311),

Gene: Renaud18\_70 Start: 41973, Stop: 42221, Start Num: 70

Candidate Starts for Renaud18\_70:

(49, 41946), (Start: 70 @41973 has 36 MA's), (108, 42069), (113, 42093), (129, 42126),

Gene: Renaud18\_71 Start: 42261, Stop: 42503, Start Num: 67

Candidate Starts for Renaud18\_71:

(Start: 67 @42261 has 15 MA's), (73, 42276), (114, 42354), (133, 42414),

Gene: Rimu\_54 Start: 47570, Stop: 47301, Start Num: 69

Candidate Starts for Rimu\_54:

(14, 47729), (20, 47672), (30, 47645), (37, 47624), (38, 47618), (Start: 69 @47570 has 128 MA's), (74, 47546), (106, 47498), (109, 47492), (114, 47468),

Gene: Rita1961\_52 Start: 45860, Stop: 45591, Start Num: 66  
Candidate Starts for Rita1961\_52:  
(Start: 66 @45860 has 87 MA's), (87, 45806), (114, 45758), (157, 45602),

Gene: Rockne\_53 Start: 37214, Stop: 37471, Start Num: 69  
Candidate Starts for Rockne\_53:  
(17, 37100), (19, 37112), (32, 37148), (53, 37199), (Start: 69 @37214 has 128 MA's), (114, 37325),  
(124, 37355),

Gene: RockyHorror\_53 Start: 37057, Stop: 37299, Start Num: 69  
Candidate Starts for RockyHorror\_53:  
(43, 37027), (Start: 69 @37057 has 128 MA's), (114, 37168),

Gene: Royals2015\_55 Start: 37315, Stop: 37545, Start Num: 69  
Candidate Starts for Royals2015\_55:  
(43, 37285), (Start: 69 @37315 has 128 MA's), (Start: 77 @37351 has 4 MA's), (113, 37411), (114,  
37414),

Gene: Ryadel\_103 Start: 62455, Stop: 62225, Start Num: 83  
Candidate Starts for Ryadel\_103:  
(Start: 66 @62491 has 87 MA's), (Start: 83 @62455 has 8 MA's), (113, 62395), (114, 62392),

Gene: SG4\_49 Start: 36037, Stop: 36267, Start Num: 69  
Candidate Starts for SG4\_49:  
(42, 36004), (43, 36007), (Start: 69 @36037 has 128 MA's), (Start: 77 @36073 has 4 MA's), (113,  
36133), (114, 36136),

Gene: Samaymay\_53 Start: 47369, Stop: 47076, Start Num: 69  
Candidate Starts for Samaymay\_53:  
(14, 47528), (20, 47471), (30, 47444), (37, 47423), (38, 47417), (Start: 69 @47369 has 128 MA's), (74,  
47345), (106, 47297), (109, 47291), (114, 47267),

Gene: Samman98\_60 Start: 39796, Stop: 40041, Start Num: 67  
Candidate Starts for Samman98\_60:  
(Start: 67 @39796 has 15 MA's), (Start: 77 @39835 has 4 MA's), (143, 39985),

Gene: Sassafras\_50 Start: 36161, Stop: 36394, Start Num: 69  
Candidate Starts for Sassafras\_50:  
(Start: 45 @36131 has 1 MA's), (Start: 69 @36161 has 128 MA's), (74, 36185), (104, 36227), (111,  
36242), (113, 36260), (114, 36263),

Gene: SassyCat97\_52 Start: 47096, Stop: 46803, Start Num: 69  
Candidate Starts for SassyCat97\_52:  
(14, 47255), (20, 47198), (30, 47171), (37, 47150), (38, 47144), (Start: 69 @47096 has 128 MA's), (74,  
47072), (106, 47024), (109, 47018), (114, 46994),

Gene: Schatzie\_85 Start: 55507, Stop: 55803, Start Num: 66  
Candidate Starts for Schatzie\_85:  
(Start: 66 @55507 has 87 MA's), (98, 55585), (110, 55612), (114, 55636),

Gene: Schatzie\_141 Start: 77688, Stop: 77933, Start Num: 79  
Candidate Starts for Schatzie\_141:

(23, 77553), (56, 77628), (Start: 68 @77643 has 3 MA's), (Start: 79 @77688 has 33 MA's), (108, 77760), (110, 77763),

Gene: Sebata\_6 Start: 2738, Stop: 2995, Start Num: 69

Candidate Starts for Sebata\_6:

(Start: 62 @2729 has 1 MA's), (Start: 69 @2738 has 128 MA's), (74, 2762), (104, 2804), (111, 2819), (113, 2837), (114, 2840), (149, 2936),

Gene: Serendipity\_53 Start: 47393, Stop: 47100, Start Num: 69

Candidate Starts for Serendipity\_53:

(14, 47552), (20, 47495), (30, 47468), (37, 47447), (38, 47441), (Start: 69 @47393 has 128 MA's), (74, 47369), (106, 47321), (109, 47315), (114, 47291),

Gene: Shauna1\_47 Start: 36503, Stop: 36781, Start Num: 66

Candidate Starts for Shauna1\_47:

(22, 36419), (30, 36437), (43, 36479), (Start: 66 @36503 has 87 MA's), (114, 36614),

Gene: ShroomBoi\_52 Start: 36993, Stop: 37238, Start Num: 69

Candidate Starts for ShroomBoi\_52:

(25, 36909), (33, 36927), (48, 36969), (Start: 69 @36993 has 128 MA's), (114, 37104),

Gene: Smairt\_67 Start: 44819, Stop: 44574, Start Num: 70

Candidate Starts for Smairt\_67:

(Start: 70 @44819 has 36 MA's), (88, 44777), (98, 44765), (102, 44762), (114, 44723), (118, 44705),

Gene: Smooch\_99 Start: 62468, Stop: 62202, Start Num: 66

Candidate Starts for Smooch\_99:

(Start: 66 @62468 has 87 MA's), (Start: 83 @62432 has 8 MA's), (113, 62372), (114, 62369),

Gene: Soile\_54 Start: 47617, Stop: 47348, Start Num: 69

Candidate Starts for Soile\_54:

(14, 47776), (20, 47719), (30, 47692), (37, 47671), (38, 47665), (Start: 69 @47617 has 128 MA's), (74, 47593), (106, 47545), (109, 47539), (114, 47515), (157, 47359),

Gene: Solosis\_52 Start: 47090, Stop: 46797, Start Num: 69

Candidate Starts for Solosis\_52:

(14, 47249), (20, 47192), (30, 47165), (37, 47144), (38, 47138), (Start: 69 @47090 has 128 MA's), (74, 47066), (106, 47018), (109, 47012), (114, 46988),

Gene: Sophia\_52 Start: 47084, Stop: 46791, Start Num: 69

Candidate Starts for Sophia\_52:

(14, 47243), (20, 47186), (30, 47159), (37, 47138), (38, 47132), (Start: 69 @47084 has 128 MA's), (74, 47060), (106, 47012), (109, 47006), (114, 46982),

Gene: Sparkdehlily\_60 Start: 38797, Stop: 39039, Start Num: 69

Candidate Starts for Sparkdehlily\_60:

(64, 38791), (Start: 69 @38797 has 128 MA's), (114, 38908),

Gene: Specks\_6 Start: 1888, Stop: 2115, Start Num: 70

Candidate Starts for Specks\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Spikelee\_42 Start: 31774, Stop: 31466, Start Num: 55

Candidate Starts for Spikelee\_42:

(27, 31840), (28, 31837), (29, 31834), (44, 31789), (Start: 55 @31774 has 1 MA's), (65, 31762), (Start: 71 @31747 has 1 MA's), (91, 31687), (108, 31645), (113, 31621), (125, 31573),

Gene: Spooky\_78 Start: 45719, Stop: 45976, Start Num: 67

Candidate Starts for Spooky\_78:

(Start: 67 @45719 has 15 MA's), (75, 45749), (Start: 77 @45758 has 4 MA's), (90, 45782),

Gene: Squid\_53 Start: 47096, Stop: 46803, Start Num: 69

Candidate Starts for Squid\_53:

(14, 47255), (20, 47198), (30, 47171), (37, 47150), (38, 47144), (Start: 69 @47096 has 128 MA's), (74, 47072), (106, 47024), (109, 47018), (114, 46994),

Gene: Squint\_83 Start: 50044, Stop: 49775, Start Num: 66

Candidate Starts for Squint\_83:

(Start: 66 @50044 has 87 MA's), (87, 49990), (114, 49942),

Gene: Stellammi\_140 Start: 62378, Stop: 62599, Start Num: 70

Candidate Starts for Stellammi\_140:

(Start: 70 @62378 has 36 MA's), (114, 62471),

Gene: Sunshine924\_70 Start: 43095, Stop: 42850, Start Num: 70

Candidate Starts for Sunshine924\_70:

(Start: 70 @43095 has 36 MA's), (88, 43053), (98, 43041), (102, 43038), (114, 42999), (118, 42981),

Gene: SuperGrey\_52 Start: 37962, Stop: 38207, Start Num: 69

Candidate Starts for SuperGrey\_52:

(25, 37878), (33, 37896), (48, 37938), (Start: 69 @37962 has 128 MA's), (114, 38073),

Gene: Surely\_53 Start: 47386, Stop: 47093, Start Num: 69

Candidate Starts for Surely\_53:

(14, 47545), (20, 47488), (30, 47461), (37, 47440), (38, 47434), (Start: 69 @47386 has 128 MA's), (74, 47362), (106, 47314), (109, 47308), (114, 47284),

Gene: SynergyX\_51 Start: 45415, Stop: 45146, Start Num: 66

Candidate Starts for SynergyX\_51:

(Start: 66 @45415 has 87 MA's), (87, 45361), (114, 45313),

Gene: TDanisky\_60 Start: 38797, Stop: 39039, Start Num: 69

Candidate Starts for TDanisky\_60:

(64, 38791), (Start: 69 @38797 has 128 MA's), (114, 38908),

Gene: Tainan\_6 Start: 1924, Stop: 2115, Start Num: 77

Candidate Starts for Tainan\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: Taj\_56 Start: 38142, Stop: 38369, Start Num: 69

Candidate Starts for Taj\_56:

(43, 38112), (Start: 69 @38142 has 128 MA's), (Start: 77 @38175 has 4 MA's), (96, 38199), (113, 38232),

Gene: TallGrassMM\_53 Start: 47000, Stop: 46707, Start Num: 69

Candidate Starts for TallGrassMM\_53:

(14, 47159), (20, 47102), (30, 47075), (37, 47054), (38, 47048), (Start: 69 @47000 has 128 MA's), (74, 46976), (106, 46928), (109, 46922), (114, 46898),

Gene: Tarzan\_58 Start: 37656, Stop: 37880, Start Num: 70

Candidate Starts for Tarzan\_58:

(Start: 70 @37656 has 36 MA's), (82, 37692), (123, 37785), (146, 37833),

Gene: ThetaBob\_69 Start: 42635, Stop: 42865, Start Num: 84

Candidate Starts for ThetaBob\_69:

(48, 42563), (Start: 70 @42590 has 36 MA's), (76, 42623), (Start: 84 @42635 has 1 MA's), (93, 42656), (103, 42680), (113, 42716), (114, 42719), (158, 42851),

Gene: Thibault\_128 Start: 74023, Stop: 74301, Start Num: 79

Candidate Starts for Thibault\_128:

(23, 73888), (Start: 68 @73978 has 3 MA's), (Start: 79 @74023 has 33 MA's), (108, 74095), (110, 74098), (117, 74140), (136, 74206), (140, 74218),

Gene: Thora\_53 Start: 47382, Stop: 47089, Start Num: 69

Candidate Starts for Thora\_53:

(14, 47541), (20, 47484), (30, 47457), (37, 47436), (38, 47430), (Start: 69 @47382 has 128 MA's), (74, 47358), (106, 47310), (109, 47304), (114, 47280),

Gene: ThreeRngTarjay\_140 Start: 77611, Stop: 77856, Start Num: 79

Candidate Starts for ThreeRngTarjay\_140:

(23, 77476), (56, 77551), (Start: 68 @77566 has 3 MA's), (Start: 79 @77611 has 33 MA's), (108, 77683), (110, 77686),

Gene: ThreeRngTarjay\_87 Start: 56792, Stop: 57088, Start Num: 66

Candidate Starts for ThreeRngTarjay\_87:

(Start: 66 @56792 has 87 MA's), (98, 56870), (110, 56897), (114, 56921),

Gene: Timmi\_52 Start: 47085, Stop: 46792, Start Num: 69

Candidate Starts for Timmi\_52:

(14, 47244), (20, 47187), (30, 47160), (37, 47139), (38, 47133), (Start: 69 @47085 has 128 MA's), (74, 47061), (106, 47013), (109, 47007), (114, 46983),

Gene: TinyDot\_48 Start: 31963, Stop: 32163, Start Num: 89

Candidate Starts for TinyDot\_48:

(Start: 89 @31963 has 2 MA's), (139, 32071), (141, 32074),

Gene: TinyTerror\_52 Start: 45907, Stop: 45638, Start Num: 66

Candidate Starts for TinyTerror\_52:

(Start: 66 @45907 has 87 MA's), (87, 45853), (114, 45805), (157, 45649),

Gene: TomBombadil\_53 Start: 47370, Stop: 47077, Start Num: 69

Candidate Starts for TomBombadil\_53:

(14, 47529), (20, 47472), (30, 47445), (37, 47424), (38, 47418), (Start: 69 @47370 has 128 MA's), (74, 47346), (106, 47298), (109, 47292), (114, 47268),

Gene: Tonenili\_49 Start: 15568, Stop: 15810, Start Num: 69

Candidate Starts for Tonenili\_49:

(54, 15550), (Start: 69 @15568 has 128 MA's), (74, 15592), (104, 15634), (111, 15649), (114, 15670), (127, 15700), (135, 15718), (145, 15739),

Gene: Tonenili\_50 Start: 15803, Stop: 16036, Start Num: 70

Candidate Starts for Tonenili\_50:

(Start: 59 @15797 has 1 MA's), (Start: 70 @15803 has 36 MA's), (78, 15839), (107, 15875), (113, 15896), (144, 15962), (147, 15971),

Gene: Topiatin\_58 Start: 38825, Stop: 39058, Start Num: 69

Candidate Starts for Topiatin\_58:

(43, 38795), (Start: 69 @38825 has 128 MA's), (94, 38879), (114, 38927),

Gene: Toron\_84 Start: 50886, Stop: 51176, Start Num: 70

Candidate Starts for Toron\_84:

(36, 50841), (Start: 70 @50886 has 36 MA's), (73, 50901), (74, 50910), (113, 51018), (144, 51111), (156, 51162),

Gene: Tweety\_52 Start: 37774, Stop: 38004, Start Num: 69

Candidate Starts for Tweety\_52:

(43, 37744), (Start: 69 @37774 has 128 MA's), (Start: 77 @37810 has 4 MA's), (113, 37870), (114, 37873),

Gene: Tyke\_6 Start: 1888, Stop: 2115, Start Num: 70

Candidate Starts for Tyke\_6:

(Start: 63 @1879 has 3 MA's), (Start: 70 @1888 has 36 MA's), (Start: 77 @1924 has 4 MA's), (87, 1933), (114, 1987), (130, 2026),

Gene: VRedHorse\_52 Start: 36525, Stop: 36758, Start Num: 69

Candidate Starts for VRedHorse\_52:

(43, 36495), (Start: 69 @36525 has 128 MA's), (Start: 77 @36561 has 4 MA's), (113, 36621), (114, 36624),

Gene: VanLee\_73 Start: 43882, Stop: 44154, Start Num: 70

Candidate Starts for VanLee\_73:

(Start: 70 @43882 has 36 MA's), (100, 43969), (110, 43987), (126, 44041),

Gene: VasuNzinga\_8 Start: 2535, Stop: 2807, Start Num: 66

Candidate Starts for VasuNzinga\_8:

(Start: 66 @2535 has 87 MA's), (99, 2598), (114, 2640),

Gene: Vortex\_53 Start: 47080, Stop: 46787, Start Num: 69

Candidate Starts for Vortex\_53:

(14, 47239), (20, 47182), (30, 47155), (37, 47134), (38, 47128), (Start: 69 @47080 has 128 MA's), (74, 47056), (106, 47008), (109, 47002), (114, 46978),

Gene: Vortrix\_51 Start: 15836, Stop: 16081, Start Num: 69

Candidate Starts for Vortrix\_51:

(54, 15818), (Start: 69 @15836 has 128 MA's), (74, 15860), (104, 15902), (111, 15917), (114, 15938), (127, 15968), (135, 15986), (145, 16007),

Gene: Vortrix\_52 Start: 16078, Stop: 16320, Start Num: 70

Candidate Starts for Vortrix\_52:

(16, 15955), (Start: 70 @16078 has 36 MA's), (107, 16153), (113, 16180), (144, 16246), (147, 16255),

Gene: Wanda\_94 Start: 55909, Stop: 56205, Start Num: 66

Candidate Starts for Wanda\_94:

(61, 55903), (Start: 66 @55909 has 87 MA's), (98, 55987), (110, 56014), (114, 56038),

Gene: Wanda\_145 Start: 75318, Stop: 75596, Start Num: 79

Candidate Starts for Wanda\_145:

(23, 75183), (Start: 68 @75273 has 3 MA's), (Start: 79 @75318 has 33 MA's), (108, 75390), (110, 75393), (117, 75435), (140, 75513),

Gene: Wee\_55 Start: 38414, Stop: 38641, Start Num: 69

Candidate Starts for Wee\_55:

(43, 38384), (Start: 69 @38414 has 128 MA's), (Start: 77 @38447 has 4 MA's), (96, 38471), (113, 38504),

Gene: Whatsapiecost\_53 Start: 36689, Stop: 36931, Start Num: 69

Candidate Starts for Whatsapiecost\_53:

(Start: 69 @36689 has 128 MA's), (114, 36800),

Gene: William\_80 Start: 49369, Stop: 49632, Start Num: 70

Candidate Starts for William\_80:

(5, 49048), (7, 49063), (8, 49099), (Start: 70 @49369 has 36 MA's), (Start: 77 @49405 has 4 MA's), (105, 49456),

Gene: WilliamBoone\_96 Start: 57383, Stop: 57652, Start Num: 70

Candidate Starts for WilliamBoone\_96:

(Start: 70 @57383 has 36 MA's), (110, 57488), (131, 57554),

Gene: XFactor\_50 Start: 36012, Stop: 36242, Start Num: 69

Candidate Starts for XFactor\_50:

(43, 35982), (Start: 69 @36012 has 128 MA's), (Start: 77 @36048 has 4 MA's), (113, 36108), (114, 36111),

Gene: Xavier\_52 Start: 47087, Stop: 46794, Start Num: 69

Candidate Starts for Xavier\_52:

(14, 47246), (20, 47189), (30, 47162), (37, 47141), (38, 47135), (Start: 69 @47087 has 128 MA's), (74, 47063), (106, 47015), (109, 47009), (114, 46985),

Gene: Xiaokay\_141 Start: 77151, Stop: 77429, Start Num: 79

Candidate Starts for Xiaokay\_141:

(6, 76800), (23, 77016), (Start: 68 @77106 has 3 MA's), (Start: 79 @77151 has 33 MA's), (108, 77223), (110, 77226), (136, 77334), (140, 77346),

Gene: Yeet\_83 Start: 55009, Stop: 55305, Start Num: 66

Candidate Starts for Yeet\_83:

(Start: 66 @55009 has 87 MA's), (98, 55087), (110, 55114), (114, 55138),

Gene: Yeet\_139 Start: 77084, Stop: 77329, Start Num: 79

Candidate Starts for Yeet\_139:

(23, 76949), (Start: 68 @77039 has 3 MA's), (Start: 79 @77084 has 33 MA's), (108, 77156), (110, 77159),

Gene: Yoshi\_64 Start: 38747, Stop: 38995, Start Num: 69

Candidate Starts for Yoshi\_64:

(46, 38717), (Start: 69 @38747 has 128 MA's), (108, 38843), (113, 38867), (129, 38900),

Gene: Yoshi\_77 Start: 42854, Stop: 43129, Start Num: 70

Candidate Starts for Yoshi\_77:

(48, 42827), (Start: 70 @42854 has 36 MA's), (76, 42887), (Start: 84 @42899 has 1 MA's), (93, 42920), (103, 42944), (113, 42980), (114, 42983), (158, 43115),

Gene: YungJamal\_99 Start: 61508, Stop: 61278, Start Num: 83

Candidate Starts for YungJamal\_99:

(Start: 66 @61544 has 87 MA's), (Start: 83 @61508 has 8 MA's), (113, 61448), (114, 61445),

Gene: Zelda\_53 Start: 47424, Stop: 47131, Start Num: 69

Candidate Starts for Zelda\_53:

(14, 47583), (20, 47526), (30, 47499), (37, 47478), (38, 47472), (Start: 69 @47424 has 128 MA's), (74, 47400), (106, 47352), (109, 47346), (114, 47322),

Gene: Zelink\_87 Start: 57104, Stop: 57400, Start Num: 66

Candidate Starts for Zelink\_87:

(Start: 66 @57104 has 87 MA's), (98, 57182), (110, 57209), (114, 57233),

Gene: Zelink\_140 Start: 78130, Stop: 78408, Start Num: 79

Candidate Starts for Zelink\_140:

(23, 77995), (56, 78070), (Start: 68 @78085 has 3 MA's), (Start: 79 @78130 has 33 MA's), (108, 78202), (110, 78205), (117, 78247), (140, 78325),

Gene: Zerg\_52 Start: 37166, Stop: 37408, Start Num: 69

Candidate Starts for Zerg\_52:

(43, 37136), (Start: 69 @37166 has 128 MA's), (114, 37277),