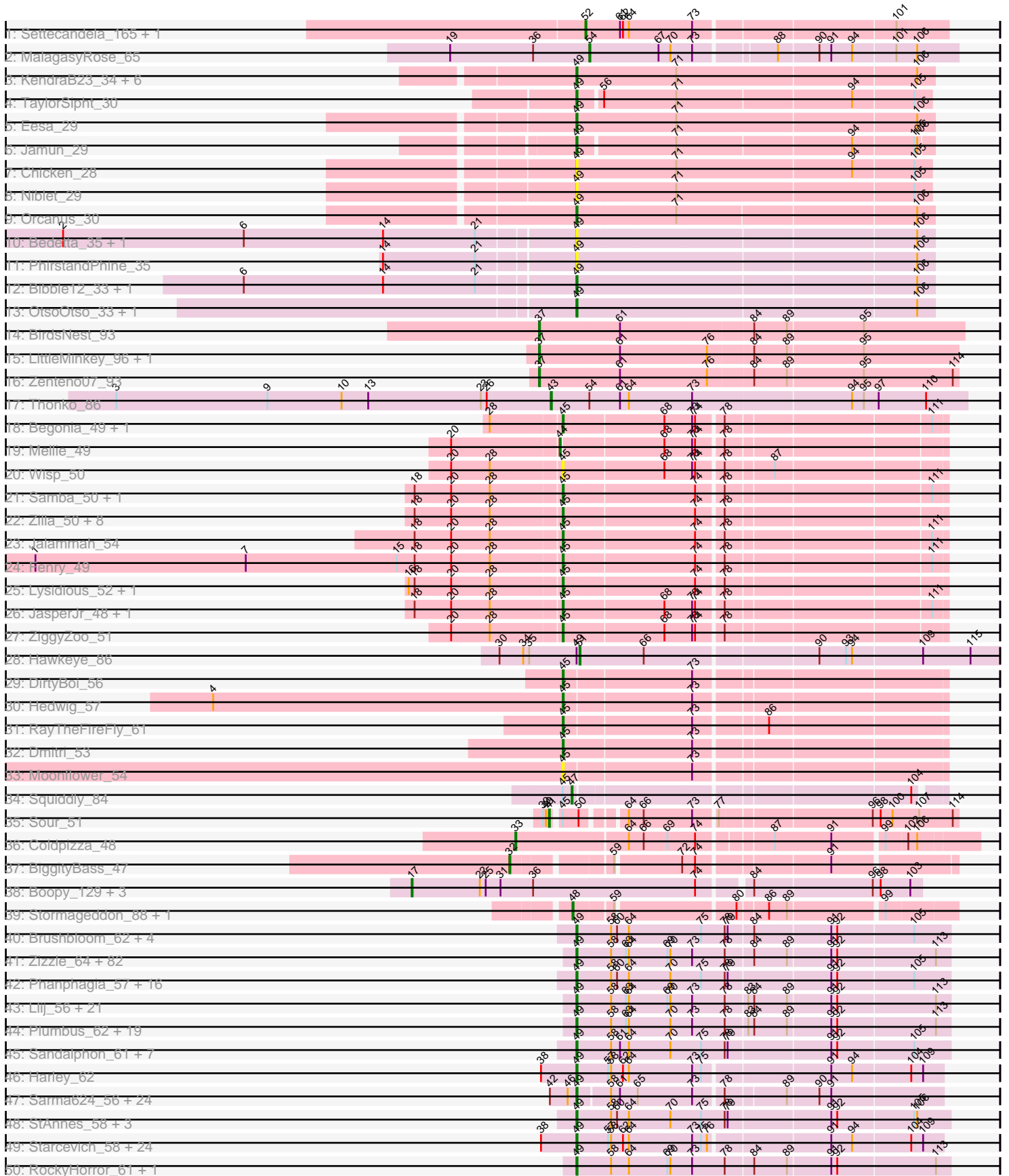
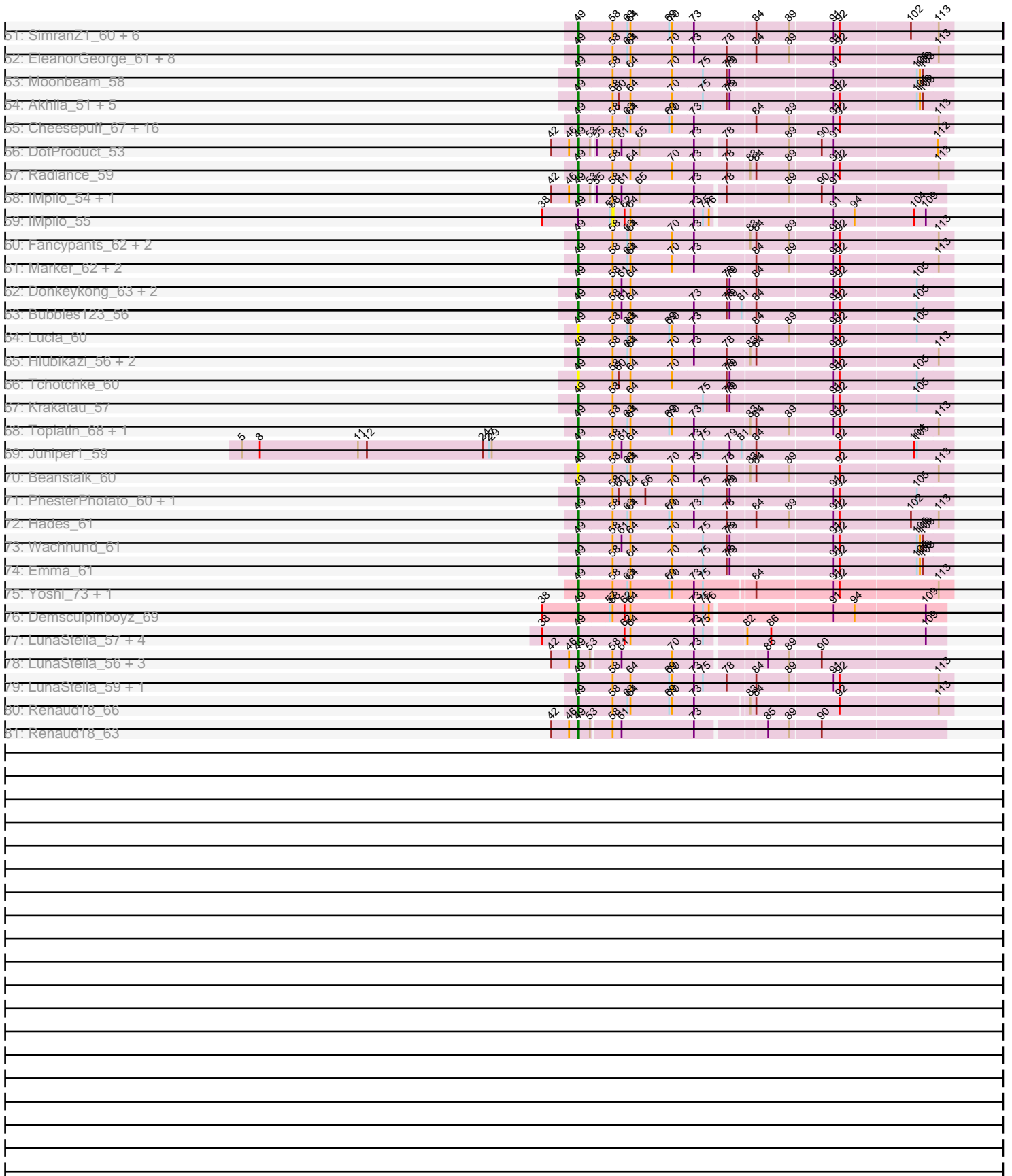


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 294352 Report

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

Pham number 294352 has 364 members, 43 are drafts.

Phages represented in each track:

- Track 1 : Settecandela\_165, Phrappuccino\_165
- Track 2 : MalagasyRose\_65
- Track 3 : KendraB23\_34, Westrich\_33, Gravel\_33, Pelletreau\_33, Toad24\_32, Amanises\_34, Zixiang\_29
- Track 4 : TaylorSipht\_30
- Track 5 : Eesa\_29
- Track 6 : Jamun\_29
- Track 7 : Chicken\_28
- Track 8 : Niblet\_29
- Track 9 : Orcanus\_30
- Track 10 : Bedetta\_35, Pineda\_34
- Track 11 : PhirstandPhine\_35
- Track 12 : Bibble12\_33, Colusalem\_33
- Track 13 : OtsoOtso\_33, Polka\_32
- Track 14 : BirdsNest\_93
- Track 15 : LittleMinkey\_96, Hashim76\_90
- Track 16 : Zenteno07\_93
- Track 17 : Thonko\_86
- Track 18 : Begonia\_49, Malachai\_49
- Track 19 : Mellie\_49
- Track 20 : Wisp\_50
- Track 21 : Samba\_50, Hitter\_51
- Track 22 : Zilla\_50, CaptainKirk2\_51, MintFen\_51, BlingBling\_48, Barco\_49, Melba\_50, Delian\_54, Zarbodnamra\_50, Archis\_54
- Track 23 : Jalammah\_54
- Track 24 : Fenry\_49
- Track 25 : Lysidious\_52, Utz\_44
- Track 26 : JasperJr\_48, Guacamole\_48
- Track 27 : ZiggyZoo\_51
- Track 28 : Hawkeye\_86
- Track 29 : DirtyBoi\_56
- Track 30 : Hedwig\_57
- Track 31 : RayTheFireFly\_61
- Track 32 : Dmitri\_53
- Track 33 : Moonflower\_54
- Track 34 : Squiddly\_84
- Track 35 : Sour\_51

- Track 36 : Coldpizza\_48
- Track 37 : BiggityBass\_47
- Track 38 : Boopy\_129, BlueNGold\_128, Forza\_129, Mareelih\_127
- Track 39 : Stormageddon\_88, RedWattleHog\_91
- Track 40 : Brushbloom\_62, MilleniumForce\_63, Ramsey\_59, Batiatus\_58, Aubs\_60
- Track 41 : Zizzle\_64, Rita\_61, DeadP\_66, Soul22\_66, Martik\_60, AlpineSix\_65, Zapner\_73, MinionDave\_59, Maravista\_61, Totinger\_59, Rockne\_61, Eish\_64, James\_64, Pippy\_58, SG4\_57, LastJedi\_54, Dorothy\_58, Crumble\_55, PhilipPhlop\_60, Seabastian\_65, Taj\_64, Jinglebell\_65, Ochi17\_63, Jabbawokkie\_74, GUMbie\_58, Lizziana\_66, Priscilla\_60, Whouxphf\_57, Zerg\_60, VRedHorse\_60, Dante\_61, Yorick\_59, Chuckly\_63, ShiLan\_59, Nichirin\_67, PMC\_57, Modragons\_64, Slim\_61, Blarby\_72, Boomer\_65, Mattes\_64, Firehouse51\_61, Inventum\_55, OwlsT2W\_60, Mutaforma13\_64, Starcevich\_60, ShowerHandel\_63, SiSi\_58, Burwell21\_58, SwagPigglett\_65, EmiMonkey\_58, Hegedechwinu\_60, Pollywog\_61, Saal\_62, BuzzLyseyear\_66, Alexphander\_64, PatoPoderoso\_57, OlympiaSaint\_62, DaWorst\_61, Koella\_54, IbOuu\_59, Karhdo\_57, Wee\_64, KingJulian\_60, Peridot\_61, Sassafras\_58, OfUltron\_65, Oksu\_64, Llama\_65, CaptainTrips\_57, Emmaloid\_61, Brocalys\_55, BobaPhett\_64, Enby\_61, NormanBulbieJr\_60, Clifton\_55, Eradicator\_53, Cabrinians\_61, Gorge\_64, FreddyB\_61, LittleShirley\_59, Polka14\_58, Corium\_57
- Track 42 : Phanphagia\_57, Beakin\_61, ArcusAngelus\_62, TDanisky\_67, Bobi\_65, DLane\_55, Ms6\_55, Melissauren88\_58, PopTart\_54, SuperGrey\_63, SassyB\_54, SilverChicken\_70, Ardmore\_52, Kenuha5\_57, Chevrolet\_65, Sparkdehlily\_67, Tweety\_59
- Track 43 : Llij\_56, Phatniss\_58, Mwanjiwa\_66, MulchExplorer\_63, Lorde\_60, Job42\_62, UncleRicky\_59, Nivrat\_56, Avani\_68, Drago\_58, QuickMath\_62, Kimberlium\_63, Jarcob\_60, LilMoolah\_58, DirtMcgirt\_59, Estave1\_63, DRBy19\_63, Kersh\_62, Veteran\_57, Jennelsea\_57, Philus\_63, Rialto\_66
- Track 44 : Plumbus\_62, Daenerys\_54, ByChance\_52, Tootsieroll\_61, Pacc40\_54, KingMidas\_59, BodEinwohner17\_60, Vivum\_61, Empress\_58, Leozinho\_59, DosHalletts\_62, RitaG\_55, JoeyJr\_55, Leperchaun\_52, Doomphist\_60, Poenanya\_60, PHappiness\_55, DaddyRickover\_59, Violac\_62, Spoonbill\_57
- Track 45 : Sandalphon\_61, Girafales\_69, Okabe\_55, Quico\_68, Florinda\_71, Minnie\_63, Bipolar\_58, Fruitloop\_57
- Track 46 : Harley\_62
- Track 47 : Sarma624\_56, BigPhil\_54, Kingsley\_55, Cheesepuff\_64, MulchExplorer\_60, DoRead\_60, Cerasum\_54, Harley\_61, Starcevich\_57, Brookers\_55, Kimberlium\_60, Che8\_63, Coco12\_57, Ovechkin\_57, Seagreen\_58, QuickMath\_59, Demsculpinboyz\_68, JalFarm20\_71, Topiatin\_65, Velveteen\_53, Jant\_62, Che9d\_66, Juice456\_59, Cornie\_53, Royals2015\_61
- Track 48 : StAnnes\_58, Medindi\_56, Filuzino\_58, XFactor\_58
- Track 49 : Starcevich\_58, BigPhil\_55, Juice456\_60, Cheesepuff\_65, MulchExplorer\_61, DoRead\_61, Cerasum\_55, Sarma624\_57, QuickMath\_60, Che8\_64, Brookers\_56, Coco12\_58, Ovechkin\_58, Seagreen\_59, Velveteen\_54, Kimberlium\_61, JalFarm20\_72, Topiatin\_66, Jant\_63, Juniper1\_57, Che9d\_67, Cornie\_54, Kingsley\_56, DotProduct\_54, Royals2015\_62
- Track 50 : RockyHorror\_61, Doug\_62
- Track 51 : SimranZ1\_60, Sabbb\_64, DillTech15\_57, Phasih\_58, Fastidio\_60, Ibhubes\_i\_60, Demsculpinboyz\_71
- Track 52 : EleanorGeorge\_61, Blexus\_58, Scottish\_58, ShroomBoi\_62, Mova\_61, KristaRAM\_63, Gandalph\_63, MadMen\_58, Madiba\_58
- Track 53 : Moonbeam\_58

- Track 54 : Akhila\_51, MilanaBonita\_50, Whatsapiecost\_60, Hamulus\_61, Opopogo\_65, Flathead\_60
- Track 55 : Cheesepuff\_67, Mozy\_69, Doomslug\_69, Grimmer\_70, LunaBlu\_62, GigiOuiOui\_56, Girr\_58, Ruby\_56, IrishSherpFalk\_61, NewHope4\_61, Mahavrat\_58, WillSterrel\_61, Latretium\_62, Cornie\_56, Spartacus\_62, MisterCuddles\_58, Galactic\_59
- Track 56 : DotProduct\_53
- Track 57 : Radiance\_59
- Track 58 : IMpilo\_54, Juniper1\_56
- Track 59 : IMpilo\_55
- Track 60 : Fancypants\_62, BlueCrab\_60, Byougenkin\_58
- Track 61 : Marker\_62, Spikelee\_67, OldBen\_57
- Track 62 : Donkeykong\_63, Squirty\_62, Shauna1\_58
- Track 63 : Bubbles123\_56
- Track 64 : Lucia\_60
- Track 65 : Hlubikazi\_56, Mandlovu\_56, Strokeseat\_56
- Track 66 : Tchotchke\_60
- Track 67 : Krakatau\_57
- Track 68 : Topiatin\_68, Cornucopia\_62
- Track 69 : Juniper1\_59
- Track 70 : Beanstalk\_60
- Track 71 : PhesterPhotato\_60, Phalconet\_58
- Track 72 : Hades\_61
- Track 73 : Wachhund\_61
- Track 74 : Emma\_61
- Track 75 : Yoshi\_73, ThetaBob\_65
- Track 76 : Demsculpinboyz\_69
- Track 77 : LunaStella\_57, Renaud18\_64, Yoshi\_71, ThetaBob\_63, TChen\_59
- Track 78 : LunaStella\_56, Yoshi\_70, ThetaBob\_62, TChen\_58
- Track 79 : LunaStella\_59, TChen\_61
- Track 80 : Renaud18\_66
- Track 81 : Renaud18\_63

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

The start number called the most often in the published annotations is 49, it was called in 279 of the 321 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_51, Alexphander\_64, AlpineSix\_65, Amanises\_34, ArcusAngelus\_62, Ardmore\_52, Aubs\_60, Avani\_68, Batiatus\_58, Beakin\_61, Beanstalk\_60, Bedetta\_35, Bibble12\_33, BigPhil\_54, BigPhil\_55, Bipolar\_58, Blarby\_72, Blexus\_58, BlueCrab\_60, BobaPhett\_64, Bobi\_65, BodEinwohner17\_60, Boomer\_65, Brocalys\_55, Brookers\_55, Brookers\_56, Brushbloom\_62, Bubbles123\_56, Burwell21\_58, BuzzLyseyear\_66, ByChance\_52, Byougenkin\_58, Cabrinians\_61, CaptainTrips\_57, Cerasum\_54, Cerasum\_55, Che8\_63, Che8\_64, Che9d\_66, Che9d\_67, Cheesepuff\_64, Cheesepuff\_65, Cheesepuff\_67, Chevrolet\_65, Chicken\_28, Chuckly\_63, Clifton\_55, Coco12\_57, Coco12\_58, Colusalem\_33, Corium\_57, Cornie\_53, Cornie\_54, Cornie\_56, Cornucopia\_62, Crumble\_55, DLane\_55, DRBy19\_63, DaWorst\_61, DaddyRickover\_59, Daenerys\_54, Dante\_61,

DeadP\_66, Demsculpinboyz\_68, Demsculpinboyz\_69, Demsculpinboyz\_71, DillTech15\_57, DirtMcgirt\_59, DoRead\_60, DoRead\_61, Donkeykong\_63, Doomphist\_60, Doomslug\_69, Dorothy\_58, DosHalletts\_62, DotProduct\_53, DotProduct\_54, Doug\_62, Drago\_58, Eesa\_29, Eish\_64, EleanorGeorge\_61, EmiMonkey\_58, Emma\_61, Emmaloid\_61, Empress\_58, Enby\_61, Eradicator\_53, Estave1\_63, Fancypants\_62, Fastidio\_60, Filuzino\_58, Firehouse51\_61, Flathead\_60, Florinda\_71, FreddyB\_61, Fruitloop\_57, GUmbie\_58, Galactic\_59, Gandalph\_63, GigiOuiOui\_56, Girafales\_69, Girr\_58, Gorge\_64, Gravel\_33, Grimmer\_70, Hades\_61, Hamulus\_61, Harley\_61, Harley\_62, Hegedechwinu\_60, Hlubikazi\_56, IMpilo\_54, IbOuu\_59, Ibhubesi\_60, Inventum\_55, IrishSherpFalk\_61, Jabbawokkie\_74, JalFarm20\_71, JalFarm20\_72, James\_64, Jamun\_29, Jant\_62, Jant\_63, Jarcob\_60, Jennelsea\_57, Jinglebell\_65, Job42\_62, JoeyJr\_55, Juice456\_59, Juice456\_60, Juniper1\_56, Juniper1\_57, Juniper1\_59, Karhdo\_57, KendraB23\_34, Kenuha5\_57, Kersh\_62, Kimberlium\_60, Kimberlium\_61, Kimberlium\_63, KingJulian\_60, KingMidas\_59, Kingsley\_55, Kingsley\_56, Koella\_54, Krakatau\_57, KristaRAM\_63, LastJedi\_54, Latretium\_62, Leozinho\_59, Leperchaun\_52, LilMoolah\_58, LittleShirley\_59, Lizziana\_66, Llama\_65, Llij\_56, Lorde\_60, Lucia\_60, LunaBlu\_62, LunaStella\_56, LunaStella\_57, LunaStella\_59, MadMen\_58, Madiba\_58, Mahavrat\_58, Mandlovu\_56, Maravista\_61, Marker\_62, Martik\_60, Mattes\_64, Medindi\_56, Melissauren88\_58, MilanaBonita\_50, MilleniumForce\_63, MinionDave\_59, Minnie\_63, MisterCuddles\_58, Modragons\_64, Moonbeam\_58, Mova\_61, Mozy\_69, Ms6\_55, MulchExplorer\_60, MulchExplorer\_61, MulchExplorer\_63, Mutaforma13\_64, Mwanjiwa\_66, NewHope4\_61, Niblet\_29, Nichirin\_67, Nivrat\_56, NormanBulbieJr\_60, Ochi17\_63, OfUltron\_65, Ogoopogo\_65, Okabe\_55, Oksu\_64, OldBen\_57, OlympiaSaint\_62, Orcanus\_30, OtsoOtso\_33, Ovechkin\_57, Ovechkin\_58, OwlsT2W\_60, PHappiness\_55, PMC\_57, Pacc40\_54, PatoPoderoso\_57, Pelletreau\_33, Peridot\_61, Phalconet\_58, Phanphagia\_57, Phasih\_58, Phatniss\_58, PhesterPhotato\_60, Philus\_63, PhirstandPhine\_35, PhlipPhlop\_60, Pineda\_34, Pippy\_58, Plumbus\_62, Poenanya\_60, Polka14\_58, Polka\_32, Pollywog\_61, PopTart\_54, Priscilla\_60, QuickMath\_59, QuickMath\_60, QuickMath\_62, Quico\_68, Radiance\_59, Ramsey\_59, Renaud18\_63, Renaud18\_64, Renaud18\_66, Rialto\_66, RitaG\_55, Rita\_61, Rockne\_61, RockyHorror\_61, Royals2015\_61, Royals2015\_62, Ruby\_56, SG4\_57, Saal\_62, Sabbb\_64, Sandalphon\_61, Sarma624\_56, Sarma624\_57, Sassafras\_58, SassyB\_54, Scottish\_58, Seabastian\_65, Seagreen\_58, Seagreen\_59, Shauna1\_58, ShiLan\_59, ShowerHandel\_63, ShroomBoi\_62, SiSi\_58, SilverChicken\_70, SimranZ1\_60, Slim\_61, Soul22\_66, Sparkdehlily\_67, Spartacus\_62, Spikelee\_67, Spoonbill\_57, Squirty\_62, StAnnes\_58, Starcevich\_57, Starcevich\_58, Starcevich\_60, Strokeseat\_56, SuperGrey\_63, SwagPiggett\_65, TChen\_58, TChen\_59, TChen\_61, TDanisky\_67, Taj\_64, TaylorSipht\_30, Tchotchke\_60, ThetaBob\_62, ThetaBob\_63, ThetaBob\_65, Toad24\_32, Tootsieroll\_61, Topiatin\_65, Topiatin\_66, Topiatin\_68, Totinger\_59, Tweety\_59, UncleRicky\_59, VRedHorse\_60, Velveteen\_53, Velveteen\_54, Veteran\_57, Violac\_62, Vivum\_61, Wachhund\_61, Wee\_64, Westrich\_33, Whatsapiecost\_60, Whouxphf\_57, WillSterrel\_61, XFactor\_58, Yorick\_59, Yoshi\_70, Yoshi\_71, Yoshi\_73, Zapner\_73, Zerg\_60, Zixiang\_29, Zizzle\_64,

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

- Hawkeye\_86, IMpilo\_55,

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

- Archis\_54, Barco\_49, Begonia\_49, BiggityBass\_47, BirdsNest\_93, BlingBling\_48, BlueNGold\_128, Boopy\_129, CaptainKirk2\_51, Coldpizza\_48, Delian\_54,

DirtyBoi\_56, Dmitri\_53, Fenry\_49, Forza\_129, Guacamole\_48, Hashim76\_90, Hedwig\_57, Hitter\_51, Jalammah\_54, JasperJr\_48, LittleMinkey\_96, Lysidious\_52, Malachai\_49, MalagasyRose\_65, Mareelih\_127, Melba\_50, Mellie\_49, MintFen\_51, Moonflower\_54, Phrappuccino\_165, RayTheFireFly\_61, RedWattleHog\_91, Samba\_50, Settecandela\_165, Sour\_51, Squiddly\_84, Stormageddon\_88, Thonko\_86, Utz\_44, Wisp\_50, Zarbodnamra\_50, Zenteno07\_93, ZiggyZoo\_51, Zilla\_50,

### Summary by start number:

#### Start 17:

- Found in 4 of 364 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 4 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueNGold\_128 (DS), Boopy\_129 (DS), Forza\_129 (DS), Mareelih\_127 (DS),

#### Start 32:

- Found in 1 of 364 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BiggityBass\_47 (DR),

#### Start 33:

- Found in 1 of 364 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Coldpizza\_48 (DR),

#### Start 37:

- Found in 4 of 364 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 3 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdsNest\_93 (B13), Hashim76\_90 (B13), LittleMinkey\_96 (B13), Zenteno07\_93 (B13),

#### Start 41:

- Found in 1 of 364 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sour\_51 (DR),

#### Start 43:

- Found in 1 of 364 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Thonko\_86 (B8),

#### Start 44:

- Found in 1 of 364 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mellie\_49 (CV),

Start 45:

- Found in 28 of 364 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 23 of 321
- Called 92.9% of time when present
- Phage (with cluster) where this start called: Archis\_54 (CV), Barco\_49 (CV), Begonia\_49 (CV), BlingBling\_48 (CV), CaptainKirk2\_51 (CV), Delian\_54 (CV), DirtyBoi\_56 (DB), Dmitri\_53 (DB), Fenry\_49 (CV), Guacamole\_48 (CV), Hedwig\_57 (DB), Hitter\_51 (CV), Jalammah\_54 (CV), JasperJr\_48 (CV), Lysidious\_52 (CV), Malachai\_49 (CV), Melba\_50 (CV), MintFen\_51 (CV), Moonflower\_54 (DB), RayTheFireFly\_61 (DB), Samba\_50 (CV), Utz\_44 (CV), Wisp\_50 (CV), Zarbodnamra\_50 (CV), ZiggyZoo\_51 (CV), Zilla\_50 (CV),

Start 47:

- Found in 1 of 364 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Squiddly\_84 (DN2),

Start 48:

- Found in 2 of 364 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RedWattleHog\_91 (DX), Stormageddon\_88 (DX),

Start 49:

- Found in 319 of 364 ( 87.6% ) of genes in pham
- Manual Annotations of this start: 279 of 321
- Called 99.4% of time when present
- Phage (with cluster) where this start called: Akhila\_51 (F1), Alexphander\_64 (F1), AlpineSix\_65 (F1), Amanises\_34 (AS1), ArcusAngelus\_62 (F1), Ardmore\_52 (F1), Aubs\_60 (F1), Avani\_68 (F2), Batiatus\_58 (F1), Beakin\_61 (F1), Beanstalk\_60 (F1), Bedetta\_35 (AS2), Bibble12\_33 (AS2), BigPhil\_54 (F1), BigPhil\_55 (F1), Bipolar\_58 (F1), Blarby\_72 (F), Blexus\_58 (F1), BlueCrab\_60 (F1), BobaPhett\_64 (F1), Bobi\_65 (F1), BodEinwohner17\_60 (F1), Boomer\_65 (F1), Brocalys\_55 (F1), Brookers\_55 (F1), Brookers\_56 (F1), Brushbloom\_62 (F1), Bubbles123\_56 (F1), Burwell21\_58 (F1), BuzzLyseyear\_66 (F1), ByChance\_52 (F1), Byougenkin\_58 (F1), Cabrinians\_61 (F1), CaptainTrips\_57 (F1), Cerasum\_54 (F1), Cerasum\_55 (F1), Che8\_63 (F1), Che8\_64 (F1), Che9d\_66 (F2), Che9d\_67 (F2), Cheesepuff\_64 (F1), Cheesepuff\_65 (F1), Cheesepuff\_67 (F1), Chevrolet\_65 (F1), Chicken\_28 (AS1), Chuckly\_63 (F1), Clifton\_55 (F1), Coco12\_57 (F1), Coco12\_58 (F1), Colusalem\_33 (AS2), Corium\_57 (F1), Cornie\_53 (F5), Cornie\_54 (F5), Cornie\_56 (F5), Cornucopia\_62 (F1), Crumble\_55 (F1), DLane\_55 (F1), DRBy19\_63 (F1), DaWorst\_61 (F1), DaddyRickover\_59 (F1), Daenerys\_54 (F1), Dante\_61 (F1), DeadP\_66 (F1), Demsculpinboyz\_68 (F2), Demsculpinboyz\_69 (F2), Demsculpinboyz\_71 (F2), DillTech15\_57 (F1), DirtMcgirt\_59 (F1), DoRead\_60 (F1), DoRead\_61 (F1), Donkeykong\_63 (F1), Doomphist\_60 (F1), Doomslug\_69 (F), Dorothy\_58 (F1), DosHalletts\_62 (F1), DotProduct\_53 (F1), DotProduct\_54 (F1), Doug\_62 (F1), Drago\_58 (F1), Eesa\_29 (AS1), Eish\_64 (F1), EleanorGeorge\_61 (F1), EmiMonkey\_58 (F1), Emma\_61 (F1), Emmaloid\_61 (F1), Empress\_58 (F1), Enby\_61 (F1), Eradicator\_53 (F1), Estave1\_63 (F1), Fancypants\_62 (F1), Fastidio\_60 (F1), Filuzino\_58 (F1), Firehouse51\_61 (F1), Flathead\_60 (F1), Florinda\_71 (F1),

FreddyB\_61 (F1), Fruitloop\_57 (F1), GUmbie\_58 (F1), Galactic\_59 (F1), Gandolph\_63 (F1), GigiOuiOui\_56 (F1), Girafales\_69 (F1), Girr\_58 (F1), Gorge\_64 (F1), Gravel\_33 (AS1), Grimmer\_70 (F1), Hades\_61 (F1), Hamulus\_61 (F1), Harley\_61 (F1), Harley\_62 (F1), Hegedechwinu\_60 (F1), Hlubikazi\_56 (F1), IMpilo\_54 (F1), IbOuu\_59 (F1), Ibhubesi\_60 (F1), Inventum\_55 (F1), IrishSherpFalk\_61 (F1), Jabbawokkie\_74 (F2), JalFarm20\_71 (F1), JalFarm20\_72 (F1), James\_64 (F1), Jamun\_29 (AS1), Jant\_62 (F1), Jant\_63 (F1), Jacob\_60 (F1), Jennelsea\_57 (F1), Jinglebell\_65 (F1), Job42\_62 (F1), JoeyJr\_55 (F1), Juice456\_59 (F1), Juice456\_60 (F1), Juniper1\_56 (F1), Juniper1\_57 (F1), Juniper1\_59 (F1), Karhdo\_57 (F1), KendraB23\_34 (AS1), Kenuha5\_57 (F1), Kersh\_62 (F1), Kimberlium\_60 (F1), Kimberlium\_61 (F1), Kimberlium\_63 (F1), KingJulian\_60 (F1), KingMidas\_59 (F1), Kingsley\_55 (F1), Kingsley\_56 (F1), Koella\_54 (F1), Krakatau\_57 (F1), KristaRAM\_63 (F1), LastJedi\_54 (F1), Latretium\_62 (F1), Leozinho\_59 (F1), Leperchaun\_52 (F1), LilMoolah\_58 (F1), LittleShirley\_59 (F1), Lizziana\_66 (F1), Llama\_65 (F1), Llij\_56 (F1), Lorde\_60 (F1), Lucia\_60 (F1), LunaBlu\_62 (F1), LunaStella\_56 (F4), LunaStella\_57 (F4), LunaStella\_59 (F4), MadMen\_58 (F1), Madiba\_58 (F1), Mahavrat\_58 (F1), Mandlovu\_56 (F1), Maravista\_61 (F1), Marker\_62 (F1), Martik\_60 (F1), Mattes\_64 (F1), Medindi\_56 (F1), Melissauren88\_58 (F1), MilanaBonita\_50 (F1), MilleniumForce\_63 (F1), MinionDave\_59 (F1), Minnie\_63 (F1), MisterCuddles\_58 (F1), Modragons\_64 (F1), Moonbeam\_58 (F1), Mova\_61 (F1), Mozy\_69 (F1), Ms6\_55 (F1), MulchExplorer\_60 (F1), MulchExplorer\_61 (F1), MulchExplorer\_63 (F1), Mutaforma13\_64 (F1), Mwanjiwa\_66 (F1), NewHope4\_61 (F1), Niblet\_29 (AS1), Nichirin\_67 (F1), Nivrat\_56 (F1), NormanBulbieJr\_60 (F1), Ochi17\_63 (F1), OfUltron\_65 (F1), Ogopogo\_65 (F1), Okabe\_55 (F8), Oksu\_64 (F1), OldBen\_57 (F1), OlympiaSaint\_62 (F1), Orcanus\_30 (AS1), OtsoOtso\_33 (AS2), Ovechkin\_57 (F1), Ovechkin\_58 (F1), OwlsT2W\_60 (F1), PHappiness\_55 (F1), PMC\_57 (F1), Pacc40\_54 (F1), PatoPoderoso\_57 (F1), Pelletreau\_33 (AS1), Peridot\_61 (F1), Phalconet\_58 (F1), Phanphagia\_57 (F1), Phasih\_58 (F1), Phatniss\_58 (F1), PhesterPotato\_60 (F1), Philus\_63 (F1), PhirstandPhine\_35 (AS2), PhilipPhlop\_60 (F1), Pineda\_34 (AS2), Pippy\_58 (F1), Plumbus\_62 (F1), Poenanya\_60 (F1), Polka14\_58 (F1), Polka\_32 (AS2), Pollywog\_61 (F1), PopTart\_54 (F1), Priscilla\_60 (F1), QuickMath\_59 (F1), QuickMath\_60 (F1), QuickMath\_62 (F1), Quico\_68 (F1), Radiance\_59 (F1), Ramsey\_59 (F1), Renaud18\_63 (F4), Renaud18\_64 (F4), Renaud18\_66 (F4), Rialto\_66 (F1), RitaG\_55 (F1), Rita\_61 (F1), Rockne\_61 (F1), RockyHorror\_61 (F1), Royals2015\_61 (F1), Royals2015\_62 (F1), Ruby\_56 (F1), SG4\_57 (F1), Saal\_62 (F1), Sabbb\_64 (F1), Sandalphon\_61 (F1), Sarma624\_56 (F1), Sarma624\_57 (F1), Sassafras\_58 (F1), SassyB\_54 (F1), Scottish\_58 (F1), Seabastian\_65 (F1), Seagreen\_58 (F1), Seagreen\_59 (F1), Shauna1\_58 (F1), ShiLan\_59 (F1), ShowerHandel\_63 (F1), ShroomBoi\_62 (F1), SiSi\_58 (F1), SilverChicken\_70 (F2), SimranZ1\_60 (F1), Slim\_61 (F1), Soul22\_66 (F2), Sparkdehlily\_67 (F1), Spartacus\_62 (F1), Spikelee\_67 (F1), Spoonbill\_57 (F1), Squirty\_62 (F3), StAnnes\_58 (F1), Starcevic\_57 (F1), Starcevic\_58 (F1), Starcevic\_60 (F1), Strokeseat\_56 (F1), SuperGrey\_63 (F1), SwagPiggett\_65 (F1), TChen\_58 (F4), TChen\_59 (F4), TChen\_61 (F4), TDanisky\_67 (F1), Taj\_64 (F1), TaylorSipt\_30 (AS1), Tchotchke\_60 (F1), ThetaBob\_62 (F4), ThetaBob\_63 (F4), ThetaBob\_65 (F4), Toad24\_32 (AS1), Tootsieroll\_61 (F1), Topiatin\_65 (F1), Topiatin\_66 (F1), Topiatin\_68 (F1), Totinger\_59 (F1), Tweety\_59 (F1), UncleRicky\_59 (F1), VRedHorse\_60 (F1), Velveteen\_53 (F1), Velveteen\_54 (F1), Veteran\_57 (F1), Violac\_62 (F1), Vivum\_61 (F1), Wachhund\_61 (F1), Wee\_64 (F1), Westrich\_33 (AS1), Whatsapiecost\_60 (F1), Whouxphf\_57 (F1), WillSterrel\_61 (F1), XFactor\_58 (F1), Yorick\_59 (F1), Yoshi\_70 (F2), Yoshi\_71 (F2), Yoshi\_73 (F2), Zapner\_73 (F2), Zerg\_60 (F1), Zixiang\_29 (AS1), Zizzle\_64 (F1),

Start 51:

- Found in 1 of 364 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hawkeye\_86 (D2),

Start 52:

- Found in 2 of 364 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phrappuccino\_165 (AA), Settecandela\_165 (AA),

Start 54:

- Found in 2 of 364 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MalagasyRose\_65 (AG),

Start 58:

- Found in 293 of 364 ( 80.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.3% of time when present
- Phage (with cluster) where this start called: IMpilo\_55 (F1),

**Summary by clusters:**

There are 20 clusters represented in this pham: AA, F1, F2, F3, F4, F5, AG, AS2, F8, D2, F, DB, AS1, DS, B13, DX, DN2, DR, CV, B8,

Info for manual annotations of cluster AA:

- Start number 52 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AG:

- Start number 54 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster AS1:

- Start number 49 was manually annotated 5 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 49 was manually annotated 3 times for cluster AS2.

Info for manual annotations of cluster B13:

- Start number 37 was manually annotated 3 times for cluster B13.

Info for manual annotations of cluster B8:

- Start number 43 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster CV:

- Start number 44 was manually annotated 1 time for cluster CV.
- Start number 45 was manually annotated 19 times for cluster CV.

Info for manual annotations of cluster D2:

- Start number 51 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DB:

- Start number 45 was manually annotated 4 times for cluster DB.

Info for manual annotations of cluster DN2:

- Start number 47 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DR:

- Start number 32 was manually annotated 1 time for cluster DR.
- Start number 33 was manually annotated 1 time for cluster DR.
- Start number 41 was manually annotated 1 time for cluster DR.

Info for manual annotations of cluster DS:

- Start number 17 was manually annotated 4 times for cluster DS.

Info for manual annotations of cluster DX:

- Start number 48 was manually annotated 2 times for cluster DX.

Info for manual annotations of cluster F1:

- Start number 49 was manually annotated 243 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 49 was manually annotated 12 times for cluster F2.

Info for manual annotations of cluster F3:

- Start number 49 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 49 was manually annotated 12 times for cluster F4.

Info for manual annotations of cluster F5:

- Start number 49 was manually annotated 3 times for cluster F5.

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

Gene: Akhila\_51 Start: 36387, Stop: 36752, Start Num: 49

Candidate Starts for Akhila\_51:

(Start: 49 @36387 has 279 MA's), (58, 36420), (60, 36426), (64, 36438), (70, 36480), (75, 36510), (78, 36534), (79, 36537), (91, 36636), (92, 36642), (105, 36717), (106, 36720), (108, 36723),

Gene: Alexphander\_64 Start: 40703, Stop: 41068, Start Num: 49

Candidate Starts for Alexphander\_64:

(Start: 49 @40703 has 279 MA's), (58, 40736), (63, 40751), (64, 40754), (69, 40793), (70, 40796), (73, 40817), (78, 40850), (84, 40877), (89, 40910), (91, 40952), (92, 40958), (113, 41054),

Gene: AlpineSix\_65 Start: 42816, Stop: 43181, Start Num: 49

Candidate Starts for AlpineSix\_65:

(Start: 49 @42816 has 279 MA's), (58, 42849), (63, 42864), (64, 42867), (69, 42906), (70, 42909), (73, 42930), (78, 42963), (84, 42990), (89, 43023), (91, 43065), (92, 43071), (113, 43167),

Gene: Amanises\_34 Start: 22613, Stop: 22260, Start Num: 49

Candidate Starts for Amanises\_34:

(Start: 49 @22613 has 279 MA's), (71, 22514), (106, 22277),

Gene: Archis\_54 Start: 35570, Stop: 35932, Start Num: 45

Candidate Starts for Archis\_54:

(18, 35426), (20, 35462), (28, 35501), (Start: 45 @35570 has 23 MA's), (74, 35699), (78, 35723),

Gene: ArcusAngelus\_62 Start: 40946, Stop: 41311, Start Num: 49

Candidate Starts for ArcusAngelus\_62:

(Start: 49 @40946 has 279 MA's), (58, 40979), (60, 40985), (64, 40997), (70, 41039), (75, 41069), (78, 41093), (79, 41096), (91, 41195), (92, 41201), (105, 41276),

Gene: Ardmore\_52 Start: 38473, Stop: 38838, Start Num: 49

Candidate Starts for Ardmore\_52:

(Start: 49 @38473 has 279 MA's), (58, 38506), (60, 38512), (64, 38524), (70, 38566), (75, 38596), (78, 38620), (79, 38623), (91, 38722), (92, 38728), (105, 38803),

Gene: Aubs\_60 Start: 40637, Stop: 41002, Start Num: 49

Candidate Starts for Aubs\_60:

(Start: 49 @40637 has 279 MA's), (58, 40670), (60, 40676), (64, 40688), (75, 40760), (78, 40784), (79, 40787), (84, 40811), (91, 40886), (92, 40892), (105, 40967),

Gene: Avani\_68 Start: 41015, Stop: 41380, Start Num: 49

Candidate Starts for Avani\_68:

(Start: 49 @41015 has 279 MA's), (58, 41048), (63, 41063), (64, 41066), (69, 41105), (70, 41108), (73, 41129), (78, 41162), (83, 41183), (84, 41189), (89, 41222), (91, 41264), (92, 41270), (113, 41366),

Gene: Barco\_49 Start: 34620, Stop: 34982, Start Num: 45

Candidate Starts for Barco\_49:

(18, 34476), (20, 34512), (28, 34551), (Start: 45 @34620 has 23 MA's), (74, 34749), (78, 34773),

Gene: Batiatus\_58 Start: 40347, Stop: 40712, Start Num: 49

Candidate Starts for Batiatus\_58:

(Start: 49 @40347 has 279 MA's), (58, 40380), (60, 40386), (64, 40398), (75, 40470), (78, 40494), (79, 40497), (84, 40521), (91, 40596), (92, 40602), (105, 40677),

Gene: Beakin\_61 Start: 39476, Stop: 39841, Start Num: 49

Candidate Starts for Beakin\_61:

(Start: 49 @39476 has 279 MA's), (58, 39509), (60, 39515), (64, 39527), (70, 39569), (75, 39599), (78, 39623), (79, 39626), (91, 39725), (92, 39731), (105, 39806),

Gene: Beanstalk\_60 Start: 39020, Stop: 39385, Start Num: 49

Candidate Starts for Beanstalk\_60:

(Start: 49 @39020 has 279 MA's), (58, 39053), (63, 39068), (64, 39071), (70, 39113), (73, 39134), (78, 39167), (83, 39188), (84, 39194), (89, 39227), (92, 39275), (113, 39371),

Gene: Bedetta\_35 Start: 22003, Stop: 21653, Start Num: 49

Candidate Starts for Bedetta\_35:

(2, 22510), (6, 22327), (14, 22186), (21, 22093), (Start: 49 @22003 has 279 MA's), (106, 21670),

Gene: Begonia\_49 Start: 37159, Stop: 37521, Start Num: 45

Candidate Starts for Begonia\_49:

(28, 37090), (Start: 45 @37159 has 23 MA's), (68, 37258), (73, 37285), (74, 37288), (78, 37312), (111, 37507),

Gene: Bible12\_33 Start: 21861, Stop: 21511, Start Num: 49

Candidate Starts for Bible12\_33:

(6, 22185), (14, 22044), (21, 21951), (Start: 49 @21861 has 279 MA's), (106, 21528),

Gene: BigPhil\_54 Start: 35652, Stop: 35999, Start Num: 49

Candidate Starts for BigPhil\_54:

(42, 35625), (46, 35643), (Start: 49 @35652 has 279 MA's), (58, 35682), (61, 35691), (65, 35709), (73, 35763), (78, 35790), (89, 35847), (90, 35877), (91, 35889),

Gene: BigPhil\_55 Start: 35996, Stop: 36349, Start Num: 49

Candidate Starts for BigPhil\_55:

(38, 35960), (Start: 49 @35996 has 279 MA's), (57, 36026), (58, 36029), (62, 36041), (64, 36047), (73, 36110), (75, 36119), (76, 36125), (91, 36239), (94, 36260), (104, 36317), (109, 36329),

Gene: BiggityBass\_47 Start: 42936, Stop: 42535, Start Num: 32

Candidate Starts for BiggityBass\_47:

(Start: 32 @42936 has 1 MA's), (59, 42849), (72, 42786), (74, 42774), (91, 42651),

Gene: Bipolar\_58 Start: 40097, Stop: 40462, Start Num: 49

Candidate Starts for Bipolar\_58:

(Start: 49 @40097 has 279 MA's), (58, 40130), (61, 40139), (64, 40148), (70, 40190), (75, 40220), (78, 40244), (79, 40247), (91, 40346), (92, 40352), (105, 40427),

Gene: BirdsNest\_93 Start: 66573, Stop: 66154, Start Num: 37

Candidate Starts for BirdsNest\_93:

(Start: 37 @66573 has 3 MA's), (61, 66492), (84, 66363), (89, 66330), (95, 66255),

Gene: Blarby\_72 Start: 42116, Stop: 42481, Start Num: 49

Candidate Starts for Blarby\_72:

(Start: 49 @42116 has 279 MA's), (58, 42149), (63, 42164), (64, 42167), (69, 42206), (70, 42209), (73, 42230), (78, 42263), (84, 42290), (89, 42323), (91, 42365), (92, 42371), (113, 42467),

Gene: Blexus\_58 Start: 40670, Stop: 41035, Start Num: 49

Candidate Starts for Blexus\_58:

(Start: 49 @40670 has 279 MA's), (58, 40703), (63, 40718), (64, 40721), (70, 40763), (73, 40784), (78, 40817), (84, 40844), (89, 40877), (91, 40919), (92, 40925), (113, 41021),

Gene: BlingBling\_48 Start: 35583, Stop: 35945, Start Num: 45

Candidate Starts for BlingBling\_48:

(18, 35439), (20, 35475), (28, 35514), (Start: 45 @35583 has 23 MA's), (74, 35712), (78, 35736),

Gene: BlueCrab\_60 Start: 40975, Stop: 41340, Start Num: 49

Candidate Starts for BlueCrab\_60:

(Start: 49 @40975 has 279 MA's), (58, 41008), (63, 41023), (64, 41026), (70, 41068), (73, 41089), (83, 41143), (84, 41149), (89, 41182), (91, 41224), (92, 41230), (113, 41326),

Gene: BlueNGold\_128 Start: 82923, Stop: 82429, Start Num: 17

Candidate Starts for BlueNGold\_128:

(Start: 17 @82923 has 4 MA's), (22, 82854), (25, 82848), (31, 82833), (36, 82800), (74, 82638), (84, 82593), (96, 82476), (98, 82470), (103, 82440),

Gene: BobaPhett\_64 Start: 42932, Stop: 43297, Start Num: 49

Candidate Starts for BobaPhett\_64:

(Start: 49 @42932 has 279 MA's), (58, 42965), (63, 42980), (64, 42983), (69, 43022), (70, 43025), (73, 43046), (78, 43079), (84, 43106), (89, 43139), (91, 43181), (92, 43187), (113, 43283),

Gene: Bobi\_65 Start: 41950, Stop: 42315, Start Num: 49

Candidate Starts for Bobi\_65:

(Start: 49 @41950 has 279 MA's), (58, 41983), (60, 41989), (64, 42001), (70, 42043), (75, 42073), (78, 42097), (79, 42100), (91, 42199), (92, 42205), (105, 42280),

Gene: BodEinwohner17\_60 Start: 39737, Stop: 40102, Start Num: 49

Candidate Starts for BodEinwohner17\_60:

(Start: 49 @39737 has 279 MA's), (58, 39770), (63, 39785), (64, 39788), (70, 39830), (73, 39851), (78, 39884), (83, 39905), (84, 39911), (89, 39944), (91, 39986), (92, 39992), (113, 40088),

Gene: Boomer\_65 Start: 42607, Stop: 42972, Start Num: 49

Candidate Starts for Boomer\_65:

(Start: 49 @42607 has 279 MA's), (58, 42640), (63, 42655), (64, 42658), (69, 42697), (70, 42700), (73, 42721), (78, 42754), (84, 42781), (89, 42814), (91, 42856), (92, 42862), (113, 42958),

Gene: Boopy\_129 Start: 82935, Stop: 82441, Start Num: 17

Candidate Starts for Boopy\_129:

(Start: 17 @82935 has 4 MA's), (22, 82866), (25, 82860), (31, 82845), (36, 82812), (74, 82650), (84, 82605), (96, 82488), (98, 82482), (103, 82452),

Gene: Brocalys\_55 Start: 37114, Stop: 37479, Start Num: 49

Candidate Starts for Brocalys\_55:

(Start: 49 @37114 has 279 MA's), (58, 37147), (63, 37162), (64, 37165), (69, 37204), (70, 37207), (73, 37228), (78, 37261), (84, 37288), (89, 37321), (91, 37363), (92, 37369), (113, 37465),

Gene: Brookers\_55 Start: 38603, Stop: 38950, Start Num: 49

Candidate Starts for Brookers\_55:

(42, 38576), (46, 38594), (Start: 49 @38603 has 279 MA's), (58, 38633), (61, 38642), (65, 38660), (73, 38714), (78, 38741), (89, 38798), (90, 38828), (91, 38840),

Gene: Brookers\_56 Start: 38947, Stop: 39300, Start Num: 49

Candidate Starts for Brookers\_56:

(38, 38911), (Start: 49 @38947 has 279 MA's), (57, 38977), (58, 38980), (62, 38992), (64, 38998), (73, 39061), (75, 39070), (76, 39076), (91, 39190), (94, 39211), (104, 39268), (109, 39280),

Gene: Brushbloom\_62 Start: 41279, Stop: 41644, Start Num: 49

Candidate Starts for Brushbloom\_62:

(Start: 49 @41279 has 279 MA's), (58, 41312), (60, 41318), (64, 41330), (75, 41402), (78, 41426), (79, 41429), (84, 41453), (91, 41528), (92, 41534), (105, 41609),

Gene: Bubbles123\_56 Start: 40256, Stop: 40621, Start Num: 49

Candidate Starts for Bubbles123\_56:

(Start: 49 @40256 has 279 MA's), (58, 40289), (61, 40298), (64, 40307), (73, 40370), (78, 40403), (79, 40406), (81, 40418), (84, 40430), (91, 40505), (92, 40511), (105, 40586),

Gene: Burwell21\_58 Start: 40215, Stop: 40580, Start Num: 49

Candidate Starts for Burwell21\_58:

(Start: 49 @40215 has 279 MA's), (58, 40248), (63, 40263), (64, 40266), (69, 40305), (70, 40308), (73, 40329), (78, 40362), (84, 40389), (89, 40422), (91, 40464), (92, 40470), (113, 40566),

Gene: BuzzLyseyear\_66 Start: 41636, Stop: 42001, Start Num: 49

Candidate Starts for BuzzLyseyear\_66:

(Start: 49 @41636 has 279 MA's), (58, 41669), (63, 41684), (64, 41687), (69, 41726), (70, 41729), (73, 41750), (78, 41783), (84, 41810), (89, 41843), (91, 41885), (92, 41891), (113, 41987),

Gene: ByChance\_52 Start: 35903, Stop: 36268, Start Num: 49

Candidate Starts for ByChance\_52:

(Start: 49 @35903 has 279 MA's), (58, 35936), (63, 35951), (64, 35954), (70, 35996), (73, 36017), (78, 36050), (83, 36071), (84, 36077), (89, 36110), (91, 36152), (92, 36158), (113, 36254),

Gene: Byougenkin\_58 Start: 39979, Stop: 40344, Start Num: 49

Candidate Starts for Byougenkin\_58:

(Start: 49 @39979 has 279 MA's), (58, 40012), (63, 40027), (64, 40030), (70, 40072), (73, 40093), (83, 40147), (84, 40153), (89, 40186), (91, 40228), (92, 40234), (113, 40330),

Gene: Cabrinians\_61 Start: 40293, Stop: 40658, Start Num: 49

Candidate Starts for Cabrinians\_61:

(Start: 49 @40293 has 279 MA's), (58, 40326), (63, 40341), (64, 40344), (69, 40383), (70, 40386), (73, 40407), (78, 40440), (84, 40467), (89, 40500), (91, 40542), (92, 40548), (113, 40644),

Gene: CaptainKirk2\_51 Start: 34868, Stop: 35230, Start Num: 45

Candidate Starts for CaptainKirk2\_51:

(18, 34724), (20, 34760), (28, 34799), (Start: 45 @34868 has 23 MA's), (74, 34997), (78, 35021),

Gene: CaptainTrips\_57 Start: 39789, Stop: 40154, Start Num: 49

Candidate Starts for CaptainTrips\_57:

(Start: 49 @39789 has 279 MA's), (58, 39822), (63, 39837), (64, 39840), (69, 39879), (70, 39882), (73, 39903), (78, 39936), (84, 39963), (89, 39996), (91, 40038), (92, 40044), (113, 40140),

Gene: Cerasum\_55 Start: 36014, Stop: 36367, Start Num: 49

Candidate Starts for Cerasum\_55:

(38, 35978), (Start: 49 @36014 has 279 MA's), (57, 36044), (58, 36047), (62, 36059), (64, 36065), (73, 36128), (75, 36137), (76, 36143), (91, 36257), (94, 36278), (104, 36335), (109, 36347),

Gene: Cerasum\_54 Start: 35670, Stop: 36017, Start Num: 49

Candidate Starts for Cerasum\_54:

(42, 35643), (46, 35661), (Start: 49 @35670 has 279 MA's), (58, 35700), (61, 35709), (65, 35727), (73, 35781), (78, 35808), (89, 35865), (90, 35895), (91, 35907),

Gene: Che8\_64 Start: 42503, Stop: 42856, Start Num: 49

Candidate Starts for Che8\_64:

(38, 42467), (Start: 49 @42503 has 279 MA's), (57, 42533), (58, 42536), (62, 42548), (64, 42554), (73, 42617), (75, 42626), (76, 42632), (91, 42746), (94, 42767), (104, 42824), (109, 42836),

Gene: Che8\_63 Start: 42159, Stop: 42506, Start Num: 49

Candidate Starts for Che8\_63:

(42, 42132), (46, 42150), (Start: 49 @42159 has 279 MA's), (58, 42189), (61, 42198), (65, 42216), (73, 42270), (78, 42297), (89, 42354), (90, 42384), (91, 42396),

Gene: Che9d\_67 Start: 39585, Stop: 39938, Start Num: 49

Candidate Starts for Che9d\_67:

(38, 39549), (Start: 49 @39585 has 279 MA's), (57, 39615), (58, 39618), (62, 39630), (64, 39636), (73, 39699), (75, 39708), (76, 39714), (91, 39828), (94, 39849), (104, 39906), (109, 39918),

Gene: Che9d\_66 Start: 39241, Stop: 39588, Start Num: 49

Candidate Starts for Che9d\_66:

(42, 39214), (46, 39232), (Start: 49 @39241 has 279 MA's), (58, 39271), (61, 39280), (65, 39298), (73, 39352), (78, 39379), (89, 39436), (90, 39466), (91, 39478),

Gene: Cheesepuff\_65 Start: 41627, Stop: 41980, Start Num: 49

Candidate Starts for Cheesepuff\_65:

(38, 41591), (Start: 49 @41627 has 279 MA's), (57, 41657), (58, 41660), (62, 41672), (64, 41678), (73, 41741), (75, 41750), (76, 41756), (91, 41870), (94, 41891), (104, 41948), (109, 41960),

Gene: Cheesepuff\_64 Start: 41283, Stop: 41630, Start Num: 49

Candidate Starts for Cheesepuff\_64:

(42, 41256), (46, 41274), (Start: 49 @41283 has 279 MA's), (58, 41313), (61, 41322), (65, 41340), (73, 41394), (78, 41421), (89, 41478), (90, 41508), (91, 41520),

Gene: Cheesepuff\_67 Start: 42252, Stop: 42617, Start Num: 49

Candidate Starts for Cheesepuff\_67:

(Start: 49 @42252 has 279 MA's), (58, 42285), (63, 42300), (64, 42303), (69, 42342), (70, 42345), (73, 42366), (84, 42426), (89, 42459), (91, 42501), (92, 42507), (113, 42603),

Gene: Chevrolet\_65 Start: 40947, Stop: 41312, Start Num: 49

Candidate Starts for Chevrolet\_65:

(Start: 49 @40947 has 279 MA's), (58, 40980), (60, 40986), (64, 40998), (70, 41040), (75, 41070), (78, 41094), (79, 41097), (91, 41196), (92, 41202), (105, 41277),

Gene: Chicken\_28 Start: 22015, Stop: 21665, Start Num: 49

Candidate Starts for Chicken\_28:

(Start: 49 @22015 has 279 MA's), (71, 21916), (94, 21742), (105, 21682),

Gene: Chuckly\_63 Start: 40935, Stop: 41300, Start Num: 49

Candidate Starts for Chuckly\_63:

(Start: 49 @40935 has 279 MA's), (58, 40968), (63, 40983), (64, 40986), (69, 41025), (70, 41028), (73, 41049), (78, 41082), (84, 41109), (89, 41142), (91, 41184), (92, 41190), (113, 41286),

Gene: Clifton\_55 Start: 37465, Stop: 37830, Start Num: 49

Candidate Starts for Clifton\_55:

(Start: 49 @37465 has 279 MA's), (58, 37498), (63, 37513), (64, 37516), (69, 37555), (70, 37558), (73, 37579), (78, 37612), (84, 37639), (89, 37672), (91, 37714), (92, 37720), (113, 37816),

Gene: Coco12\_57 Start: 39727, Stop: 40074, Start Num: 49

Candidate Starts for Coco12\_57:

(42, 39700), (46, 39718), (Start: 49 @39727 has 279 MA's), (58, 39757), (61, 39766), (65, 39784), (73, 39838), (78, 39865), (89, 39922), (90, 39952), (91, 39964),

Gene: Coco12\_58 Start: 40071, Stop: 40424, Start Num: 49

Candidate Starts for Coco12\_58:

(38, 40035), (Start: 49 @40071 has 279 MA's), (57, 40101), (58, 40104), (62, 40116), (64, 40122), (73, 40185), (75, 40194), (76, 40200), (91, 40314), (94, 40335), (104, 40392), (109, 40404),

Gene: Coldpizza\_48 Start: 43898, Stop: 43461, Start Num: 33

Candidate Starts for Coldpizza\_48:

(Start: 33 @43898 has 1 MA's), (64, 43787), (66, 43772), (69, 43748), (74, 43721), (87, 43655), (91, 43598), (99, 43550), (102, 43529), (106, 43520),

Gene: Colusalem\_33 Start: 21842, Stop: 21492, Start Num: 49

Candidate Starts for Colusalem\_33:

(6, 22166), (14, 22025), (21, 21932), (Start: 49 @21842 has 279 MA's), (106, 21509),

Gene: Corium\_57 Start: 39332, Stop: 39697, Start Num: 49

Candidate Starts for Corium\_57:

(Start: 49 @39332 has 279 MA's), (58, 39365), (63, 39380), (64, 39383), (69, 39422), (70, 39425), (73, 39446), (78, 39479), (84, 39506), (89, 39539), (91, 39581), (92, 39587), (113, 39683),

Gene: Cornie\_53 Start: 37745, Stop: 38092, Start Num: 49

Candidate Starts for Cornie\_53:

(42, 37718), (46, 37736), (Start: 49 @37745 has 279 MA's), (58, 37775), (61, 37784), (65, 37802), (73, 37856), (78, 37883), (89, 37940), (90, 37970), (91, 37982),

Gene: Cornie\_56 Start: 38714, Stop: 39079, Start Num: 49

Candidate Starts for Cornie\_56:

(Start: 49 @38714 has 279 MA's), (58, 38747), (63, 38762), (64, 38765), (69, 38804), (70, 38807), (73, 38828), (84, 38888), (89, 38921), (91, 38963), (92, 38969), (113, 39065),

Gene: Cornie\_54 Start: 38089, Stop: 38442, Start Num: 49

Candidate Starts for Cornie\_54:

(38, 38053), (Start: 49 @38089 has 279 MA's), (57, 38119), (58, 38122), (62, 38134), (64, 38140), (73, 38203), (75, 38212), (76, 38218), (91, 38332), (94, 38353), (104, 38410), (109, 38422),

Gene: Cornucopia\_62 Start: 40943, Stop: 41308, Start Num: 49

Candidate Starts for Cornucopia\_62:

(Start: 49 @40943 has 279 MA's), (58, 40976), (63, 40991), (64, 40994), (69, 41033), (70, 41036), (73, 41057), (83, 41111), (84, 41117), (89, 41150), (91, 41192), (92, 41198), (113, 41294),

Gene: Crumble\_55 Start: 36229, Stop: 36594, Start Num: 49

Candidate Starts for Crumble\_55:

(Start: 49 @36229 has 279 MA's), (58, 36262), (63, 36277), (64, 36280), (69, 36319), (70, 36322), (73, 36343), (78, 36376), (84, 36403), (89, 36436), (91, 36478), (92, 36484), (113, 36580),

Gene: DLane\_55 Start: 38997, Stop: 39362, Start Num: 49

Candidate Starts for DLane\_55:

(Start: 49 @38997 has 279 MA's), (58, 39030), (60, 39036), (64, 39048), (70, 39090), (75, 39120), (78, 39144), (79, 39147), (91, 39246), (92, 39252), (105, 39327),

Gene: DRBy19\_63 Start: 41390, Stop: 41755, Start Num: 49

Candidate Starts for DRBy19\_63:

(Start: 49 @41390 has 279 MA's), (58, 41423), (63, 41438), (64, 41441), (69, 41480), (70, 41483), (73, 41504), (78, 41537), (83, 41558), (84, 41564), (89, 41597), (91, 41639), (92, 41645), (113, 41741),

Gene: DaWorst\_61 Start: 40694, Stop: 41059, Start Num: 49

Candidate Starts for DaWorst\_61:

(Start: 49 @40694 has 279 MA's), (58, 40727), (63, 40742), (64, 40745), (69, 40784), (70, 40787), (73, 40808), (78, 40841), (84, 40868), (89, 40901), (91, 40943), (92, 40949), (113, 41045),

Gene: DaddyRickover\_59 Start: 40432, Stop: 40797, Start Num: 49

Candidate Starts for DaddyRickover\_59:

(Start: 49 @40432 has 279 MA's), (58, 40465), (63, 40480), (64, 40483), (70, 40525), (73, 40546), (78, 40579), (83, 40600), (84, 40606), (89, 40639), (91, 40681), (92, 40687), (113, 40783),

Gene: Daenerys\_54 Start: 38542, Stop: 38907, Start Num: 49

Candidate Starts for Daenerys\_54:

(Start: 49 @38542 has 279 MA's), (58, 38575), (63, 38590), (64, 38593), (70, 38635), (73, 38656), (78, 38689), (83, 38710), (84, 38716), (89, 38749), (91, 38791), (92, 38797), (113, 38893),

Gene: Dante\_61 Start: 40217, Stop: 40582, Start Num: 49

Candidate Starts for Dante\_61:

(Start: 49 @40217 has 279 MA's), (58, 40250), (63, 40265), (64, 40268), (69, 40307), (70, 40310), (73, 40331), (78, 40364), (84, 40391), (89, 40424), (91, 40466), (92, 40472), (113, 40568),

Gene: DeadP\_66 Start: 42861, Stop: 43226, Start Num: 49

Candidate Starts for DeadP\_66:

(Start: 49 @42861 has 279 MA's), (58, 42894), (63, 42909), (64, 42912), (69, 42951), (70, 42954), (73, 42975), (78, 43008), (84, 43035), (89, 43068), (91, 43110), (92, 43116), (113, 43212),

Gene: Delian\_54 Start: 34866, Stop: 35228, Start Num: 45

Candidate Starts for Delian\_54:

(18, 34722), (20, 34758), (28, 34797), (Start: 45 @34866 has 23 MA's), (74, 34995), (78, 35019),

Gene: Demsculpinboyz\_69 Start: 39586, Stop: 39939, Start Num: 49

Candidate Starts for Demsculpinboyz\_69:

(38, 39550), (Start: 49 @39586 has 279 MA's), (57, 39616), (58, 39619), (62, 39631), (64, 39637), (73, 39700), (75, 39709), (76, 39715), (91, 39829), (94, 39850), (109, 39919),

Gene: Demsculpinboyz\_68 Start: 39242, Stop: 39589, Start Num: 49

Candidate Starts for Demsculpinboyz\_68:

(42, 39215), (46, 39233), (Start: 49 @39242 has 279 MA's), (58, 39272), (61, 39281), (65, 39299), (73, 39353), (78, 39380), (89, 39437), (90, 39467), (91, 39479),

Gene: Demsculpinboyz\_71 Start: 40214, Stop: 40579, Start Num: 49

Candidate Starts for Demsculpinboyz\_71:

(Start: 49 @40214 has 279 MA's), (58, 40247), (63, 40262), (64, 40265), (69, 40304), (70, 40307), (73, 40328), (84, 40388), (89, 40421), (91, 40463), (92, 40469), (102, 40538), (113, 40565),

Gene: DillTech15\_57 Start: 38876, Stop: 39241, Start Num: 49

Candidate Starts for DillTech15\_57:

(Start: 49 @38876 has 279 MA's), (58, 38909), (63, 38924), (64, 38927), (69, 38966), (70, 38969), (73, 38990), (84, 39050), (89, 39083), (91, 39125), (92, 39131), (102, 39200), (113, 39227),

Gene: DirtMcgirt\_59 Start: 38957, Stop: 39322, Start Num: 49

Candidate Starts for DirtMcgirt\_59:

(Start: 49 @38957 has 279 MA's), (58, 38990), (63, 39005), (64, 39008), (69, 39047), (70, 39050), (73, 39071), (78, 39104), (83, 39125), (84, 39131), (89, 39164), (91, 39206), (92, 39212), (113, 39308),

Gene: DirtyBoi\_56 Start: 37313, Stop: 37675, Start Num: 45

Candidate Starts for DirtyBoi\_56:

(Start: 45 @37313 has 23 MA's), (73, 37436),

Gene: Dmitri\_53 Start: 39335, Stop: 39700, Start Num: 45

Candidate Starts for Dmitri\_53:

(Start: 45 @39335 has 23 MA's), (73, 39461),

Gene: DoRead\_60 Start: 38654, Stop: 39001, Start Num: 49

Candidate Starts for DoRead\_60:

(42, 38627), (46, 38645), (Start: 49 @38654 has 279 MA's), (58, 38684), (61, 38693), (65, 38711), (73, 38765), (78, 38792), (89, 38849), (90, 38879), (91, 38891),

Gene: DoRead\_61 Start: 38998, Stop: 39351, Start Num: 49

Candidate Starts for DoRead\_61:

(38, 38962), (Start: 49 @38998 has 279 MA's), (57, 39028), (58, 39031), (62, 39043), (64, 39049), (73, 39112), (75, 39121), (76, 39127), (91, 39241), (94, 39262), (104, 39319), (109, 39331),

Gene: Donkeykong\_63 Start: 42892, Stop: 43257, Start Num: 49

Candidate Starts for Donkeykong\_63:

(Start: 49 @42892 has 279 MA's), (58, 42925), (61, 42934), (64, 42943), (78, 43039), (79, 43042), (84, 43066), (91, 43141), (92, 43147), (105, 43222),

Gene: Doomphist\_60 Start: 41387, Stop: 41752, Start Num: 49

Candidate Starts for Doomphist\_60:

(Start: 49 @41387 has 279 MA's), (58, 41420), (63, 41435), (64, 41438), (70, 41480), (73, 41501), (78, 41534), (83, 41555), (84, 41561), (89, 41594), (91, 41636), (92, 41642), (113, 41738),

Gene: Doomslug\_69 Start: 40807, Stop: 41172, Start Num: 49

Candidate Starts for Doomslug\_69:

(Start: 49 @40807 has 279 MA's), (58, 40840), (63, 40855), (64, 40858), (69, 40897), (70, 40900), (73, 40921), (84, 40981), (89, 41014), (91, 41056), (92, 41062), (113, 41158),

Gene: Dorothy\_58 Start: 39606, Stop: 39971, Start Num: 49

Candidate Starts for Dorothy\_58:

(Start: 49 @39606 has 279 MA's), (58, 39639), (63, 39654), (64, 39657), (69, 39696), (70, 39699), (73, 39720), (78, 39753), (84, 39780), (89, 39813), (91, 39855), (92, 39861), (113, 39957),

Gene: DosHalletts\_62 Start: 41742, Stop: 42107, Start Num: 49

Candidate Starts for DosHalletts\_62:

(Start: 49 @41742 has 279 MA's), (58, 41775), (63, 41790), (64, 41793), (70, 41835), (73, 41856), (78, 41889), (83, 41910), (84, 41916), (89, 41949), (91, 41991), (92, 41997), (113, 42093),

Gene: DotProduct\_53 Start: 38248, Stop: 38595, Start Num: 49

Candidate Starts for DotProduct\_53:

(42, 38221), (46, 38239), (Start: 49 @38248 has 279 MA's), (53, 38260), (55, 38263), (58, 38278), (61, 38287), (65, 38305), (73, 38359), (78, 38386), (89, 38443), (90, 38473), (91, 38485), (112, 38587),

Gene: DotProduct\_54 Start: 38592, Stop: 38945, Start Num: 49

Candidate Starts for DotProduct\_54:

(38, 38556), (Start: 49 @38592 has 279 MA's), (57, 38622), (58, 38625), (62, 38637), (64, 38643), (73, 38706), (75, 38715), (76, 38721), (91, 38835), (94, 38856), (104, 38913), (109, 38925),

Gene: Doug\_62 Start: 40960, Stop: 41325, Start Num: 49

Candidate Starts for Doug\_62:

(Start: 49 @40960 has 279 MA's), (58, 40993), (64, 41011), (69, 41050), (70, 41053), (73, 41074), (78, 41107), (84, 41134), (89, 41167), (91, 41209), (92, 41215), (113, 41311),

Gene: Drago\_58 Start: 38960, Stop: 39325, Start Num: 49

Candidate Starts for Drago\_58:

(Start: 49 @38960 has 279 MA's), (58, 38993), (63, 39008), (64, 39011), (69, 39050), (70, 39053), (73, 39074), (78, 39107), (83, 39128), (84, 39134), (89, 39167), (91, 39209), (92, 39215), (113, 39311),

Gene: Eesa\_29 Start: 22456, Stop: 22103, Start Num: 49

Candidate Starts for Eesa\_29:

(Start: 49 @22456 has 279 MA's), (71, 22357), (106, 22120),

Gene: Eish\_64 Start: 41209, Stop: 41574, Start Num: 49

Candidate Starts for Eish\_64:

(Start: 49 @41209 has 279 MA's), (58, 41242), (63, 41257), (64, 41260), (69, 41299), (70, 41302), (73, 41323), (78, 41356), (84, 41383), (89, 41416), (91, 41458), (92, 41464), (113, 41560),

Gene: EleanorGeorge\_61 Start: 41073, Stop: 41438, Start Num: 49

Candidate Starts for EleanorGeorge\_61:

(Start: 49 @41073 has 279 MA's), (58, 41106), (63, 41121), (64, 41124), (70, 41166), (73, 41187), (78, 41220), (84, 41247), (89, 41280), (91, 41322), (92, 41328), (113, 41424),

Gene: EmiMonkey\_58 Start: 41923, Stop: 42288, Start Num: 49

Candidate Starts for EmiMonkey\_58:

(Start: 49 @41923 has 279 MA's), (58, 41956), (63, 41971), (64, 41974), (69, 42013), (70, 42016), (73, 42037), (78, 42070), (84, 42097), (89, 42130), (91, 42172), (92, 42178), (113, 42274),

Gene: Emma\_61 Start: 40009, Stop: 40374, Start Num: 49

Candidate Starts for Emma\_61:

(Start: 49 @40009 has 279 MA's), (58, 40042), (64, 40060), (70, 40102), (75, 40132), (78, 40156), (79, 40159), (91, 40258), (92, 40264), (105, 40339), (106, 40342), (108, 40345),

Gene: Emmaloid\_61 Start: 41019, Stop: 41384, Start Num: 49

Candidate Starts for Emmaloid\_61:

(Start: 49 @41019 has 279 MA's), (58, 41052), (63, 41067), (64, 41070), (69, 41109), (70, 41112), (73, 41133), (78, 41166), (84, 41193), (89, 41226), (91, 41268), (92, 41274), (113, 41370),

Gene: Empress\_58 Start: 39956, Stop: 40321, Start Num: 49

Candidate Starts for Empress\_58:

(Start: 49 @39956 has 279 MA's), (58, 39989), (63, 40004), (64, 40007), (70, 40049), (73, 40070), (78, 40103), (83, 40124), (84, 40130), (89, 40163), (91, 40205), (92, 40211), (113, 40307),

Gene: Enby\_61 Start: 39236, Stop: 39601, Start Num: 49

Candidate Starts for Enby\_61:

(Start: 49 @39236 has 279 MA's), (58, 39269), (63, 39284), (64, 39287), (69, 39326), (70, 39329), (73, 39350), (78, 39383), (84, 39410), (89, 39443), (91, 39485), (92, 39491), (113, 39587),

Gene: Eradicator\_53 Start: 38486, Stop: 38851, Start Num: 49

Candidate Starts for Eradicator\_53:

(Start: 49 @38486 has 279 MA's), (58, 38519), (63, 38534), (64, 38537), (69, 38576), (70, 38579), (73, 38600), (78, 38633), (84, 38660), (89, 38693), (91, 38735), (92, 38741), (113, 38837),

Gene: Estave1\_63 Start: 41407, Stop: 41772, Start Num: 49

Candidate Starts for Estave1\_63:

(Start: 49 @41407 has 279 MA's), (58, 41440), (63, 41455), (64, 41458), (69, 41497), (70, 41500), (73, 41521), (78, 41554), (83, 41575), (84, 41581), (89, 41614), (91, 41656), (92, 41662), (113, 41758),

Gene: Fancypants\_62 Start: 40927, Stop: 41292, Start Num: 49

Candidate Starts for Fancypants\_62:

(Start: 49 @40927 has 279 MA's), (58, 40960), (63, 40975), (64, 40978), (70, 41020), (73, 41041), (83, 41095), (84, 41101), (89, 41134), (91, 41176), (92, 41182), (113, 41278),

Gene: Fastidio\_60 Start: 39023, Stop: 39388, Start Num: 49

Candidate Starts for Fastidio\_60:

(Start: 49 @39023 has 279 MA's), (58, 39056), (63, 39071), (64, 39074), (69, 39113), (70, 39116), (73, 39137), (84, 39197), (89, 39230), (91, 39272), (92, 39278), (102, 39347), (113, 39374),

Gene: Fenry\_49 Start: 36364, Stop: 36726, Start Num: 45

Candidate Starts for Fenry\_49:

(1, 35836), (7, 36049), (15, 36202), (18, 36220), (20, 36256), (28, 36295), (Start: 45 @36364 has 23 MA's), (74, 36493), (78, 36517), (111, 36712),

Gene: Filuzino\_58 Start: 39299, Stop: 39664, Start Num: 49

Candidate Starts for Filuzino\_58:

(Start: 49 @39299 has 279 MA's), (58, 39332), (60, 39338), (64, 39350), (70, 39392), (75, 39422), (78, 39446), (79, 39449), (91, 39548), (92, 39554), (105, 39629), (106, 39632),

Gene: Firehouse51\_61 Start: 43811, Stop: 44176, Start Num: 49

Candidate Starts for Firehouse51\_61:

(Start: 49 @43811 has 279 MA's), (58, 43844), (63, 43859), (64, 43862), (69, 43901), (70, 43904), (73, 43925), (78, 43958), (84, 43985), (89, 44018), (91, 44060), (92, 44066), (113, 44162),

Gene: Flathead\_60 Start: 40766, Stop: 41131, Start Num: 49

Candidate Starts for Flathead\_60:

(Start: 49 @40766 has 279 MA's), (58, 40799), (60, 40805), (64, 40817), (70, 40859), (75, 40889), (78, 40913), (79, 40916), (91, 41015), (92, 41021), (105, 41096), (106, 41099), (108, 41102),

Gene: Florinda\_71 Start: 42396, Stop: 42761, Start Num: 49

Candidate Starts for Florinda\_71:

(Start: 49 @42396 has 279 MA's), (58, 42429), (61, 42438), (64, 42447), (70, 42489), (75, 42519), (78, 42543), (79, 42546), (91, 42645), (92, 42651), (105, 42726),

Gene: Forza\_129 Start: 82851, Stop: 82357, Start Num: 17

Candidate Starts for Forza\_129:

(Start: 17 @82851 has 4 MA's), (22, 82782), (25, 82776), (31, 82761), (36, 82728), (74, 82566), (84, 82521), (96, 82404), (98, 82398), (103, 82368),

Gene: FreddyB\_61 Start: 39138, Stop: 39503, Start Num: 49

Candidate Starts for FreddyB\_61:

(Start: 49 @39138 has 279 MA's), (58, 39171), (63, 39186), (64, 39189), (69, 39228), (70, 39231), (73, 39252), (78, 39285), (84, 39312), (89, 39345), (91, 39387), (92, 39393), (113, 39489),

Gene: Fruitloop\_57 Start: 40613, Stop: 40978, Start Num: 49

Candidate Starts for Fruitloop\_57:

(Start: 49 @40613 has 279 MA's), (58, 40646), (61, 40655), (64, 40664), (70, 40706), (75, 40736), (78, 40760), (79, 40763), (91, 40862), (92, 40868), (105, 40943),

Gene: GUmbie\_58 Start: 39713, Stop: 40078, Start Num: 49

Candidate Starts for GUmbie\_58:

(Start: 49 @39713 has 279 MA's), (58, 39746), (63, 39761), (64, 39764), (69, 39803), (70, 39806), (73, 39827), (78, 39860), (84, 39887), (89, 39920), (91, 39962), (92, 39968), (113, 40064),

Gene: Galactic\_59 Start: 40176, Stop: 40541, Start Num: 49

Candidate Starts for Galactic\_59:

(Start: 49 @40176 has 279 MA's), (58, 40209), (63, 40224), (64, 40227), (69, 40266), (70, 40269), (73, 40290), (84, 40350), (89, 40383), (91, 40425), (92, 40431), (113, 40527),

Gene: Gandalph\_63 Start: 40535, Stop: 40900, Start Num: 49

Candidate Starts for Gandalph\_63:

(Start: 49 @40535 has 279 MA's), (58, 40568), (63, 40583), (64, 40586), (70, 40628), (73, 40649), (78, 40682), (84, 40709), (89, 40742), (91, 40784), (92, 40790), (113, 40886),

Gene: GigiOuiOui\_56 Start: 39153, Stop: 39518, Start Num: 49

Candidate Starts for GigiOuiOui\_56:

(Start: 49 @39153 has 279 MA's), (58, 39186), (63, 39201), (64, 39204), (69, 39243), (70, 39246), (73, 39267), (84, 39327), (89, 39360), (91, 39402), (92, 39408), (113, 39504),

Gene: Girafales\_69 Start: 42187, Stop: 42552, Start Num: 49

Candidate Starts for Girafales\_69:

(Start: 49 @42187 has 279 MA's), (58, 42220), (61, 42229), (64, 42238), (70, 42280), (75, 42310), (78, 42334), (79, 42337), (91, 42436), (92, 42442), (105, 42517),

Gene: Girr\_58 Start: 40017, Stop: 40382, Start Num: 49

Candidate Starts for Girr\_58:

(Start: 49 @40017 has 279 MA's), (58, 40050), (63, 40065), (64, 40068), (69, 40107), (70, 40110), (73, 40131), (84, 40191), (89, 40224), (91, 40266), (92, 40272), (113, 40368),

Gene: Gorge\_64 Start: 41655, Stop: 42020, Start Num: 49

Candidate Starts for Gorge\_64:

(Start: 49 @41655 has 279 MA's), (58, 41688), (63, 41703), (64, 41706), (69, 41745), (70, 41748), (73, 41769), (78, 41802), (84, 41829), (89, 41862), (91, 41904), (92, 41910), (113, 42006),

Gene: Gravel\_33 Start: 22425, Stop: 22072, Start Num: 49

Candidate Starts for Gravel\_33:

(Start: 49 @22425 has 279 MA's), (71, 22326), (106, 22089),

Gene: Grimmer\_70 Start: 41812, Stop: 42177, Start Num: 49

Candidate Starts for Grimmer\_70:

(Start: 49 @41812 has 279 MA's), (58, 41845), (63, 41860), (64, 41863), (69, 41902), (70, 41905), (73, 41926), (84, 41986), (89, 42019), (91, 42061), (92, 42067), (113, 42163),

Gene: Guacamole\_48 Start: 35005, Stop: 35367, Start Num: 45

Candidate Starts for Guacamole\_48:

(18, 34861), (20, 34897), (28, 34936), (Start: 45 @35005 has 23 MA's), (68, 35104), (73, 35131), (74, 35134), (78, 35158), (111, 35353),

Gene: Hades\_61 Start: 41111, Stop: 41476, Start Num: 49

Candidate Starts for Hades\_61:

(Start: 49 @41111 has 279 MA's), (58, 41144), (63, 41159), (64, 41162), (69, 41201), (70, 41204), (73, 41225), (78, 41258), (84, 41285), (89, 41318), (91, 41360), (92, 41366), (102, 41435), (113, 41462),

Gene: Hamulus\_61 Start: 40756, Stop: 41121, Start Num: 49

Candidate Starts for Hamulus\_61:

(Start: 49 @40756 has 279 MA's), (58, 40789), (60, 40795), (64, 40807), (70, 40849), (75, 40879), (78, 40903), (79, 40906), (91, 41005), (92, 41011), (105, 41086), (106, 41089), (108, 41092),

Gene: Harley\_62 Start: 40658, Stop: 41011, Start Num: 49

Candidate Starts for Harley\_62:

(38, 40622), (Start: 49 @40658 has 279 MA's), (57, 40688), (58, 40691), (62, 40703), (64, 40709), (73, 40772), (75, 40781), (91, 40901), (94, 40922), (104, 40979), (109, 40991),

Gene: Harley\_61 Start: 40314, Stop: 40661, Start Num: 49

Candidate Starts for Harley\_61:

(42, 40287), (46, 40305), (Start: 49 @40314 has 279 MA's), (58, 40344), (61, 40353), (65, 40371), (73, 40425), (78, 40452), (89, 40509), (90, 40539), (91, 40551),

Gene: Hashim76\_90 Start: 66062, Stop: 65649, Start Num: 37

Candidate Starts for Hashim76\_90:

(Start: 37 @66062 has 3 MA's), (61, 65981), (76, 65894), (84, 65852), (89, 65819), (95, 65744),

Gene: Hawkeye\_86 Start: 58033, Stop: 58440, Start Num: 51

Candidate Starts for Hawkeye\_86:

(30, 57952), (34, 57976), (35, 57982), (Start: 49 @58030 has 279 MA's), (Start: 51 @58033 has 1 MA's), (66, 58096), (90, 58261), (93, 58288), (94, 58294), (109, 58363), (115, 58411),

Gene: Hedwig\_57 Start: 38509, Stop: 38871, Start Num: 45

Candidate Starts for Hedwig\_57:

(4, 38158), (Start: 45 @38509 has 23 MA's), (73, 38632),

Gene: Hegedechwinu\_60 Start: 39325, Stop: 39690, Start Num: 49

Candidate Starts for Hegedechwinu\_60:

(Start: 49 @39325 has 279 MA's), (58, 39358), (63, 39373), (64, 39376), (69, 39415), (70, 39418), (73, 39439), (78, 39472), (84, 39499), (89, 39532), (91, 39574), (92, 39580), (113, 39676),

Gene: Hitter\_51 Start: 34662, Stop: 35024, Start Num: 45

Candidate Starts for Hitter\_51:

(18, 34518), (20, 34554), (28, 34593), (Start: 45 @34662 has 23 MA's), (74, 34791), (78, 34815), (111, 35010),

Gene: Hlubikazi\_56 Start: 38331, Stop: 38696, Start Num: 49

Candidate Starts for Hlubikazi\_56:

(Start: 49 @38331 has 279 MA's), (58, 38364), (63, 38379), (64, 38382), (70, 38424), (73, 38445), (78, 38478), (83, 38499), (84, 38505), (91, 38580), (92, 38586), (113, 38682),

Gene: IMpilo\_54 Start: 37409, Stop: 37756, Start Num: 49

Candidate Starts for IMpilo\_54:

(42, 37382), (46, 37400), (Start: 49 @37409 has 279 MA's), (53, 37421), (55, 37424), (58, 37439), (61, 37448), (65, 37466), (73, 37520), (78, 37547), (89, 37604), (90, 37634), (91, 37646),

Gene: IMpilo\_55 Start: 37786, Stop: 38106, Start Num: 58

Candidate Starts for IMpilo\_55:

(38, 37717), (Start: 49 @37753 has 279 MA's), (57, 37783), (58, 37786), (62, 37798), (64, 37804), (73, 37867), (75, 37876), (76, 37882), (91, 37996), (94, 38017), (104, 38074), (109, 38086),

Gene: IbOuu\_59 Start: 40693, Stop: 41058, Start Num: 49

Candidate Starts for IbOuu\_59:

(Start: 49 @40693 has 279 MA's), (58, 40726), (63, 40741), (64, 40744), (69, 40783), (70, 40786), (73, 40807), (78, 40840), (84, 40867), (89, 40900), (91, 40942), (92, 40948), (113, 41044),

Gene: Ibhubesi\_60 Start: 40300, Stop: 40665, Start Num: 49

Candidate Starts for Ibhubesi\_60:

(Start: 49 @40300 has 279 MA's), (58, 40333), (63, 40348), (64, 40351), (69, 40390), (70, 40393), (73, 40414), (84, 40474), (89, 40507), (91, 40549), (92, 40555), (102, 40624), (113, 40651),

Gene: Inventum\_55 Start: 39804, Stop: 40169, Start Num: 49

Candidate Starts for Inventum\_55:

(Start: 49 @39804 has 279 MA's), (58, 39837), (63, 39852), (64, 39855), (69, 39894), (70, 39897), (73, 39918), (78, 39951), (84, 39978), (89, 40011), (91, 40053), (92, 40059), (113, 40155),

Gene: IrishSherpFalk\_61 Start: 41968, Stop: 42333, Start Num: 49

Candidate Starts for IrishSherpFalk\_61:

(Start: 49 @41968 has 279 MA's), (58, 42001), (63, 42016), (64, 42019), (69, 42058), (70, 42061), (73, 42082), (84, 42142), (89, 42175), (91, 42217), (92, 42223), (113, 42319),

Gene: Jabbawokkie\_74 Start: 42036, Stop: 42401, Start Num: 49

Candidate Starts for Jabbawokkie\_74:

(Start: 49 @42036 has 279 MA's), (58, 42069), (63, 42084), (64, 42087), (69, 42126), (70, 42129), (73, 42150), (78, 42183), (84, 42210), (89, 42243), (91, 42285), (92, 42291), (113, 42387),

Gene: JalFarm20\_71 Start: 43462, Stop: 43809, Start Num: 49

Candidate Starts for JalFarm20\_71:

(42, 43435), (46, 43453), (Start: 49 @43462 has 279 MA's), (58, 43492), (61, 43501), (65, 43519), (73, 43573), (78, 43600), (89, 43657), (90, 43687), (91, 43699),

Gene: JalFarm20\_72 Start: 43806, Stop: 44159, Start Num: 49

Candidate Starts for JalFarm20\_72:

(38, 43770), (Start: 49 @43806 has 279 MA's), (57, 43836), (58, 43839), (62, 43851), (64, 43857), (73, 43920), (75, 43929), (76, 43935), (91, 44049), (94, 44070), (104, 44127), (109, 44139),

Gene: Jalammah\_54 Start: 37665, Stop: 38027, Start Num: 45

Candidate Starts for Jalammah\_54:

(18, 37521), (20, 37557), (28, 37596), (Start: 45 @37665 has 23 MA's), (74, 37794), (78, 37818), (111, 38013),

Gene: James\_64 Start: 41780, Stop: 42145, Start Num: 49

Candidate Starts for James\_64:

(Start: 49 @41780 has 279 MA's), (58, 41813), (63, 41828), (64, 41831), (69, 41870), (70, 41873), (73, 41894), (78, 41927), (84, 41954), (89, 41987), (91, 42029), (92, 42035), (113, 42131),

Gene: Jamun\_29 Start: 21575, Stop: 21234, Start Num: 49

Candidate Starts for Jamun\_29:

(Start: 49 @21575 has 279 MA's), (71, 21482), (94, 21311), (105, 21251), (106, 21248),

Gene: Jant\_62 Start: 41040, Stop: 41387, Start Num: 49

Candidate Starts for Jant\_62:

(42, 41013), (46, 41031), (Start: 49 @41040 has 279 MA's), (58, 41070), (61, 41079), (65, 41097), (73, 41151), (78, 41178), (89, 41235), (90, 41265), (91, 41277),

Gene: Jant\_63 Start: 41384, Stop: 41737, Start Num: 49

Candidate Starts for Jant\_63:

(38, 41348), (Start: 49 @41384 has 279 MA's), (57, 41414), (58, 41417), (62, 41429), (64, 41435), (73, 41498), (75, 41507), (76, 41513), (91, 41627), (94, 41648), (104, 41705), (109, 41717),

Gene: Jarcob\_60 Start: 40261, Stop: 40626, Start Num: 49

Candidate Starts for Jarcob\_60:

(Start: 49 @40261 has 279 MA's), (58, 40294), (63, 40309), (64, 40312), (69, 40351), (70, 40354), (73, 40375), (78, 40408), (83, 40429), (84, 40435), (89, 40468), (91, 40510), (92, 40516), (113, 40612),

Gene: JasperJr\_48 Start: 35005, Stop: 35367, Start Num: 45

Candidate Starts for JasperJr\_48:

(18, 34861), (20, 34897), (28, 34936), (Start: 45 @35005 has 23 MA's), (68, 35104), (73, 35131), (74, 35134), (78, 35158), (111, 35353),

Gene: Jennelsea\_57 Start: 38940, Stop: 39305, Start Num: 49

Candidate Starts for Jennelsea\_57:

(Start: 49 @38940 has 279 MA's), (58, 38973), (63, 38988), (64, 38991), (69, 39030), (70, 39033), (73, 39054), (78, 39087), (83, 39108), (84, 39114), (89, 39147), (91, 39189), (92, 39195), (113, 39291),

Gene: Jinglebell\_65 Start: 42815, Stop: 43180, Start Num: 49

Candidate Starts for Jinglebell\_65:

(Start: 49 @42815 has 279 MA's), (58, 42848), (63, 42863), (64, 42866), (69, 42905), (70, 42908), (73, 42929), (78, 42962), (84, 42989), (89, 43022), (91, 43064), (92, 43070), (113, 43166),

Gene: Job42\_62 Start: 42198, Stop: 42563, Start Num: 49

Candidate Starts for Job42\_62:

(Start: 49 @42198 has 279 MA's), (58, 42231), (63, 42246), (64, 42249), (69, 42288), (70, 42291), (73, 42312), (78, 42345), (83, 42366), (84, 42372), (89, 42405), (91, 42447), (92, 42453), (113, 42549),

Gene: JoeyJr\_55 Start: 38710, Stop: 39075, Start Num: 49

Candidate Starts for JoeyJr\_55:

(Start: 49 @38710 has 279 MA's), (58, 38743), (63, 38758), (64, 38761), (70, 38803), (73, 38824), (78, 38857), (83, 38878), (84, 38884), (89, 38917), (91, 38959), (92, 38965), (113, 39061),

Gene: Juice456\_60 Start: 41762, Stop: 42115, Start Num: 49

Candidate Starts for Juice456\_60:

(38, 41726), (Start: 49 @41762 has 279 MA's), (57, 41792), (58, 41795), (62, 41807), (64, 41813), (73, 41876), (75, 41885), (76, 41891), (91, 42005), (94, 42026), (104, 42083), (109, 42095),

Gene: Juice456\_59 Start: 41418, Stop: 41765, Start Num: 49

Candidate Starts for Juice456\_59:

(42, 41391), (46, 41409), (Start: 49 @41418 has 279 MA's), (58, 41448), (61, 41457), (65, 41475), (73, 41529), (78, 41556), (89, 41613), (90, 41643), (91, 41655),

Gene: Juniper1\_59 Start: 40443, Stop: 40808, Start Num: 49

Candidate Starts for Juniper1\_59:

(5, 40104), (8, 40122), (11, 40221), (12, 40230), (24, 40347), (27, 40353), (29, 40356), (Start: 49 @40443 has 279 MA's), (58, 40476), (61, 40485), (64, 40494), (73, 40557), (75, 40566), (79, 40593), (81, 40605), (84, 40617), (92, 40698), (104, 40770), (105, 40773),

Gene: Juniper1\_56 Start: 39354, Stop: 39701, Start Num: 49

Candidate Starts for Juniper1\_56:

(42, 39327), (46, 39345), (Start: 49 @39354 has 279 MA's), (53, 39366), (55, 39369), (58, 39384), (61, 39393), (65, 39411), (73, 39465), (78, 39492), (89, 39549), (90, 39579), (91, 39591),

Gene: Juniper1\_57 Start: 39698, Stop: 40051, Start Num: 49

Candidate Starts for Juniper1\_57:

(38, 39662), (Start: 49 @39698 has 279 MA's), (57, 39728), (58, 39731), (62, 39743), (64, 39749), (73, 39812), (75, 39821), (76, 39827), (91, 39941), (94, 39962), (104, 40019), (109, 40031),

Gene: Karhdo\_57 Start: 39806, Stop: 40171, Start Num: 49

Candidate Starts for Karhdo\_57:

(Start: 49 @39806 has 279 MA's), (58, 39839), (63, 39854), (64, 39857), (69, 39896), (70, 39899), (73, 39920), (78, 39953), (84, 39980), (89, 40013), (91, 40055), (92, 40061), (113, 40157),

Gene: KendraB23\_34 Start: 22613, Stop: 22260, Start Num: 49

Candidate Starts for KendraB23\_34:

(Start: 49 @22613 has 279 MA's), (71, 22514), (106, 22277),

Gene: Kenuha5\_57 Start: 38874, Stop: 39239, Start Num: 49

Candidate Starts for Kenuha5\_57:

(Start: 49 @38874 has 279 MA's), (58, 38907), (60, 38913), (64, 38925), (70, 38967), (75, 38997), (78, 39021), (79, 39024), (91, 39123), (92, 39129), (105, 39204),

Gene: Kersh\_62 Start: 42556, Stop: 42921, Start Num: 49

Candidate Starts for Kersh\_62:

(Start: 49 @42556 has 279 MA's), (58, 42589), (63, 42604), (64, 42607), (69, 42646), (70, 42649), (73, 42670), (78, 42703), (83, 42724), (84, 42730), (89, 42763), (91, 42805), (92, 42811), (113, 42907),

Gene: Kimberlium\_60 Start: 41117, Stop: 41464, Start Num: 49

Candidate Starts for Kimberlium\_60:

(42, 41090), (46, 41108), (Start: 49 @41117 has 279 MA's), (58, 41147), (61, 41156), (65, 41174), (73, 41228), (78, 41255), (89, 41312), (90, 41342), (91, 41354),

Gene: Kimberlium\_63 Start: 42089, Stop: 42454, Start Num: 49

Candidate Starts for Kimberlium\_63:

(Start: 49 @42089 has 279 MA's), (58, 42122), (63, 42137), (64, 42140), (69, 42179), (70, 42182), (73, 42203), (78, 42236), (83, 42257), (84, 42263), (89, 42296), (91, 42338), (92, 42344), (113, 42440),

Gene: Kimberlium\_61 Start: 41461, Stop: 41814, Start Num: 49

Candidate Starts for Kimberlium\_61:

(38, 41425), (Start: 49 @41461 has 279 MA's), (57, 41491), (58, 41494), (62, 41506), (64, 41512), (73, 41575), (75, 41584), (76, 41590), (91, 41704), (94, 41725), (104, 41782), (109, 41794),

Gene: KingJulian\_60 Start: 39332, Stop: 39697, Start Num: 49

Candidate Starts for KingJulian\_60:

(Start: 49 @39332 has 279 MA's), (58, 39365), (63, 39380), (64, 39383), (69, 39422), (70, 39425), (73, 39446), (78, 39479), (84, 39506), (89, 39539), (91, 39581), (92, 39587), (113, 39683),

Gene: KingMidas\_59 Start: 40372, Stop: 40737, Start Num: 49

Candidate Starts for KingMidas\_59:

(Start: 49 @40372 has 279 MA's), (58, 40405), (63, 40420), (64, 40423), (70, 40465), (73, 40486), (78, 40519), (83, 40540), (84, 40546), (89, 40579), (91, 40621), (92, 40627), (113, 40723),

Gene: Kingsley\_55 Start: 38460, Stop: 38807, Start Num: 49

Candidate Starts for Kingsley\_55:

(42, 38433), (46, 38451), (Start: 49 @38460 has 279 MA's), (58, 38490), (61, 38499), (65, 38517), (73, 38571), (78, 38598), (89, 38655), (90, 38685), (91, 38697),

Gene: Kingsley\_56 Start: 38804, Stop: 39157, Start Num: 49

Candidate Starts for Kingsley\_56:

(38, 38768), (Start: 49 @38804 has 279 MA's), (57, 38834), (58, 38837), (62, 38849), (64, 38855), (73, 38918), (75, 38927), (76, 38933), (91, 39047), (94, 39068), (104, 39125), (109, 39137),

Gene: Koella\_54 Start: 36191, Stop: 36556, Start Num: 49

Candidate Starts for Koella\_54:

(Start: 49 @36191 has 279 MA's), (58, 36224), (63, 36239), (64, 36242), (69, 36281), (70, 36284), (73, 36305), (78, 36338), (84, 36365), (89, 36398), (91, 36440), (92, 36446), (113, 36542),

Gene: Krakatau\_57 Start: 39569, Stop: 39934, Start Num: 49

Candidate Starts for Krakatau\_57:

(Start: 49 @39569 has 279 MA's), (58, 39602), (64, 39620), (75, 39692), (78, 39716), (79, 39719), (91, 39818), (92, 39824), (105, 39899),

Gene: KristaRAM\_63 Start: 42760, Stop: 43125, Start Num: 49

Candidate Starts for KristaRAM\_63:

(Start: 49 @42760 has 279 MA's), (58, 42793), (63, 42808), (64, 42811), (70, 42853), (73, 42874), (78, 42907), (84, 42934), (89, 42967), (91, 43009), (92, 43015), (113, 43111),

Gene: LastJedi\_54 Start: 37508, Stop: 37873, Start Num: 49

Candidate Starts for LastJedi\_54:

(Start: 49 @37508 has 279 MA's), (58, 37541), (63, 37556), (64, 37559), (69, 37598), (70, 37601), (73, 37622), (78, 37655), (84, 37682), (89, 37715), (91, 37757), (92, 37763), (113, 37859),

Gene: Latretium\_62 Start: 40834, Stop: 41199, Start Num: 49

Candidate Starts for Latretium\_62:

(Start: 49 @40834 has 279 MA's), (58, 40867), (63, 40882), (64, 40885), (69, 40924), (70, 40927), (73, 40948), (84, 41008), (89, 41041), (91, 41083), (92, 41089), (113, 41185),

Gene: Leozinho\_59 Start: 39590, Stop: 39955, Start Num: 49

Candidate Starts for Leozinho\_59:

(Start: 49 @39590 has 279 MA's), (58, 39623), (63, 39638), (64, 39641), (70, 39683), (73, 39704), (78, 39737), (83, 39758), (84, 39764), (89, 39797), (91, 39839), (92, 39845), (113, 39941),

Gene: Leperchaun\_52 Start: 37940, Stop: 38305, Start Num: 49

Candidate Starts for Leperchaun\_52:

(Start: 49 @37940 has 279 MA's), (58, 37973), (63, 37988), (64, 37991), (70, 38033), (73, 38054), (78, 38087), (83, 38108), (84, 38114), (89, 38147), (91, 38189), (92, 38195), (113, 38291),

Gene: LilMoolah\_58 Start: 39703, Stop: 40068, Start Num: 49

Candidate Starts for LilMoolah\_58:

(Start: 49 @39703 has 279 MA's), (58, 39736), (63, 39751), (64, 39754), (69, 39793), (70, 39796), (73, 39817), (78, 39850), (83, 39871), (84, 39877), (89, 39910), (91, 39952), (92, 39958), (113, 40054),

Gene: LittleMinkey\_96 Start: 66537, Stop: 66124, Start Num: 37

Candidate Starts for LittleMinkey\_96:

(Start: 37 @66537 has 3 MA's), (61, 66456), (76, 66369), (84, 66327), (89, 66294), (95, 66219),

Gene: LittleShirley\_59 Start: 40750, Stop: 41115, Start Num: 49

Candidate Starts for LittleShirley\_59:

(Start: 49 @40750 has 279 MA's), (58, 40783), (63, 40798), (64, 40801), (69, 40840), (70, 40843), (73, 40864), (78, 40897), (84, 40924), (89, 40957), (91, 40999), (92, 41005), (113, 41101),

Gene: Lizziana\_66 Start: 41261, Stop: 41626, Start Num: 49

Candidate Starts for Lizziana\_66:

(Start: 49 @41261 has 279 MA's), (58, 41294), (63, 41309), (64, 41312), (69, 41351), (70, 41354), (73, 41375), (78, 41408), (84, 41435), (89, 41468), (91, 41510), (92, 41516), (113, 41612),

Gene: Llama\_65 Start: 42669, Stop: 43034, Start Num: 49

Candidate Starts for Llama\_65:

(Start: 49 @42669 has 279 MA's), (58, 42702), (63, 42717), (64, 42720), (69, 42759), (70, 42762), (73, 42783), (78, 42816), (84, 42843), (89, 42876), (91, 42918), (92, 42924), (113, 43020),

Gene: Llij\_56 Start: 39114, Stop: 39479, Start Num: 49

Candidate Starts for Llij\_56:

(Start: 49 @39114 has 279 MA's), (58, 39147), (63, 39162), (64, 39165), (69, 39204), (70, 39207), (73, 39228), (78, 39261), (83, 39282), (84, 39288), (89, 39321), (91, 39363), (92, 39369), (113, 39465),

Gene: Lorde\_60 Start: 38401, Stop: 38766, Start Num: 49

Candidate Starts for Lorde\_60:

(Start: 49 @38401 has 279 MA's), (58, 38434), (63, 38449), (64, 38452), (69, 38491), (70, 38494), (73, 38515), (78, 38548), (83, 38569), (84, 38575), (89, 38608), (91, 38650), (92, 38656), (113, 38752),

Gene: Lucia\_60 Start: 39255, Stop: 39620, Start Num: 49

Candidate Starts for Lucia\_60:

(Start: 49 @39255 has 279 MA's), (58, 39288), (63, 39303), (64, 39306), (69, 39345), (70, 39348), (73, 39369), (84, 39429), (89, 39462), (91, 39504), (92, 39510), (105, 39585),

Gene: LunaBlu\_62 Start: 40835, Stop: 41200, Start Num: 49

Candidate Starts for LunaBlu\_62:

(Start: 49 @40835 has 279 MA's), (58, 40868), (63, 40883), (64, 40886), (69, 40925), (70, 40928), (73, 40949), (84, 41009), (89, 41042), (91, 41084), (92, 41090), (113, 41186),

Gene: LunaStella\_57 Start: 39057, Stop: 39410, Start Num: 49

Candidate Starts for LunaStella\_57:

(38, 39021), (Start: 49 @39057 has 279 MA's), (62, 39102), (64, 39108), (73, 39171), (75, 39180), (82, 39216), (86, 39240), (109, 39390),

Gene: LunaStella\_56 Start: 38713, Stop: 39060, Start Num: 49

Candidate Starts for LunaStella\_56:

(42, 38686), (46, 38704), (Start: 49 @38713 has 279 MA's), (53, 38725), (58, 38743), (61, 38752), (70, 38803), (73, 38824), (85, 38887), (89, 38908), (90, 38938),

Gene: LunaStella\_59 Start: 39682, Stop: 40047, Start Num: 49

Candidate Starts for LunaStella\_59:

(Start: 49 @39682 has 279 MA's), (58, 39715), (64, 39733), (69, 39772), (70, 39775), (73, 39796), (75, 39805), (78, 39829), (84, 39856), (89, 39889), (91, 39931), (92, 39937), (113, 40033),

Gene: Lysidious\_52 Start: 36936, Stop: 37298, Start Num: 45

Candidate Starts for Lysidious\_52:

(16, 36786), (18, 36792), (20, 36828), (28, 36867), (Start: 45 @36936 has 23 MA's), (74, 37065), (78, 37089),

Gene: MadMen\_58 Start: 40038, Stop: 40403, Start Num: 49

Candidate Starts for MadMen\_58:

(Start: 49 @40038 has 279 MA's), (58, 40071), (63, 40086), (64, 40089), (70, 40131), (73, 40152), (78, 40185), (84, 40212), (89, 40245), (91, 40287), (92, 40293), (113, 40389),

Gene: Madiba\_58 Start: 39287, Stop: 39652, Start Num: 49

Candidate Starts for Madiba\_58:

(Start: 49 @39287 has 279 MA's), (58, 39320), (63, 39335), (64, 39338), (70, 39380), (73, 39401), (78, 39434), (84, 39461), (89, 39494), (91, 39536), (92, 39542), (113, 39638),

Gene: Mahavrat\_58 Start: 39663, Stop: 40028, Start Num: 49

Candidate Starts for Mahavrat\_58:

(Start: 49 @39663 has 279 MA's), (58, 39696), (63, 39711), (64, 39714), (69, 39753), (70, 39756), (73, 39777), (84, 39837), (89, 39870), (91, 39912), (92, 39918), (113, 40014),

Gene: Malachai\_49 Start: 37159, Stop: 37521, Start Num: 45

Candidate Starts for Malachai\_49:

(28, 37090), (Start: 45 @37159 has 23 MA's), (68, 37258), (73, 37285), (74, 37288), (78, 37312), (111, 37507),

Gene: MalagasyRose\_65 Start: 42032, Stop: 42385, Start Num: 54

Candidate Starts for MalagasyRose\_65:

(19, 41891), (36, 41975), (Start: 54 @42032 has 1 MA's), (67, 42101), (70, 42113), (73, 42134), (88, 42209), (90, 42248), (91, 42260), (94, 42281), (101, 42323), (106, 42344),

Gene: Mandlovu\_56 Start: 38273, Stop: 38638, Start Num: 49

Candidate Starts for Mandlovu\_56:

(Start: 49 @38273 has 279 MA's), (58, 38306), (63, 38321), (64, 38324), (70, 38366), (73, 38387), (78, 38420), (83, 38441), (84, 38447), (91, 38522), (92, 38528), (113, 38624),

Gene: Maravista\_61 Start: 41710, Stop: 42075, Start Num: 49

Candidate Starts for Maravista\_61:

(Start: 49 @41710 has 279 MA's), (58, 41743), (63, 41758), (64, 41761), (69, 41800), (70, 41803), (73, 41824), (78, 41857), (84, 41884), (89, 41917), (91, 41959), (92, 41965), (113, 42061),

Gene: Mareelih\_127 Start: 82353, Stop: 81859, Start Num: 17

Candidate Starts for Mareelih\_127:

(Start: 17 @82353 has 4 MA's), (22, 82284), (25, 82278), (31, 82263), (36, 82230), (74, 82068), (84, 82023), (96, 81906), (98, 81900), (103, 81870),

Gene: Marker\_62 Start: 40381, Stop: 40746, Start Num: 49

Candidate Starts for Marker\_62:

(Start: 49 @40381 has 279 MA's), (58, 40414), (63, 40429), (64, 40432), (70, 40474), (73, 40495), (84, 40555), (89, 40588), (91, 40630), (92, 40636), (113, 40732),

Gene: Martik\_60 Start: 40214, Stop: 40579, Start Num: 49

Candidate Starts for Martik\_60:

(Start: 49 @40214 has 279 MA's), (58, 40247), (63, 40262), (64, 40265), (69, 40304), (70, 40307), (73, 40328), (78, 40361), (84, 40388), (89, 40421), (91, 40463), (92, 40469), (113, 40565),

Gene: Mattes\_64 Start: 41780, Stop: 42145, Start Num: 49

Candidate Starts for Mattes\_64:

(Start: 49 @41780 has 279 MA's), (58, 41813), (63, 41828), (64, 41831), (69, 41870), (70, 41873), (73, 41894), (78, 41927), (84, 41954), (89, 41987), (91, 42029), (92, 42035), (113, 42131),

Gene: Medindi\_56 Start: 37651, Stop: 38016, Start Num: 49

Candidate Starts for Medindi\_56:

(Start: 49 @37651 has 279 MA's), (58, 37684), (60, 37690), (64, 37702), (70, 37744), (75, 37774), (78, 37798), (79, 37801), (91, 37900), (92, 37906), (105, 37981), (106, 37984),

Gene: Melba\_50 Start: 35408, Stop: 35770, Start Num: 45

Candidate Starts for Melba\_50:

(18, 35264), (20, 35300), (28, 35339), (Start: 45 @35408 has 23 MA's), (74, 35537), (78, 35561),

Gene: Melissauren88\_58 Start: 39794, Stop: 40159, Start Num: 49

Candidate Starts for Melissauren88\_58:

(Start: 49 @39794 has 279 MA's), (58, 39827), (60, 39833), (64, 39845), (70, 39887), (75, 39917), (78, 39941), (79, 39944), (91, 40043), (92, 40049), (105, 40124),

Gene: Mellie\_49 Start: 35048, Stop: 35410, Start Num: 44

Candidate Starts for Mellie\_49:

(20, 34943), (Start: 44 @35048 has 1 MA's), (68, 35147), (73, 35174), (74, 35177), (78, 35201),

Gene: MilanaBonita\_50 Start: 36387, Stop: 36752, Start Num: 49

Candidate Starts for MilanaBonita\_50:

(Start: 49 @36387 has 279 MA's), (58, 36420), (60, 36426), (64, 36438), (70, 36480), (75, 36510), (78, 36534), (79, 36537), (91, 36636), (92, 36642), (105, 36717), (106, 36720), (108, 36723),

Gene: MilleniumForce\_63 Start: 42482, Stop: 42847, Start Num: 49

Candidate Starts for MilleniumForce\_63:

(Start: 49 @42482 has 279 MA's), (58, 42515), (60, 42521), (64, 42533), (75, 42605), (78, 42629), (79, 42632), (84, 42656), (91, 42731), (92, 42737), (105, 42812),

Gene: MinionDave\_59 Start: 40561, Stop: 40926, Start Num: 49

Candidate Starts for MinionDave\_59:

(Start: 49 @40561 has 279 MA's), (58, 40594), (63, 40609), (64, 40612), (69, 40651), (70, 40654), (73, 40675), (78, 40708), (84, 40735), (89, 40768), (91, 40810), (92, 40816), (113, 40912),

Gene: Minnie\_63 Start: 41784, Stop: 42149, Start Num: 49

Candidate Starts for Minnie\_63:

(Start: 49 @41784 has 279 MA's), (58, 41817), (61, 41826), (64, 41835), (70, 41877), (75, 41907), (78, 41931), (79, 41934), (91, 42033), (92, 42039), (105, 42114),

Gene: MintFen\_51 Start: 35482, Stop: 35844, Start Num: 45

Candidate Starts for MintFen\_51:

(18, 35338), (20, 35374), (28, 35413), (Start: 45 @35482 has 23 MA's), (74, 35611), (78, 35635),

Gene: MisterCuddles\_58 Start: 40017, Stop: 40382, Start Num: 49

Candidate Starts for MisterCuddles\_58:

(Start: 49 @40017 has 279 MA's), (58, 40050), (63, 40065), (64, 40068), (69, 40107), (70, 40110), (73, 40131), (84, 40191), (89, 40224), (91, 40266), (92, 40272), (113, 40368),

Gene: Modragons\_64 Start: 42659, Stop: 43024, Start Num: 49

Candidate Starts for Modragons\_64:

(Start: 49 @42659 has 279 MA's), (58, 42692), (63, 42707), (64, 42710), (69, 42749), (70, 42752), (73, 42773), (78, 42806), (84, 42833), (89, 42866), (91, 42908), (92, 42914), (113, 43010),

Gene: Moonbeam\_58 Start: 39938, Stop: 40303, Start Num: 49

Candidate Starts for Moonbeam\_58:

(Start: 49 @39938 has 279 MA's), (58, 39971), (64, 39989), (70, 40031), (75, 40061), (78, 40085), (79, 40088), (91, 40187), (105, 40268), (106, 40271), (108, 40274),

Gene: Moonflower\_54 Start: 39482, Stop: 39844, Start Num: 45

Candidate Starts for Moonflower\_54:

(Start: 45 @39482 has 23 MA's), (73, 39605),

Gene: Mova\_61 Start: 39791, Stop: 40156, Start Num: 49

Candidate Starts for Mova\_61:

(Start: 49 @39791 has 279 MA's), (58, 39824), (63, 39839), (64, 39842), (70, 39884), (73, 39905), (78, 39938), (84, 39965), (89, 39998), (91, 40040), (92, 40046), (113, 40142),

Gene: Mozy\_69 Start: 42795, Stop: 43160, Start Num: 49

Candidate Starts for Mozy\_69:

(Start: 49 @42795 has 279 MA's), (58, 42828), (63, 42843), (64, 42846), (69, 42885), (70, 42888), (73, 42909), (84, 42969), (89, 43002), (91, 43044), (92, 43050), (113, 43146),

Gene: Ms6\_55 Start: 35525, Stop: 35890, Start Num: 49

Candidate Starts for Ms6\_55:

(Start: 49 @35525 has 279 MA's), (58, 35558), (60, 35564), (64, 35576), (70, 35618), (75, 35648), (78, 35672), (79, 35675), (91, 35774), (92, 35780), (105, 35855),

Gene: MulchExplorer\_60 Start: 41116, Stop: 41463, Start Num: 49

Candidate Starts for MulchExplorer\_60:

(42, 41089), (46, 41107), (Start: 49 @41116 has 279 MA's), (58, 41146), (61, 41155), (65, 41173), (73, 41227), (78, 41254), (89, 41311), (90, 41341), (91, 41353),

Gene: MulchExplorer\_61 Start: 41460, Stop: 41813, Start Num: 49

Candidate Starts for MulchExplorer\_61:

(38, 41424), (Start: 49 @41460 has 279 MA's), (57, 41490), (58, 41493), (62, 41505), (64, 41511), (73, 41574), (75, 41583), (76, 41589), (91, 41703), (94, 41724), (104, 41781), (109, 41793),

Gene: MulchExplorer\_63 Start: 42088, Stop: 42453, Start Num: 49

Candidate Starts for MulchExplorer\_63:

(Start: 49 @42088 has 279 MA's), (58, 42121), (63, 42136), (64, 42139), (69, 42178), (70, 42181), (73, 42202), (78, 42235), (83, 42256), (84, 42262), (89, 42295), (91, 42337), (92, 42343), (113, 42439),

Gene: Mutaforma13\_64 Start: 43121, Stop: 43486, Start Num: 49

Candidate Starts for Mutaforma13\_64:

(Start: 49 @43121 has 279 MA's), (58, 43154), (63, 43169), (64, 43172), (69, 43211), (70, 43214), (73, 43235), (78, 43268), (84, 43295), (89, 43328), (91, 43370), (92, 43376), (113, 43472),

Gene: Mwanjiwa\_66 Start: 40892, Stop: 41257, Start Num: 49

Candidate Starts for Mwanjiwa\_66:

(Start: 49 @40892 has 279 MA's), (58, 40925), (63, 40940), (64, 40943), (69, 40982), (70, 40985), (73, 41006), (78, 41039), (83, 41060), (84, 41066), (89, 41099), (91, 41141), (92, 41147), (113, 41243),

Gene: NewHope4\_61 Start: 40206, Stop: 40571, Start Num: 49

Candidate Starts for NewHope4\_61:

(Start: 49 @40206 has 279 MA's), (58, 40239), (63, 40254), (64, 40257), (69, 40296), (70, 40299), (73, 40320), (84, 40380), (89, 40413), (91, 40455), (92, 40461), (113, 40557),

Gene: Niblet\_29 Start: 22015, Stop: 21665, Start Num: 49

Candidate Starts for Niblet\_29:

(Start: 49 @22015 has 279 MA's), (71, 21916), (105, 21682),

Gene: Nichirin\_67 Start: 44200, Stop: 44565, Start Num: 49

Candidate Starts for Nichirin\_67:

(Start: 49 @44200 has 279 MA's), (58, 44233), (63, 44248), (64, 44251), (69, 44290), (70, 44293), (73, 44314), (78, 44347), (84, 44374), (89, 44407), (91, 44449), (92, 44455), (113, 44551),

Gene: Nivrat\_56 Start: 39576, Stop: 39941, Start Num: 49

Candidate Starts for Nivrat\_56:

(Start: 49 @39576 has 279 MA's), (58, 39609), (63, 39624), (64, 39627), (69, 39666), (70, 39669), (73, 39690), (78, 39723), (83, 39744), (84, 39750), (89, 39783), (91, 39825), (92, 39831), (113, 39927),

Gene: NormanBulbieJr\_60 Start: 40204, Stop: 40569, Start Num: 49

Candidate Starts for NormanBulbieJr\_60:

(Start: 49 @40204 has 279 MA's), (58, 40237), (63, 40252), (64, 40255), (69, 40294), (70, 40297), (73, 40318), (78, 40351), (84, 40378), (89, 40411), (91, 40453), (92, 40459), (113, 40555),

Gene: Ochi17\_63 Start: 42266, Stop: 42631, Start Num: 49

Candidate Starts for Ochi17\_63:

(Start: 49 @42266 has 279 MA's), (58, 42299), (63, 42314), (64, 42317), (69, 42356), (70, 42359), (73, 42380), (78, 42413), (84, 42440), (89, 42473), (91, 42515), (92, 42521), (113, 42617),

Gene: OfUltron\_65 Start: 42815, Stop: 43180, Start Num: 49

Candidate Starts for OfUltron\_65:

(Start: 49 @42815 has 279 MA's), (58, 42848), (63, 42863), (64, 42866), (69, 42905), (70, 42908), (73, 42929), (78, 42962), (84, 42989), (89, 43022), (91, 43064), (92, 43070), (113, 43166),

Gene: Ogopogo\_65 Start: 40778, Stop: 41143, Start Num: 49

Candidate Starts for Ogopogo\_65:

(Start: 49 @40778 has 279 MA's), (58, 40811), (60, 40817), (64, 40829), (70, 40871), (75, 40901), (78, 40925), (79, 40928), (91, 41027), (92, 41033), (105, 41108), (106, 41111), (108, 41114),

Gene: Okabe\_55 Start: 36707, Stop: 37072, Start Num: 49

Candidate Starts for Okabe\_55:

(Start: 49 @36707 has 279 MA's), (58, 36740), (61, 36749), (64, 36758), (70, 36800), (75, 36830), (78, 36854), (79, 36857), (91, 36956), (92, 36962), (105, 37037),

Gene: Oksu\_64 Start: 43078, Stop: 43443, Start Num: 49

Candidate Starts for Oksu\_64:

(Start: 49 @43078 has 279 MA's), (58, 43111), (63, 43126), (64, 43129), (69, 43168), (70, 43171), (73, 43192), (78, 43225), (84, 43252), (89, 43285), (91, 43327), (92, 43333), (113, 43429),

Gene: OldBen\_57 Start: 40129, Stop: 40494, Start Num: 49

Candidate Starts for OldBen\_57:

(Start: 49 @40129 has 279 MA's), (58, 40162), (63, 40177), (64, 40180), (70, 40222), (73, 40243), (84, 40303), (89, 40336), (91, 40378), (92, 40384), (113, 40480),

Gene: OlympiaSaint\_62 Start: 40722, Stop: 41087, Start Num: 49

Candidate Starts for OlympiaSaint\_62:

(Start: 49 @40722 has 279 MA's), (58, 40755), (63, 40770), (64, 40773), (69, 40812), (70, 40815), (73, 40836), (78, 40869), (84, 40896), (89, 40929), (91, 40971), (92, 40977), (113, 41073),

Gene: Orcanus\_30 Start: 22223, Stop: 21873, Start Num: 49

Candidate Starts for Orcanus\_30:

(Start: 49 @22223 has 279 MA's), (71, 22124), (106, 21890),

Gene: OtsoOtso\_33 Start: 21713, Stop: 21363, Start Num: 49

Candidate Starts for OtsoOtso\_33:

(Start: 49 @21713 has 279 MA's), (106, 21380),

Gene: Ovechkin\_57 Start: 39962, Stop: 40309, Start Num: 49

Candidate Starts for Ovechkin\_57:

(42, 39935), (46, 39953), (Start: 49 @39962 has 279 MA's), (58, 39992), (61, 40001), (65, 40019), (73, 40073), (78, 40100), (89, 40157), (90, 40187), (91, 40199),

Gene: Ovechkin\_58 Start: 40306, Stop: 40659, Start Num: 49

Candidate Starts for Ovechkin\_58:

(38, 40270), (Start: 49 @40306 has 279 MA's), (57, 40336), (58, 40339), (62, 40351), (64, 40357), (73, 40420), (75, 40429), (76, 40435), (91, 40549), (94, 40570), (104, 40627), (109, 40639),

Gene: OwlsT2W\_60 Start: 40441, Stop: 40806, Start Num: 49

Candidate Starts for OwlsT2W\_60:

(Start: 49 @40441 has 279 MA's), (58, 40474), (63, 40489), (64, 40492), (69, 40531), (70, 40534), (73, 40555), (78, 40588), (84, 40615), (89, 40648), (91, 40690), (92, 40696), (113, 40792),

Gene: PHappiness\_55 Start: 38486, Stop: 38851, Start Num: 49

Candidate Starts for PHappiness\_55:

(Start: 49 @38486 has 279 MA's), (58, 38519), (63, 38534), (64, 38537), (70, 38579), (73, 38600), (78, 38633), (83, 38654), (84, 38660), (89, 38693), (91, 38735), (92, 38741), (113, 38837),

Gene: PMC\_57 Start: 40831, Stop: 41196, Start Num: 49

Candidate Starts for PMC\_57:

(Start: 49 @40831 has 279 MA's), (58, 40864), (63, 40879), (64, 40882), (69, 40921), (70, 40924), (73, 40945), (78, 40978), (84, 41005), (89, 41038), (91, 41080), (92, 41086), (113, 41182),

Gene: Pacc40\_54 Start: 38560, Stop: 38925, Start Num: 49

Candidate Starts for Pacc40\_54:

(Start: 49 @38560 has 279 MA's), (58, 38593), (63, 38608), (64, 38611), (70, 38653), (73, 38674), (78, 38707), (83, 38728), (84, 38734), (89, 38767), (91, 38809), (92, 38815), (113, 38911),

Gene: PatoPoderoso\_57 Start: 39332, Stop: 39697, Start Num: 49

Candidate Starts for PatoPoderoso\_57:

(Start: 49 @39332 has 279 MA's), (58, 39365), (63, 39380), (64, 39383), (69, 39422), (70, 39425), (73, 39446), (78, 39479), (84, 39506), (89, 39539), (91, 39581), (92, 39587), (113, 39683),

Gene: Pelletreau\_33 Start: 22425, Stop: 22072, Start Num: 49

Candidate Starts for Pelletreau\_33:

(Start: 49 @22425 has 279 MA's), (71, 22326), (106, 22089),

Gene: Peridot\_61 Start: 39669, Stop: 40034, Start Num: 49

Candidate Starts for Peridot\_61:

(Start: 49 @39669 has 279 MA's), (58, 39702), (63, 39717), (64, 39720), (69, 39759), (70, 39762), (73, 39783), (78, 39816), (84, 39843), (89, 39876), (91, 39918), (92, 39924), (113, 40020),

Gene: Phalconet\_58 Start: 39065, Stop: 39430, Start Num: 49

Candidate Starts for Phalconet\_58:

(Start: 49 @39065 has 279 MA's), (58, 39098), (60, 39104), (64, 39116), (66, 39131), (70, 39158), (75, 39188), (78, 39212), (79, 39215), (91, 39314), (92, 39320), (105, 39395),

Gene: Phanphagia\_57 Start: 40656, Stop: 41021, Start Num: 49

Candidate Starts for Phanphagia\_57:

(Start: 49 @40656 has 279 MA's), (58, 40689), (60, 40695), (64, 40707), (70, 40749), (75, 40779), (78, 40803), (79, 40806), (91, 40905), (92, 40911), (105, 40986),

Gene: Phasih\_58 Start: 40630, Stop: 40995, Start Num: 49

Candidate Starts for Phasih\_58:

(Start: 49 @40630 has 279 MA's), (58, 40663), (63, 40678), (64, 40681), (69, 40720), (70, 40723), (73, 40744), (84, 40804), (89, 40837), (91, 40879), (92, 40885), (102, 40954), (113, 40981),

Gene: Phatniss\_58 Start: 40209, Stop: 40574, Start Num: 49

Candidate Starts for Phatniss\_58:

(Start: 49 @40209 has 279 MA's), (58, 40242), (63, 40257), (64, 40260), (69, 40299), (70, 40302), (73, 40323), (78, 40356), (83, 40377), (84, 40383), (89, 40416), (91, 40458), (92, 40464), (113, 40560),

Gene: PhesterPhotato\_60 Start: 39882, Stop: 40247, Start Num: 49

Candidate Starts for PhesterPhotato\_60:

(Start: 49 @39882 has 279 MA's), (58, 39915), (60, 39921), (64, 39933), (66, 39948), (70, 39975), (75, 40005), (78, 40029), (79, 40032), (91, 40131), (92, 40137), (105, 40212),

Gene: Philus\_63 Start: 41366, Stop: 41731, Start Num: 49

Candidate Starts for Philus\_63:

(Start: 49 @41366 has 279 MA's), (58, 41399), (63, 41414), (64, 41417), (69, 41456), (70, 41459), (73, 41480), (78, 41513), (83, 41534), (84, 41540), (89, 41573), (91, 41615), (92, 41621), (113, 41717),

Gene: PhirstandPhine\_35 Start: 21992, Stop: 21642, Start Num: 49

Candidate Starts for PhirstandPhine\_35:

(14, 22175), (21, 22082), (Start: 49 @21992 has 279 MA's), (106, 21659),

Gene: PhlipPhlop\_60 Start: 41923, Stop: 42288, Start Num: 49

Candidate Starts for PhlipPhlop\_60:

(Start: 49 @41923 has 279 MA's), (58, 41956), (63, 41971), (64, 41974), (69, 42013), (70, 42016), (73, 42037), (78, 42070), (84, 42097), (89, 42130), (91, 42172), (92, 42178), (113, 42274),

Gene: Phrappuccino\_165 Start: 110158, Stop: 110505, Start Num: 52

Candidate Starts for Phrappuccino\_165:

(Start: 52 @110158 has 2 MA's), (61, 110191), (62, 110194), (64, 110200), (73, 110263), (101, 110455),

Gene: Pineda\_34 Start: 22001, Stop: 21651, Start Num: 49

Candidate Starts for Pineda\_34:

(2, 22508), (6, 22325), (14, 22184), (21, 22091), (Start: 49 @22001 has 279 MA's), (106, 21668),

Gene: Pippy\_58 Start: 39072, Stop: 39437, Start Num: 49

Candidate Starts for Pippy\_58:

(Start: 49 @39072 has 279 MA's), (58, 39105), (63, 39120), (64, 39123), (69, 39162), (70, 39165), (73, 39186), (78, 39219), (84, 39246), (89, 39279), (91, 39321), (92, 39327), (113, 39423),

Gene: Plumbus\_62 Start: 40530, Stop: 40895, Start Num: 49

Candidate Starts for Plumbus\_62:

(Start: 49 @40530 has 279 MA's), (58, 40563), (63, 40578), (64, 40581), (70, 40623), (73, 40644), (78, 40677), (83, 40698), (84, 40704), (89, 40737), (91, 40779), (92, 40785), (113, 40881),

Gene: Poenanya\_60 Start: 41387, Stop: 41752, Start Num: 49

Candidate Starts for Poenanya\_60:

(Start: 49 @41387 has 279 MA's), (58, 41420), (63, 41435), (64, 41438), (70, 41480), (73, 41501), (78, 41534), (83, 41555), (84, 41561), (89, 41594), (91, 41636), (92, 41642), (113, 41738),

Gene: Polka\_32 Start: 21713, Stop: 21363, Start Num: 49

Candidate Starts for Polka\_32:

(Start: 49 @21713 has 279 MA's), (106, 21380),

Gene: Polka14\_58 Start: 39583, Stop: 39948, Start Num: 49

Candidate Starts for Polka14\_58:

(Start: 49 @39583 has 279 MA's), (58, 39616), (63, 39631), (64, 39634), (69, 39673), (70, 39676), (73, 39697), (78, 39730), (84, 39757), (89, 39790), (91, 39832), (92, 39838), (113, 39934),

Gene: Pollywog\_61 Start: 41040, Stop: 41405, Start Num: 49

Candidate Starts for Pollywog\_61:

(Start: 49 @41040 has 279 MA's), (58, 41073), (63, 41088), (64, 41091), (69, 41130), (70, 41133), (73, 41154), (78, 41187), (84, 41214), (89, 41247), (91, 41289), (92, 41295), (113, 41391),

Gene: PopTart\_54 Start: 38690, Stop: 39055, Start Num: 49

Candidate Starts for PopTart\_54:

(Start: 49 @38690 has 279 MA's), (58, 38723), (60, 38729), (64, 38741), (70, 38783), (75, 38813), (78, 38837), (79, 38840), (91, 38939), (92, 38945), (105, 39020),

Gene: Priscilla\_60 Start: 40303, Stop: 40668, Start Num: 49

Candidate Starts for Priscilla\_60:

(Start: 49 @40303 has 279 MA's), (58, 40336), (63, 40351), (64, 40354), (69, 40393), (70, 40396), (73, 40417), (78, 40450), (84, 40477), (89, 40510), (91, 40552), (92, 40558), (113, 40654),

Gene: QuickMath\_62 Start: 42312, Stop: 42677, Start Num: 49

Candidate Starts for QuickMath\_62:

(Start: 49 @42312 has 279 MA's), (58, 42345), (63, 42360), (64, 42363), (69, 42402), (70, 42405), (73, 42426), (78, 42459), (83, 42480), (84, 42486), (89, 42519), (91, 42561), (92, 42567), (113, 42663),

Gene: QuickMath\_60 Start: 41684, Stop: 42037, Start Num: 49

Candidate Starts for QuickMath\_60:

(38, 41648), (Start: 49 @41684 has 279 MA's), (57, 41714), (58, 41717), (62, 41729), (64, 41735), (73, 41798), (75, 41807), (76, 41813), (91, 41927), (94, 41948), (104, 42005), (109, 42017),

Gene: QuickMath\_59 Start: 41340, Stop: 41687, Start Num: 49

Candidate Starts for QuickMath\_59:

(42, 41313), (46, 41331), (Start: 49 @41340 has 279 MA's), (58, 41370), (61, 41379), (65, 41397), (73, 41451), (78, 41478), (89, 41535), (90, 41565), (91, 41577),

Gene: Quico\_68 Start: 42216, Stop: 42581, Start Num: 49

Candidate Starts for Quico\_68:

(Start: 49 @42216 has 279 MA's), (58, 42249), (61, 42258), (64, 42267), (70, 42309), (75, 42339), (78, 42363), (79, 42366), (91, 42465), (92, 42471), (105, 42546),

Gene: Radiance\_59 Start: 40325, Stop: 40690, Start Num: 49

Candidate Starts for Radiance\_59:

(Start: 49 @40325 has 279 MA's), (58, 40358), (64, 40376), (70, 40418), (73, 40439), (78, 40472), (83, 40493), (84, 40499), (89, 40532), (91, 40574), (92, 40580), (113, 40676),

Gene: Ramsey\_59 Start: 40638, Stop: 41003, Start Num: 49

Candidate Starts for Ramsey\_59:

(Start: 49 @40638 has 279 MA's), (58, 40671), (60, 40677), (64, 40689), (75, 40761), (78, 40785), (79, 40788), (84, 40812), (91, 40887), (92, 40893), (105, 40968),

Gene: RayTheFireFly\_61 Start: 39688, Stop: 40050, Start Num: 45

Candidate Starts for RayTheFireFly\_61:

(Start: 45 @39688 has 23 MA's), (73, 39811), (86, 39877),

Gene: RedWattleHog\_91 Start: 82425, Stop: 82775, Start Num: 48

Candidate Starts for RedWattleHog\_91:

(Start: 48 @82425 has 2 MA's), (59, 82461), (80, 82572), (86, 82599), (89, 82617), (99, 82707),

Gene: Renaud18\_64 Start: 40462, Stop: 40815, Start Num: 49

Candidate Starts for Renaud18\_64:

(38, 40426), (Start: 49 @40462 has 279 MA's), (62, 40507), (64, 40513), (73, 40576), (75, 40585), (82, 40621), (86, 40645), (109, 40795),

Gene: Renaud18\_66 Start: 41090, Stop: 41452, Start Num: 49

Candidate Starts for Renaud18\_66:

(Start: 49 @41090 has 279 MA's), (58, 41123), (63, 41138), (64, 41141), (69, 41180), (70, 41183), (73, 41204), (83, 41255), (84, 41261), (92, 41342), (113, 41438),

Gene: Renaud18\_63 Start: 40118, Stop: 40465, Start Num: 49

Candidate Starts for Renaud18\_63:

(42, 40091), (46, 40109), (Start: 49 @40118 has 279 MA's), (53, 40130), (58, 40148), (61, 40157), (73, 40229), (85, 40292), (89, 40313), (90, 40343),

Gene: Rialto\_66 Start: 43107, Stop: 43472, Start Num: 49

Candidate Starts for Rialto\_66:

(Start: 49 @43107 has 279 MA's), (58, 43140), (63, 43155), (64, 43158), (69, 43197), (70, 43200), (73, 43221), (78, 43254), (83, 43275), (84, 43281), (89, 43314), (91, 43356), (92, 43362), (113, 43458),

Gene: Rita\_61 Start: 38934, Stop: 39299, Start Num: 49

Candidate Starts for Rita\_61:

(Start: 49 @38934 has 279 MA's), (58, 38967), (63, 38982), (64, 38985), (69, 39024), (70, 39027), (73, 39048), (78, 39081), (84, 39108), (89, 39141), (91, 39183), (92, 39189), (113, 39285),

Gene: RitaG\_55 Start: 38831, Stop: 39196, Start Num: 49

Candidate Starts for RitaG\_55:

(Start: 49 @38831 has 279 MA's), (58, 38864), (63, 38879), (64, 38882), (70, 38924), (73, 38945), (78, 38978), (83, 38999), (84, 39005), (89, 39038), (91, 39080), (92, 39086), (113, 39182),

Gene: Rockne\_61 Start: 40843, Stop: 41208, Start Num: 49

Candidate Starts for Rockne\_61:

(Start: 49 @40843 has 279 MA's), (58, 40876), (63, 40891), (64, 40894), (69, 40933), (70, 40936), (73, 40957), (78, 40990), (84, 41017), (89, 41050), (91, 41092), (92, 41098), (113, 41194),

Gene: RockyHorror\_61 Start: 39889, Stop: 40254, Start Num: 49

Candidate Starts for RockyHorror\_61:

(Start: 49 @39889 has 279 MA's), (58, 39922), (64, 39940), (69, 39979), (70, 39982), (73, 40003), (78, 40036), (84, 40063), (89, 40096), (91, 40138), (92, 40144), (113, 40240),

Gene: Royals2015\_62 Start: 39826, Stop: 40179, Start Num: 49

Candidate Starts for Royals2015\_62:

(38, 39790), (Start: 49 @39826 has 279 MA's), (57, 39856), (58, 39859), (62, 39871), (64, 39877), (73, 39940), (75, 39949), (76, 39955), (91, 40069), (94, 40090), (104, 40147), (109, 40159),

Gene: Royals2015\_61 Start: 39482, Stop: 39829, Start Num: 49

Candidate Starts for Royals2015\_61:

(42, 39455), (46, 39473), (Start: 49 @39482 has 279 MA's), (58, 39512), (61, 39521), (65, 39539), (73, 39593), (78, 39620), (89, 39677), (90, 39707), (91, 39719),

Gene: Ruby\_56 Start: 40018, Stop: 40383, Start Num: 49

Candidate Starts for Ruby\_56:

(Start: 49 @40018 has 279 MA's), (58, 40051), (63, 40066), (64, 40069), (69, 40108), (70, 40111), (73, 40132), (84, 40192), (89, 40225), (91, 40267), (92, 40273), (113, 40369),

Gene: SG4\_57 Start: 39721, Stop: 40086, Start Num: 49

Candidate Starts for SG4\_57:

(Start: 49 @39721 has 279 MA's), (58, 39754), (63, 39769), (64, 39772), (69, 39811), (70, 39814), (73, 39835), (78, 39868), (84, 39895), (89, 39928), (91, 39970), (92, 39976), (113, 40072),

Gene: Saal\_62 Start: 41474, Stop: 41839, Start Num: 49

Candidate Starts for Saal\_62:

(Start: 49 @41474 has 279 MA's), (58, 41507), (63, 41522), (64, 41525), (69, 41564), (70, 41567), (73, 41588), (78, 41621), (84, 41648), (89, 41681), (91, 41723), (92, 41729), (113, 41825),

Gene: Sabbb\_64 Start: 41162, Stop: 41527, Start Num: 49

Candidate Starts for Sabbb\_64:

(Start: 49 @41162 has 279 MA's), (58, 41195), (63, 41210), (64, 41213), (69, 41252), (70, 41255), (73, 41276), (84, 41336), (89, 41369), (91, 41411), (92, 41417), (102, 41486), (113, 41513),

Gene: Samba\_50 Start: 37695, Stop: 38057, Start Num: 45

Candidate Starts for Samba\_50:

(18, 37551), (20, 37587), (28, 37626), (Start: 45 @37695 has 23 MA's), (74, 37824), (78, 37848), (111, 38043),

Gene: Sandalphon\_61 Start: 40762, Stop: 41127, Start Num: 49

Candidate Starts for Sandalphon\_61:

(Start: 49 @40762 has 279 MA's), (58, 40795), (61, 40804), (64, 40813), (70, 40855), (75, 40885), (78, 40909), (79, 40912), (91, 41011), (92, 41017), (105, 41092),

Gene: Sarma624\_56 Start: 35652, Stop: 35999, Start Num: 49

Candidate Starts for Sarma624\_56:

(42, 35625), (46, 35643), (Start: 49 @35652 has 279 MA's), (58, 35682), (61, 35691), (65, 35709), (73, 35763), (78, 35790), (89, 35847), (90, 35877), (91, 35889),

Gene: Sarma624\_57 Start: 35996, Stop: 36349, Start Num: 49

Candidate Starts for Sarma624\_57:

(38, 35960), (Start: 49 @35996 has 279 MA's), (57, 36026), (58, 36029), (62, 36041), (64, 36047), (73, 36110), (75, 36119), (76, 36125), (91, 36239), (94, 36260), (104, 36317), (109, 36329),

Gene: Sassafras\_58 Start: 39803, Stop: 40168, Start Num: 49

Candidate Starts for Sassafras\_58:

(Start: 49 @39803 has 279 MA's), (58, 39836), (63, 39851), (64, 39854), (69, 39893), (70, 39896), (73, 39917), (78, 39950), (84, 39977), (89, 40010), (91, 40052), (92, 40058), (113, 40154),

Gene: SassyB\_54 Start: 38690, Stop: 39055, Start Num: 49

Candidate Starts for SassyB\_54:

(Start: 49 @38690 has 279 MA's), (58, 38723), (60, 38729), (64, 38741), (70, 38783), (75, 38813), (78, 38837), (79, 38840), (91, 38939), (92, 38945), (105, 39020),

Gene: Scottish\_58 Start: 39849, Stop: 40214, Start Num: 49

Candidate Starts for Scottish\_58:

(Start: 49 @39849 has 279 MA's), (58, 39882), (63, 39897), (64, 39900), (70, 39942), (73, 39963), (78, 39996), (84, 40023), (89, 40056), (91, 40098), (92, 40104), (113, 40200),

Gene: Seabastian\_65 Start: 42816, Stop: 43181, Start Num: 49

Candidate Starts for Seabastian\_65:

(Start: 49 @42816 has 279 MA's), (58, 42849), (63, 42864), (64, 42867), (69, 42906), (70, 42909), (73, 42930), (78, 42963), (84, 42990), (89, 43023), (91, 43065), (92, 43071), (113, 43167),

Gene: Seagreen\_58 Start: 39051, Stop: 39398, Start Num: 49

Candidate Starts for Seagreen\_58:

(42, 39024), (46, 39042), (Start: 49 @39051 has 279 MA's), (58, 39081), (61, 39090), (65, 39108), (73, 39162), (78, 39189), (89, 39246), (90, 39276), (91, 39288),

Gene: Seagreen\_59 Start: 39395, Stop: 39748, Start Num: 49

Candidate Starts for Seagreen\_59:

(38, 39359), (Start: 49 @39395 has 279 MA's), (57, 39425), (58, 39428), (62, 39440), (64, 39446), (73, 39509), (75, 39518), (76, 39524), (91, 39638), (94, 39659), (104, 39716), (109, 39728),

Gene: Settecandela\_165 Start: 110158, Stop: 110505, Start Num: 52

Candidate Starts for Settecandela\_165:

(Start: 52 @110158 has 2 MA's), (61, 110191), (62, 110194), (64, 110200), (73, 110263), (101, 110455),

Gene: Shauna1\_58 Start: 40565, Stop: 40930, Start Num: 49

Candidate Starts for Shauna1\_58:

(Start: 49 @40565 has 279 MA's), (58, 40598), (61, 40607), (64, 40616), (78, 40712), (79, 40715), (84, 40739), (91, 40814), (92, 40820), (105, 40895),

Gene: ShiLan\_59 Start: 40250, Stop: 40615, Start Num: 49

Candidate Starts for ShiLan\_59:

(Start: 49 @40250 has 279 MA's), (58, 40283), (63, 40298), (64, 40301), (69, 40340), (70, 40343), (73, 40364), (78, 40397), (84, 40424), (89, 40457), (91, 40499), (92, 40505), (113, 40601),

Gene: ShowerHandel\_63 Start: 40214, Stop: 40579, Start Num: 49

Candidate Starts for ShowerHandel\_63:

(Start: 49 @40214 has 279 MA's), (58, 40247), (63, 40262), (64, 40265), (69, 40304), (70, 40307), (73, 40328), (78, 40361), (84, 40388), (89, 40421), (91, 40463), (92, 40469), (113, 40565),

Gene: ShroomBoi\_62 Start: 41174, Stop: 41539, Start Num: 49

Candidate Starts for ShroomBoi\_62:

(Start: 49 @41174 has 279 MA's), (58, 41207), (63, 41222), (64, 41225), (70, 41267), (73, 41288), (78, 41321), (84, 41348), (89, 41381), (91, 41423), (92, 41429), (113, 41525),

Gene: SiSi\_58 Start: 39623, Stop: 39988, Start Num: 49

Candidate Starts for SiSi\_58:

(Start: 49 @39623 has 279 MA's), (58, 39656), (63, 39671), (64, 39674), (69, 39713), (70, 39716), (73, 39737), (78, 39770), (84, 39797), (89, 39830), (91, 39872), (92, 39878), (113, 39974),

Gene: SilverChicken\_70 Start: 40345, Stop: 40710, Start Num: 49

Candidate Starts for SilverChicken\_70:

(Start: 49 @40345 has 279 MA's), (58, 40378), (60, 40384), (64, 40396), (70, 40438), (75, 40468), (78, 40492), (79, 40495), (91, 40594), (92, 40600), (105, 40675),

Gene: SimranZ1\_60 Start: 40397, Stop: 40762, Start Num: 49

Candidate Starts for SimranZ1\_60:

(Start: 49 @40397 has 279 MA's), (58, 40430), (63, 40445), (64, 40448), (69, 40487), (70, 40490), (73, 40511), (84, 40571), (89, 40604), (91, 40646), (92, 40652), (102, 40721), (113, 40748),

Gene: Slim\_61 Start: 41010, Stop: 41375, Start Num: 49

Candidate Starts for Slim\_61:

(Start: 49 @41010 has 279 MA's), (58, 41043), (63, 41058), (64, 41061), (69, 41100), (70, 41103), (73, 41124), (78, 41157), (84, 41184), (89, 41217), (91, 41259), (92, 41265), (113, 41361),

Gene: Soul22\_66 Start: 41808, Stop: 42173, Start Num: 49

Candidate Starts for Soul22\_66:

(Start: 49 @41808 has 279 MA's), (58, 41841), (63, 41856), (64, 41859), (69, 41898), (70, 41901), (73, 41922), (78, 41955), (84, 41982), (89, 42015), (91, 42057), (92, 42063), (113, 42159),

Gene: Sour\_51 Start: 44771, Stop: 44406, Start Num: 41

Candidate Starts for Sour\_51:

(39, 44777), (40, 44774), (Start: 41 @44771 has 1 MA's), (Start: 45 @44765 has 23 MA's), (50, 44750), (64, 44717), (66, 44702), (73, 44654), (77, 44633), (96, 44489), (98, 44483), (100, 44471), (107, 44444), (114, 44411),

Gene: Sparkdehlily\_67 Start: 41576, Stop: 41941, Start Num: 49

Candidate Starts for Sparkdehlily\_67:

(Start: 49 @41576 has 279 MA's), (58, 41609), (60, 41615), (64, 41627), (70, 41669), (75, 41699), (78, 41723), (79, 41726), (91, 41825), (92, 41831), (105, 41906),

Gene: Spartacus\_62 Start: 40884, Stop: 41249, Start Num: 49

Candidate Starts for Spartacus\_62:

(Start: 49 @40884 has 279 MA's), (58, 40917), (63, 40932), (64, 40935), (69, 40974), (70, 40977), (73, 40998), (84, 41058), (89, 41091), (91, 41133), (92, 41139), (113, 41235),

Gene: Spikelee\_67 Start: 42504, Stop: 42869, Start Num: 49

Candidate Starts for Spikelee\_67:

(Start: 49 @42504 has 279 MA's), (58, 42537), (63, 42552), (64, 42555), (70, 42597), (73, 42618), (84, 42678), (89, 42711), (91, 42753), (92, 42759), (113, 42855),

Gene: Spoonbill\_57 Start: 38791, Stop: 39156, Start Num: 49

Candidate Starts for Spoonbill\_57:

(Start: 49 @38791 has 279 MA's), (58, 38824), (63, 38839), (64, 38842), (70, 38884), (73, 38905), (78, 38938), (83, 38959), (84, 38965), (89, 38998), (91, 39040), (92, 39046), (113, 39142),

Gene: Squiddly\_84 Start: 50073, Stop: 50414, Start Num: 47

Candidate Starts for Squiddly\_84:

(Start: 45 @50064 has 23 MA's), (Start: 47 @50073 has 1 MA's), (104, 50388),

Gene: Squirty\_62 Start: 41343, Stop: 41708, Start Num: 49

Candidate Starts for Squirty\_62:

(Start: 49 @41343 has 279 MA's), (58, 41376), (61, 41385), (64, 41394), (78, 41490), (79, 41493), (84, 41517), (91, 41592), (92, 41598), (105, 41673),

Gene: StAnnes\_58 Start: 40743, Stop: 41108, Start Num: 49

Candidate Starts for StAnnes\_58:

(Start: 49 @40743 has 279 MA's), (58, 40776), (60, 40782), (64, 40794), (70, 40836), (75, 40866), (78, 40890), (79, 40893), (91, 40992), (92, 40998), (105, 41073), (106, 41076),

Gene: Starcevich\_58 Start: 39755, Stop: 40108, Start Num: 49

Candidate Starts for Starcevich\_58:

(38, 39719), (Start: 49 @39755 has 279 MA's), (57, 39785), (58, 39788), (62, 39800), (64, 39806), (73, 39869), (75, 39878), (76, 39884), (91, 39998), (94, 40019), (104, 40076), (109, 40088),

Gene: Starcevich\_57 Start: 39411, Stop: 39758, Start Num: 49

Candidate Starts for Starcevich\_57:

(42, 39384), (46, 39402), (Start: 49 @39411 has 279 MA's), (58, 39441), (61, 39450), (65, 39468), (73, 39522), (78, 39549), (89, 39606), (90, 39636), (91, 39648),

Gene: Starcevich\_60 Start: 40380, Stop: 40745, Start Num: 49

Candidate Starts for Starcevich\_60:

(Start: 49 @40380 has 279 MA's), (58, 40413), (63, 40428), (64, 40431), (69, 40470), (70, 40473), (73, 40494), (78, 40527), (84, 40554), (89, 40587), (91, 40629), (92, 40635), (113, 40731),

Gene: Stormageddon\_88 Start: 82406, Stop: 82756, Start Num: 48

Candidate Starts for Stormageddon\_88:

(Start: 48 @82406 has 2 MA's), (59, 82442), (80, 82553), (86, 82580), (89, 82598), (99, 82688),

Gene: Strokeseat\_56 Start: 38330, Stop: 38695, Start Num: 49

Candidate Starts for Strokeseat\_56:

(Start: 49 @38330 has 279 MA's), (58, 38363), (63, 38378), (64, 38381), (70, 38423), (73, 38444), (78, 38477), (83, 38498), (84, 38504), (91, 38579), (92, 38585), (113, 38681),

Gene: SuperGrey\_63 Start: 42051, Stop: 42416, Start Num: 49

Candidate Starts for SuperGrey\_63:

(Start: 49 @42051 has 279 MA's), (58, 42084), (60, 42090), (64, 42102), (70, 42144), (75, 42174), (78, 42198), (79, 42201), (91, 42300), (92, 42306), (105, 42381),

Gene: SwagPigglett\_65 Start: 42522, Stop: 42887, Start Num: 49

Candidate Starts for SwagPigglett\_65:

(Start: 49 @42522 has 279 MA's), (58, 42555), (63, 42570), (64, 42573), (69, 42612), (70, 42615), (73, 42636), (78, 42669), (84, 42696), (89, 42729), (91, 42771), (92, 42777), (113, 42873),

Gene: TChen\_61 Start: 41633, Stop: 41998, Start Num: 49

Candidate Starts for TChen\_61:

(Start: 49 @41633 has 279 MA's), (58, 41666), (64, 41684), (69, 41723), (70, 41726), (73, 41747), (75, 41756), (78, 41780), (84, 41807), (89, 41840), (91, 41882), (92, 41888), (113, 41984),

Gene: TChen\_59 Start: 41008, Stop: 41361, Start Num: 49

Candidate Starts for TChen\_59:

(38, 40972), (Start: 49 @41008 has 279 MA's), (62, 41053), (64, 41059), (73, 41122), (75, 41131), (82, 41167), (86, 41191), (109, 41341),

Gene: TChen\_58 Start: 40664, Stop: 41011, Start Num: 49

Candidate Starts for TChen\_58:

(42, 40637), (46, 40655), (Start: 49 @40664 has 279 MA's), (53, 40676), (58, 40694), (61, 40703), (70, 40754), (73, 40775), (85, 40838), (89, 40859), (90, 40889),

Gene: TDanisky\_67 Start: 41576, Stop: 41941, Start Num: 49

Candidate Starts for TDanisky\_67:

(Start: 49 @41576 has 279 MA's), (58, 41609), (60, 41615), (64, 41627), (70, 41669), (75, 41699), (78, 41723), (79, 41726), (91, 41825), (92, 41831), (105, 41906),

Gene: Taj\_64 Start: 41975, Stop: 42340, Start Num: 49

Candidate Starts for Taj\_64:

(Start: 49 @41975 has 279 MA's), (58, 42008), (63, 42023), (64, 42026), (69, 42065), (70, 42068), (73, 42089), (78, 42122), (84, 42149), (89, 42182), (91, 42224), (92, 42230), (113, 42326),

Gene: TaylorSipht\_30 Start: 21627, Stop: 21286, Start Num: 49

Candidate Starts for TaylorSipht\_30:

(Start: 49 @21627 has 279 MA's), (56, 21606), (71, 21534), (94, 21363), (105, 21303),

Gene: Tchotchke\_60 Start: 39968, Stop: 40333, Start Num: 49

Candidate Starts for Tchotchke\_60:

(Start: 49 @39968 has 279 MA's), (58, 40001), (60, 40007), (64, 40019), (70, 40061), (78, 40115), (79, 40118), (91, 40217), (92, 40223), (105, 40298),

Gene: ThetaBob\_62 Start: 40738, Stop: 41085, Start Num: 49

Candidate Starts for ThetaBob\_62:

(42, 40711), (46, 40729), (Start: 49 @40738 has 279 MA's), (53, 40750), (58, 40768), (61, 40777), (70, 40828), (73, 40849), (85, 40912), (89, 40933), (90, 40963),

Gene: ThetaBob\_63 Start: 41082, Stop: 41435, Start Num: 49

Candidate Starts for ThetaBob\_63:

(38, 41046), (Start: 49 @41082 has 279 MA's), (62, 41127), (64, 41133), (73, 41196), (75, 41205), (82, 41241), (86, 41265), (109, 41415),

Gene: ThetaBob\_65 Start: 41707, Stop: 42069, Start Num: 49

Candidate Starts for ThetaBob\_65:

(Start: 49 @41707 has 279 MA's), (58, 41740), (63, 41755), (64, 41758), (69, 41797), (70, 41800), (73, 41821), (75, 41830), (84, 41878), (91, 41953), (92, 41959), (113, 42055),

Gene: Thonko\_86 Start: 63155, Stop: 62742, Start Num: 43

Candidate Starts for Thonko\_86:

(3, 63593), (9, 63440), (10, 63365), (13, 63338), (23, 63224), (26, 63218), (Start: 43 @63155 has 1 MA's), (Start: 54 @63116 has 1 MA's), (61, 63086), (64, 63077), (73, 63014), (94, 62858), (95, 62846), (97, 62831), (110, 62783),

Gene: Toad24\_32 Start: 22672, Stop: 22322, Start Num: 49

Candidate Starts for Toad24\_32:

(Start: 49 @22672 has 279 MA's), (71, 22573), (106, 22339),

Gene: Tootsieroll\_61 Start: 39546, Stop: 39911, Start Num: 49

Candidate Starts for Tootsieroll\_61:

(Start: 49 @39546 has 279 MA's), (58, 39579), (63, 39594), (64, 39597), (70, 39639), (73, 39660), (78, 39693), (83, 39714), (84, 39720), (89, 39753), (91, 39795), (92, 39801), (113, 39897),

Gene: Topiatin\_65 Start: 41903, Stop: 42250, Start Num: 49

Candidate Starts for Topiatin\_65:

(42, 41876), (46, 41894), (Start: 49 @41903 has 279 MA's), (58, 41933), (61, 41942), (65, 41960), (73, 42014), (78, 42041), (89, 42098), (90, 42128), (91, 42140),

Gene: Topiatin\_66 Start: 42247, Stop: 42600, Start Num: 49

Candidate Starts for Topiatin\_66:

(38, 42211), (Start: 49 @42247 has 279 MA's), (57, 42277), (58, 42280), (62, 42292), (64, 42298), (73, 42361), (75, 42370), (76, 42376), (91, 42490), (94, 42511), (104, 42568), (109, 42580),

Gene: Topiatin\_68 Start: 42875, Stop: 43240, Start Num: 49

Candidate Starts for Topiatin\_68:

(Start: 49 @42875 has 279 MA's), (58, 42908), (63, 42923), (64, 42926), (69, 42965), (70, 42968), (73, 42989), (83, 43043), (84, 43049), (89, 43082), (91, 43124), (92, 43130), (113, 43226),

Gene: Totinger\_59 Start: 39476, Stop: 39841, Start Num: 49

Candidate Starts for Totinger\_59:

(Start: 49 @39476 has 279 MA's), (58, 39509), (63, 39524), (64, 39527), (69, 39566), (70, 39569), (73, 39590), (78, 39623), (84, 39650), (89, 39683), (91, 39725), (92, 39731), (113, 39827),

Gene: Tweety\_59 Start: 41367, Stop: 41732, Start Num: 49

Candidate Starts for Tweety\_59:

(Start: 49 @41367 has 279 MA's), (58, 41400), (60, 41406), (64, 41418), (70, 41460), (75, 41490), (78, 41514), (79, 41517), (91, 41616), (92, 41622), (105, 41697),

Gene: UncleRicky\_59 Start: 40457, Stop: 40822, Start Num: 49

Candidate Starts for UncleRicky\_59:

(Start: 49 @40457 has 279 MA's), (58, 40490), (63, 40505), (64, 40508), (69, 40547), (70, 40550), (73, 40571), (78, 40604), (83, 40625), (84, 40631), (89, 40664), (91, 40706), (92, 40712), (113, 40808),

Gene: Utz\_44 Start: 35948, Stop: 36310, Start Num: 45

Candidate Starts for Utz\_44:

(16, 35798), (18, 35804), (20, 35840), (28, 35879), (Start: 45 @35948 has 23 MA's), (74, 36077), (78, 36101),

Gene: VRedHorse\_60 Start: 39530, Stop: 39895, Start Num: 49

Candidate Starts for VRedHorse\_60:

(Start: 49 @39530 has 279 MA's), (58, 39563), (63, 39578), (64, 39581), (69, 39620), (70, 39623), (73, 39644), (78, 39677), (84, 39704), (89, 39737), (91, 39779), (92, 39785), (113, 39881),

Gene: Velveteen\_54 Start: 35996, Stop: 36349, Start Num: 49

Candidate Starts for Velveteen\_54:

(38, 35960), (Start: 49 @35996 has 279 MA's), (57, 36026), (58, 36029), (62, 36041), (64, 36047), (73, 36110), (75, 36119), (76, 36125), (91, 36239), (94, 36260), (104, 36317), (109, 36329),

Gene: Velveteen\_53 Start: 35652, Stop: 35999, Start Num: 49

Candidate Starts for Velveteen\_53:

(42, 35625), (46, 35643), (Start: 49 @35652 has 279 MA's), (58, 35682), (61, 35691), (65, 35709), (73, 35763), (78, 35790), (89, 35847), (90, 35877), (91, 35889),

Gene: Veteran\_57 Start: 39234, Stop: 39599, Start Num: 49

Candidate Starts for Veteran\_57:

(Start: 49 @39234 has 279 MA's), (58, 39267), (63, 39282), (64, 39285), (69, 39324), (70, 39327), (73, 39348), (78, 39381), (83, 39402), (84, 39408), (89, 39441), (91, 39483), (92, 39489), (113, 39585),

Gene: Violac\_62 Start: 41600, Stop: 41965, Start Num: 49

Candidate Starts for Violac\_62:

(Start: 49 @41600 has 279 MA's), (58, 41633), (63, 41648), (64, 41651), (70, 41693), (73, 41714), (78, 41747), (83, 41768), (84, 41774), (89, 41807), (91, 41849), (92, 41855), (113, 41951),

Gene: Vivum\_61 Start: 40532, Stop: 40897, Start Num: 49

Candidate Starts for Vivum\_61:

(Start: 49 @40532 has 279 MA's), (58, 40565), (63, 40580), (64, 40583), (70, 40625), (73, 40646), (78, 40679), (83, 40700), (84, 40706), (89, 40739), (91, 40781), (92, 40787), (113, 40883),

Gene: Wachhund\_61 Start: 40167, Stop: 40532, Start Num: 49

Candidate Starts for Wachhund\_61:

(Start: 49 @40167 has 279 MA's), (58, 40200), (61, 40209), (64, 40218), (70, 40260), (75, 40290), (78, 40314), (79, 40317), (91, 40416), (92, 40422), (105, 40497), (106, 40500), (108, 40503),

Gene: Wee\_64 Start: 42051, Stop: 42416, Start Num: 49

Candidate Starts for Wee\_64:

(Start: 49 @42051 has 279 MA's), (58, 42084), (63, 42099), (64, 42102), (69, 42141), (70, 42144), (73, 42165), (78, 42198), (84, 42225), (89, 42258), (91, 42300), (92, 42306), (113, 42402),

Gene: Westrich\_33 Start: 22349, Stop: 21999, Start Num: 49

Candidate Starts for Westrich\_33:

(Start: 49 @22349 has 279 MA's), (71, 22250), (106, 22016),

Gene: Whatsapiecost\_60 Start: 39457, Stop: 39822, Start Num: 49

Candidate Starts for Whatsapiecost\_60:

(Start: 49 @39457 has 279 MA's), (58, 39490), (60, 39496), (64, 39508), (70, 39550), (75, 39580), (78, 39604), (79, 39607), (91, 39706), (92, 39712), (105, 39787), (106, 39790), (108, 39793),

Gene: Whouxphf\_57 Start: 40126, Stop: 40491, Start Num: 49

Candidate Starts for Whouxphf\_57:

(Start: 49 @40126 has 279 MA's), (58, 40159), (63, 40174), (64, 40177), (69, 40216), (70, 40219), (73, 40240), (78, 40273), (84, 40300), (89, 40333), (91, 40375), (92, 40381), (113, 40477),

Gene: WillSterrel\_61 Start: 42001, Stop: 42366, Start Num: 49

Candidate Starts for WillSterrel\_61:

(Start: 49 @42001 has 279 MA's), (58, 42034), (63, 42049), (64, 42052), (69, 42091), (70, 42094), (73, 42115), (84, 42175), (89, 42208), (91, 42250), (92, 42256), (113, 42352),

Gene: Wisp\_50 Start: 36176, Stop: 36538, Start Num: 45

Candidate Starts for Wisp\_50:

(20, 36068), (28, 36107), (Start: 45 @36176 has 23 MA's), (68, 36275), (73, 36302), (74, 36305), (78, 36329), (87, 36374),

Gene: XFactor\_58 Start: 39256, Stop: 39621, Start Num: 49

Candidate Starts for XFactor\_58:

(Start: 49 @39256 has 279 MA's), (58, 39289), (60, 39295), (64, 39307), (70, 39349), (75, 39379), (78, 39403), (79, 39406), (91, 39505), (92, 39511), (105, 39586), (106, 39589),

Gene: Yorick\_59 Start: 40588, Stop: 40953, Start Num: 49

Candidate Starts for Yorick\_59:

(Start: 49 @40588 has 279 MA's), (58, 40621), (63, 40636), (64, 40639), (69, 40678), (70, 40681), (73, 40702), (78, 40735), (84, 40762), (89, 40795), (91, 40837), (92, 40843), (113, 40939),

Gene: Yoshi\_73 Start: 41971, Stop: 42333, Start Num: 49

Candidate Starts for Yoshi\_73:

(Start: 49 @41971 has 279 MA's), (58, 42004), (63, 42019), (64, 42022), (69, 42061), (70, 42064), (73, 42085), (75, 42094), (84, 42142), (91, 42217), (92, 42223), (113, 42319),

Gene: Yoshi\_71 Start: 41346, Stop: 41699, Start Num: 49

Candidate Starts for Yoshi\_71:

(38, 41310), (Start: 49 @41346 has 279 MA's), (62, 41391), (64, 41397), (73, 41460), (75, 41469), (82, 41505), (86, 41529), (109, 41679),

Gene: Yoshi\_70 Start: 41002, Stop: 41349, Start Num: 49

Candidate Starts for Yoshi\_70:

(42, 40975), (46, 40993), (Start: 49 @41002 has 279 MA's), (53, 41014), (58, 41032), (61, 41041), (70, 41092), (73, 41113), (85, 41176), (89, 41197), (90, 41227),

Gene: Zapner\_73 Start: 42130, Stop: 42495, Start Num: 49

Candidate Starts for Zapner\_73:

(Start: 49 @42130 has 279 MA's), (58, 42163), (63, 42178), (64, 42181), (69, 42220), (70, 42223), (73, 42244), (78, 42277), (84, 42304), (89, 42337), (91, 42379), (92, 42385), (113, 42481),

Gene: Zarbodnamra\_50 Start: 34890, Stop: 35252, Start Num: 45

Candidate Starts for Zarbodnamra\_50:

(18, 34746), (20, 34782), (28, 34821), (Start: 45 @34890 has 23 MA's), (74, 35019), (78, 35043),

Gene: Zenteno07\_93 Start: 66203, Stop: 65790, Start Num: 37

Candidate Starts for Zenteno07\_93:

(Start: 37 @66203 has 3 MA's), (61, 66122), (76, 66035), (84, 65993), (89, 65960), (95, 65885), (114, 65795),

Gene: Zerg\_60 Start: 40001, Stop: 40366, Start Num: 49

Candidate Starts for Zerg\_60:

(Start: 49 @40001 has 279 MA's), (58, 40034), (63, 40049), (64, 40052), (69, 40091), (70, 40094), (73, 40115), (78, 40148), (84, 40175), (89, 40208), (91, 40250), (92, 40256), (113, 40352),

Gene: ZiggyZoo\_51 Start: 37223, Stop: 37585, Start Num: 45

Candidate Starts for ZiggyZoo\_51:

(20, 37115), (28, 37154), (Start: 45 @37223 has 23 MA's), (68, 37322), (73, 37349), (74, 37352), (78, 37376),

Gene: Zilla\_50 Start: 34637, Stop: 34999, Start Num: 45

Candidate Starts for Zilla\_50:

(18, 34493), (20, 34529), (28, 34568), (Start: 45 @34637 has 23 MA's), (74, 34766), (78, 34790),

Gene: Zixiang\_29 Start: 22031, Stop: 21678, Start Num: 49

Candidate Starts for Zixiang\_29:

(Start: 49 @22031 has 279 MA's), (71, 21932), (106, 21695),

Gene: Zizzle\_64 Start: 41844, Stop: 42209, Start Num: 49

Candidate Starts for Zizzle\_64:

(Start: 49 @41844 has 279 MA's), (58, 41877), (63, 41892), (64, 41895), (69, 41934), (70, 41937), (73, 41958), (78, 41991), (84, 42018), (89, 42051), (91, 42093), (92, 42099), (113, 42195),