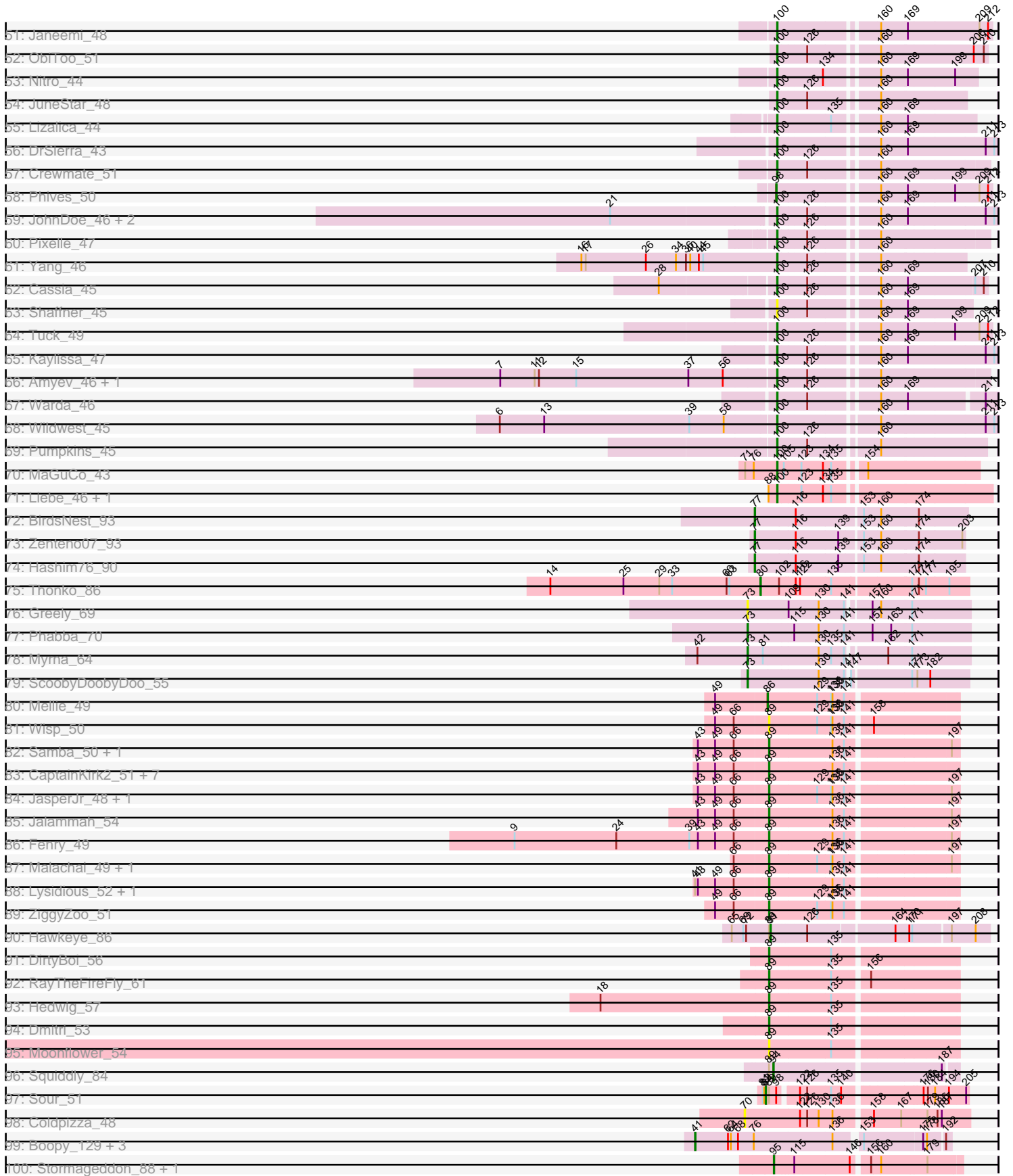
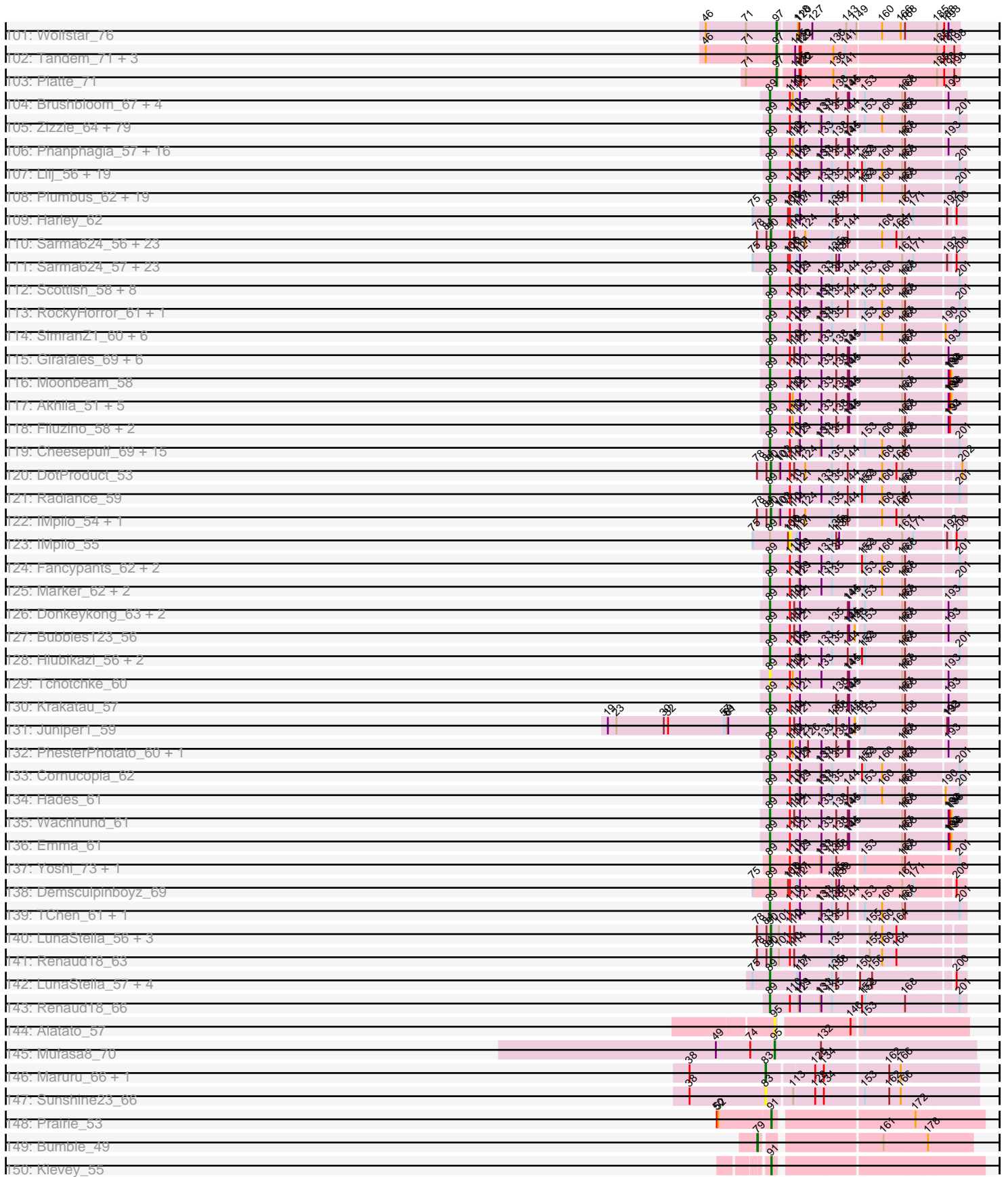


Pham 215684







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 215684 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215684 has 495 members, 83 are drafts.

Phages represented in each track:

- Track 1 : Settecandela\_165, Phrappuccino\_165
- Track 2 : MalagasyRose\_65
- Track 3 : StAugustine\_140
- Track 4 : KendraB23\_34, Westrich\_33, Gravel\_33, Pelletreau\_33, Toad24\_31
- Track 5 : Vulpecula\_30
- Track 6 : TaylorSipht\_30
- Track 7 : Orcanus\_30
- Track 8 : Eesa\_29
- Track 9 : Brynnie\_30
- Track 10 : Jamun\_29
- Track 11 : Basilisk\_31
- Track 12 : Abidatro\_30
- Track 13 : Chickaboom\_31
- Track 14 : Ruchi\_30
- Track 15 : Bedetta\_35
- Track 16 : Cygnet\_35
- Track 17 : Bible12\_33, Jerole\_38, Colusalem\_34
- Track 18 : Zhuangyuan\_36
- Track 19 : OtsoOtso\_36, Polka\_32
- Track 20 : LittleTokyo\_33
- Track 21 : Leona\_30
- Track 22 : Andrew\_32
- Track 23 : Raphaella\_77, AdaS\_72, Faja\_79, BenchScraper\_76, JellyBread\_72, CookieBear\_73, Hestia\_70, YoungHarleezy\_74
- Track 24 : Seahorse\_84
- Track 25 : Sakai\_73, Gorpy\_74, MaterMagnus\_76, Aikyam\_75
- Track 26 : EvePickles\_75, ThayneTheZag\_81, Globfish\_75
- Track 27 : Bhageatrice\_81
- Track 28 : Shukran\_73
- Track 29 : Isolde\_74
- Track 30 : Persistence\_70
- Track 31 : MUWow\_77
- Track 32 : Richie\_79
- Track 33 : MidnightRain\_81, SpicyFrank\_78
- Track 34 : Anekin\_78
- Track 35 : BillyTP\_77, Lawnathon\_76, Windest\_79
- Track 36 : Raqqa\_74

- Track 37 : Tiff81\_72
- Track 38 : Phrank15\_80
- Track 39 : AbbyDaisy\_79
- Track 40 : Hillester\_80, RadFad\_81
- Track 41 : BlueShadow\_78
- Track 42 : Sashimi\_76
- Track 43 : Auxilium\_74
- Track 44 : Tbone\_46
- Track 45 : Powerpuff\_48, YesChef\_46, Tutumahutu\_47, Lego\_45, AGrandiflora\_48, Cyan\_46
- Track 46 : Mudpuppy\_42
- Track 47 : Community\_48
- Track 48 : lter\_45
- Track 49 : IttyBittyPiggy\_46
- Track 50 : Ascela\_45
- Track 51 : Janeemi\_48
- Track 52 : ObiToo\_51
- Track 53 : Nitro\_44
- Track 54 : JuneStar\_48
- Track 55 : Lizalica\_44
- Track 56 : DrSierra\_43
- Track 57 : Crewmate\_51
- Track 58 : Phives\_50
- Track 59 : JohnDoe\_46, Simpson\_48, Joemato\_46
- Track 60 : Pixelle\_47
- Track 61 : Yang\_46
- Track 62 : Cassia\_45
- Track 63 : Shaffner\_45
- Track 64 : Tuck\_49
- Track 65 : Kaylissa\_47
- Track 66 : Amyev\_46, Tian\_45
- Track 67 : Warda\_46
- Track 68 : Wildwest\_45
- Track 69 : Pumpkins\_45
- Track 70 : MaGuCo\_43
- Track 71 : Liebe\_46, Maureen\_46
- Track 72 : BirdsNest\_93
- Track 73 : Zenteno07\_93
- Track 74 : Hashim76\_90
- Track 75 : Thonko\_86
- Track 76 : Greely\_69
- Track 77 : Phabba\_70
- Track 78 : Myrna\_64
- Track 79 : ScoobyDoobyDoo\_55
- Track 80 : Mellie\_49
- Track 81 : Wisp\_50
- Track 82 : Samba\_50, Hitter\_51
- Track 83 : CaptainKirk2\_51, MintFen\_51, BlingBling\_48, Barco\_49, Melba\_50, Delian\_54, Zarbodnamra\_50, Archis\_54
- Track 84 : JasperJr\_48, Guacamole\_48
- Track 85 : Jalammah\_54
- Track 86 : Fenry\_49
- Track 87 : Malachai\_49, Begonia\_49

- Track 88 : Lysidious\_52, Utz\_44
- Track 89 : ZiggyZoo\_51
- Track 90 : Hawkeye\_86
- Track 91 : DirtyBoi\_56
- Track 92 : RayTheFireFly\_61
- Track 93 : Hedwig\_57
- Track 94 : Dmitri\_53
- Track 95 : Moonflower\_54
- Track 96 : Squiddly\_84
- Track 97 : Sour\_51
- Track 98 : Coldpizza\_48
- Track 99 : Boopy\_129, BlueNGold\_128, Forza\_129, Mareelih\_127
- Track 100 : Stormageddon\_88, RedWattleHog\_91
- Track 101 : Wolfstar\_76
- Track 102 : Tandem\_71, Pioneer3\_71, Hortus1\_71, OlinDD\_71
- Track 103 : Platte\_71
- Track 104 : Brushbloom\_67, MilleniumForce\_63, Ramsey\_59, Batiatus\_58, Aubs\_60
- Track 105 : Zizzle\_64, Rita\_61, DeadP\_66, Soul22\_66, Martik\_60, AlpineSix\_65, Koella\_54, Zapner\_73, Dante\_61, Maravista\_61, Totinger\_59, Rockne\_61, Eish\_64, James\_64, Pippy\_58, Chuckly\_63, SG4\_57, FreddyB\_61, LastJedi\_54, Dorothy\_58, Crumble\_55, Sebastian\_65, Taj\_64, Jinglebell\_65, Ochi17\_63, Jabbawokkie\_74, GUmbe\_58, MinionDave\_59, Lizziana\_66, Priscilla\_60, Whouxphf\_57, Zerg\_60, VRedHorse\_60, PMC\_57, Modragons\_64, Blarby\_72, Boomer\_65, Mattes\_64, Firehouse51\_61, Inventum\_55, OwlsT2W\_60, Slim\_61, Mutaforma13\_64, Starcevich\_60, ShowerHandel\_63, SiSi\_58, Burwell21\_58, SwagPigglett\_65, EmiMonkey\_58, Hegedechwinu\_60, Pollywog\_61, Karhdo\_57, Saal\_62, BuzzLyseyear\_66, Alexphander\_64, KingJulian\_57, OlympiaSaint\_62, DaWorst\_61, IbOuu\_61, Yorick\_59, Wee\_64, Sassafras\_58, OfUltron\_65, Oksu\_64, Llama\_65, CaptainTrips\_57, Emmaloid\_61, Brocalys\_55, BobaPhett\_64, Enby\_61, ShiLan\_59, NormanBulbieJr\_60, Clifton\_55, Eradicator\_53, Cabrinians\_61, Gorge\_64, PhilipPhlop\_58, LittleShirley\_59, Polka14\_58, Corium\_57
- Track 106 : Phanphagia\_57, Beakin\_61, DLane\_55, ArcusAngelus\_62, TDanisky\_67, Bobi\_65, Ms6\_55, Melissauren88\_58, PopTart\_54, SuperGrey\_63, SassyB\_54, SilverChicken\_70, Ardmore\_52, Kenuha5\_57, Chevrolet\_65, Sparkdehlily\_67, Tweety\_59
- Track 107 : Llij\_56, Phatniss\_58, MulchExplorer\_67, Lorde\_60, Job42\_62, UncleRicky\_59, Nivrat\_56, Avani\_68, Drago\_58, QuickMath\_62, DirtMcgirt\_59, Kimberlium\_63, Jarcob\_60, LilMoolah\_58, Estave1\_63, DRBy19\_63, Kersh\_62, Veteran\_57, Philus\_63, Rialto\_66
- Track 108 : Plumbus\_62, Daenerys\_54, ByChance\_52, Pacc40\_54, KingMidas\_59, BodEinwohner17\_60, Empress\_58, Leozinho\_59, Leperchaun\_52, DosHalletts\_62, Tootsieroll\_61, Vivum\_63, JoeyJr\_55, Poenanya\_60, Doomphist\_60, PHappiness\_55, DaddyRickover\_59, Violac\_63, Spoonbill\_57, RitaG\_55
- Track 109 : Harley\_62
- Track 110 : Sarma624\_56, BigPhil\_54, Kingsley\_55, Cheesepuff\_66, MulchExplorer\_64, DoRead\_61, Cerasum\_54, Harley\_61, Starcevich\_57, Brookers\_55, Kimberlium\_60, Che8\_63, Coco12\_57, Ovechkin\_57, Seagreen\_58, QuickMath\_59, Demsculpinboyz\_68, JalFarm20\_71, Velveteen\_53, Jant\_62, Che9d\_66, Juice456\_59, Cornie\_53, Royals2015\_61
- Track 111 : Sarma624\_57, BigPhil\_55, Cheesepuff\_67, MulchExplorer\_65, DoRead\_62, Cerasum\_55, QuickMath\_60, Starcevich\_58, Brookers\_56, Che8\_64, Coco12\_58, Ovechkin\_58, Seagreen\_59, Jant\_63, DotProduct\_54, Kimberlium\_61,

JalFarm20\_72, Velveteen\_54, Juniper1\_57, Che9d\_67, Juice456\_60, Cornie\_54, Kingsley\_56, Royals2015\_62

- Track 112 : Scottish\_58, EleanorGeorge\_61, Blexus\_58, ShroomBoi\_62, Mova\_61, KristaRAM\_63, Gandalph\_63, MadMen\_58, Madiba\_58
- Track 113 : RockyHorror\_61, Doug\_62
- Track 114 : SimranZ1\_60, Phasih\_58, Fastidio\_60, DillTech15\_57, Ibhubesi\_60, Sabbb\_64, Demsculpinboyz\_71
- Track 115 : Girafales\_69, Quico\_68, Florinda\_71, Minnie\_63, Bipolar\_58, Sandalphon\_61, Fruitloop\_57
- Track 116 : Moonbeam\_58
- Track 117 : Akhila\_51, MilanaBonita\_50, Whatsapiecost\_60, Hamulus\_61, Ogopogo\_65, Flathead\_60
- Track 118 : Filuzino\_58, StAnnes\_58, XFactor\_58
- Track 119 : Cheesepuff\_69, Grimmer\_70, LunaBlu\_62, GigiOuiOui\_56, Girr\_58, Ruby\_56, IrishSherpFalk\_61, NewHope4\_64, Mahavrat\_58, Mozy\_69, WillSterrel\_61, Latretium\_62, Cornie\_56, Spartacus\_62, MisterCuddles\_58, Galactic\_59
- Track 120 : DotProduct\_53
- Track 121 : Radiance\_59
- Track 122 : IMpilo\_54, Juniper1\_56
- Track 123 : IMpilo\_55
- Track 124 : Fancypants\_62, BlueCrab\_60, Byougenkin\_58
- Track 125 : Marker\_62, Spikelee\_67, OldBen\_57
- Track 126 : Donkeykong\_63, Squirty\_62, Shauna1\_58
- Track 127 : Bubbles123\_56
- Track 128 : Hlubikazi\_56, Mandlovu\_56, Strokeseat\_56
- Track 129 : Tchotchke\_60
- Track 130 : Krakatau\_57
- Track 131 : Juniper1\_59
- Track 132 : PhesterPhotato\_60, Phalconet\_58
- Track 133 : Cornucopia\_62
- Track 134 : Hades\_61
- Track 135 : Wachhund\_61
- Track 136 : Emma\_61
- Track 137 : Yoshi\_73, ThetaBob\_65
- Track 138 : Demsculpinboyz\_69
- Track 139 : TChen\_61, LunaStella\_59
- Track 140 : LunaStella\_56, Yoshi\_70, ThetaBob\_62, TChen\_58
- Track 141 : Renaud18\_63
- Track 142 : LunaStella\_57, Renaud18\_64, Yoshi\_71, ThetaBob\_63, TChen\_59
- Track 143 : Renaud18\_66
- Track 144 : Alatato\_57
- Track 145 : Mufasa8\_70
- Track 146 : Maruru\_66, Sonali\_65
- Track 147 : Sunshine23\_66
- Track 148 : Prairie\_53
- Track 149 : Bumble\_49
- Track 150 : Klevey\_55
- Track 151 : Bolt007\_53
- Track 152 : Altadena\_50
- Track 153 : Lilmac1015\_57, CalWood4100\_57
- Track 154 : Circuit\_48
- Track 155 : Vitus\_44
- Track 156 : GoldDust\_45, Vibaki\_44



- Track 157 : Hirko\_43
- Track 158 : BlackSpider\_67
- Track 159 : Zucker\_73
- Track 160 : Bagrid\_145, Dove\_130, NihilNomen\_146, Minerva\_144, Halley\_146, Optimus\_135, Wanda\_144, Odette\_148, DmpstrDiver\_145, Ejimix\_137, Klein\_142, Zelink\_139, Kalah2\_135, BAKA\_144, EricMillard\_136, Hughesyang\_143, JuicyJay\_140, Constella\_138, Schatzie\_140, Duke13\_140, ThreeRngTarjay\_139, Dallas\_145, Beem\_146, Phoebus\_144, Bombitas\_132
- Track 161 : Marleymoo\_127, Bobby\_134
- Track 162 : Pound\_136
- Track 163 : Porcelain\_140, Yeet\_138, MiaZeal\_143, HokkenD\_137, Redno2\_139, Lucky2013\_136, KashFlow\_143
- Track 164 : Thibault\_127
- Track 165 : Footloose\_58

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

The start number called the most often in the published annotations is 89, it was called in 250 of the 412 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_51, Alexphander\_64, AlpineSix\_65, Archis\_54, ArcusAngelus\_62, Ardmore\_52, Aubs\_60, Avani\_68, Barco\_49, Batiatus\_58, Beakin\_61, Begonia\_49, BigPhil\_55, Bipolar\_58, Blarby\_72, Blexus\_58, BlingBling\_48, BlueCrab\_60, BobaPhett\_64, Bobi\_65, BodEinwohner17\_60, Boomer\_65, Brocalys\_55, Brookers\_56, Brushbloom\_67, Bubbles123\_56, Burwell21\_58, BuzzLyseyear\_66, ByChance\_52, Byougenkin\_58, Cabrinians\_61, CaptainKirk2\_51, CaptainTrips\_57, Cerasum\_55, Che8\_64, Che9d\_67, CheesePuff\_67, CheesePuff\_69, Chevrolet\_65, Chuckly\_63, Clifton\_55, Coco12\_58, Corium\_57, Cornie\_54, Cornie\_56, Cornucopia\_62, Crumble\_55, DLane\_55, DRBy19\_63, DaWorst\_61, DaddyRickover\_59, Daenerys\_54, Dante\_61, DeadP\_66, Delian\_54, Demsculpinboyz\_69, Demsculpinboyz\_71, DillTech15\_57, DirtMcGirt\_59, DirtyBoi\_56, Dmitri\_53, DoRead\_62, Donkeykong\_63, Doomphist\_60, Dorothy\_58, DosHalletts\_62, DotProduct\_54, Doug\_62, Drago\_58, Eish\_64, EleanorGeorge\_61, EmiMonkey\_58, Emma\_61, Emmaloid\_61, Empress\_58, Enby\_61, Eradicator\_53, Estave1\_63, Fancypants\_62, Fastidio\_60, Fenry\_49, Filuzino\_58, Firehouse51\_61, Flathead\_60, Florinda\_71, Footloose\_58, FreddyB\_61, Fruitloop\_57, GUmble\_58, Galactic\_59, Gandolph\_63, GigiOuiOui\_56, Girafales\_69, Girr\_58, Gorge\_64, Grimmer\_70, Guacamole\_48, Hades\_61, Hamulus\_61, Harley\_62, Hedwig\_57, Hegedechwinu\_60, Hitter\_51, Hlubikazi\_56, IbOuu\_61, Ibhubesu\_60, Inventum\_55, IrishSherpFalk\_61, Jabbawokkie\_74, JalFarm20\_72, Jalammah\_54, James\_64, Jant\_63, Jacob\_60, JasperJr\_48, Jinglebell\_65, Job42\_62, JoeyJr\_55, Juice456\_60, Juniper1\_57, Juniper1\_59, Karhdo\_57, Kenuha5\_57, Kersh\_62, Kimberlium\_61, Kimberlium\_63, KingJulian\_57, KingMidas\_59, 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, LunaBlu\_62, LunaStella\_57, LunaStella\_59, Lysidious\_52, MadMen\_58, Madiba\_58, Mahavrat\_58, Malachai\_49, Mandlovu\_56, Maravista\_61, Marker\_62, Martik\_60, Mattes\_64, Melba\_50, Melissauren88\_58, MilanaBonita\_50, MilleniumForce\_63, MinionDave\_59, Minnie\_63, MintFen\_51, MisterCuddles\_58, Modragons\_64,

Moonbeam\_58, Moonflower\_54, Mova\_61, Mozy\_69, Ms6\_55, MulchExplorer\_65, MulchExplorer\_67, Mutaforma13\_64, NewHope4\_64, Nivrat\_56, NormanBulbieJr\_60, Ochi17\_63, OfUltron\_65, Ogopogo\_65, Oksu\_64, OldBen\_57, OlympiaSaint\_62, Ovechkin\_58, OwlsT2W\_60, PHappiness\_55, PMC\_57, Pacc40\_54, Phalconet\_58, Phanphagia\_57, Phasih\_58, Phatniss\_58, PhesterPotato\_60, Philus\_63, PhilipPhlop\_58, Pippy\_58, Plumbus\_62, Poenanya\_60, Polka14\_58, Pollywog\_61, PopTart\_54, Priscilla\_60, QuickMath\_60, QuickMath\_62, Quico\_68, Radiance\_59, Ramsey\_59, RayTheFireFly\_61, Renaud18\_64, Renaud18\_66, Rialto\_66, RitaG\_55, Rita\_61, Rockne\_61, RockyHorror\_61, Royals2015\_62, Ruby\_56, SG4\_57, Saal\_62, Sabb\_64, Samba\_50, Sandalphon\_61, Sarma624\_57, Sassafras\_58, SassyB\_54, Scottish\_58, Seabastian\_65, 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\_58, Starcevich\_60, Strokeseat\_56, SuperGrey\_63, SwagPiggett\_65, TChen\_59, TChen\_61, TDanisky\_67, Taj\_64, Tchotchke\_60, ThetaBob\_63, ThetaBob\_65, Tootsieroll\_61, Totinger\_59, Tweety\_59, UncleRicky\_59, Utz\_44, VRedHorse\_60, Velveteen\_54, Veteran\_57, Violac\_63, Vivum\_63, Wachhund\_61, Wee\_64, Whatsapiecost\_60, Whouxphf\_57, WillSterrel\_61, Wisp\_50, XFactor\_58, Yorick\_59, Yoshi\_71, Yoshi\_73, Zapner\_73, Zarbodnamra\_50, Zerg\_60, ZiggyZoo\_51, Zizzle\_64,

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

- Hawkeye\_86, IMpilo\_55, Sour\_51, Squiddly\_84,

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

- AGrandiflora\_48, AbbyDaisy\_79, Abidatro\_30, AdaS\_72, Aikyam\_75, Alatato\_57, Altadena\_50, Amyev\_46, Andrew\_32, Anekin\_78, Ascela\_45, Auxilium\_74, BAKA\_144, Bagrid\_145, Basilisk\_31, Bedetta\_35, Beem\_146, BenchScraper\_76, Bhageatrice\_81, Bibble12\_33, BigPhil\_54, BillyTP\_77, BirdsNest\_93, BlackSpider\_67, BlueNGold\_128, BlueShadow\_78, Bobby\_134, Bolt007\_53, Bombitas\_132, Boopy\_129, Brookers\_55, Brynnie\_30, Bumble\_49, CalWood4100\_57, Cassia\_45, Cerasum\_54, Che8\_63, Che9d\_66, Cheesepuff\_66, Chickaboom\_31, Circuit\_48, Coco12\_57, Coldpizza\_48, Colusalem\_34, Community\_48, Constella\_138, CookieBear\_73, Cornie\_53, Crewmate\_51, Cyan\_46, Cygnet\_35, Dallas\_145, Demsculpinboyz\_68, DmpstrDiver\_145, DoRead\_61, DotProduct\_53, Dove\_130, DrSierra\_43, Duke13\_140, Eesa\_29, Ejimix\_137, EricMillard\_136, EvePickles\_75, Faja\_79, Forza\_129, Globfish\_75, GoldDust\_45, Gorpy\_74, Gravel\_33, Greely\_69, Halley\_146, Harley\_61, Hashim76\_90, Hestia\_70, Hillester\_80, Hirko\_43, HokkenD\_137, Hortus1\_71, Hughesyang\_143, IMpilo\_54, Isolde\_74, Iter\_45, IttyBittyPiggy\_46, JalFarm20\_71, Jamun\_29, Janeemi\_48, Jant\_62, JellyBread\_72, Jerole\_38, Joemato\_46, JohnDoe\_46, Juice456\_59, JuicyJay\_140, JuneStar\_48, Juniper1\_56, Kalah2\_135, KashFlow\_143, Kaylissa\_47, KendraB23\_34, Kimberlium\_60, Kingsley\_55, Klein\_142, Klevey\_55, Lawnathon\_76, Lego\_45, Leona\_30, Liebe\_46, Lilmac1015\_57, LittleTokyo\_33, Lizalica\_44, Lucky2013\_136, LunaStella\_56, MUWow\_77, MaGuCo\_43, MalagasyRose\_65, Mareelih\_127, Marleymoo\_127, Maruru\_66, MaterMagnus\_76, Maureen\_46, Mellie\_49, MiaZeal\_143, MidnightRain\_81, Minerva\_144, Mudpuppy\_42, Mufasa8\_70, MulchExplorer\_64, Myrna\_64, NihilNomen\_146, Nitro\_44, ObiToo\_51, Odette\_148, OlinDD\_71, Optimus\_135, Orcanus\_30, OtsoOtso\_36, Ovechkin\_57, Pelletreau\_33, Persistence\_70, Phabba\_70, Phives\_50, Phoebus\_144, Phrank15\_80, Phrappuccino\_165, Pioneer3\_71, Pixelle\_47, Platte\_71, Polka\_32, Porcelain\_140, Pound\_136, Powerpuff\_48, Prairie\_53, Pumpkins\_45, QuickMath\_59, RadFad\_81, Raphaella\_77, Raqqa\_74, RedWattleHog\_91, Redno2\_139, Renaud18\_63,

Richie\_79, Royals2015\_61, Ruchi\_30, Sakai\_73, Sarma624\_56, Sashimi\_76, Schatzie\_140, ScoobyDoobyDoo\_55, Seagreen\_58, Seahorse\_84, Settecandela\_165, Shaffner\_45, Shukran\_73, Simpson\_48, Sonali\_65, SpicyFrank\_78, StAugustine\_140, Starceвич\_57, Stormageddon\_88, Sunshine23\_66, TChen\_58, Tandem\_71, TaylorSipht\_30, Tbone\_46, ThayneTheZag\_81, ThetaBob\_62, Thibault\_127, Thonko\_86, ThreeRngTarjay\_139, Tian\_45, Tiff81\_72, Toad24\_31, Tuck\_49, Tutumahutu\_47, Velveteen\_53, Vibaki\_44, Vitus\_44, Vulpecula\_30, Wanda\_144, Warda\_46, Westrich\_33, Wildwest\_45, Windest\_79, Wolfstar\_76, Yang\_46, Yeet\_138, YesChef\_46, Yoshi\_70, YoungHarleezy\_74, Zelink\_139, Zenteno07\_93, Zhuangyuan\_36, Zucker\_73,

### Summary by start number:

#### Start 41:

- Found in 6 of 495 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 4 of 412
- Called 66.7% of time when present
- Phage (with cluster) where this start called: BlueNGold\_128 (DS), Boopy\_129 (DS), Forza\_129 (DS), Mareelih\_127 (DS),

#### Start 70:

- Found in 1 of 495 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Coldpizza\_48 (DR),

#### Start 73:

- Found in 4 of 495 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 3 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Greely\_69 (C2), Myrna\_64 (C2), Phabba\_70 (C2), ScoobyDoobyDoo\_55 (C2),

#### Start 77:

- Found in 3 of 495 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 3 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdsNest\_93 (B13), Hashim76\_90 (B13), Zenteno07\_93 (B13),

#### Start 78:

- Found in 34 of 495 ( 6.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Cygnet\_35 (AS2), Zhuangyuan\_36 (AS2),

#### Start 79:

- Found in 3 of 495 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 2 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altadena\_50 (FH), Bumble\_49 (FH), Circuit\_48 (FH),

Start 80:

- Found in 1 of 495 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Thonko\_86 (B8),

Start 83:

- Found in 3 of 495 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Maruru\_66 (FG), Sonali\_65 (FG), Sunshine23\_66 (FG),

Start 84:

- Found in 33 of 495 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 1 of 412
- Called 3.0% of time when present
- Phage (with cluster) where this start called: Sour\_51 (DR),

Start 86:

- Found in 1 of 495 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mellie\_49 (CV),

Start 89:

- Found in 282 of 495 ( 57.0% ) of genes in pham
- Manual Annotations of this start: 250 of 412
- Called 98.6% of time when present
- Phage (with cluster) where this start called: Akhila\_51 (F1), Alexphander\_64 (F1), AlpineSix\_65 (F1), Archis\_54 (CV), ArcusAngelus\_62 (F1), Ardmore\_52 (F1), Aubs\_60 (F1), Avani\_68 (F2), Barco\_49 (CV), Batiatus\_58 (F1), Beakin\_61 (F1), Begonia\_49 (CV), BigPhil\_55 (F1), Bipolar\_58 (F1), Blarby\_72 (F), Blexus\_58 (F1), BlingBling\_48 (CV), BlueCrab\_60 (F1), BobaPhett\_64 (F1), Bobi\_65 (F1), BodEinwohner17\_60 (F1), Boomer\_65 (F1), Brocalys\_55 (F1), Brookers\_56 (F1), Brushbloom\_67 (F1), Bubbles123\_56 (F1), Burwell21\_58 (F1), BuzzLyseyear\_66 (F1), ByChance\_52 (F1), Byougenkin\_58 (F1), Cabrinians\_61 (F1), CaptainKirk2\_51 (CV), CaptainTrips\_57 (F1), Cerasum\_55 (F1), Che8\_64 (F1), Che9d\_67 (F2), CheesePuff\_67 (F1), CheesePuff\_69 (F1), Chevrolet\_65 (F1), Chuckly\_63 (F1), Clifton\_55 (F1), Coco12\_58 (F1), Corium\_57 (F1), 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), Delian\_54 (CV), Demsculpinboyz\_69 (F2), Demsculpinboyz\_71 (F2), DillTech15\_57 (F1), DirtMcGirt\_59 (F1), DirtyBoi\_56 (DB), Dmitri\_53 (DB), DoRead\_62 (F1), Donkeykong\_63 (F1), Doomphist\_60 (F1), Dorothy\_58 (F1), DosHalletts\_62 (F1), DotProduct\_54 (F1), Doug\_62 (F1), Drago\_58 (F1), 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), Fenry\_49 (CV), Filuzino\_58 (F1), Firehouse51\_61 (F1), Flathead\_60 (F1), Florinda\_71 (F1), Footloose\_58 (singleton), 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), Grimmer\_70 (F1), Guacamole\_48 (CV), Hades\_61 (F1), Hamulus\_61 (F1), Harley\_62 (F1), Hedwig\_57 (DB), Hegedechwinu\_60 (F1), Hitter\_51 (CV), Hlubikazi\_56 (F1), IbOuu\_61 (F1), Ibhubesi\_60 (F1), Inventum\_55 (F1), IrishSherpFalk\_61 (F1), Jabbawokkie\_74 (F2), JalFarm20\_72 (F1), Jalammah\_54 (CV), James\_64 (F1), Jant\_63 (F1), Jarcob\_60 (F1), JasperJr\_48 (CV), Jinglebell\_65 (F1), Job42\_62 (F1), JoeyJr\_55 (F1), Juice456\_60 (F1), Juniper1\_57 (F1), Juniper1\_59 (F1), Karhdo\_57 (F1), Kenuha5\_57 (F1), Kersh\_62 (F1), Kimberlium\_61 (F1), Kimberlium\_63 (F1), KingJulian\_57 (F1), KingMidas\_59 (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), LunaBlu\_62 (F1), LunaStella\_57 (F4), LunaStella\_59 (F4), Lysidious\_52 (CV), MadMen\_58 (F1), Madiba\_58 (F1), Mahavrat\_58 (F1), Malachai\_49 (CV), Mandlovu\_56 (F1), Maravista\_61 (F1), Marker\_62 (F1), Martik\_60 (F1), Mattes\_64 (F1), Melba\_50 (CV), Melissauren88\_58 (F1), MilanaBonita\_50 (F1), MilleniumForce\_63 (F1), MinionDave\_59 (F1), Minnie\_63 (F1), MintFen\_51 (CV), MisterCuddles\_58 (F1), Modragons\_64 (F1), Moonbeam\_58 (F1), Moonflower\_54 (DB), Mova\_61 (F1), Mozy\_69 (F1), Ms6\_55 (F1), MulchExplorer\_65 (F1), MulchExplorer\_67 (F1), Mutaforma13\_64 (F1), NewHope4\_64 (F1), Nivrat\_56 (F1), NormanBulbieJr\_60 (F1), Ochi17\_63 (F1), OfUltron\_65 (F1), Ogopogo\_65 (F1), Oksu\_64 (F1), OldBen\_57 (F1), OlympiaSaint\_62 (F1), Ovechkin\_58 (F1), OwlsT2W\_60 (F1), PHappiness\_55 (F1), PMC\_57 (F1), Pacc40\_54 (F1), Phalconet\_58 (F1), Phanphagia\_57 (F1), Phasih\_58 (F1), Phatniss\_58 (F1), PhesterPhotato\_60 (F1), Philus\_63 (F1), PhilipPhlop\_58 (F1), Pippy\_58 (F1), Plumbus\_62 (F1), Poenanya\_60 (F1), Polka14\_58 (F1), Pollywog\_61 (F1), PopTart\_54 (F1), Priscilla\_60 (F1), QuickMath\_60 (F1), QuickMath\_62 (F1), Quico\_68 (F1), Radiance\_59 (F1), Ramsey\_59 (F1), RayTheFireFly\_61 (DB), Renaud18\_64 (F4), Renaud18\_66 (F4), Rialto\_66 (F1), RitaG\_55 (F1), Rita\_61 (F1), Rockne\_61 (F1), RockyHorror\_61 (F1), Royals2015\_62 (F1), Ruby\_56 (F1), SG4\_57 (F1), Saal\_62 (F1), Sabbb\_64 (F1), Samba\_50 (CV), Sandalphon\_61 (F1), Sarma624\_57 (F1), Sassafras\_58 (F1), SassyB\_54 (F1), Scottish\_58 (F1), Sebastian\_65 (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), Starcevich\_58 (F1), Starcevich\_60 (F1), Strokeseat\_56 (F1), SuperGrey\_63 (F1), SwagPigglett\_65 (F1), TChen\_59 (F4), TChen\_61 (F4), TDanisky\_67 (F1), Taj\_64 (F1), Tchotchke\_60 (F1), ThetaBob\_63 (F4), ThetaBob\_65 (F4), Tootsieroll\_61 (F1), Totinger\_59 (F1), Tweety\_59 (F1), UncleRicky\_59 (F1), Utz\_44 (CV), VRedHorse\_60 (F1), Velveteen\_54 (F1), Veteran\_57 (F1), Violac\_63 (F1), Vivum\_63 (F1), Wachhund\_61 (F1), Wee\_64 (F1), Whatsapiecost\_60 (F1), Whouxphf\_57 (F1), WillSterrel\_61 (F1), Wisp\_50 (CV), XFactor\_58 (F1), Yorick\_59 (F1), Yoshi\_71 (F2), Yoshi\_73 (F2), Zapner\_73 (F2), Zarbodnamra\_50 (CV), Zerg\_60 (F1), ZiggyZoo\_51 (CV), Zizzle\_64 (F1),

Start 90:

- Found in 32 of 495 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 26 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BigPhil\_54 (F1), Brookers\_55 (F1), Cerasum\_54 (F1), Che8\_63 (F1), Che9d\_66 (F2), Cheesepuff\_66 (F1), Coco12\_57 (F1), Cornie\_53 (F5), Demsculpinboyz\_68 (F2), DoRead\_61 (F1), DotProduct\_53 (F1), Harley\_61 (F1), IMpilo\_54 (F1), JalFarm20\_71 (F1), Jant\_62 (F1), Juice456\_59

(F1), Juniper1\_56 (F1), Kimberlium\_60 (F1), Kingsley\_55 (F1), LunaStella\_56 (F4), MulchExplorer\_64 (F1), Ovechkin\_57 (F1), QuickMath\_59 (F1), Renaud18\_63 (F4), Royals2015\_61 (F1), Sarma624\_56 (F1), Seagreen\_58 (F1), Starcevich\_57 (F1), TChen\_58 (F4), ThetaBob\_62 (F4), Velveteen\_53 (F1), Yoshi\_70 (F2),

Start 91:

- Found in 6 of 495 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 5 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bolt007\_53 (FH), CalWood4100\_57 (FH), Hawkeye\_86 (D2), Klevey\_55 (FH), Lilmac1015\_57 (FH), Prairie\_53 (FH),

Start 92:

- Found in 24 of 495 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 13 of 412
- Called 95.8% of time when present
- Phage (with cluster) where this start called: Abidatro\_30 (AS1), Andrew\_32 (AS3), Basilisk\_31 (AS1), Bedetta\_35 (AS2), Bibble12\_33 (AS2), Brynnie\_30 (AS1), Colusalem\_34 (AS2), Eesa\_29 (AS1), Gravel\_33 (AS1), Jamun\_29 (AS1), Jerole\_38 (AS2), KendraB23\_34 (AS1), Leona\_30 (AS3), LittleTokyo\_33 (AS2), Orcanus\_30 (AS1), OtsoOtso\_36 (AS2), Pelletreau\_33 (AS1), Polka\_32 (AS2), Ruchi\_30 (AS1), TaylorSipt\_30 (AS1), Toad24\_31 (AS1), Vulpecula\_30 (AS1), Westrich\_33 (AS1),

Start 93:

- Found in 36 of 495 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 33 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BAKA\_144 (J), Bagrid\_145 (J), Beem\_146 (J), Bobby\_134 (J), Bombitas\_132 (J), Constella\_138 (J), Dallas\_145 (J), DmpstrDiver\_145 (J), Dove\_130 (J), Duke13\_140 (J), Ejimix\_137 (J), EricMillard\_136 (J), Halley\_146 (J), HokkenD\_137 (J), Hughesyang\_143 (J), JuicyJay\_140 (J), Kalah2\_135 (J), KashFlow\_143 (J), Klein\_142 (J), Lucky2013\_136 (J), Marleymoo\_127 (J), MiaZeal\_143 (J), Minerva\_144 (J), NihilNomen\_146 (J), Odette\_148 (J), Optimus\_135 (J), Phoebus\_144 (J), Porcelain\_140 (J), Pound\_136 (J), Redno2\_139 (J), Schatzie\_140 (J), Thibault\_127 (J), ThreeRngTarjay\_139 (J), Wanda\_144 (J), Yeet\_138 (J), Zelink\_139 (J),

Start 94:

- Found in 1 of 495 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Squiddly\_84 (DN2),

Start 95:

- Found in 44 of 495 ( 8.9% ) of genes in pham
- Manual Annotations of this start: 24 of 412
- Called 97.7% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_79 (AY), AdaS\_72 (AY), Aikyam\_75 (AY), Alatato\_57 (FB), Anekin\_78 (AY), Auxilium\_74 (AY), BenchScraper\_76 (AY), Bhageatrice\_81 (AY), BillyTP\_77 (AY), BlackSpider\_67 (FN), BlueShadow\_78 (AY), CookieBear\_73 (AY), EvePickles\_75 (AY), Faja\_79 (AY), Globfish\_75 (AY), Gorpy\_74 (AY), Hestia\_70 (AY), Hillester\_80 (AY), Isolde\_74 (AY), JellyBread\_72 (AY), Lawnathon\_76 (AY), MUWow\_77 (AY), MaterMagnus\_76 (AY),

MidnightRain\_81 (AY), Mufasa8\_70 (FG), Persistence\_70 (AY), Phrank15\_80 (AY), RadFad\_81 (AY), Raphaella\_77 (AY), RedWattleHog\_91 (DX), Richie\_79 (AY), Sakai\_73 (AY), Sashimi\_76 (AY), Seahorse\_84 (AY), Shukran\_73 (AY), SpicyFrank\_78 (AY), StAugustine\_140 (AI), Stormageddon\_88 (DX), ThayneTheZag\_81 (AY), Tiff81\_72 (AY), Windest\_79 (AY), YoungHarleezy\_74 (AY), Zucker\_73 (FN),

Start 97:

- Found in 6 of 495 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 6 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hortus1\_71 (ED1), OlinDD\_71 (ED1), Pioneer3\_71 (ED1), Platte\_71 (ED1), Tandem\_71 (ED1), Wolfstar\_76 (ED),

Start 98:

- Found in 2 of 495 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 412
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Phives\_50 (AZ1),

Start 99:

- Found in 1 of 495 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MalagasyRose\_65 (AG),

Start 100:

- Found in 40 of 495 ( 8.1% ) of genes in pham
- Manual Annotations of this start: 33 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AGrandiflora\_48 (AZ1), Amyev\_46 (AZ1), Ascela\_45 (AZ1), Cassia\_45 (AZ1), Community\_48 (AZ1), Crewmate\_51 (AZ1), Cyan\_46 (AZ1), DrSierra\_43 (AZ1), GoldDust\_45 (FL), Hirko\_43 (FL), Iter\_45 (AZ1), IttyBittyPiggy\_46 (AZ1), Janeemi\_48 (AZ1), Joemato\_46 (AZ1), JohnDoe\_46 (AZ1), JuneStar\_48 (AZ1), Kaylissa\_47 (AZ1), Lego\_45 (AZ1), Liebe\_46 (AZ2), Lizalica\_44 (AZ1), MaGuCo\_43 (AZ2), Maureen\_46 (AZ2), Mudpuppy\_42 (AZ1), Nitro\_44 (AZ1), ObiToo\_51 (AZ1), Pixelle\_47 (AZ1), Powerpuff\_48 (AZ1), Pumpkins\_45 (AZ1), Shaffner\_45 (AZ1), Simpson\_48 (AZ1), Tbone\_46 (AZ1), Tian\_45 (AZ1), Tuck\_49 (AZ1), Tutumahutu\_47 (AZ1), Vibaki\_44 (FL), Vitus\_44 (FL), Warda\_46 (AZ1), Wildwest\_45 (AZ1), Yang\_46 (AZ1), YesChef\_46 (AZ1),

Start 104:

- Found in 2 of 495 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 2 of 412
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phrappuccino\_165 (AA), Settecandela\_165 (AA),

Start 107:

- Found in 9 of 495 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 412
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Chickaboom\_31 (AS1), Raqqa\_74 (AY),

Start 110:

- Found in 280 of 495 ( 56.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.4% of time when present
- Phage (with cluster) where this start called: IMpilo\_55 (F1),

### **Summary by clusters:**

There are 34 clusters represented in this pham: AS3, singleton, DB, FB, ED1, B13, DX, FG, FH, FL, DS, FN, DR, DN2, C2, AA, AS2, AS1, AG, F, AI, ED, J, AY, CV, F1, F2, F3, F4, F5, B8, AZ1, AZ2, D2,

Info for manual annotations of cluster AA:

- Start number 104 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AG:

- Start number 99 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster AI:

- Start number 95 was manually annotated 1 time for cluster AI.

Info for manual annotations of cluster AS1:

- Start number 92 was manually annotated 9 times for cluster AS1.
- Start number 107 was manually annotated 1 time for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 92 was manually annotated 2 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 92 was manually annotated 2 times for cluster AS3.

Info for manual annotations of cluster AY:

- Start number 95 was manually annotated 19 times for cluster AY.

Info for manual annotations of cluster AZ1:

- Start number 98 was manually annotated 1 time for cluster AZ1.
- Start number 100 was manually annotated 28 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 100 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster B13:

- Start number 77 was manually annotated 3 times for cluster B13.

Info for manual annotations of cluster B8:

- Start number 80 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster C2:

- Start number 73 was manually annotated 3 times for cluster C2.

Info for manual annotations of cluster CV:

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



- Start number 89 was manually annotated 19 times for cluster CV.

Info for manual annotations of cluster D2:

- Start number 91 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DB:

- Start number 89 was manually annotated 4 times for cluster DB.

Info for manual annotations of cluster DN2:

- Start number 94 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DR:

- Start number 84 was manually annotated 1 time for cluster DR.

Info for manual annotations of cluster DS:

- Start number 41 was manually annotated 4 times for cluster DS.

Info for manual annotations of cluster DX:

- Start number 95 was manually annotated 2 times for cluster DX.

Info for manual annotations of cluster ED:

- Start number 97 was manually annotated 1 time for cluster ED.

Info for manual annotations of cluster ED1:

- Start number 97 was manually annotated 5 times for cluster ED1.

Info for manual annotations of cluster F1:

- Start number 89 was manually annotated 206 times for cluster F1.
- Start number 90 was manually annotated 18 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 89 was manually annotated 9 times for cluster F2.
- Start number 90 was manually annotated 3 times for cluster F2.

Info for manual annotations of cluster F3:

- Start number 89 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 89 was manually annotated 8 times for cluster F4.
- Start number 90 was manually annotated 4 times for cluster F4.

Info for manual annotations of cluster F5:

- Start number 89 was manually annotated 2 times for cluster F5.
- Start number 90 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster FG:

- Start number 83 was manually annotated 1 time for cluster FG.
- Start number 95 was manually annotated 1 time for cluster FG.

Info for manual annotations of cluster FH:

- Start number 79 was manually annotated 2 times for cluster FH.

- Start number 91 was manually annotated 4 times for cluster FH.

Info for manual annotations of cluster FL:

- Start number 100 was manually annotated 2 times for cluster FL.

Info for manual annotations of cluster FN:

- Start number 95 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster J:

- Start number 93 was manually annotated 33 times for cluster J.

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

Gene: AGrandiflora\_48 Start: 33790, Stop: 34203, Start Num: 100

Candidate Starts for AGrandiflora\_48:

(Start: 100 @33790 has 33 MA's), (126, 33844), (160, 33970), (169, 34024), (211, 34177), (213, 34195),

Gene: AbbyDaisy\_79 Start: 44094, Stop: 44489, Start Num: 95

Candidate Starts for AbbyDaisy\_79:

(Start: 95 @44094 has 24 MA's), (Start: 107 @44118 has 1 MA's), (120, 44139), (153, 44265), (204, 44463),

Gene: Abidatro\_30 Start: 21728, Stop: 21387, Start Num: 92

Candidate Starts for Abidatro\_30:

(Start: 92 @21728 has 13 MA's), (Start: 107 @21707 has 1 MA's), (164, 21497), (191, 21401),

Gene: AdaS\_72 Start: 39804, Stop: 40205, Start Num: 95

Candidate Starts for AdaS\_72:

(Start: 95 @39804 has 24 MA's), (153, 39972), (165, 40041),

Gene: Aikyam\_75 Start: 40510, Stop: 40911, Start Num: 95

Candidate Starts for Aikyam\_75:

(27, 40264), (Start: 95 @40510 has 24 MA's), (153, 40678), (165, 40747),

Gene: Akhila\_51 Start: 36387, Stop: 36752, Start Num: 89

Candidate Starts for Akhila\_51:

(Start: 89 @36387 has 250 MA's), (110, 36420), (112, 36426), (121, 36438), (133, 36480), (138, 36510), (144, 36534), (145, 36537), (167, 36636), (168, 36642), (193, 36717), (194, 36720), (196, 36723),

Gene: Alatato\_57 Start: 32552, Stop: 32914, Start Num: 95

Candidate Starts for Alatato\_57:

(Start: 95 @32552 has 24 MA's), (146, 32687), (153, 32708),

Gene: Alexphander\_64 Start: 40703, Stop: 41068, Start Num: 89

Candidate Starts for Alexphander\_64:

(Start: 89 @40703 has 250 MA's), (110, 40736), (119, 40751), (121, 40754), (131, 40793), (133, 40796), (135, 40817), (144, 40850), (153, 40877), (160, 40910), (167, 40952), (168, 40958), (201, 41054),

Gene: AlpineSix\_65 Start: 42816, Stop: 43181, Start Num: 89

Candidate Starts for AlpineSix\_65:

(Start: 89 @42816 has 250 MA's), (110, 42849), (119, 42864), (121, 42867), (131, 42906), (133, 42909), (135, 42930), (144, 42963), (153, 42990), (160, 43023), (167, 43065), (168, 43071), (201, 43167),

Gene: Altadena\_50 Start: 34978, Stop: 35370, Start Num: 79

Candidate Starts for Altadena\_50:

(Start: 79 @34978 has 2 MA's), (132, 35077), (162, 35206), (178, 35281),

Gene: Amyev\_46 Start: 34828, Stop: 35223, Start Num: 100

Candidate Starts for Amyev\_46:

(7, 34264), (11, 34336), (12, 34345), (15, 34423), (37, 34654), (56, 34726), (Start: 100 @34828 has 33 MA's), (126, 34882), (160, 35008),

Gene: Andrew\_32 Start: 21174, Stop: 20812, Start Num: 92

Candidate Starts for Andrew\_32:

(Start: 92 @21174 has 13 MA's), (134, 21087), (163, 20958), (177, 20892),

Gene: Anekin\_78 Start: 43082, Stop: 43483, Start Num: 95

Candidate Starts for Anekin\_78:

(27, 42836), (Start: 95 @43082 has 24 MA's), (153, 43250), (165, 43319),

Gene: Archis\_54 Start: 35570, Stop: 35932, Start Num: 89

Candidate Starts for Archis\_54:

(43, 35426), (49, 35462), (66, 35501), (Start: 89 @35570 has 250 MA's), (136, 35699), (141, 35723),

Gene: ArcusAngelus\_62 Start: 40946, Stop: 41311, Start Num: 89

Candidate Starts for ArcusAngelus\_62:

(Start: 89 @40946 has 250 MA's), (110, 40979), (112, 40985), (121, 40997), (133, 41039), (138, 41069), (144, 41093), (145, 41096), (167, 41195), (168, 41201), (193, 41276),

Gene: Ardmore\_52 Start: 38473, Stop: 38838, Start Num: 89

Candidate Starts for Ardmore\_52:

(Start: 89 @38473 has 250 MA's), (110, 38506), (112, 38512), (121, 38524), (133, 38566), (138, 38596), (144, 38620), (145, 38623), (167, 38722), (168, 38728), (193, 38803),

Gene: Ascela\_45 Start: 33111, Stop: 33515, Start Num: 100

Candidate Starts for Ascela\_45:

(Start: 100 @33111 has 33 MA's), (134, 33198), (160, 33291), (169, 33345), (209, 33489),

Gene: Aubs\_60 Start: 40637, Stop: 41002, Start Num: 89

Candidate Starts for Aubs\_60:

(Start: 89 @40637 has 250 MA's), (110, 40670), (112, 40676), (121, 40688), (138, 40760), (144, 40784), (145, 40787), (153, 40811), (167, 40886), (168, 40892), (193, 40967),

Gene: Auxilium\_74 Start: 40053, Stop: 40418, Start Num: 95

Candidate Starts for Auxilium\_74:

(Start: 95 @40053 has 24 MA's), (128, 40116), (135, 40149), (153, 40209), (164, 40272),

Gene: Avani\_68 Start: 41015, Stop: 41380, Start Num: 89

Candidate Starts for Avani\_68:

(Start: 89 @41015 has 250 MA's), (110, 41048), (119, 41063), (121, 41066), (131, 41105), (133, 41108), (135, 41129), (144, 41162), (152, 41183), (153, 41189), (160, 41222), (167, 41264), (168, 41270), (201, 41366),

Gene: BAKA\_144 Start: 76097, Stop: 76450, Start Num: 93  
Candidate Starts for BAKA\_144:  
(Start: 93 @76097 has 33 MA's), (160, 76298), (167, 76340),

Gene: Bagrid\_145 Start: 76792, Stop: 77145, Start Num: 93  
Candidate Starts for Bagrid\_145:  
(Start: 93 @76792 has 33 MA's), (160, 76993), (167, 77035),

Gene: Barco\_49 Start: 34620, Stop: 34982, Start Num: 89  
Candidate Starts for Barco\_49:  
(43, 34476), (49, 34512), (66, 34551), (Start: 89 @34620 has 250 MA's), (136, 34749), (141, 34773),

Gene: Basilisk\_31 Start: 22679, Stop: 22335, Start Num: 92  
Candidate Starts for Basilisk\_31:  
(Start: 92 @22679 has 13 MA's), (Start: 107 @22658 has 1 MA's), (111, 22652), (122, 22634), (134, 22586),

Gene: Batiatus\_58 Start: 40347, Stop: 40712, Start Num: 89  
Candidate Starts for Batiatus\_58:  
(Start: 89 @40347 has 250 MA's), (110, 40380), (112, 40386), (121, 40398), (138, 40470), (144, 40494), (145, 40497), (153, 40521), (167, 40596), (168, 40602), (193, 40677),

Gene: Beakin\_61 Start: 39476, Stop: 39841, Start Num: 89  
Candidate Starts for Beakin\_61:  
(Start: 89 @39476 has 250 MA's), (110, 39509), (112, 39515), (121, 39527), (133, 39569), (138, 39599), (144, 39623), (145, 39626), (167, 39725), (168, 39731), (193, 39806),

Gene: Bedetta\_35 Start: 22003, Stop: 21653, Start Num: 92  
Candidate Starts for Bedetta\_35:  
(10, 22510), (20, 22327), (34, 22186), (54, 22093), (Start: 92 @22003 has 13 MA's), (191, 21670),

Gene: Beem\_146 Start: 77695, Stop: 78048, Start Num: 93  
Candidate Starts for Beem\_146:  
(Start: 93 @77695 has 33 MA's), (160, 77896), (167, 77938),

Gene: Begonia\_49 Start: 37159, Stop: 37521, Start Num: 89  
Candidate Starts for Begonia\_49:  
(66, 37090), (Start: 89 @37159 has 250 MA's), (129, 37258), (135, 37285), (136, 37288), (141, 37312), (197, 37507),

Gene: BenchScraper\_76 Start: 41215, Stop: 41616, Start Num: 95  
Candidate Starts for BenchScraper\_76:  
(Start: 95 @41215 has 24 MA's), (153, 41383), (165, 41452),

Gene: Bhageatrice\_81 Start: 44894, Stop: 45259, Start Num: 95  
Candidate Starts for Bhageatrice\_81:  
(Start: 95 @44894 has 24 MA's), (128, 44957), (135, 44990), (153, 45050), (164, 45113),

Gene: Bible12\_33 Start: 21861, Stop: 21511, Start Num: 92

Candidate Starts for Bibble12\_33:

(20, 22185), (34, 22044), (54, 21951), (Start: 92 @21861 has 13 MA's), (191, 21528),

Gene: BigPhil\_54 Start: 35652, Stop: 35999, Start Num: 90

Candidate Starts for BigPhil\_54:

(78, 35625), (Start: 84 @35643 has 1 MA's), (Start: 90 @35652 has 26 MA's), (110, 35682), (114, 35691), (124, 35709), (135, 35763), (144, 35790), (160, 35847), (164, 35877), (167, 35889),

Gene: BigPhil\_55 Start: 35996, Stop: 36349, Start Num: 89

Candidate Starts for BigPhil\_55:

(75, 35960), (Start: 89 @35996 has 250 MA's), (108, 36026), (110, 36029), (117, 36041), (121, 36047), (135, 36110), (138, 36119), (139, 36125), (167, 36239), (171, 36260), (192, 36317), (200, 36329),

Gene: BillyTP\_77 Start: 43046, Stop: 43435, Start Num: 95

Candidate Starts for BillyTP\_77:

(Start: 95 @43046 has 24 MA's), (141, 43169), (153, 43202), (156, 43217), (165, 43271),

Gene: Bipolar\_58 Start: 40097, Stop: 40462, Start Num: 89

Candidate Starts for Bipolar\_58:

(Start: 89 @40097 has 250 MA's), (110, 40130), (114, 40139), (121, 40148), (133, 40190), (138, 40220), (144, 40244), (145, 40247), (167, 40346), (168, 40352), (193, 40427),

Gene: BirdsNest\_93 Start: 66573, Stop: 66154, Start Num: 77

Candidate Starts for BirdsNest\_93:

(Start: 77 @66573 has 3 MA's), (116, 66492), (153, 66363), (160, 66330), (174, 66255),

Gene: BlackSpider\_67 Start: 39612, Stop: 40001, Start Num: 95

Candidate Starts for BlackSpider\_67:

(55, 39510), (Start: 95 @39612 has 24 MA's), (141, 39735), (153, 39768), (156, 39783), (161, 39804), (165, 39837),

Gene: Blarby\_72 Start: 42116, Stop: 42481, Start Num: 89

Candidate Starts for Blarby\_72:

(Start: 89 @42116 has 250 MA's), (110, 42149), (119, 42164), (121, 42167), (131, 42206), (133, 42209), (135, 42230), (144, 42263), (153, 42290), (160, 42323), (167, 42365), (168, 42371), (201, 42467),

Gene: Blexus\_58 Start: 40670, Stop: 41035, Start Num: 89

Candidate Starts for Blexus\_58:

(Start: 89 @40670 has 250 MA's), (110, 40703), (119, 40718), (121, 40721), (133, 40763), (135, 40784), (144, 40817), (153, 40844), (160, 40877), (167, 40919), (168, 40925), (201, 41021),

Gene: BlingBling\_48 Start: 35583, Stop: 35945, Start Num: 89

Candidate Starts for BlingBling\_48:

(43, 35439), (49, 35475), (66, 35514), (Start: 89 @35583 has 250 MA's), (136, 35712), (141, 35736),

Gene: BlueCrab\_60 Start: 40975, Stop: 41340, Start Num: 89

Candidate Starts for BlueCrab\_60:

(Start: 89 @40975 has 250 MA's), (110, 41008), (119, 41023), (121, 41026), (133, 41068), (135, 41089), (152, 41143), (153, 41149), (160, 41182), (167, 41224), (168, 41230), (201, 41326),

Gene: BlueNGold\_128 Start: 82923, Stop: 82429, Start Num: 41

Candidate Starts for BlueNGold\_128:

(Start: 41 @82923 has 4 MA's), (62, 82854), (64, 82848), (68, 82833), (76, 82800), (136, 82638), (153, 82593), (175, 82476), (178, 82470), (192, 82440),

Gene: BlueShadow\_78 Start: 42358, Stop: 42759, Start Num: 95

Candidate Starts for BlueShadow\_78:

(Start: 95 @42358 has 24 MA's), (153, 42526), (165, 42595),

Gene: BobaPhett\_64 Start: 42932, Stop: 43297, Start Num: 89

Candidate Starts for BobaPhett\_64:

(Start: 89 @42932 has 250 MA's), (110, 42965), (119, 42980), (121, 42983), (131, 43022), (133, 43025), (135, 43046), (144, 43079), (153, 43106), (160, 43139), (167, 43181), (168, 43187), (201, 43283),

Gene: Bobby\_134 Start: 77532, Stop: 77885, Start Num: 93

Candidate Starts for Bobby\_134:

(Start: 93 @77532 has 33 MA's), (160, 77733), (167, 77775),

Gene: Bobi\_65 Start: 41950, Stop: 42315, Start Num: 89

Candidate Starts for Bobi\_65:

(Start: 89 @41950 has 250 MA's), (110, 41983), (112, 41989), (121, 42001), (133, 42043), (138, 42073), (144, 42097), (145, 42100), (167, 42199), (168, 42205), (193, 42280),

Gene: BodEinwohner17\_60 Start: 39737, Stop: 40102, Start Num: 89

Candidate Starts for BodEinwohner17\_60:

(Start: 89 @39737 has 250 MA's), (110, 39770), (119, 39785), (121, 39788), (133, 39830), (135, 39851), (144, 39884), (152, 39905), (153, 39911), (160, 39944), (167, 39986), (168, 39992), (201, 40088),

Gene: Bolt007\_53 Start: 38007, Stop: 38369, Start Num: 91

Candidate Starts for Bolt007\_53:

(50, 37902), (52, 37905), (Start: 91 @38007 has 5 MA's), (178, 38295),

Gene: Bombitas\_132 Start: 75106, Stop: 75459, Start Num: 93

Candidate Starts for Bombitas\_132:

(Start: 93 @75106 has 33 MA's), (160, 75307), (167, 75349),

Gene: Boomer\_65 Start: 42607, Stop: 42972, Start Num: 89

Candidate Starts for Boomer\_65:

(Start: 89 @42607 has 250 MA's), (110, 42640), (119, 42655), (121, 42658), (131, 42697), (133, 42700), (135, 42721), (144, 42754), (153, 42781), (160, 42814), (167, 42856), (168, 42862), (201, 42958),

Gene: Boopy\_129 Start: 82935, Stop: 82441, Start Num: 41

Candidate Starts for Boopy\_129:

(Start: 41 @82935 has 4 MA's), (62, 82866), (64, 82860), (68, 82845), (76, 82812), (136, 82650), (153, 82605), (175, 82488), (178, 82482), (192, 82452),

Gene: Brocalys\_55 Start: 37114, Stop: 37479, Start Num: 89

Candidate Starts for Brocalys\_55:

(Start: 89 @37114 has 250 MA's), (110, 37147), (119, 37162), (121, 37165), (131, 37204), (133, 37207), (135, 37228), (144, 37261), (153, 37288), (160, 37321), (167, 37363), (168, 37369), (201, 37465),

Gene: Brookers\_55 Start: 38603, Stop: 38950, Start Num: 90

Candidate Starts for Brookers\_55:

(78, 38576), (Start: 84 @38594 has 1 MA's), (Start: 90 @38603 has 26 MA's), (110, 38633), (114, 38642), (124, 38660), (135, 38714), (144, 38741), (160, 38798), (164, 38828), (167, 38840),

Gene: Brookers\_56 Start: 38947, Stop: 39300, Start Num: 89

Candidate Starts for Brookers\_56:

(75, 38911), (Start: 89 @38947 has 250 MA's), (108, 38977), (110, 38980), (117, 38992), (121, 38998), (135, 39061), (138, 39070), (139, 39076), (167, 39190), (171, 39211), (192, 39268), (200, 39280),

Gene: Brushbloom\_67 Start: 41279, Stop: 41644, Start Num: 89

Candidate Starts for Brushbloom\_67:

(Start: 89 @41279 has 250 MA's), (110, 41312), (112, 41318), (121, 41330), (138, 41402), (144, 41426), (145, 41429), (153, 41453), (167, 41528), (168, 41534), (193, 41609),

Gene: Brynnie\_30 Start: 22557, Stop: 22213, Start Num: 92

Candidate Starts for Brynnie\_30:

(Start: 92 @22557 has 13 MA's), (Start: 107 @22536 has 1 MA's), (153, 22389), (191, 22230),

Gene: Bubbles123\_56 Start: 40256, Stop: 40621, Start Num: 89

Candidate Starts for Bubbles123\_56:

(Start: 89 @40256 has 250 MA's), (110, 40289), (114, 40298), (121, 40307), (135, 40370), (144, 40403), (145, 40406), (148, 40418), (153, 40430), (167, 40505), (168, 40511), (193, 40586),

Gene: Bumble\_49 Start: 35709, Stop: 36101, Start Num: 79

Candidate Starts for Bumble\_49:

(Start: 79 @35709 has 2 MA's), (161, 35925), (178, 36012),

Gene: Burwell21\_58 Start: 40215, Stop: 40580, Start Num: 89

Candidate Starts for Burwell21\_58:

(Start: 89 @40215 has 250 MA's), (110, 40248), (119, 40263), (121, 40266), (131, 40305), (133, 40308), (135, 40329), (144, 40362), (153, 40389), (160, 40422), (167, 40464), (168, 40470), (201, 40566),

Gene: BuzzLyseyear\_66 Start: 41636, Stop: 42001, Start Num: 89

Candidate Starts for BuzzLyseyear\_66:

(Start: 89 @41636 has 250 MA's), (110, 41669), (119, 41684), (121, 41687), (131, 41726), (133, 41729), (135, 41750), (144, 41783), (153, 41810), (160, 41843), (167, 41885), (168, 41891), (201, 41987),

Gene: ByChance\_52 Start: 35903, Stop: 36268, Start Num: 89

Candidate Starts for ByChance\_52:

(Start: 89 @35903 has 250 MA's), (110, 35936), (119, 35951), (121, 35954), (133, 35996), (135, 36017), (144, 36050), (152, 36071), (153, 36077), (160, 36110), (167, 36152), (168, 36158), (201, 36254),

Gene: Byougenkin\_58 Start: 39979, Stop: 40344, Start Num: 89

Candidate Starts for Byougenkin\_58:

(Start: 89 @39979 has 250 MA's), (110, 40012), (119, 40027), (121, 40030), (133, 40072), (135, 40093), (152, 40147), (153, 40153), (160, 40186), (167, 40228), (168, 40234), (201, 40330),

Gene: Cabrinians\_61 Start: 40293, Stop: 40658, Start Num: 89

Candidate Starts for Cabrinians\_61:

(Start: 89 @40293 has 250 MA's), (110, 40326), (119, 40341), (121, 40344), (131, 40383), (133, 40386), (135, 40407), (144, 40440), (153, 40467), (160, 40500), (167, 40542), (168, 40548), (201, 40644),

Gene: CalWood4100\_57 Start: 38014, Stop: 38406, Start Num: 91

Candidate Starts for CalWood4100\_57:

(Start: 91 @38014 has 5 MA's), (178, 38299), (191, 38335),

Gene: CaptainKirk2\_51 Start: 34868, Stop: 35230, Start Num: 89

Candidate Starts for CaptainKirk2\_51:

(43, 34724), (49, 34760), (66, 34799), (Start: 89 @34868 has 250 MA's), (136, 34997), (141, 35021),

Gene: CaptainTrips\_57 Start: 39789, Stop: 40154, Start Num: 89

Candidate Starts for CaptainTrips\_57:

(Start: 89 @39789 has 250 MA's), (110, 39822), (119, 39837), (121, 39840), (131, 39879), (133, 39882), (135, 39903), (144, 39936), (153, 39963), (160, 39996), (167, 40038), (168, 40044), (201, 40140),

Gene: Cassia\_45 Start: 33045, Stop: 33434, Start Num: 100

Candidate Starts for Cassia\_45:

(28, 32820), (Start: 100 @33045 has 33 MA's), (126, 33099), (160, 33225), (169, 33279), (207, 33408), (210, 33426),

Gene: Cerasum\_55 Start: 36014, Stop: 36367, Start Num: 89

Candidate Starts for Cerasum\_55:

(75, 35978), (Start: 89 @36014 has 250 MA's), (108, 36044), (110, 36047), (117, 36059), (121, 36065), (135, 36128), (138, 36137), (139, 36143), (167, 36257), (171, 36278), (192, 36335), (200, 36347),

Gene: Cerasum\_54 Start: 35670, Stop: 36017, Start Num: 90

Candidate Starts for Cerasum\_54:

(78, 35643), (Start: 84 @35661 has 1 MA's), (Start: 90 @35670 has 26 MA's), (110, 35700), (114, 35709), (124, 35727), (135, 35781), (144, 35808), (160, 35865), (164, 35895), (167, 35907),

Gene: Che8\_64 Start: 42503, Stop: 42856, Start Num: 89

Candidate Starts for Che8\_64:

(75, 42467), (Start: 89 @42503 has 250 MA's), (108, 42533), (110, 42536), (117, 42548), (121, 42554), (135, 42617), (138, 42626), (139, 42632), (167, 42746), (171, 42767), (192, 42824), (200, 42836),

Gene: Che8\_63 Start: 42159, Stop: 42506, Start Num: 90

Candidate Starts for Che8\_63:

(78, 42132), (Start: 84 @42150 has 1 MA's), (Start: 90 @42159 has 26 MA's), (110, 42189), (114, 42198), (124, 42216), (135, 42270), (144, 42297), (160, 42354), (164, 42384), (167, 42396),

Gene: Che9d\_67 Start: 39585, Stop: 39938, Start Num: 89

Candidate Starts for Che9d\_67:

(75, 39549), (Start: 89 @39585 has 250 MA's), (108, 39615), (110, 39618), (117, 39630), (121, 39636), (135, 39699), (138, 39708), (139, 39714), (167, 39828), (171, 39849), (192, 39906), (200, 39918),

Gene: Che9d\_66 Start: 39241, Stop: 39588, Start Num: 90

Candidate Starts for Che9d\_66:

(78, 39214), (Start: 84 @39232 has 1 MA's), (Start: 90 @39241 has 26 MA's), (110, 39271), (114, 39280), (124, 39298), (135, 39352), (144, 39379), (160, 39436), (164, 39466), (167, 39478),



Gene: Cheesepuff\_69 Start: 42252, Stop: 42617, Start Num: 89

Candidate Starts for Cheesepuff\_69:

(Start: 89 @42252 has 250 MA's), (110, 42285), (119, 42300), (121, 42303), (131, 42342), (133, 42345), (135, 42366), (153, 42426), (160, 42459), (167, 42501), (168, 42507), (201, 42603),

Gene: Cheesepuff\_67 Start: 41627, Stop: 41980, Start Num: 89

Candidate Starts for Cheesepuff\_67:

(75, 41591), (Start: 89 @41627 has 250 MA's), (108, 41657), (110, 41660), (117, 41672), (121, 41678), (135, 41741), (138, 41750), (139, 41756), (167, 41870), (171, 41891), (192, 41948), (200, 41960),

Gene: Cheesepuff\_66 Start: 41283, Stop: 41630, Start Num: 90

Candidate Starts for Cheesepuff\_66:

(78, 41256), (Start: 84 @41274 has 1 MA's), (Start: 90 @41283 has 26 MA's), (110, 41313), (114, 41322), (124, 41340), (135, 41394), (144, 41421), (160, 41478), (164, 41508), (167, 41520),

Gene: Chevrolet\_65 Start: 40947, Stop: 41312, Start Num: 89

Candidate Starts for Chevrolet\_65:

(Start: 89 @40947 has 250 MA's), (110, 40980), (112, 40986), (121, 40998), (133, 41040), (138, 41070), (144, 41094), (145, 41097), (167, 41196), (168, 41202), (193, 41277),

Gene: Chickaboom\_31 Start: 21673, Stop: 21350, Start Num: 107

Candidate Starts for Chickaboom\_31:

(Start: 92 @21694 has 13 MA's), (Start: 107 @21673 has 1 MA's), (134, 21601), (171, 21430), (191, 21367),

Gene: Chuckly\_63 Start: 40935, Stop: 41300, Start Num: 89

Candidate Starts for Chuckly\_63:

(Start: 89 @40935 has 250 MA's), (110, 40968), (119, 40983), (121, 40986), (131, 41025), (133, 41028), (135, 41049), (144, 41082), (153, 41109), (160, 41142), (167, 41184), (168, 41190), (201, 41286),

Gene: Circuit\_48 Start: 36342, Stop: 36734, Start Num: 79

Candidate Starts for Circuit\_48:

(Start: 79 @36342 has 2 MA's), (153, 36522), (162, 36570), (178, 36645),

Gene: Clifton\_55 Start: 37465, Stop: 37830, Start Num: 89

Candidate Starts for Clifton\_55:

(Start: 89 @37465 has 250 MA's), (110, 37498), (119, 37513), (121, 37516), (131, 37555), (133, 37558), (135, 37579), (144, 37612), (153, 37639), (160, 37672), (167, 37714), (168, 37720), (201, 37816),

Gene: Coco12\_57 Start: 39727, Stop: 40074, Start Num: 90

Candidate Starts for Coco12\_57:

(78, 39700), (Start: 84 @39718 has 1 MA's), (Start: 90 @39727 has 26 MA's), (110, 39757), (114, 39766), (124, 39784), (135, 39838), (144, 39865), (160, 39922), (164, 39952), (167, 39964),

Gene: Coco12\_58 Start: 40071, Stop: 40424, Start Num: 89

Candidate Starts for Coco12\_58:

(75, 40035), (Start: 89 @40071 has 250 MA's), (108, 40101), (110, 40104), (117, 40116), (121, 40122), (135, 40185), (138, 40194), (139, 40200), (167, 40314), (171, 40335), (192, 40392), (200, 40404),

Gene: Coldpizza\_48 Start: 43898, Stop: 43461, Start Num: 70

Candidate Starts for Coldpizza\_48:

(70, 43898), (122, 43787), (126, 43772), (130, 43748), (136, 43721), (158, 43655), (167, 43598), (179, 43550), (186, 43529), (187, 43520),

Gene: Colusalem\_34 Start: 21842, Stop: 21492, Start Num: 92

Candidate Starts for Colusalem\_34:

(20, 22166), (34, 22025), (54, 21932), (Start: 92 @21842 has 13 MA's), (191, 21509),

Gene: Community\_48 Start: 35107, Stop: 35478, Start Num: 100

Candidate Starts for Community\_48:

(Start: 100 @35107 has 33 MA's), (135, 35209), (160, 35287), (169, 35341),

Gene: Constella\_138 Start: 76348, Stop: 76701, Start Num: 93

Candidate Starts for Constella\_138:

(Start: 93 @76348 has 33 MA's), (160, 76549), (167, 76591),

Gene: CookieBear\_73 Start: 41689, Stop: 42090, Start Num: 95

Candidate Starts for CookieBear\_73:

(Start: 95 @41689 has 24 MA's), (153, 41857), (165, 41926),

Gene: Corium\_57 Start: 39332, Stop: 39697, Start Num: 89

Candidate Starts for Corium\_57:

(Start: 89 @39332 has 250 MA's), (110, 39365), (119, 39380), (121, 39383), (131, 39422), (133, 39425), (135, 39446), (144, 39479), (153, 39506), (160, 39539), (167, 39581), (168, 39587), (201, 39683),

Gene: Cornie\_53 Start: 37745, Stop: 38092, Start Num: 90

Candidate Starts for Cornie\_53:

(78, 37718), (Start: 84 @37736 has 1 MA's), (Start: 90 @37745 has 26 MA's), (110, 37775), (114, 37784), (124, 37802), (135, 37856), (144, 37883), (160, 37940), (164, 37970), (167, 37982),

Gene: Cornie\_56 Start: 38714, Stop: 39079, Start Num: 89

Candidate Starts for Cornie\_56:

(Start: 89 @38714 has 250 MA's), (110, 38747), (119, 38762), (121, 38765), (131, 38804), (133, 38807), (135, 38828), (153, 38888), (160, 38921), (167, 38963), (168, 38969), (201, 39065),

Gene: Cornie\_54 Start: 38089, Stop: 38442, Start Num: 89

Candidate Starts for Cornie\_54:

(75, 38053), (Start: 89 @38089 has 250 MA's), (108, 38119), (110, 38122), (117, 38134), (121, 38140), (135, 38203), (138, 38212), (139, 38218), (167, 38332), (171, 38353), (192, 38410), (200, 38422),

Gene: Cornucopia\_62 Start: 40943, Stop: 41308, Start Num: 89

Candidate Starts for Cornucopia\_62:

(Start: 89 @40943 has 250 MA's), (110, 40976), (119, 40991), (121, 40994), (131, 41033), (133, 41036), (135, 41057), (152, 41111), (153, 41117), (160, 41150), (167, 41192), (168, 41198), (201, 41294),

Gene: Crewmate\_51 Start: 33740, Stop: 34135, Start Num: 100

Candidate Starts for Crewmate\_51:

(Start: 100 @33740 has 33 MA's), (126, 33794), (160, 33920),

Gene: Crumble\_55 Start: 36229, Stop: 36594, Start Num: 89

Candidate Starts for Crumble\_55:

(Start: 89 @36229 has 250 MA's), (110, 36262), (119, 36277), (121, 36280), (131, 36319), (133, 36322), (135, 36343), (144, 36376), (153, 36403), (160, 36436), (167, 36478), (168, 36484), (201, 36580),

Gene: Cyan\_46 Start: 33389, Stop: 33802, Start Num: 100

Candidate Starts for Cyan\_46:

(Start: 100 @33389 has 33 MA's), (126, 33443), (160, 33569), (169, 33623), (211, 33776), (213, 33794),

Gene: Cygnet\_35 Start: 22555, Stop: 22169, Start Num: 78

Candidate Starts for Cygnet\_35:

(78, 22555), (189, 22207),

Gene: DLane\_55 Start: 38997, Stop: 39362, Start Num: 89

Candidate Starts for DLane\_55:

(Start: 89 @38997 has 250 MA's), (110, 39030), (112, 39036), (121, 39048), (133, 39090), (138, 39120), (144, 39144), (145, 39147), (167, 39246), (168, 39252), (193, 39327),

Gene: DRBy19\_63 Start: 41390, Stop: 41755, Start Num: 89

Candidate Starts for DRBy19\_63:

(Start: 89 @41390 has 250 MA's), (110, 41423), (119, 41438), (121, 41441), (131, 41480), (133, 41483), (135, 41504), (144, 41537), (152, 41558), (153, 41564), (160, 41597), (167, 41639), (168, 41645), (201, 41741),

Gene: DaWorst\_61 Start: 40694, Stop: 41059, Start Num: 89

Candidate Starts for DaWorst\_61:

(Start: 89 @40694 has 250 MA's), (110, 40727), (119, 40742), (121, 40745), (131, 40784), (133, 40787), (135, 40808), (144, 40841), (153, 40868), (160, 40901), (167, 40943), (168, 40949), (201, 41045),

Gene: DaddyRickover\_59 Start: 40432, Stop: 40797, Start Num: 89

Candidate Starts for DaddyRickover\_59:

(Start: 89 @40432 has 250 MA's), (110, 40465), (119, 40480), (121, 40483), (133, 40525), (135, 40546), (144, 40579), (152, 40600), (153, 40606), (160, 40639), (167, 40681), (168, 40687), (201, 40783),

Gene: Daenerys\_54 Start: 38542, Stop: 38907, Start Num: 89

Candidate Starts for Daenerys\_54:

(Start: 89 @38542 has 250 MA's), (110, 38575), (119, 38590), (121, 38593), (133, 38635), (135, 38656), (144, 38689), (152, 38710), (153, 38716), (160, 38749), (167, 38791), (168, 38797), (201, 38893),

Gene: Dallas\_145 Start: 77162, Stop: 77515, Start Num: 93

Candidate Starts for Dallas\_145:

(Start: 93 @77162 has 33 MA's), (160, 77363), (167, 77405),

Gene: Dante\_61 Start: 40217, Stop: 40582, Start Num: 89

Candidate Starts for Dante\_61:

(Start: 89 @40217 has 250 MA's), (110, 40250), (119, 40265), (121, 40268), (131, 40307), (133, 40310), (135, 40331), (144, 40364), (153, 40391), (160, 40424), (167, 40466), (168, 40472), (201, 40568),

Gene: DeadP\_66 Start: 42861, Stop: 43226, Start Num: 89

Candidate Starts for DeadP\_66:

(Start: 89 @42861 has 250 MA's), (110, 42894), (119, 42909), (121, 42912), (131, 42951), (133, 42954), (135, 42975), (144, 43008), (153, 43035), (160, 43068), (167, 43110), (168, 43116), (201, 43212),

Gene: Delian\_54 Start: 34866, Stop: 35228, Start Num: 89

Candidate Starts for Delian\_54:

(43, 34722), (49, 34758), (66, 34797), (Start: 89 @34866 has 250 MA's), (136, 34995), (141, 35019),

Gene: Demsculpinboyz\_69 Start: 39586, Stop: 39939, Start Num: 89

Candidate Starts for Demsculpinboyz\_69:

(75, 39550), (Start: 89 @39586 has 250 MA's), (108, 39616), (110, 39619), (117, 39631), (121, 39637), (135, 39700), (138, 39709), (139, 39715), (167, 39829), (171, 39850), (200, 39919),

Gene: Demsculpinboyz\_68 Start: 39242, Stop: 39589, Start Num: 90

Candidate Starts for Demsculpinboyz\_68:

(78, 39215), (Start: 84 @39233 has 1 MA's), (Start: 90 @39242 has 26 MA's), (110, 39272), (114, 39281), (124, 39299), (135, 39353), (144, 39380), (160, 39437), (164, 39467), (167, 39479),

Gene: Demsculpinboyz\_71 Start: 40214, Stop: 40579, Start Num: 89

Candidate Starts for Demsculpinboyz\_71:

(Start: 89 @40214 has 250 MA's), (110, 40247), (119, 40262), (121, 40265), (131, 40304), (133, 40307), (135, 40328), (153, 40388), (160, 40421), (167, 40463), (168, 40469), (190, 40538), (201, 40565),

Gene: DillTech15\_57 Start: 38876, Stop: 39241, Start Num: 89

Candidate Starts for DillTech15\_57:

(Start: 89 @38876 has 250 MA's), (110, 38909), (119, 38924), (121, 38927), (131, 38966), (133, 38969), (135, 38990), (153, 39050), (160, 39083), (167, 39125), (168, 39131), (190, 39200), (201, 39227),

Gene: DirtMcgirt\_59 Start: 38957, Stop: 39322, Start Num: 89

Candidate Starts for DirtMcgirt\_59:

(Start: 89 @38957 has 250 MA's), (110, 38990), (119, 39005), (121, 39008), (131, 39047), (133, 39050), (135, 39071), (144, 39104), (152, 39125), (153, 39131), (160, 39164), (167, 39206), (168, 39212), (201, 39308),

Gene: DirtyBoi\_56 Start: 37313, Stop: 37675, Start Num: 89

Candidate Starts for DirtyBoi\_56:

(Start: 89 @37313 has 250 MA's), (135, 37436),

Gene: Dmitri\_53 Start: 39335, Stop: 39700, Start Num: 89

Candidate Starts for Dmitri\_53:

(Start: 89 @39335 has 250 MA's), (135, 39461),

Gene: DmpstrDiver\_145 Start: 77081, Stop: 77434, Start Num: 93

Candidate Starts for DmpstrDiver\_145:

(Start: 93 @77081 has 33 MA's), (160, 77282), (167, 77324),

Gene: DoRead\_62 Start: 38998, Stop: 39351, Start Num: 89

Candidate Starts for DoRead\_62:

(75, 38962), (Start: 89 @38998 has 250 MA's), (108, 39028), (110, 39031), (117, 39043), (121, 39049), (135, 39112), (138, 39121), (139, 39127), (167, 39241), (171, 39262), (192, 39319), (200, 39331),

Gene: DoRead\_61 Start: 38654, Stop: 39001, Start Num: 90

Candidate Starts for DoRead\_61:

(78, 38627), (Start: 84 @38645 has 1 MA's), (Start: 90 @38654 has 26 MA's), (110, 38684), (114, 38693), (124, 38711), (135, 38765), (144, 38792), (160, 38849), (164, 38879), (167, 38891),

Gene: Donkeykong\_63 Start: 42892, Stop: 43257, Start Num: 89

Candidate Starts for Donkeykong\_63:

(Start: 89 @42892 has 250 MA's), (110, 42925), (114, 42934), (121, 42943), (144, 43039), (145, 43042), (153, 43066), (167, 43141), (168, 43147), (193, 43222),

Gene: Doomphist\_60 Start: 41387, Stop: 41752, Start Num: 89

Candidate Starts for Doomphist\_60:

(Start: 89 @41387 has 250 MA's), (110, 41420), (119, 41435), (121, 41438), (133, 41480), (135, 41501), (144, 41534), (152, 41555), (153, 41561), (160, 41594), (167, 41636), (168, 41642), (201, 41738),

Gene: Dorothy\_58 Start: 39606, Stop: 39971, Start Num: 89

Candidate Starts for Dorothy\_58:

(Start: 89 @39606 has 250 MA's), (110, 39639), (119, 39654), (121, 39657), (131, 39696), (133, 39699), (135, 39720), (144, 39753), (153, 39780), (160, 39813), (167, 39855), (168, 39861), (201, 39957),

Gene: DosHalletts\_62 Start: 41742, Stop: 42107, Start Num: 89

Candidate Starts for DosHalletts\_62:

(Start: 89 @41742 has 250 MA's), (110, 41775), (119, 41790), (121, 41793), (133, 41835), (135, 41856), (144, 41889), (152, 41910), (153, 41916), (160, 41949), (167, 41991), (168, 41997), (201, 42093),

Gene: DotProduct\_53 Start: 38248, Stop: 38595, Start Num: 90

Candidate Starts for DotProduct\_53:

(78, 38221), (Start: 84 @38239 has 1 MA's), (Start: 90 @38248 has 26 MA's), (101, 38260), (103, 38263), (110, 38278), (114, 38287), (124, 38305), (135, 38359), (144, 38386), (160, 38443), (164, 38473), (167, 38485), (202, 38587),

Gene: DotProduct\_54 Start: 38592, Stop: 38945, Start Num: 89

Candidate Starts for DotProduct\_54:

(75, 38556), (Start: 89 @38592 has 250 MA's), (108, 38622), (110, 38625), (117, 38637), (121, 38643), (135, 38706), (138, 38715), (139, 38721), (167, 38835), (171, 38856), (192, 38913), (200, 38925),

Gene: Doug\_62 Start: 40960, Stop: 41325, Start Num: 89

Candidate Starts for Doug\_62:

(Start: 89 @40960 has 250 MA's), (110, 40993), (121, 41011), (131, 41050), (133, 41053), (135, 41074), (144, 41107), (153, 41134), (160, 41167), (167, 41209), (168, 41215), (201, 41311),

Gene: Dove\_130 Start: 72680, Stop: 73033, Start Num: 93

Candidate Starts for Dove\_130:

(Start: 93 @72680 has 33 MA's), (160, 72881), (167, 72923),

Gene: DrSierra\_43 Start: 31383, Stop: 31799, Start Num: 100

Candidate Starts for DrSierra\_43:

(Start: 100 @31383 has 33 MA's), (160, 31566), (169, 31620), (211, 31773), (213, 31791),

Gene: Drago\_58 Start: 38960, Stop: 39325, Start Num: 89

Candidate Starts for Drago\_58:

(Start: 89 @38960 has 250 MA's), (110, 38993), (119, 39008), (121, 39011), (131, 39050), (133, 39053), (135, 39074), (144, 39107), (152, 39128), (153, 39134), (160, 39167), (167, 39209), (168, 39215), (201, 39311),

Gene: Duke13\_140 Start: 74382, Stop: 74735, Start Num: 93

Candidate Starts for Duke13\_140:

(Start: 93 @74382 has 33 MA's), (160, 74583), (167, 74625),

Gene: Eesa\_29 Start: 22456, Stop: 22103, Start Num: 92

Candidate Starts for Eesa\_29:

(Start: 92 @22456 has 13 MA's), (134, 22357), (191, 22120),

Gene: Eish\_64 Start: 41209, Stop: 41574, Start Num: 89

Candidate Starts for Eish\_64:

(Start: 89 @41209 has 250 MA's), (110, 41242), (119, 41257), (121, 41260), (131, 41299), (133, 41302), (135, 41323), (144, 41356), (153, 41383), (160, 41416), (167, 41458), (168, 41464), (201, 41560),

Gene: Ejimix\_137 Start: 77230, Stop: 77583, Start Num: 93

Candidate Starts for Ejimix\_137:

(Start: 93 @77230 has 33 MA's), (160, 77431), (167, 77473),

Gene: EleanorGeorge\_61 Start: 41073, Stop: 41438, Start Num: 89

Candidate Starts for EleanorGeorge\_61:

(Start: 89 @41073 has 250 MA's), (110, 41106), (119, 41121), (121, 41124), (133, 41166), (135, 41187), (144, 41220), (153, 41247), (160, 41280), (167, 41322), (168, 41328), (201, 41424),

Gene: EmiMonkey\_58 Start: 41923, Stop: 42288, Start Num: 89

Candidate Starts for EmiMonkey\_58:

(Start: 89 @41923 has 250 MA's), (110, 41956), (119, 41971), (121, 41974), (131, 42013), (133, 42016), (135, 42037), (144, 42070), (153, 42097), (160, 42130), (167, 42172), (168, 42178), (201, 42274),

Gene: Emma\_61 Start: 40009, Stop: 40374, Start Num: 89

Candidate Starts for Emma\_61:

(Start: 89 @40009 has 250 MA's), (110, 40042), (121, 40060), (133, 40102), (138, 40132), (144, 40156), (145, 40159), (167, 40258), (168, 40264), (193, 40339), (194, 40342), (196, 40345),

Gene: Emmaloid\_61 Start: 41019, Stop: 41384, Start Num: 89

Candidate Starts for Emmaloid\_61:

(Start: 89 @41019 has 250 MA's), (110, 41052), (119, 41067), (121, 41070), (131, 41109), (133, 41112), (135, 41133), (144, 41166), (153, 41193), (160, 41226), (167, 41268), (168, 41274), (201, 41370),

Gene: Empress\_58 Start: 39956, Stop: 40321, Start Num: 89

Candidate Starts for Empress\_58:

(Start: 89 @39956 has 250 MA's), (110, 39989), (119, 40004), (121, 40007), (133, 40049), (135, 40070), (144, 40103), (152, 40124), (153, 40130), (160, 40163), (167, 40205), (168, 40211), (201, 40307),

Gene: Enby\_61 Start: 39236, Stop: 39601, Start Num: 89

Candidate Starts for Enby\_61:

(Start: 89 @39236 has 250 MA's), (110, 39269), (119, 39284), (121, 39287), (131, 39326), (133, 39329), (135, 39350), (144, 39383), (153, 39410), (160, 39443), (167, 39485), (168, 39491), (201, 39587),

Gene: Eradicator\_53 Start: 38486, Stop: 38851, Start Num: 89

Candidate Starts for Eradicator\_53:

(Start: 89 @38486 has 250 MA's), (110, 38519), (119, 38534), (121, 38537), (131, 38576), (133, 38579), (135, 38600), (144, 38633), (153, 38660), (160, 38693), (167, 38735), (168, 38741), (201, 38837),

Gene: EricMillard\_136 Start: 75734, Stop: 76087, Start Num: 93

Candidate Starts for EricMillard\_136:

(Start: 93 @75734 has 33 MA's), (160, 75935), (167, 75977),

Gene: Estave1\_63 Start: 41407, Stop: 41772, Start Num: 89

Candidate Starts for Estave1\_63:

(Start: 89 @41407 has 250 MA's), (110, 41440), (119, 41455), (121, 41458), (131, 41497), (133, 41500), (135, 41521), (144, 41554), (152, 41575), (153, 41581), (160, 41614), (167, 41656), (168, 41662), (201, 41758),

Gene: EvePickles\_75 Start: 42959, Stop: 43348, Start Num: 95

Candidate Starts for EvePickles\_75:

(Start: 95 @42959 has 24 MA's), (141, 43082), (153, 43115), (156, 43130), (165, 43184),

Gene: Faja\_79 Start: 43731, Stop: 44132, Start Num: 95

Candidate Starts for Faja\_79:

(Start: 95 @43731 has 24 MA's), (153, 43899), (165, 43968),

Gene: Fancypants\_62 Start: 40927, Stop: 41292, Start Num: 89

Candidate Starts for Fancypants\_62:

(Start: 89 @40927 has 250 MA's), (110, 40960), (119, 40975), (121, 40978), (133, 41020), (135, 41041), (152, 41095), (153, 41101), (160, 41134), (167, 41176), (168, 41182), (201, 41278),

Gene: Fastidio\_60 Start: 39023, Stop: 39388, Start Num: 89

Candidate Starts for Fastidio\_60:

(Start: 89 @39023 has 250 MA's), (110, 39056), (119, 39071), (121, 39074), (131, 39113), (133, 39116), (135, 39137), (153, 39197), (160, 39230), (167, 39272), (168, 39278), (190, 39347), (201, 39374),

Gene: Fenry\_49 Start: 36364, Stop: 36726, Start Num: 89

Candidate Starts for Fenry\_49:

(9, 35836), (24, 36049), (39, 36202), (43, 36220), (49, 36256), (66, 36295), (Start: 89 @36364 has 250 MA's), (136, 36493), (141, 36517), (197, 36712),

Gene: Filuzino\_58 Start: 39299, Stop: 39664, Start Num: 89

Candidate Starts for Filuzino\_58:

(Start: 89 @39299 has 250 MA's), (110, 39332), (112, 39338), (121, 39350), (133, 39392), (138, 39422), (144, 39446), (145, 39449), (167, 39548), (168, 39554), (193, 39629), (194, 39632),

Gene: Firehouse51\_61 Start: 43811, Stop: 44176, Start Num: 89

Candidate Starts for Firehouse51\_61:

(Start: 89 @43811 has 250 MA's), (110, 43844), (119, 43859), (121, 43862), (131, 43901), (133, 43904), (135, 43925), (144, 43958), (153, 43985), (160, 44018), (167, 44060), (168, 44066), (201, 44162),

Gene: Flathead\_60 Start: 40766, Stop: 41131, Start Num: 89

Candidate Starts for Flathead\_60:

(Start: 89 @40766 has 250 MA's), (110, 40799), (112, 40805), (121, 40817), (133, 40859), (138, 40889), (144, 40913), (145, 40916), (167, 41015), (168, 41021), (193, 41096), (194, 41099), (196, 41102),

Gene: Florinda\_71 Start: 42396, Stop: 42761, Start Num: 89

Candidate Starts for Florinda\_71:

(Start: 89 @42396 has 250 MA's), (110, 42429), (114, 42438), (121, 42447), (133, 42489), (138, 42519), (144, 42543), (145, 42546), (167, 42645), (168, 42651), (193, 42726),

Gene: Footloose\_58 Start: 33452, Stop: 33814, Start Num: 89

Candidate Starts for Footloose\_58:

(67, 33380), (69, 33398), (75, 33416), (Start: 89 @33452 has 250 MA's), (96, 33464), (125, 33524), (134, 33557), (135, 33572), (141, 33599), (151, 33623), (160, 33659),

Gene: Forza\_129 Start: 82851, Stop: 82357, Start Num: 41

Candidate Starts for Forza\_129:

(Start: 41 @82851 has 4 MA's), (62, 82782), (64, 82776), (68, 82761), (76, 82728), (136, 82566), (153, 82521), (175, 82404), (178, 82398), (192, 82368),

Gene: FreddyB\_61 Start: 39138, Stop: 39503, Start Num: 89

Candidate Starts for FreddyB\_61:

(Start: 89 @39138 has 250 MA's), (110, 39171), (119, 39186), (121, 39189), (131, 39228), (133, 39231), (135, 39252), (144, 39285), (153, 39312), (160, 39345), (167, 39387), (168, 39393), (201, 39489),

Gene: Fruitloop\_57 Start: 40613, Stop: 40978, Start Num: 89

Candidate Starts for Fruitloop\_57:

(Start: 89 @40613 has 250 MA's), (110, 40646), (114, 40655), (121, 40664), (133, 40706), (138, 40736), (144, 40760), (145, 40763), (167, 40862), (168, 40868), (193, 40943),

Gene: GUmbie\_58 Start: 39713, Stop: 40078, Start Num: 89

Candidate Starts for GUmbie\_58:

(Start: 89 @39713 has 250 MA's), (110, 39746), (119, 39761), (121, 39764), (131, 39803), (133, 39806), (135, 39827), (144, 39860), (153, 39887), (160, 39920), (167, 39962), (168, 39968), (201, 40064),

Gene: Galactic\_59 Start: 40176, Stop: 40541, Start Num: 89

Candidate Starts for Galactic\_59:

(Start: 89 @40176 has 250 MA's), (110, 40209), (119, 40224), (121, 40227), (131, 40266), (133, 40269), (135, 40290), (153, 40350), (160, 40383), (167, 40425), (168, 40431), (201, 40527),

Gene: Gandalph\_63 Start: 40535, Stop: 40900, Start Num: 89

Candidate Starts for Gandalph\_63:

(Start: 89 @40535 has 250 MA's), (110, 40568), (119, 40583), (121, 40586), (133, 40628), (135, 40649), (144, 40682), (153, 40709), (160, 40742), (167, 40784), (168, 40790), (201, 40886),

Gene: GigiOuiOui\_56 Start: 39153, Stop: 39518, Start Num: 89



Candidate Starts for GigiOuiOui\_56:

(Start: 89 @39153 has 250 MA's), (110, 39186), (119, 39201), (121, 39204), (131, 39243), (133, 39246), (135, 39267), (153, 39327), (160, 39360), (167, 39402), (168, 39408), (201, 39504),

Gene: Girafales\_69 Start: 42187, Stop: 42552, Start Num: 89

Candidate Starts for Girafales\_69:

(Start: 89 @42187 has 250 MA's), (110, 42220), (114, 42229), (121, 42238), (133, 42280), (138, 42310), (144, 42334), (145, 42337), (167, 42436), (168, 42442), (193, 42517),

Gene: Girr\_58 Start: 40017, Stop: 40382, Start Num: 89

Candidate Starts for Girr\_58:

(Start: 89 @40017 has 250 MA's), (110, 40050), (119, 40065), (121, 40068), (131, 40107), (133, 40110), (135, 40131), (153, 40191), (160, 40224), (167, 40266), (168, 40272), (201, 40368),

Gene: Globfish\_75 Start: 41426, Stop: 41815, Start Num: 95

Candidate Starts for Globfish\_75:

(Start: 95 @41426 has 24 MA's), (141, 41549), (153, 41582), (156, 41597), (165, 41651),

Gene: GoldDust\_45 Start: 35305, Stop: 35673, Start Num: 100

Candidate Starts for GoldDust\_45:

(Start: 100 @35305 has 33 MA's), (153, 35458), (160, 35491), (162, 35506),

Gene: Gorge\_64 Start: 41655, Stop: 42020, Start Num: 89

Candidate Starts for Gorge\_64:

(Start: 89 @41655 has 250 MA's), (110, 41688), (119, 41703), (121, 41706), (131, 41745), (133, 41748), (135, 41769), (144, 41802), (153, 41829), (160, 41862), (167, 41904), (168, 41910), (201, 42006),

Gene: Gorpy\_74 Start: 42930, Stop: 43331, Start Num: 95

Candidate Starts for Gorpy\_74:

(27, 42684), (Start: 95 @42930 has 24 MA's), (153, 43098), (165, 43167),

Gene: Gravel\_33 Start: 22425, Stop: 22072, Start Num: 92

Candidate Starts for Gravel\_33:

(Start: 92 @22425 has 13 MA's), (134, 22326), (191, 22089),

Gene: Greely\_69 Start: 25152, Stop: 25580, Start Num: 73

Candidate Starts for Greely\_69:

(Start: 73 @25152 has 3 MA's), (109, 25233), (130, 25296), (141, 25347), (157, 25386), (160, 25401), (171, 25464),

Gene: Grimmer\_70 Start: 41812, Stop: 42177, Start Num: 89

Candidate Starts for Grimmer\_70:

(Start: 89 @41812 has 250 MA's), (110, 41845), (119, 41860), (121, 41863), (131, 41902), (133, 41905), (135, 41926), (153, 41986), (160, 42019), (167, 42061), (168, 42067), (201, 42163),

Gene: Guacamole\_48 Start: 35005, Stop: 35367, Start Num: 89

Candidate Starts for Guacamole\_48:

(43, 34861), (49, 34897), (66, 34936), (Start: 89 @35005 has 250 MA's), (129, 35104), (135, 35131), (136, 35134), (141, 35158), (197, 35353),

Gene: Hades\_61 Start: 41111, Stop: 41476, Start Num: 89

Candidate Starts for Hades\_61:

(Start: 89 @41111 has 250 MA's), (110, 41144), (119, 41159), (121, 41162), (131, 41201), (133, 41204), (135, 41225), (144, 41258), (153, 41285), (160, 41318), (167, 41360), (168, 41366), (190, 41435), (201, 41462),

Gene: Halley\_146 Start: 77546, Stop: 77899, Start Num: 93

Candidate Starts for Halley\_146:

(Start: 93 @77546 has 33 MA's), (160, 77747), (167, 77789),

Gene: Hamulus\_61 Start: 40756, Stop: 41121, Start Num: 89

Candidate Starts for Hamulus\_61:

(Start: 89 @40756 has 250 MA's), (110, 40789), (112, 40795), (121, 40807), (133, 40849), (138, 40879), (144, 40903), (145, 40906), (167, 41005), (168, 41011), (193, 41086), (194, 41089), (196, 41092),

Gene: Harley\_62 Start: 40658, Stop: 41011, Start Num: 89

Candidate Starts for Harley\_62:

(75, 40622), (Start: 89 @40658 has 250 MA's), (108, 40688), (110, 40691), (117, 40703), (121, 40709), (135, 40772), (138, 40781), (167, 40901), (171, 40922), (192, 40979), (200, 40991),

Gene: Harley\_61 Start: 40314, Stop: 40661, Start Num: 90

Candidate Starts for Harley\_61:

(78, 40287), (Start: 84 @40305 has 1 MA's), (Start: 90 @40314 has 26 MA's), (110, 40344), (114, 40353), (124, 40371), (135, 40425), (144, 40452), (160, 40509), (164, 40539), (167, 40551),

Gene: Hashim76\_90 Start: 66062, Stop: 65649, Start Num: 77

Candidate Starts for Hashim76\_90:

(Start: 77 @66062 has 3 MA's), (116, 65981), (139, 65894), (153, 65852), (160, 65819), (174, 65744),

Gene: Hawkeye\_86 Start: 58033, Stop: 58440, Start Num: 91

Candidate Starts for Hawkeye\_86:

(65, 57952), (69, 57976), (72, 57982), (Start: 89 @58030 has 250 MA's), (Start: 91 @58033 has 5 MA's), (126, 58096), (164, 58261), (170, 58288), (171, 58294), (197, 58363), (208, 58411),

Gene: Hedwig\_57 Start: 38509, Stop: 38871, Start Num: 89

Candidate Starts for Hedwig\_57:

(18, 38158), (Start: 89 @38509 has 250 MA's), (135, 38632),

Gene: Hegedechwinu\_60 Start: 39325, Stop: 39690, Start Num: 89

Candidate Starts for Hegedechwinu\_60:

(Start: 89 @39325 has 250 MA's), (110, 39358), (119, 39373), (121, 39376), (131, 39415), (133, 39418), (135, 39439), (144, 39472), (153, 39499), (160, 39532), (167, 39574), (168, 39580), (201, 39676),

Gene: Hestia\_70 Start: 39954, Stop: 40355, Start Num: 95

Candidate Starts for Hestia\_70:

(Start: 95 @39954 has 24 MA's), (153, 40122), (165, 40191),

Gene: Hillester\_80 Start: 42975, Stop: 43364, Start Num: 95

Candidate Starts for Hillester\_80:

(1, 41406), (2, 41541), (3, 41652), (4, 41688), (5, 41751), (8, 42429), (22, 42645), (Start: 95 @42975 has 24 MA's), (141, 43098), (153, 43131), (156, 43146), (165, 43200), (191, 43290),

Gene: Hirko\_43 Start: 34532, Stop: 34897, Start Num: 100

Candidate Starts for Hirko\_43:

(Start: 100 @34532 has 33 MA's), (153, 34685), (160, 34718), (162, 34733), (182, 34814),

Gene: Hitter\_51 Start: 34662, Stop: 35024, Start Num: 89

Candidate Starts for Hitter\_51:

(43, 34518), (49, 34554), (66, 34593), (Start: 89 @34662 has 250 MA's), (136, 34791), (141, 34815), (197, 35010),

Gene: Hlubikazi\_56 Start: 38331, Stop: 38696, Start Num: 89

Candidate Starts for Hlubikazi\_56:

(Start: 89 @38331 has 250 MA's), (110, 38364), (119, 38379), (121, 38382), (133, 38424), (135, 38445), (144, 38478), (152, 38499), (153, 38505), (167, 38580), (168, 38586), (201, 38682),

Gene: HokkenD\_137 Start: 76705, Stop: 77058, Start Num: 93

Candidate Starts for HokkenD\_137:

(57, 76603), (Start: 93 @76705 has 33 MA's), (160, 76906), (167, 76948),

Gene: Hortus1\_71 Start: 44930, Stop: 44580, Start Num: 97

Candidate Starts for Hortus1\_71:

(46, 45071), (71, 44987), (Start: 97 @44930 has 6 MA's), (115, 44903), (120, 44894), (122, 44891), (136, 44828), (141, 44804), (185, 44627), (188, 44612), (198, 44591),

Gene: Hughesyang\_143 Start: 77316, Stop: 77669, Start Num: 93

Candidate Starts for Hughesyang\_143:

(Start: 93 @77316 has 33 MA's), (160, 77517), (167, 77559),

Gene: IMpilo\_54 Start: 37409, Stop: 37756, Start Num: 90

Candidate Starts for IMpilo\_54:

(78, 37382), (Start: 84 @37400 has 1 MA's), (Start: 90 @37409 has 26 MA's), (101, 37421), (103, 37424), (110, 37439), (114, 37448), (124, 37466), (135, 37520), (144, 37547), (160, 37604), (164, 37634), (167, 37646),

Gene: IMpilo\_55 Start: 37786, Stop: 38106, Start Num: 110

Candidate Starts for IMpilo\_55:

(75, 37717), (Start: 89 @37753 has 250 MA's), (108, 37783), (110, 37786), (117, 37798), (121, 37804), (135, 37867), (138, 37876), (139, 37882), (167, 37996), (171, 38017), (192, 38074), (200, 38086),

Gene: lbOuu\_61 Start: 40693, Stop: 41058, Start Num: 89

Candidate Starts for lbOuu\_61:

(Start: 89 @40693 has 250 MA's), (110, 40726), (119, 40741), (121, 40744), (131, 40783), (133, 40786), (135, 40807), (144, 40840), (153, 40867), (160, 40900), (167, 40942), (168, 40948), (201, 41044),

Gene: lbhubesi\_60 Start: 40300, Stop: 40665, Start Num: 89

Candidate Starts for lbhubesi\_60:

(Start: 89 @40300 has 250 MA's), (110, 40333), (119, 40348), (121, 40351), (131, 40390), (133, 40393), (135, 40414), (153, 40474), (160, 40507), (167, 40549), (168, 40555), (190, 40624), (201, 40651),

Gene: Inventum\_55 Start: 39804, Stop: 40169, Start Num: 89

Candidate Starts for Inventum\_55:

(Start: 89 @39804 has 250 MA's), (110, 39837), (119, 39852), (121, 39855), (131, 39894), (133, 39897), (135, 39918), (144, 39951), (153, 39978), (160, 40011), (167, 40053), (168, 40059), (201,

40155),

Gene: IrishSherpFalk\_61 Start: 41968, Stop: 42333, Start Num: 89

Candidate Starts for IrishSherpFalk\_61:

(Start: 89 @41968 has 250 MA's), (110, 42001), (119, 42016), (121, 42019), (131, 42058), (133, 42061), (135, 42082), (153, 42142), (160, 42175), (167, 42217), (168, 42223), (201, 42319),

Gene: Isolde\_74 Start: 41800, Stop: 42201, Start Num: 95

Candidate Starts for Isolde\_74:

(53, 41689), (Start: 95 @41800 has 24 MA's), (153, 41968), (165, 42037),

Gene: Iter\_45 Start: 33105, Stop: 33509, Start Num: 100

Candidate Starts for Iter\_45:

(Start: 100 @33105 has 33 MA's), (134, 33192), (160, 33285), (169, 33339), (209, 33483), (212, 33501),

Gene: IttyBittyPiggy\_46 Start: 32844, Stop: 33215, Start Num: 100

Candidate Starts for IttyBittyPiggy\_46:

(Start: 100 @32844 has 33 MA's), (126, 32898), (160, 33024), (169, 33078),

Gene: Jabbawokkie\_74 Start: 42036, Stop: 42401, Start Num: 89

Candidate Starts for Jabbawokkie\_74:

(Start: 89 @42036 has 250 MA's), (110, 42069), (119, 42084), (121, 42087), (131, 42126), (133, 42129), (135, 42150), (144, 42183), (153, 42210), (160, 42243), (167, 42285), (168, 42291), (201, 42387),

Gene: JalFarm20\_71 Start: 43462, Stop: 43809, Start Num: 90

Candidate Starts for JalFarm20\_71:

(78, 43435), (Start: 84 @43453 has 1 MA's), (Start: 90 @43462 has 26 MA's), (110, 43492), (114, 43501), (124, 43519), (135, 43573), (144, 43600), (160, 43657), (164, 43687), (167, 43699),

Gene: JalFarm20\_72 Start: 43806, Stop: 44159, Start Num: 89

Candidate Starts for JalFarm20\_72:

(75, 43770), (Start: 89 @43806 has 250 MA's), (108, 43836), (110, 43839), (117, 43851), (121, 43857), (135, 43920), (138, 43929), (139, 43935), (167, 44049), (171, 44070), (192, 44127), (200, 44139),

Gene: Jalammah\_54 Start: 37665, Stop: 38027, Start Num: 89

Candidate Starts for Jalammah\_54:

(43, 37521), (49, 37557), (66, 37596), (Start: 89 @37665 has 250 MA's), (136, 37794), (141, 37818), (197, 38013),

Gene: James\_64 Start: 41780, Stop: 42145, Start Num: 89

Candidate Starts for James\_64:

(Start: 89 @41780 has 250 MA's), (110, 41813), (119, 41828), (121, 41831), (131, 41870), (133, 41873), (135, 41894), (144, 41927), (153, 41954), (160, 41987), (167, 42029), (168, 42035), (201, 42131),

Gene: Jamun\_29 Start: 21575, Stop: 21234, Start Num: 92

Candidate Starts for Jamun\_29:

(Start: 92 @21575 has 13 MA's), (134, 21482), (171, 21311), (189, 21251), (191, 21248),

Gene: Janeemi\_48 Start: 35112, Stop: 35516, Start Num: 100

Candidate Starts for Janeemi\_48:

(Start: 100 @35112 has 33 MA's), (160, 35292), (169, 35346), (209, 35490), (212, 35508),

Gene: Jant\_63 Start: 41384, Stop: 41737, Start Num: 89

Candidate Starts for Jant\_63:

(75, 41348), (Start: 89 @41384 has 250 MA's), (108, 41414), (110, 41417), (117, 41429), (121, 41435), (135, 41498), (138, 41507), (139, 41513), (167, 41627), (171, 41648), (192, 41705), (200, 41717),

Gene: Jant\_62 Start: 41040, Stop: 41387, Start Num: 90

Candidate Starts for Jant\_62:

(78, 41013), (Start: 84 @41031 has 1 MA's), (Start: 90 @41040 has 26 MA's), (110, 41070), (114, 41079), (124, 41097), (135, 41151), (144, 41178), (160, 41235), (164, 41265), (167, 41277),

Gene: Jacob\_60 Start: 40261, Stop: 40626, Start Num: 89

Candidate Starts for Jacob\_60:

(Start: 89 @40261 has 250 MA's), (110, 40294), (119, 40309), (121, 40312), (131, 40351), (133, 40354), (135, 40375), (144, 40408), (152, 40429), (153, 40435), (160, 40468), (167, 40510), (168, 40516), (201, 40612),

Gene: JasperJr\_48 Start: 35005, Stop: 35367, Start Num: 89

Candidate Starts for JasperJr\_48:

(43, 34861), (49, 34897), (66, 34936), (Start: 89 @35005 has 250 MA's), (129, 35104), (135, 35131), (136, 35134), (141, 35158), (197, 35353),

Gene: JellyBread\_72 Start: 41945, Stop: 42346, Start Num: 95

Candidate Starts for JellyBread\_72:

(Start: 95 @41945 has 24 MA's), (153, 42113), (165, 42182),

Gene: Jerole\_38 Start: 21984, Stop: 21634, Start Num: 92

Candidate Starts for Jerole\_38:

(20, 22308), (34, 22167), (54, 22074), (Start: 92 @21984 has 13 MA's), (191, 21651),

Gene: Jinglebell\_65 Start: 42815, Stop: 43180, Start Num: 89

Candidate Starts for Jinglebell\_65:

(Start: 89 @42815 has 250 MA's), (110, 42848), (119, 42863), (121, 42866), (131, 42905), (133, 42908), (135, 42929), (144, 42962), (153, 42989), (160, 43022), (167, 43064), (168, 43070), (201, 43166),

Gene: Job42\_62 Start: 42198, Stop: 42563, Start Num: 89

Candidate Starts for Job42\_62:

(Start: 89 @42198 has 250 MA's), (110, 42231), (119, 42246), (121, 42249), (131, 42288), (133, 42291), (135, 42312), (144, 42345), (152, 42366), (153, 42372), (160, 42405), (167, 42447), (168, 42453), (201, 42549),

Gene: Joemato\_46 Start: 33415, Stop: 33828, Start Num: 100

Candidate Starts for Joemato\_46:

(21, 33085), (Start: 100 @33415 has 33 MA's), (126, 33469), (160, 33595), (169, 33649), (211, 33802), (213, 33820),

Gene: JoeyJr\_55 Start: 38710, Stop: 39075, Start Num: 89

Candidate Starts for JoeyJr\_55:

(Start: 89 @38710 has 250 MA's), (110, 38743), (119, 38758), (121, 38761), (133, 38803), (135, 38824), (144, 38857), (152, 38878), (153, 38884), (160, 38917), (167, 38959), (168, 38965), (201, 39061),

Gene: JohnDoe\_46 Start: 33411, Stop: 33824, Start Num: 100

Candidate Starts for JohnDoe\_46:

(21, 33081), (Start: 100 @33411 has 33 MA's), (126, 33465), (160, 33591), (169, 33645), (211, 33798), (213, 33816),

Gene: Juice456\_60 Start: 41762, Stop: 42115, Start Num: 89

Candidate Starts for Juice456\_60:

(75, 41726), (Start: 89 @41762 has 250 MA's), (108, 41792), (110, 41795), (117, 41807), (121, 41813), (135, 41876), (138, 41885), (139, 41891), (167, 42005), (171, 42026), (192, 42083), (200, 42095),

Gene: Juice456\_59 Start: 41418, Stop: 41765, Start Num: 90

Candidate Starts for Juice456\_59:

(78, 41391), (Start: 84 @41409 has 1 MA's), (Start: 90 @41418 has 26 MA's), (110, 41448), (114, 41457), (124, 41475), (135, 41529), (144, 41556), (160, 41613), (164, 41643), (167, 41655),

Gene: JuicyJay\_140 Start: 78831, Stop: 79184, Start Num: 93

Candidate Starts for JuicyJay\_140:

(Start: 93 @78831 has 33 MA's), (160, 79032), (167, 79074),

Gene: JuneStar\_48 Start: 35661, Stop: 36011, Start Num: 100

Candidate Starts for JuneStar\_48:

(Start: 100 @35661 has 33 MA's), (126, 35715), (160, 35841),

Gene: Juniper1\_59 Start: 40443, Stop: 40808, Start Num: 89

Candidate Starts for Juniper1\_59:

(19, 40104), (23, 40122), (30, 40221), (32, 40230), (57, 40347), (59, 40353), (61, 40356), (Start: 89 @40443 has 250 MA's), (110, 40476), (114, 40485), (121, 40494), (135, 40557), (138, 40566), (145, 40593), (148, 40605), (153, 40617), (168, 40698), (192, 40770), (193, 40773),

Gene: Juniper1\_56 Start: 39354, Stop: 39701, Start Num: 90

Candidate Starts for Juniper1\_56:

(78, 39327), (Start: 84 @39345 has 1 MA's), (Start: 90 @39354 has 26 MA's), (101, 39366), (103, 39369), (110, 39384), (114, 39393), (124, 39411), (135, 39465), (144, 39492), (160, 39549), (164, 39579), (167, 39591),

Gene: Juniper1\_57 Start: 39698, Stop: 40051, Start Num: 89

Candidate Starts for Juniper1\_57:

(75, 39662), (Start: 89 @39698 has 250 MA's), (108, 39728), (110, 39731), (117, 39743), (121, 39749), (135, 39812), (138, 39821), (139, 39827), (167, 39941), (171, 39962), (192, 40019), (200, 40031),

Gene: Kalah2\_135 Start: 76437, Stop: 76790, Start Num: 93

Candidate Starts for Kalah2\_135:

(Start: 93 @76437 has 33 MA's), (160, 76638), (167, 76680),

Gene: Karhdo\_57 Start: 39806, Stop: 40171, Start Num: 89

Candidate Starts for Karhdo\_57:

(Start: 89 @39806 has 250 MA's), (110, 39839), (119, 39854), (121, 39857), (131, 39896), (133, 39899), (135, 39920), (144, 39953), (153, 39980), (160, 40013), (167, 40055), (168, 40061), (201, 40157),

Gene: KashFlow\_143 Start: 75737, Stop: 76090, Start Num: 93

Candidate Starts for KashFlow\_143:

(57, 75635), (Start: 93 @75737 has 33 MA's), (160, 75938), (167, 75980),

Gene: Kaylissa\_47 Start: 33807, Stop: 34220, Start Num: 100

Candidate Starts for Kaylissa\_47:

(Start: 100 @33807 has 33 MA's), (126, 33861), (160, 33987), (169, 34041), (211, 34194), (213, 34212),

Gene: KendraB23\_34 Start: 22613, Stop: 22260, Start Num: 92

Candidate Starts for KendraB23\_34:

(Start: 92 @22613 has 13 MA's), (134, 22514), (191, 22277),

Gene: Kenuha5\_57 Start: 38874, Stop: 39239, Start Num: 89

Candidate Starts for Kenuha5\_57:

(Start: 89 @38874 has 250 MA's), (110, 38907), (112, 38913), (121, 38925), (133, 38967), (138, 38997), (144, 39021), (145, 39024), (167, 39123), (168, 39129), (193, 39204),

Gene: Kersh\_62 Start: 42556, Stop: 42921, Start Num: 89

Candidate Starts for Kersh\_62:

(Start: 89 @42556 has 250 MA's), (110, 42589), (119, 42604), (121, 42607), (131, 42646), (133, 42649), (135, 42670), (144, 42703), (152, 42724), (153, 42730), (160, 42763), (167, 42805), (168, 42811), (201, 42907),

Gene: Kimberlium\_60 Start: 41117, Stop: 41464, Start Num: 90

Candidate Starts for Kimberlium\_60:

(78, 41090), (Start: 84 @41108 has 1 MA's), (Start: 90 @41117 has 26 MA's), (110, 41147), (114, 41156), (124, 41174), (135, 41228), (144, 41255), (160, 41312), (164, 41342), (167, 41354),

Gene: Kimberlium\_63 Start: 42089, Stop: 42454, Start Num: 89

Candidate Starts for Kimberlium\_63:

(Start: 89 @42089 has 250 MA's), (110, 42122), (119, 42137), (121, 42140), (131, 42179), (133, 42182), (135, 42203), (144, 42236), (152, 42257), (153, 42263), (160, 42296), (167, 42338), (168, 42344), (201, 42440),

Gene: Kimberlium\_61 Start: 41461, Stop: 41814, Start Num: 89

Candidate Starts for Kimberlium\_61:

(75, 41425), (Start: 89 @41461 has 250 MA's), (108, 41491), (110, 41494), (117, 41506), (121, 41512), (135, 41575), (138, 41584), (139, 41590), (167, 41704), (171, 41725), (192, 41782), (200, 41794),

Gene: KingJulian\_57 Start: 39332, Stop: 39697, Start Num: 89

Candidate Starts for KingJulian\_57:

(Start: 89 @39332 has 250 MA's), (110, 39365), (119, 39380), (121, 39383), (131, 39422), (133, 39425), (135, 39446), (144, 39479), (153, 39506), (160, 39539), (167, 39581), (168, 39587), (201, 39683),

Gene: KingMidas\_59 Start: 40372, Stop: 40737, Start Num: 89

Candidate Starts for KingMidas\_59:

(Start: 89 @40372 has 250 MA's), (110, 40405), (119, 40420), (121, 40423), (133, 40465), (135, 40486), (144, 40519), (152, 40540), (153, 40546), (160, 40579), (167, 40621), (168, 40627), (201, 40723),

Gene: Kingsley\_55 Start: 38460, Stop: 38807, Start Num: 90

Candidate Starts for Kingsley\_55:

(78, 38433), (Start: 84 @38451 has 1 MA's), (Start: 90 @38460 has 26 MA's), (110, 38490), (114, 38499), (124, 38517), (135, 38571), (144, 38598), (160, 38655), (164, 38685), (167, 38697),

Gene: Kingsley\_56 Start: 38804, Stop: 39157, Start Num: 89

Candidate Starts for Kingsley\_56:

(75, 38768), (Start: 89 @38804 has 250 MA's), (108, 38834), (110, 38837), (117, 38849), (121, 38855), (135, 38918), (138, 38927), (139, 38933), (167, 39047), (171, 39068), (192, 39125), (200, 39137),

Gene: Klein\_142 Start: 75039, Stop: 75392, Start Num: 93

Candidate Starts for Klein\_142:

(Start: 93 @75039 has 33 MA's), (160, 75240), (167, 75282),

Gene: Klevey\_55 Start: 37550, Stop: 37951, Start Num: 91

Candidate Starts for Klevey\_55:

(Start: 91 @37550 has 5 MA's),

Gene: Koella\_54 Start: 36191, Stop: 36556, Start Num: 89

Candidate Starts for Koella\_54:

(Start: 89 @36191 has 250 MA's), (110, 36224), (119, 36239), (121, 36242), (131, 36281), (133, 36284), (135, 36305), (144, 36338), (153, 36365), (160, 36398), (167, 36440), (168, 36446), (201, 36542),

Gene: Krakatau\_57 Start: 39569, Stop: 39934, Start Num: 89

Candidate Starts for Krakatau\_57:

(Start: 89 @39569 has 250 MA's), (110, 39602), (121, 39620), (138, 39692), (144, 39716), (145, 39719), (167, 39818), (168, 39824), (193, 39899),

Gene: KristaRAM\_63 Start: 42760, Stop: 43125, Start Num: 89

Candidate Starts for KristaRAM\_63:

(Start: 89 @42760 has 250 MA's), (110, 42793), (119, 42808), (121, 42811), (133, 42853), (135, 42874), (144, 42907), (153, 42934), (160, 42967), (167, 43009), (168, 43015), (201, 43111),

Gene: LastJedi\_54 Start: 37508, Stop: 37873, Start Num: 89

Candidate Starts for LastJedi\_54:

(Start: 89 @37508 has 250 MA's), (110, 37541), (119, 37556), (121, 37559), (131, 37598), (133, 37601), (135, 37622), (144, 37655), (153, 37682), (160, 37715), (167, 37757), (168, 37763), (201, 37859),

Gene: Latretium\_62 Start: 40834, Stop: 41199, Start Num: 89

Candidate Starts for Latretium\_62:

(Start: 89 @40834 has 250 MA's), (110, 40867), (119, 40882), (121, 40885), (131, 40924), (133, 40927), (135, 40948), (153, 41008), (160, 41041), (167, 41083), (168, 41089), (201, 41185),

Gene: Lawnathon\_76 Start: 42050, Stop: 42439, Start Num: 95

Candidate Starts for Lawnathon\_76:

(Start: 95 @42050 has 24 MA's), (141, 42173), (153, 42206), (156, 42221), (165, 42275),

Gene: Lego\_45 Start: 33126, Stop: 33539, Start Num: 100

Candidate Starts for Lego\_45:

(Start: 100 @33126 has 33 MA's), (126, 33180), (160, 33306), (169, 33360), (211, 33513), (213, 33531),

Gene: Leona\_30 Start: 21281, Stop: 20940, Start Num: 92



Candidate Starts for Leona\_30:

(Start: 92 @21281 has 13 MA's), (137, 21173), (142, 21152),

Gene: Leozinho\_59 Start: 39590, Stop: 39955, Start Num: 89

Candidate Starts for Leozinho\_59:

(Start: 89 @39590 has 250 MA's), (110, 39623), (119, 39638), (121, 39641), (133, 39683), (135, 39704), (144, 39737), (152, 39758), (153, 39764), (160, 39797), (167, 39839), (168, 39845), (201, 39941),

Gene: Leperchaun\_52 Start: 37940, Stop: 38305, Start Num: 89

Candidate Starts for Leperchaun\_52:

(Start: 89 @37940 has 250 MA's), (110, 37973), (119, 37988), (121, 37991), (133, 38033), (135, 38054), (144, 38087), (152, 38108), (153, 38114), (160, 38147), (167, 38189), (168, 38195), (201, 38291),

Gene: Liebe\_46 Start: 34755, Stop: 35162, Start Num: 100

Candidate Starts for Liebe\_46:

(88, 34737), (Start: 100 @34755 has 33 MA's), (123, 34800), (134, 34845), (135, 34860),

Gene: LilMoolah\_58 Start: 39703, Stop: 40068, Start Num: 89

Candidate Starts for LilMoolah\_58:

(Start: 89 @39703 has 250 MA's), (110, 39736), (119, 39751), (121, 39754), (131, 39793), (133, 39796), (135, 39817), (144, 39850), (152, 39871), (153, 39877), (160, 39910), (167, 39952), (168, 39958), (201, 40054),

Gene: Lilmac1015\_57 Start: 38014, Stop: 38406, Start Num: 91

Candidate Starts for Lilmac1015\_57:

(Start: 91 @38014 has 5 MA's), (178, 38299), (191, 38335),

Gene: LittleShirley\_59 Start: 40750, Stop: 41115, Start Num: 89

Candidate Starts for LittleShirley\_59:

(Start: 89 @40750 has 250 MA's), (110, 40783), (119, 40798), (121, 40801), (131, 40840), (133, 40843), (135, 40864), (144, 40897), (153, 40924), (160, 40957), (167, 40999), (168, 41005), (201, 41101),

Gene: LittleTokyo\_33 Start: 21980, Stop: 21597, Start Num: 92

Candidate Starts for LittleTokyo\_33:

(Start: 92 @21980 has 13 MA's), (163, 21776),

Gene: Lizalica\_44 Start: 32567, Stop: 32941, Start Num: 100

Candidate Starts for Lizalica\_44:

(Start: 100 @32567 has 33 MA's), (135, 32672), (160, 32750), (169, 32804),

Gene: Lizziana\_66 Start: 41261, Stop: 41626, Start Num: 89

Candidate Starts for Lizziana\_66:

(Start: 89 @41261 has 250 MA's), (110, 41294), (119, 41309), (121, 41312), (131, 41351), (133, 41354), (135, 41375), (144, 41408), (153, 41435), (160, 41468), (167, 41510), (168, 41516), (201, 41612),

Gene: Llama\_65 Start: 42669, Stop: 43034, Start Num: 89

Candidate Starts for Llama\_65:

(Start: 89 @42669 has 250 MA's), (110, 42702), (119, 42717), (121, 42720), (131, 42759), (133, 42762), (135, 42783), (144, 42816), (153, 42843), (160, 42876), (167, 42918), (168, 42924), (201,

43020),

Gene: Llij\_56 Start: 39114, Stop: 39479, Start Num: 89

Candidate Starts for Llij\_56:

(Start: 89 @39114 has 250 MA's), (110, 39147), (119, 39162), (121, 39165), (131, 39204), (133, 39207), (135, 39228), (144, 39261), (152, 39282), (153, 39288), (160, 39321), (167, 39363), (168, 39369), (201, 39465),

Gene: Lorde\_60 Start: 38401, Stop: 38766, Start Num: 89

Candidate Starts for Lorde\_60:

(Start: 89 @38401 has 250 MA's), (110, 38434), (119, 38449), (121, 38452), (131, 38491), (133, 38494), (135, 38515), (144, 38548), (152, 38569), (153, 38575), (160, 38608), (167, 38650), (168, 38656), (201, 38752),

Gene: Lucky2013\_136 Start: 72791, Stop: 73144, Start Num: 93

Candidate Starts for Lucky2013\_136:

(57, 72689), (Start: 93 @72791 has 33 MA's), (160, 72992), (167, 73034),

Gene: LunaBlu\_62 Start: 40835, Stop: 41200, Start Num: 89

Candidate Starts for LunaBlu\_62:

(Start: 89 @40835 has 250 MA's), (110, 40868), (119, 40883), (121, 40886), (131, 40925), (133, 40928), (135, 40949), (153, 41009), (160, 41042), (167, 41084), (168, 41090), (201, 41186),

Gene: LunaStella\_56 Start: 38713, Stop: 39060, Start Num: 90

Candidate Starts for LunaStella\_56:

(78, 38686), (Start: 84 @38704 has 1 MA's), (Start: 90 @38713 has 26 MA's), (101, 38725), (110, 38743), (114, 38752), (133, 38803), (135, 38824), (155, 38887), (160, 38908), (164, 38938),

Gene: LunaStella\_57 Start: 39057, Stop: 39410, Start Num: 89

Candidate Starts for LunaStella\_57:

(75, 39021), (Start: 89 @39057 has 250 MA's), (117, 39102), (121, 39108), (135, 39171), (138, 39180), (150, 39216), (156, 39240), (200, 39390),

Gene: LunaStella\_59 Start: 39682, Stop: 40047, Start Num: 89

Candidate Starts for LunaStella\_59:

(Start: 89 @39682 has 250 MA's), (110, 39715), (121, 39733), (131, 39772), (133, 39775), (135, 39796), (138, 39805), (144, 39829), (153, 39856), (160, 39889), (167, 39931), (168, 39937), (201, 40033),

Gene: Lysidious\_52 Start: 36936, Stop: 37298, Start Num: 89

Candidate Starts for Lysidious\_52:

(Start: 41 @36786 has 4 MA's), (43, 36792), (49, 36828), (66, 36867), (Start: 89 @36936 has 250 MA's), (136, 37065), (141, 37089),

Gene: MUWow\_77 Start: 43655, Stop: 44044, Start Num: 95

Candidate Starts for MUWow\_77:

(27, 43409), (Start: 95 @43655 has 24 MA's), (141, 43778), (153, 43811), (156, 43826), (165, 43880),

Gene: MaGuCo\_43 Start: 33237, Stop: 33617, Start Num: 100

Candidate Starts for MaGuCo\_43:

(71, 33171), (76, 33189), (Start: 100 @33237 has 33 MA's), (105, 33249), (123, 33282), (134, 33327), (135, 33342), (154, 33396),

Gene: MadMen\_58 Start: 40038, Stop: 40403, Start Num: 89

Candidate Starts for MadMen\_58:

(Start: 89 @40038 has 250 MA's), (110, 40071), (119, 40086), (121, 40089), (133, 40131), (135, 40152), (144, 40185), (153, 40212), (160, 40245), (167, 40287), (168, 40293), (201, 40389),

Gene: Madiba\_58 Start: 39287, Stop: 39652, Start Num: 89

Candidate Starts for Madiba\_58:

(Start: 89 @39287 has 250 MA's), (110, 39320), (119, 39335), (121, 39338), (133, 39380), (135, 39401), (144, 39434), (153, 39461), (160, 39494), (167, 39536), (168, 39542), (201, 39638),

Gene: Mahavrat\_58 Start: 39663, Stop: 40028, Start Num: 89

Candidate Starts for Mahavrat\_58:

(Start: 89 @39663 has 250 MA's), (110, 39696), (119, 39711), (121, 39714), (131, 39753), (133, 39756), (135, 39777), (153, 39837), (160, 39870), (167, 39912), (168, 39918), (201, 40014),

Gene: Malachai\_49 Start: 37159, Stop: 37521, Start Num: 89

Candidate Starts for Malachai\_49:

(66, 37090), (Start: 89 @37159 has 250 MA's), (129, 37258), (135, 37285), (136, 37288), (141, 37312), (197, 37507),

Gene: MalagasyRose\_65 Start: 42032, Stop: 42385, Start Num: 99

Candidate Starts for MalagasyRose\_65:

(47, 41891), (74, 41975), (Start: 99 @42032 has 1 MA's), (128, 42101), (133, 42113), (135, 42134), (159, 42209), (164, 42248), (167, 42260), (171, 42281), (184, 42323), (191, 42344),

Gene: Mandlovu\_56 Start: 38273, Stop: 38638, Start Num: 89

Candidate Starts for Mandlovu\_56:

(Start: 89 @38273 has 250 MA's), (110, 38306), (119, 38321), (121, 38324), (133, 38366), (135, 38387), (144, 38420), (152, 38441), (153, 38447), (167, 38522), (168, 38528), (201, 38624),

Gene: Maravista\_61 Start: 41710, Stop: 42075, Start Num: 89

Candidate Starts for Maravista\_61:

(Start: 89 @41710 has 250 MA's), (110, 41743), (119, 41758), (121, 41761), (131, 41800), (133, 41803), (135, 41824), (144, 41857), (153, 41884), (160, 41917), (167, 41959), (168, 41965), (201, 42061),

Gene: Mareelih\_127 Start: 82353, Stop: 81859, Start Num: 41

Candidate Starts for Mareelih\_127:

(Start: 41 @82353 has 4 MA's), (62, 82284), (64, 82278), (68, 82263), (76, 82230), (136, 82068), (153, 82023), (175, 81906), (178, 81900), (192, 81870),

Gene: Marker\_62 Start: 40381, Stop: 40746, Start Num: 89

Candidate Starts for Marker\_62:

(Start: 89 @40381 has 250 MA's), (110, 40414), (119, 40429), (121, 40432), (133, 40474), (135, 40495), (153, 40555), (160, 40588), (167, 40630), (168, 40636), (201, 40732),

Gene: Marleymoo\_127 Start: 73278, Stop: 73631, Start Num: 93

Candidate Starts for Marleymoo\_127:

(Start: 93 @73278 has 33 MA's), (160, 73479), (167, 73521),

Gene: Martik\_60 Start: 40214, Stop: 40579, Start Num: 89

Candidate Starts for Martik\_60:

(Start: 89 @40214 has 250 MA's), (110, 40247), (119, 40262), (121, 40265), (131, 40304), (133, 40307), (135, 40328), (144, 40361), (153, 40388), (160, 40421), (167, 40463), (168, 40469), (201, 40565),

Gene: Maruru\_66 Start: 44640, Stop: 45053, Start Num: 83

Candidate Starts for Maruru\_66:

(38, 44490), (Start: 83 @44640 has 1 MA's), (128, 44730), (134, 44748), (162, 44871), (166, 44895),

Gene: MaterMagnus\_76 Start: 42682, Stop: 43083, Start Num: 95

Candidate Starts for MaterMagnus\_76:

(27, 42436), (Start: 95 @42682 has 24 MA's), (153, 42850), (165, 42919),

Gene: Mattes\_64 Start: 41780, Stop: 42145, Start Num: 89

Candidate Starts for Mattes\_64:

(Start: 89 @41780 has 250 MA's), (110, 41813), (119, 41828), (121, 41831), (131, 41870), (133, 41873), (135, 41894), (144, 41927), (153, 41954), (160, 41987), (167, 42029), (168, 42035), (201, 42131),

Gene: Maureen\_46 Start: 34755, Stop: 35162, Start Num: 100

Candidate Starts for Maureen\_46:

(88, 34737), (Start: 100 @34755 has 33 MA's), (123, 34800), (134, 34845), (135, 34860),

Gene: Melba\_50 Start: 35408, Stop: 35770, Start Num: 89

Candidate Starts for Melba\_50:

(43, 35264), (49, 35300), (66, 35339), (Start: 89 @35408 has 250 MA's), (136, 35537), (141, 35561),

Gene: Melissauren88\_58 Start: 39794, Stop: 40159, Start Num: 89

Candidate Starts for Melissauren88\_58:

(Start: 89 @39794 has 250 MA's), (110, 39827), (112, 39833), (121, 39845), (133, 39887), (138, 39917), (144, 39941), (145, 39944), (167, 40043), (168, 40049), (193, 40124),

Gene: Mellie\_49 Start: 35048, Stop: 35410, Start Num: 86

Candidate Starts for Mellie\_49:

(49, 34943), (Start: 86 @35048 has 1 MA's), (129, 35147), (135, 35174), (136, 35177), (141, 35201),

Gene: MiaZeal\_143 Start: 73930, Stop: 74283, Start Num: 93

Candidate Starts for MiaZeal\_143:

(57, 73828), (Start: 93 @73930 has 33 MA's), (160, 74131), (167, 74173),

Gene: MidnightRain\_81 Start: 43270, Stop: 43659, Start Num: 95

Candidate Starts for MidnightRain\_81:

(Start: 95 @43270 has 24 MA's), (141, 43393), (153, 43426), (156, 43441), (165, 43495),

Gene: MilanaBonita\_50 Start: 36387, Stop: 36752, Start Num: 89

Candidate Starts for MilanaBonita\_50:

(Start: 89 @36387 has 250 MA's), (110, 36420), (112, 36426), (121, 36438), (133, 36480), (138, 36510), (144, 36534), (145, 36537), (167, 36636), (168, 36642), (193, 36717), (194, 36720), (196, 36723),

Gene: MilleniumForce\_63 Start: 42482, Stop: 42847, Start Num: 89

Candidate Starts for MilleniumForce\_63:

(Start: 89 @42482 has 250 MA's), (110, 42515), (112, 42521), (121, 42533), (138, 42605), (144, 42629), (145, 42632), (153, 42656), (167, 42731), (168, 42737), (193, 42812),

Gene: Minerva\_144 Start: 76488, Stop: 76841, Start Num: 93

Candidate Starts for Minerva\_144:

(Start: 93 @76488 has 33 MA's), (160, 76689), (167, 76731),

Gene: MinionDave\_59 Start: 40561, Stop: 40926, Start Num: 89

Candidate Starts for MinionDave\_59:

(Start: 89 @40561 has 250 MA's), (110, 40594), (119, 40609), (121, 40612), (131, 40651), (133, 40654), (135, 40675), (144, 40708), (153, 40735), (160, 40768), (167, 40810), (168, 40816), (201, 40912),

Gene: Minnie\_63 Start: 41784, Stop: 42149, Start Num: 89

Candidate Starts for Minnie\_63:

(Start: 89 @41784 has 250 MA's), (110, 41817), (114, 41826), (121, 41835), (133, 41877), (138, 41907), (144, 41931), (145, 41934), (167, 42033), (168, 42039), (193, 42114),

Gene: MintFen\_51 Start: 35482, Stop: 35844, Start Num: 89

Candidate Starts for MintFen\_51:

(43, 35338), (49, 35374), (66, 35413), (Start: 89 @35482 has 250 MA's), (136, 35611), (141, 35635),

Gene: MisterCuddles\_58 Start: 40017, Stop: 40382, Start Num: 89

Candidate Starts for MisterCuddles\_58:

(Start: 89 @40017 has 250 MA's), (110, 40050), (119, 40065), (121, 40068), (131, 40107), (133, 40110), (135, 40131), (153, 40191), (160, 40224), (167, 40266), (168, 40272), (201, 40368),

Gene: Modragons\_64 Start: 42659, Stop: 43024, Start Num: 89

Candidate Starts for Modragons\_64:

(Start: 89 @42659 has 250 MA's), (110, 42692), (119, 42707), (121, 42710), (131, 42749), (133, 42752), (135, 42773), (144, 42806), (153, 42833), (160, 42866), (167, 42908), (168, 42914), (201, 43010),

Gene: Moonbeam\_58 Start: 39938, Stop: 40303, Start Num: 89

Candidate Starts for Moonbeam\_58:

(Start: 89 @39938 has 250 MA's), (110, 39971), (121, 39989), (133, 40031), (138, 40061), (144, 40085), (145, 40088), (167, 40187), (193, 40268), (194, 40271), (196, 40274),

Gene: Moonflower\_54 Start: 39482, Stop: 39844, Start Num: 89

Candidate Starts for Moonflower\_54:

(Start: 89 @39482 has 250 MA's), (135, 39605),

Gene: Mova\_61 Start: 39791, Stop: 40156, Start Num: 89

Candidate Starts for Mova\_61:

(Start: 89 @39791 has 250 MA's), (110, 39824), (119, 39839), (121, 39842), (133, 39884), (135, 39905), (144, 39938), (153, 39965), (160, 39998), (167, 40040), (168, 40046), (201, 40142),

Gene: Mozy\_69 Start: 42795, Stop: 43160, Start Num: 89

Candidate Starts for Mozy\_69:

(Start: 89 @42795 has 250 MA's), (110, 42828), (119, 42843), (121, 42846), (131, 42885), (133, 42888), (135, 42909), (153, 42969), (160, 43002), (167, 43044), (168, 43050), (201, 43146),

Gene: Ms6\_55 Start: 35525, Stop: 35890, Start Num: 89

Candidate Starts for Ms6\_55:

(Start: 89 @35525 has 250 MA's), (110, 35558), (112, 35564), (121, 35576), (133, 35618), (138, 35648), (144, 35672), (145, 35675), (167, 35774), (168, 35780), (193, 35855),

Gene: Mudpuppy\_42 Start: 33064, Stop: 33480, Start Num: 100

Candidate Starts for Mudpuppy\_42:

(Start: 100 @33064 has 33 MA's), (126, 33118), (160, 33244), (169, 33298), (211, 33454), (213, 33472),

Gene: Mufasa8\_70 Start: 44952, Stop: 45344, Start Num: 95

Candidate Starts for Mufasa8\_70:

(49, 44829), (74, 44901), (Start: 95 @44952 has 24 MA's), (132, 45045),

Gene: MulchExplorer\_64 Start: 41116, Stop: 41463, Start Num: 90

Candidate Starts for MulchExplorer\_64:

(78, 41089), (Start: 84 @41107 has 1 MA's), (Start: 90 @41116 has 26 MA's), (110, 41146), (114, 41155), (124, 41173), (135, 41227), (144, 41254), (160, 41311), (164, 41341), (167, 41353),

Gene: MulchExplorer\_65 Start: 41460, Stop: 41813, Start Num: 89

Candidate Starts for MulchExplorer\_65:

(75, 41424), (Start: 89 @41460 has 250 MA's), (108, 41490), (110, 41493), (117, 41505), (121, 41511), (135, 41574), (138, 41583), (139, 41589), (167, 41703), (171, 41724), (192, 41781), (200, 41793),

Gene: MulchExplorer\_67 Start: 42088, Stop: 42453, Start Num: 89

Candidate Starts for MulchExplorer\_67:

(Start: 89 @42088 has 250 MA's), (110, 42121), (119, 42136), (121, 42139), (131, 42178), (133, 42181), (135, 42202), (144, 42235), (152, 42256), (153, 42262), (160, 42295), (167, 42337), (168, 42343), (201, 42439),

Gene: Mutaforma13\_64 Start: 43121, Stop: 43486, Start Num: 89

Candidate Starts for Mutaforma13\_64:

(Start: 89 @43121 has 250 MA's), (110, 43154), (119, 43169), (121, 43172), (131, 43211), (133, 43214), (135, 43235), (144, 43268), (153, 43295), (160, 43328), (167, 43370), (168, 43376), (201, 43472),

Gene: Myrna\_64 Start: 24516, Stop: 24944, Start Num: 73

Candidate Starts for Myrna\_64:

(42, 24411), (Start: 73 @24516 has 3 MA's), (81, 24546), (130, 24660), (135, 24684), (141, 24711), (162, 24780), (171, 24828),

Gene: NewHope4\_64 Start: 40206, Stop: 40571, Start Num: 89

Candidate Starts for NewHope4\_64:

(Start: 89 @40206 has 250 MA's), (110, 40239), (119, 40254), (121, 40257), (131, 40296), (133, 40299), (135, 40320), (153, 40380), (160, 40413), (167, 40455), (168, 40461), (201, 40557),

Gene: NihilNomen\_146 Start: 76776, Stop: 77129, Start Num: 93

Candidate Starts for NihilNomen\_146:

(Start: 93 @76776 has 33 MA's), (160, 76977), (167, 77019),

Gene: Nitro\_44 Start: 33699, Stop: 34070, Start Num: 100

Candidate Starts for Nitro\_44:

(Start: 100 @33699 has 33 MA's), (134, 33786), (160, 33879), (169, 33933), (199, 34026),

Gene: Nivrat\_56 Start: 39576, Stop: 39941, Start Num: 89

Candidate Starts for Nivrat\_56:

(Start: 89 @39576 has 250 MA's), (110, 39609), (119, 39624), (121, 39627), (131, 39666), (133, 39669), (135, 39690), (144, 39723), (152, 39744), (153, 39750), (160, 39783), (167, 39825), (168, 39831), (201, 39927),

Gene: NormanBulbieJr\_60 Start: 40204, Stop: 40569, Start Num: 89

Candidate Starts for NormanBulbieJr\_60:

(Start: 89 @40204 has 250 MA's), (110, 40237), (119, 40252), (121, 40255), (131, 40294), (133, 40297), (135, 40318), (144, 40351), (153, 40378), (160, 40411), (167, 40453), (168, 40459), (201, 40555),

Gene: ObiToo\_51 Start: 34185, Stop: 34577, Start Num: 100

Candidate Starts for ObiToo\_51:

(Start: 100 @34185 has 33 MA's), (126, 34239), (160, 34365), (206, 34551), (210, 34569),

Gene: Ochi17\_63 Start: 42266, Stop: 42631, Start Num: 89

Candidate Starts for Ochi17\_63:

(Start: 89 @42266 has 250 MA's), (110, 42299), (119, 42314), (121, 42317), (131, 42356), (133, 42359), (135, 42380), (144, 42413), (153, 42440), (160, 42473), (167, 42515), (168, 42521), (201, 42617),

Gene: Odette\_148 Start: 78919, Stop: 79272, Start Num: 93

Candidate Starts for Odette\_148:

(Start: 93 @78919 has 33 MA's), (160, 79120), (167, 79162),

Gene: OfUltron\_65 Start: 42815, Stop: 43180, Start Num: 89

Candidate Starts for OfUltron\_65:

(Start: 89 @42815 has 250 MA's), (110, 42848), (119, 42863), (121, 42866), (131, 42905), (133, 42908), (135, 42929), (144, 42962), (153, 42989), (160, 43022), (167, 43064), (168, 43070), (201, 43166),

Gene: Ogopogo\_65 Start: 40778, Stop: 41143, Start Num: 89

Candidate Starts for Ogopogo\_65:

(Start: 89 @40778 has 250 MA's), (110, 40811), (112, 40817), (121, 40829), (133, 40871), (138, 40901), (144, 40925), (145, 40928), (167, 41027), (168, 41033), (193, 41108), (194, 41111), (196, 41114),

Gene: Oksu\_64 Start: 43078, Stop: 43443, Start Num: 89

Candidate Starts for Oksu\_64:

(Start: 89 @43078 has 250 MA's), (110, 43111), (119, 43126), (121, 43129), (131, 43168), (133, 43171), (135, 43192), (144, 43225), (153, 43252), (160, 43285), (167, 43327), (168, 43333), (201, 43429),

Gene: OldBen\_57 Start: 40129, Stop: 40494, Start Num: 89

Candidate Starts for OldBen\_57:

(Start: 89 @40129 has 250 MA's), (110, 40162), (119, 40177), (121, 40180), (133, 40222), (135, 40243), (153, 40303), (160, 40336), (167, 40378), (168, 40384), (201, 40480),

Gene: OlinDD\_71 Start: 44929, Stop: 44579, Start Num: 97

Candidate Starts for OlinDD\_71:

(46, 45070), (71, 44986), (Start: 97 @44929 has 6 MA's), (115, 44902), (120, 44893), (122, 44890), (136, 44827), (141, 44803), (185, 44626), (188, 44611), (198, 44590),

Gene: OlympiaSaint\_62 Start: 40722, Stop: 41087, Start Num: 89

Candidate Starts for OlympiaSaint\_62:

(Start: 89 @40722 has 250 MA's), (110, 40755), (119, 40770), (121, 40773), (131, 40812), (133, 40815), (135, 40836), (144, 40869), (153, 40896), (160, 40929), (167, 40971), (168, 40977), (201, 41073),

Gene: Optimus\_135 Start: 74056, Stop: 74409, Start Num: 93

Candidate Starts for Optimus\_135:

(Start: 93 @74056 has 33 MA's), (160, 74257), (167, 74299),

Gene: Orcanus\_30 Start: 22223, Stop: 21873, Start Num: 92

Candidate Starts for Orcanus\_30:

(Start: 92 @22223 has 13 MA's), (134, 22124), (191, 21890),

Gene: OtsoOtso\_36 Start: 21713, Stop: 21363, Start Num: 92

Candidate Starts for OtsoOtso\_36:

(Start: 92 @21713 has 13 MA's), (191, 21380),

Gene: Ovechkin\_57 Start: 39962, Stop: 40309, Start Num: 90

Candidate Starts for Ovechkin\_57:

(78, 39935), (Start: 84 @39953 has 1 MA's), (Start: 90 @39962 has 26 MA's), (110, 39992), (114, 40001), (124, 40019), (135, 40073), (144, 40100), (160, 40157), (164, 40187), (167, 40199),

Gene: Ovechkin\_58 Start: 40306, Stop: 40659, Start Num: 89

Candidate Starts for Ovechkin\_58:

(75, 40270), (Start: 89 @40306 has 250 MA's), (108, 40336), (110, 40339), (117, 40351), (121, 40357), (135, 40420), (138, 40429), (139, 40435), (167, 40549), (171, 40570), (192, 40627), (200, 40639),

Gene: OwlsT2W\_60 Start: 40441, Stop: 40806, Start Num: 89

Candidate Starts for OwlsT2W\_60:

(Start: 89 @40441 has 250 MA's), (110, 40474), (119, 40489), (121, 40492), (131, 40531), (133, 40534), (135, 40555), (144, 40588), (153, 40615), (160, 40648), (167, 40690), (168, 40696), (201, 40792),

Gene: PHappiness\_55 Start: 38486, Stop: 38851, Start Num: 89

Candidate Starts for PHappiness\_55:

(Start: 89 @38486 has 250 MA's), (110, 38519), (119, 38534), (121, 38537), (133, 38579), (135, 38600), (144, 38633), (152, 38654), (153, 38660), (160, 38693), (167, 38735), (168, 38741), (201, 38837),

Gene: PMC\_57 Start: 40831, Stop: 41196, Start Num: 89

Candidate Starts for PMC\_57:

(Start: 89 @40831 has 250 MA's), (110, 40864), (119, 40879), (121, 40882), (131, 40921), (133, 40924), (135, 40945), (144, 40978), (153, 41005), (160, 41038), (167, 41080), (168, 41086), (201, 41182),

Gene: Pacc40\_54 Start: 38560, Stop: 38925, Start Num: 89

Candidate Starts for Pacc40\_54:

(Start: 89 @38560 has 250 MA's), (110, 38593), (119, 38608), (121, 38611), (133, 38653), (135, 38674), (144, 38707), (152, 38728), (153, 38734), (160, 38767), (167, 38809), (168, 38815), (201, 38911),

Gene: Pelletreau\_33 Start: 22425, Stop: 22072, Start Num: 92



Candidate Starts for Pelletreau\_33:

(Start: 92 @22425 has 13 MA's), (134, 22326), (191, 22089),

Gene: Persistence\_70 Start: 40343, Stop: 40708, Start Num: 95

Candidate Starts for Persistence\_70:

(Start: 95 @40343 has 24 MA's), (122, 40376), (126, 40391), (135, 40439), (153, 40499), (164, 40562),

Gene: Phabba\_70 Start: 24981, Stop: 25430, Start Num: 73

Candidate Starts for Phabba\_70:

(Start: 73 @24981 has 3 MA's), (115, 25074), (130, 25125), (141, 25176), (157, 25236), (163, 25272), (171, 25314),

Gene: Phalconet\_58 Start: 39065, Stop: 39430, Start Num: 89

Candidate Starts for Phalconet\_58:

(Start: 89 @39065 has 250 MA's), (110, 39098), (112, 39104), (121, 39116), (126, 39131), (133, 39158), (138, 39188), (144, 39212), (145, 39215), (167, 39314), (168, 39320), (193, 39395),

Gene: Phanphagia\_57 Start: 40656, Stop: 41021, Start Num: 89

Candidate Starts for Phanphagia\_57:

(Start: 89 @40656 has 250 MA's), (110, 40689), (112, 40695), (121, 40707), (133, 40749), (138, 40779), (144, 40803), (145, 40806), (167, 40905), (168, 40911), (193, 40986),

Gene: Phasih\_58 Start: 40630, Stop: 40995, Start Num: 89

Candidate Starts for Phasih\_58:

(Start: 89 @40630 has 250 MA's), (110, 40663), (119, 40678), (121, 40681), (131, 40720), (133, 40723), (135, 40744), (153, 40804), (160, 40837), (167, 40879), (168, 40885), (190, 40954), (201, 40981),

Gene: Phatniss\_58 Start: 40209, Stop: 40574, Start Num: 89

Candidate Starts for Phatniss\_58:

(Start: 89 @40209 has 250 MA's), (110, 40242), (119, 40257), (121, 40260), (131, 40299), (133, 40302), (135, 40323), (144, 40356), (152, 40377), (153, 40383), (160, 40416), (167, 40458), (168, 40464), (201, 40560),

Gene: PhesterPhotato\_60 Start: 39882, Stop: 40247, Start Num: 89

Candidate Starts for PhesterPhotato\_60:

(Start: 89 @39882 has 250 MA's), (110, 39915), (112, 39921), (121, 39933), (126, 39948), (133, 39975), (138, 40005), (144, 40029), (145, 40032), (167, 40131), (168, 40137), (193, 40212),

Gene: Philus\_63 Start: 41366, Stop: 41731, Start Num: 89

Candidate Starts for Philus\_63:

(Start: 89 @41366 has 250 MA's), (110, 41399), (119, 41414), (121, 41417), (131, 41456), (133, 41459), (135, 41480), (144, 41513), (152, 41534), (153, 41540), (160, 41573), (167, 41615), (168, 41621), (201, 41717),

Gene: Phives\_50 Start: 35604, Stop: 36011, Start Num: 98

Candidate Starts for Phives\_50:

(Start: 98 @35604 has 1 MA's), (160, 35787), (169, 35841), (199, 35934), (209, 35985), (212, 36003),

Gene: PhlipPhlop\_58 Start: 41923, Stop: 42288, Start Num: 89

Candidate Starts for PhlipPhlop\_58:

(Start: 89 @41923 has 250 MA's), (110, 41956), (119, 41971), (121, 41974), (131, 42013), (133, 42016), (135, 42037), (144, 42070), (153, 42097), (160, 42130), (167, 42172), (168, 42178), (201,

42274),

Gene: Phoebus\_144 Start: 78670, Stop: 79023, Start Num: 93

Candidate Starts for Phoebus\_144:

(Start: 93 @78670 has 33 MA's), (160, 78871), (167, 78913),

Gene: Phrank15\_80 Start: 42781, Stop: 43146, Start Num: 95

Candidate Starts for Phrank15\_80:

(55, 42679), (Start: 95 @42781 has 24 MA's), (122, 42814), (132, 42856), (135, 42877), (153, 42937), (164, 43000),

Gene: Phrappuccino\_165 Start: 110158, Stop: 110505, Start Num: 104

Candidate Starts for Phrappuccino\_165:

(Start: 104 @110158 has 2 MA's), (116, 110191), (118, 110194), (122, 110200), (135, 110263), (183, 110455),

Gene: Pioneer3\_71 Start: 44751, Stop: 44401, Start Num: 97

Candidate Starts for Pioneer3\_71:

(46, 44892), (71, 44808), (Start: 97 @44751 has 6 MA's), (115, 44724), (120, 44715), (122, 44712), (136, 44649), (141, 44625), (185, 44448), (188, 44433), (198, 44412),

Gene: Pippy\_58 Start: 39072, Stop: 39437, Start Num: 89

Candidate Starts for Pippy\_58:

(Start: 89 @39072 has 250 MA's), (110, 39105), (119, 39120), (121, 39123), (131, 39162), (133, 39165), (135, 39186), (144, 39219), (153, 39246), (160, 39279), (167, 39321), (168, 39327), (201, 39423),

Gene: Pixelle\_47 Start: 35172, Stop: 35567, Start Num: 100

Candidate Starts for Pixelle\_47:

(Start: 100 @35172 has 33 MA's), (126, 35226), (160, 35352),

Gene: Platte\_71 Start: 44704, Stop: 44354, Start Num: 97

Candidate Starts for Platte\_71:

(71, 44761), (Start: 97 @44704 has 6 MA's), (115, 44677), (120, 44668), (122, 44665), (136, 44602), (141, 44578), (185, 44401), (188, 44386), (198, 44365),

Gene: Plumbus\_62 Start: 40530, Stop: 40895, Start Num: 89

Candidate Starts for Plumbus\_62:

(Start: 89 @40530 has 250 MA's), (110, 40563), (119, 40578), (121, 40581), (133, 40623), (135, 40644), (144, 40677), (152, 40698), (153, 40704), (160, 40737), (167, 40779), (168, 40785), (201, 40881),

Gene: Poenanya\_60 Start: 41387, Stop: 41752, Start Num: 89

Candidate Starts for Poenanya\_60:

(Start: 89 @41387 has 250 MA's), (110, 41420), (119, 41435), (121, 41438), (133, 41480), (135, 41501), (144, 41534), (152, 41555), (153, 41561), (160, 41594), (167, 41636), (168, 41642), (201, 41738),

Gene: Polka\_32 Start: 21713, Stop: 21363, Start Num: 92

Candidate Starts for Polka\_32:

(Start: 92 @21713 has 13 MA's), (191, 21380),

Gene: Polka14\_58 Start: 39583, Stop: 39948, Start Num: 89

Candidate Starts for Polka14\_58:

(Start: 89 @39583 has 250 MA's), (110, 39616), (119, 39631), (121, 39634), (131, 39673), (133, 39676), (135, 39697), (144, 39730), (153, 39757), (160, 39790), (167, 39832), (168, 39838), (201, 39934),

Gene: Pollywog\_61 Start: 41040, Stop: 41405, Start Num: 89

Candidate Starts for Pollywog\_61:

(Start: 89 @41040 has 250 MA's), (110, 41073), (119, 41088), (121, 41091), (131, 41130), (133, 41133), (135, 41154), (144, 41187), (153, 41214), (160, 41247), (167, 41289), (168, 41295), (201, 41391),

Gene: PopTart\_54 Start: 38690, Stop: 39055, Start Num: 89

Candidate Starts for PopTart\_54:

(Start: 89 @38690 has 250 MA's), (110, 38723), (112, 38729), (121, 38741), (133, 38783), (138, 38813), (144, 38837), (145, 38840), (167, 38939), (168, 38945), (193, 39020),

Gene: Porcelain\_140 Start: 73737, Stop: 74090, Start Num: 93

Candidate Starts for Porcelain\_140:

(57, 73635), (Start: 93 @73737 has 33 MA's), (160, 73938), (167, 73980),

Gene: Pound\_136 Start: 76489, Stop: 76842, Start Num: 93

Candidate Starts for Pound\_136:

(52, 76375), (57, 76387), (Start: 93 @76489 has 33 MA's), (160, 76690), (167, 76732),

Gene: Powerpuff\_48 Start: 34514, Stop: 34927, Start Num: 100

Candidate Starts for Powerpuff\_48:

(Start: 100 @34514 has 33 MA's), (126, 34568), (160, 34694), (169, 34748), (211, 34901), (213, 34919),

Gene: Prairie\_53 Start: 36909, Stop: 37310, Start Num: 91

Candidate Starts for Prairie\_53:

(50, 36807), (52, 36810), (Start: 91 @36909 has 5 MA's), (172, 37170),

Gene: Priscilla\_60 Start: 40303, Stop: 40668, Start Num: 89

Candidate Starts for Priscilla\_60:

(Start: 89 @40303 has 250 MA's), (110, 40336), (119, 40351), (121, 40354), (131, 40393), (133, 40396), (135, 40417), (144, 40450), (153, 40477), (160, 40510), (167, 40552), (168, 40558), (201, 40654),

Gene: Pumpkins\_45 Start: 33566, Stop: 33961, Start Num: 100

Candidate Starts for Pumpkins\_45:

(Start: 100 @33566 has 33 MA's), (126, 33620), (160, 33749),

Gene: QuickMath\_62 Start: 42312, Stop: 42677, Start Num: 89

Candidate Starts for QuickMath\_62:

(Start: 89 @42312 has 250 MA's), (110, 42345), (119, 42360), (121, 42363), (131, 42402), (133, 42405), (135, 42426), (144, 42459), (152, 42480), (153, 42486), (160, 42519), (167, 42561), (168, 42567), (201, 42663),

Gene: QuickMath\_60 Start: 41684, Stop: 42037, Start Num: 89

Candidate Starts for QuickMath\_60:

(75, 41648), (Start: 89 @41684 has 250 MA's), (108, 41714), (110, 41717), (117, 41729), (121, 41735), (135, 41798), (138, 41807), (139, 41813), (167, 41927), (171, 41948), (192, 42005), (200, 42017),

Gene: QuickMath\_59 Start: 41340, Stop: 41687, Start Num: 90

Candidate Starts for QuickMath\_59:

(78, 41313), (Start: 84 @41331 has 1 MA's), (Start: 90 @41340 has 26 MA's), (110, 41370), (114, 41379), (124, 41397), (135, 41451), (144, 41478), (160, 41535), (164, 41565), (167, 41577),

Gene: Quico\_68 Start: 42216, Stop: 42581, Start Num: 89

Candidate Starts for Quico\_68:

(Start: 89 @42216 has 250 MA's), (110, 42249), (114, 42258), (121, 42267), (133, 42309), (138, 42339), (144, 42363), (145, 42366), (167, 42465), (168, 42471), (193, 42546),

Gene: RadFad\_81 Start: 42975, Stop: 43364, Start Num: 95

Candidate Starts for RadFad\_81:

(1, 41406), (2, 41541), (3, 41652), (4, 41688), (5, 41751), (8, 42429), (22, 42645), (Start: 95 @42975 has 24 MA's), (141, 43098), (153, 43131), (156, 43146), (165, 43200), (191, 43290),

Gene: Radiance\_59 Start: 40325, Stop: 40690, Start Num: 89

Candidate Starts for Radiance\_59:

(Start: 89 @40325 has 250 MA's), (110, 40358), (121, 40376), (133, 40418), (135, 40439), (144, 40472), (152, 40493), (153, 40499), (160, 40532), (167, 40574), (168, 40580), (201, 40676),

Gene: Ramsey\_59 Start: 40638, Stop: 41003, Start Num: 89

Candidate Starts for Ramsey\_59:

(Start: 89 @40638 has 250 MA's), (110, 40671), (112, 40677), (121, 40689), (138, 40761), (144, 40785), (145, 40788), (153, 40812), (167, 40887), (168, 40893), (193, 40968),

Gene: Raphaella\_77 Start: 41746, Stop: 42147, Start Num: 95

Candidate Starts for Raphaella\_77:

(Start: 95 @41746 has 24 MA's), (153, 41914), (165, 41983),

Gene: Raqqa\_74 Start: 42460, Stop: 42840, Start Num: 107

Candidate Starts for Raqqa\_74:

(Start: 95 @42436 has 24 MA's), (Start: 107 @42460 has 1 MA's), (120, 42481), (141, 42574), (153, 42607), (171, 42703),

Gene: RayTheFireFly\_61 Start: 39688, Stop: 40050, Start Num: 89

Candidate Starts for RayTheFireFly\_61:

(Start: 89 @39688 has 250 MA's), (135, 39811), (156, 39877),

Gene: RedWattleHog\_91 Start: 82425, Stop: 82775, Start Num: 95

Candidate Starts for RedWattleHog\_91:

(Start: 95 @82425 has 24 MA's), (115, 82461), (146, 82572), (156, 82599), (160, 82617), (179, 82707),

Gene: Redno2\_139 Start: 74778, Stop: 75131, Start Num: 93

Candidate Starts for Redno2\_139:

(57, 74676), (Start: 93 @74778 has 33 MA's), (160, 74979), (167, 75021),

Gene: Renaud18\_63 Start: 40118, Stop: 40465, Start Num: 90

Candidate Starts for Renaud18\_63:

(78, 40091), (Start: 84 @40109 has 1 MA's), (Start: 90 @40118 has 26 MA's), (101, 40130), (110, 40148), (114, 40157), (135, 40229), (155, 40292), (160, 40313), (164, 40343),

Gene: Renaud18\_64 Start: 40462, Stop: 40815, Start Num: 89

Candidate Starts for Renaud18\_64:

(75, 40426), (Start: 89 @40462 has 250 MA's), (117, 40507), (121, 40513), (135, 40576), (138, 40585), (150, 40621), (156, 40645), (200, 40795),

Gene: Renaud18\_66 Start: 41090, Stop: 41452, Start Num: 89

Candidate Starts for Renaud18\_66:

(Start: 89 @41090 has 250 MA's), (110, 41123), (119, 41138), (121, 41141), (131, 41180), (133, 41183), (135, 41204), (152, 41255), (153, 41261), (168, 41342), (201, 41438),

Gene: Rialto\_66 Start: 43107, Stop: 43472, Start Num: 89

Candidate Starts for Rialto\_66:

(Start: 89 @43107 has 250 MA's), (110, 43140), (119, 43155), (121, 43158), (131, 43197), (133, 43200), (135, 43221), (144, 43254), (152, 43275), (153, 43281), (160, 43314), (167, 43356), (168, 43362), (201, 43458),

Gene: Richie\_79 Start: 43614, Stop: 44015, Start Num: 95

Candidate Starts for Richie\_79:

(27, 43368), (Start: 95 @43614 has 24 MA's), (153, 43782), (165, 43851),

Gene: Rita\_61 Start: 38934, Stop: 39299, Start Num: 89

Candidate Starts for Rita\_61:

(Start: 89 @38934 has 250 MA's), (110, 38967), (119, 38982), (121, 38985), (131, 39024), (133, 39027), (135, 39048), (144, 39081), (153, 39108), (160, 39141), (167, 39183), (168, 39189), (201, 39285),

Gene: RitaG\_55 Start: 38831, Stop: 39196, Start Num: 89

Candidate Starts for RitaG\_55:

(Start: 89 @38831 has 250 MA's), (110, 38864), (119, 38879), (121, 38882), (133, 38924), (135, 38945), (144, 38978), (152, 38999), (153, 39005), (160, 39038), (167, 39080), (168, 39086), (201, 39182),

Gene: Rockne\_61 Start: 40843, Stop: 41208, Start Num: 89

Candidate Starts for Rockne\_61:

(Start: 89 @40843 has 250 MA's), (110, 40876), (119, 40891), (121, 40894), (131, 40933), (133, 40936), (135, 40957), (144, 40990), (153, 41017), (160, 41050), (167, 41092), (168, 41098), (201, 41194),

Gene: RockyHorror\_61 Start: 39889, Stop: 40254, Start Num: 89

Candidate Starts for RockyHorror\_61:

(Start: 89 @39889 has 250 MA's), (110, 39922), (121, 39940), (131, 39979), (133, 39982), (135, 40003), (144, 40036), (153, 40063), (160, 40096), (167, 40138), (168, 40144), (201, 40240),

Gene: Royals2015\_62 Start: 39826, Stop: 40179, Start Num: 89

Candidate Starts for Royals2015\_62:

(75, 39790), (Start: 89 @39826 has 250 MA's), (108, 39856), (110, 39859), (117, 39871), (121, 39877), (135, 39940), (138, 39949), (139, 39955), (167, 40069), (171, 40090), (192, 40147), (200, 40159),

Gene: Royals2015\_61 Start: 39482, Stop: 39829, Start Num: 90

Candidate Starts for Royals2015\_61:

(78, 39455), (Start: 84 @39473 has 1 MA's), (Start: 90 @39482 has 26 MA's), (110, 39512), (114, 39521), (124, 39539), (135, 39593), (144, 39620), (160, 39677), (164, 39707), (167, 39719),

Gene: Ruby\_56 Start: 40018, Stop: 40383, Start Num: 89

Candidate Starts for Ruby\_56:

(Start: 89 @40018 has 250 MA's), (110, 40051), (119, 40066), (121, 40069), (131, 40108), (133, 40111), (135, 40132), (153, 40192), (160, 40225), (167, 40267), (168, 40273), (201, 40369),

Gene: Ruchi\_30 Start: 22625, Stop: 22281, Start Num: 92

Candidate Starts for Ruchi\_30:

(Start: 92 @22625 has 13 MA's), (Start: 107 @22604 has 1 MA's), (122, 22580), (134, 22532), (191, 22298),

Gene: SG4\_57 Start: 39721, Stop: 40086, Start Num: 89

Candidate Starts for SG4\_57:

(Start: 89 @39721 has 250 MA's), (110, 39754), (119, 39769), (121, 39772), (131, 39811), (133, 39814), (135, 39835), (144, 39868), (153, 39895), (160, 39928), (167, 39970), (168, 39976), (201, 40072),

Gene: Saal\_62 Start: 41474, Stop: 41839, Start Num: 89

Candidate Starts for Saal\_62:

(Start: 89 @41474 has 250 MA's), (110, 41507), (119, 41522), (121, 41525), (131, 41564), (133, 41567), (135, 41588), (144, 41621), (153, 41648), (160, 41681), (167, 41723), (168, 41729), (201, 41825),

Gene: Sabbb\_64 Start: 41162, Stop: 41527, Start Num: 89

Candidate Starts for Sabbb\_64:

(Start: 89 @41162 has 250 MA's), (110, 41195), (119, 41210), (121, 41213), (131, 41252), (133, 41255), (135, 41276), (153, 41336), (160, 41369), (167, 41411), (168, 41417), (190, 41486), (201, 41513),

Gene: Sakai\_73 Start: 41641, Stop: 42042, Start Num: 95

Candidate Starts for Sakai\_73:

(27, 41395), (Start: 95 @41641 has 24 MA's), (153, 41809), (165, 41878),

Gene: Samba\_50 Start: 37695, Stop: 38057, Start Num: 89

Candidate Starts for Samba\_50:

(43, 37551), (49, 37587), (66, 37626), (Start: 89 @37695 has 250 MA's), (136, 37824), (141, 37848), (197, 38043),

Gene: Sandalphon\_61 Start: 40762, Stop: 41127, Start Num: 89

Candidate Starts for Sandalphon\_61:

(Start: 89 @40762 has 250 MA's), (110, 40795), (114, 40804), (121, 40813), (133, 40855), (138, 40885), (144, 40909), (145, 40912), (167, 41011), (168, 41017), (193, 41092),

Gene: Sarma624\_56 Start: 35652, Stop: 35999, Start Num: 90

Candidate Starts for Sarma624\_56:

(78, 35625), (Start: 84 @35643 has 1 MA's), (Start: 90 @35652 has 26 MA's), (110, 35682), (114, 35691), (124, 35709), (135, 35763), (144, 35790), (160, 35847), (164, 35877), (167, 35889),

Gene: Sarma624\_57 Start: 35996, Stop: 36349, Start Num: 89

Candidate Starts for Sarma624\_57:

(75, 35960), (Start: 89 @35996 has 250 MA's), (108, 36026), (110, 36029), (117, 36041), (121, 36047), (135, 36110), (138, 36119), (139, 36125), (167, 36239), (171, 36260), (192, 36317), (200, 36329),

Gene: Sashimi\_76 Start: 42326, Stop: 42715, Start Num: 95

Candidate Starts for Sashimi\_76:

(Start: 95 @42326 has 24 MA's), (141, 42449), (165, 42551), (191, 42641),

Gene: Sassafras\_58 Start: 39803, Stop: 40168, Start Num: 89

Candidate Starts for Sassafras\_58:

(Start: 89 @39803 has 250 MA's), (110, 39836), (119, 39851), (121, 39854), (131, 39893), (133, 39896), (135, 39917), (144, 39950), (153, 39977), (160, 40010), (167, 40052), (168, 40058), (201, 40154),

Gene: SassyB\_54 Start: 38690, Stop: 39055, Start Num: 89

Candidate Starts for SassyB\_54:

(Start: 89 @38690 has 250 MA's), (110, 38723), (112, 38729), (121, 38741), (133, 38783), (138, 38813), (144, 38837), (145, 38840), (167, 38939), (168, 38945), (193, 39020),

Gene: Schatzie\_140 Start: 77338, Stop: 77691, Start Num: 93

Candidate Starts for Schatzie\_140:

(Start: 93 @77338 has 33 MA's), (160, 77539), (167, 77581),

Gene: ScoobyDoobyDoo\_55 Start: 19568, Stop: 19993, Start Num: 73

Candidate Starts for ScoobyDoobyDoo\_55:

(Start: 73 @19568 has 3 MA's), (130, 19712), (141, 19763), (147, 19766), (171, 19880), (173, 19889), (182, 19913),

Gene: Scottish\_58 Start: 39849, Stop: 40214, Start Num: 89

Candidate Starts for Scottish\_58:

(Start: 89 @39849 has 250 MA's), (110, 39882), (119, 39897), (121, 39900), (133, 39942), (135, 39963), (144, 39996), (153, 40023), (160, 40056), (167, 40098), (168, 40104), (201, 40200),

Gene: Seabastian\_65 Start: 42816, Stop: 43181, Start Num: 89

Candidate Starts for Seabastian\_65:

(Start: 89 @42816 has 250 MA's), (110, 42849), (119, 42864), (121, 42867), (131, 42906), (133, 42909), (135, 42930), (144, 42963), (153, 42990), (160, 43023), (167, 43065), (168, 43071), (201, 43167),

Gene: Seagreen\_58 Start: 39051, Stop: 39398, Start Num: 90

Candidate Starts for Seagreen\_58:

(78, 39024), (Start: 84 @39042 has 1 MA's), (Start: 90 @39051 has 26 MA's), (110, 39081), (114, 39090), (124, 39108), (135, 39162), (144, 39189), (160, 39246), (164, 39276), (167, 39288),

Gene: Seagreen\_59 Start: 39395, Stop: 39748, Start Num: 89

Candidate Starts for Seagreen\_59:

(75, 39359), (Start: 89 @39395 has 250 MA's), (108, 39425), (110, 39428), (117, 39440), (121, 39446), (135, 39509), (138, 39518), (139, 39524), (167, 39638), (171, 39659), (192, 39716), (200, 39728),

Gene: Seahorse\_84 Start: 47304, Stop: 47699, Start Num: 95

Candidate Starts for Seahorse\_84:

(Start: 95 @47304 has 24 MA's), (120, 47349), (153, 47475), (171, 47571), (204, 47673),

Gene: Settecandela\_165 Start: 110158, Stop: 110505, Start Num: 104

Candidate Starts for Settecandela\_165:

(Start: 104 @110158 has 2 MA's), (116, 110191), (118, 110194), (122, 110200), (135, 110263), (183, 110455),

Gene: Shaffner\_45 Start: 33571, Stop: 33933, Start Num: 100

Candidate Starts for Shaffner\_45:

(Start: 100 @33571 has 33 MA's), (126, 33625), (160, 33751), (169, 33805),

Gene: Shauna1\_58 Start: 40565, Stop: 40930, Start Num: 89

Candidate Starts for Shauna1\_58:

(Start: 89 @40565 has 250 MA's), (110, 40598), (114, 40607), (121, 40616), (144, 40712), (145, 40715), (153, 40739), (167, 40814), (168, 40820), (193, 40895),

Gene: ShiLan\_59 Start: 40250, Stop: 40615, Start Num: 89

Candidate Starts for ShiLan\_59:

(Start: 89 @40250 has 250 MA's), (110, 40283), (119, 40298), (121, 40301), (131, 40340), (133, 40343), (135, 40364), (144, 40397), (153, 40424), (160, 40457), (167, 40499), (168, 40505), (201, 40601),

Gene: ShowerHandel\_63 Start: 40214, Stop: 40579, Start Num: 89

Candidate Starts for ShowerHandel\_63:

(Start: 89 @40214 has 250 MA's), (110, 40247), (119, 40262), (121, 40265), (131, 40304), (133, 40307), (135, 40328), (144, 40361), (153, 40388), (160, 40421), (167, 40463), (168, 40469), (201, 40565),

Gene: ShroomBoi\_62 Start: 41174, Stop: 41539, Start Num: 89

Candidate Starts for ShroomBoi\_62:

(Start: 89 @41174 has 250 MA's), (110, 41207), (119, 41222), (121, 41225), (133, 41267), (135, 41288), (144, 41321), (153, 41348), (160, 41381), (167, 41423), (168, 41429), (201, 41525),

Gene: Shukran\_73 Start: 41223, Stop: 41588, Start Num: 95

Candidate Starts for Shukran\_73:

(31, 41013), (53, 41118), (87, 41211), (Start: 95 @41223 has 24 MA's), (122, 41256), (135, 41319), (153, 41379),

Gene: SiSi\_58 Start: 39623, Stop: 39988, Start Num: 89

Candidate Starts for SiSi\_58:

(Start: 89 @39623 has 250 MA's), (110, 39656), (119, 39671), (121, 39674), (131, 39713), (133, 39716), (135, 39737), (144, 39770), (153, 39797), (160, 39830), (167, 39872), (168, 39878), (201, 39974),

Gene: SilverChicken\_70 Start: 40345, Stop: 40710, Start Num: 89

Candidate Starts for SilverChicken\_70:

(Start: 89 @40345 has 250 MA's), (110, 40378), (112, 40384), (121, 40396), (133, 40438), (138, 40468), (144, 40492), (145, 40495), (167, 40594), (168, 40600), (193, 40675),

Gene: Simpson\_48 Start: 33419, Stop: 33832, Start Num: 100

Candidate Starts for Simpson\_48:

(21, 33089), (Start: 100 @33419 has 33 MA's), (126, 33473), (160, 33599), (169, 33653), (211, 33806), (213, 33824),

Gene: SimranZ1\_60 Start: 40397, Stop: 40762, Start Num: 89

Candidate Starts for SimranZ1\_60:

(Start: 89 @40397 has 250 MA's), (110, 40430), (119, 40445), (121, 40448), (131, 40487), (133, 40490), (135, 40511), (153, 40571), (160, 40604), (167, 40646), (168, 40652), (190, 40721), (201, 40748),

Gene: Slim\_61 Start: 41010, Stop: 41375, Start Num: 89



Candidate Starts for Slim\_61:

(Start: 89 @41010 has 250 MA's), (110, 41043), (119, 41058), (121, 41061), (131, 41100), (133, 41103), (135, 41124), (144, 41157), (153, 41184), (160, 41217), (167, 41259), (168, 41265), (201, 41361),

Gene: Sonali\_65 Start: 45108, Stop: 45521, Start Num: 83

Candidate Starts for Sonali\_65:

(38, 44958), (Start: 83 @45108 has 1 MA's), (128, 45198), (134, 45216), (162, 45339), (166, 45363),

Gene: Soul22\_66 Start: 41808, Stop: 42173, Start Num: 89

Candidate Starts for Soul22\_66:

(Start: 89 @41808 has 250 MA's), (110, 41841), (119, 41856), (121, 41859), (131, 41898), (133, 41901), (135, 41922), (144, 41955), (153, 41982), (160, 42015), (167, 42057), (168, 42063), (201, 42159),

Gene: Sour\_51 Start: 44771, Stop: 44406, Start Num: 84

Candidate Starts for Sour\_51:

(81, 44777), (82, 44774), (Start: 84 @44771 has 1 MA's), (Start: 89 @44765 has 250 MA's), (Start: 98 @44750 has 1 MA's), (122, 44717), (126, 44702), (135, 44654), (140, 44633), (176, 44489), (180, 44483), (184, 44471), (194, 44444), (205, 44411),

Gene: Sparkdehlily\_67 Start: 41576, Stop: 41941, Start Num: 89

Candidate Starts for Sparkdehlily\_67:

(Start: 89 @41576 has 250 MA's), (110, 41609), (112, 41615), (121, 41627), (133, 41669), (138, 41699), (144, 41723), (145, 41726), (167, 41825), (168, 41831), (193, 41906),

Gene: Spartacus\_62 Start: 40884, Stop: 41249, Start Num: 89

Candidate Starts for Spartacus\_62:

(Start: 89 @40884 has 250 MA's), (110, 40917), (119, 40932), (121, 40935), (131, 40974), (133, 40977), (135, 40998), (153, 41058), (160, 41091), (167, 41133), (168, 41139), (201, 41235),

Gene: SpicyFrank\_78 Start: 42043, Stop: 42432, Start Num: 95

Candidate Starts for SpicyFrank\_78:

(Start: 95 @42043 has 24 MA's), (141, 42166), (153, 42199), (156, 42214), (165, 42268),

Gene: Spikelee\_67 Start: 42504, Stop: 42869, Start Num: 89

Candidate Starts for Spikelee\_67:

(Start: 89 @42504 has 250 MA's), (110, 42537), (119, 42552), (121, 42555), (133, 42597), (135, 42618), (153, 42678), (160, 42711), (167, 42753), (168, 42759), (201, 42855),

Gene: Spoonbill\_57 Start: 38791, Stop: 39156, Start Num: 89

Candidate Starts for Spoonbill\_57:

(Start: 89 @38791 has 250 MA's), (110, 38824), (119, 38839), (121, 38842), (133, 38884), (135, 38905), (144, 38938), (152, 38959), (153, 38965), (160, 38998), (167, 39040), (168, 39046), (201, 39142),

Gene: Squiddly\_84 Start: 50073, Stop: 50414, Start Num: 94

Candidate Starts for Squiddly\_84:

(Start: 89 @50064 has 250 MA's), (Start: 94 @50073 has 1 MA's), (187, 50388),

Gene: Squirty\_62 Start: 41343, Stop: 41708, Start Num: 89

Candidate Starts for Squirty\_62:

(Start: 89 @41343 has 250 MA's), (110, 41376), (114, 41385), (121, 41394), (144, 41490), (145, 41493), (153, 41517), (167, 41592), (168, 41598), (193, 41673),

Gene: StAnnes\_58 Start: 40743, Stop: 41108, Start Num: 89

Candidate Starts for StAnnes\_58:

(Start: 89 @40743 has 250 MA's), (110, 40776), (112, 40782), (121, 40794), (133, 40836), (138, 40866), (144, 40890), (145, 40893), (167, 40992), (168, 40998), (193, 41073), (194, 41076),

Gene: StAugustine\_140 Start: 84499, Stop: 84137, Start Num: 95

Candidate Starts for StAugustine\_140:

(85, 84514), (Start: 95 @84499 has 24 MA's), (101, 84490), (106, 84475), (128, 84418), (130, 84409), (181, 84211),

Gene: Starcevich\_58 Start: 39755, Stop: 40108, Start Num: 89

Candidate Starts for Starcevich\_58:

(75, 39719), (Start: 89 @39755 has 250 MA's), (108, 39785), (110, 39788), (117, 39800), (121, 39806), (135, 39869), (138, 39878), (139, 39884), (167, 39998), (171, 40019), (192, 40076), (200, 40088),

Gene: Starcevich\_57 Start: 39411, Stop: 39758, Start Num: 90

Candidate Starts for Starcevich\_57:

(78, 39384), (Start: 84 @39402 has 1 MA's), (Start: 90 @39411 has 26 MA's), (110, 39441), (114, 39450), (124, 39468), (135, 39522), (144, 39549), (160, 39606), (164, 39636), (167, 39648),

Gene: Starcevich\_60 Start: 40380, Stop: 40745, Start Num: 89

Candidate Starts for Starcevich\_60:

(Start: 89 @40380 has 250 MA's), (110, 40413), (119, 40428), (121, 40431), (131, 40470), (133, 40473), (135, 40494), (144, 40527), (153, 40554), (160, 40587), (167, 40629), (168, 40635), (201, 40731),

Gene: Stormageddon\_88 Start: 82406, Stop: 82756, Start Num: 95

Candidate Starts for Stormageddon\_88:

(Start: 95 @82406 has 24 MA's), (115, 82442), (146, 82553), (156, 82580), (160, 82598), (179, 82688),

Gene: Strokeseat\_56 Start: 38330, Stop: 38695, Start Num: 89

Candidate Starts for Strokeseat\_56:

(Start: 89 @38330 has 250 MA's), (110, 38363), (119, 38378), (121, 38381), (133, 38423), (135, 38444), (144, 38477), (152, 38498), (153, 38504), (167, 38579), (168, 38585), (201, 38681),

Gene: Sunshine23\_66 Start: 44762, Stop: 45172, Start Num: 83

Candidate Starts for Sunshine23\_66:

(38, 44612), (Start: 83 @44762 has 1 MA's), (113, 44810), (128, 44852), (134, 44870), (153, 44945), (162, 44993), (166, 45017),

Gene: SuperGrey\_63 Start: 42051, Stop: 42416, Start Num: 89

Candidate Starts for SuperGrey\_63:

(Start: 89 @42051 has 250 MA's), (110, 42084), (112, 42090), (121, 42102), (133, 42144), (138, 42174), (144, 42198), (145, 42201), (167, 42300), (168, 42306), (193, 42381),

Gene: SwagPigglett\_65 Start: 42522, Stop: 42887, Start Num: 89

Candidate Starts for SwagPigglett\_65:

(Start: 89 @42522 has 250 MA's), (110, 42555), (119, 42570), (121, 42573), (131, 42612), (133, 42615), (135, 42636), (144, 42669), (153, 42696), (160, 42729), (167, 42771), (168, 42777), (201, 42873),

Gene: TChen\_61 Start: 41633, Stop: 41998, Start Num: 89

Candidate Starts for TChen\_61:

(Start: 89 @41633 has 250 MA's), (110, 41666), (121, 41684), (131, 41723), (133, 41726), (135, 41747), (138, 41756), (144, 41780), (153, 41807), (160, 41840), (167, 41882), (168, 41888), (201, 41984),

Gene: TChen\_59 Start: 41008, Stop: 41361, Start Num: 89

Candidate Starts for TChen\_59:

(75, 40972), (Start: 89 @41008 has 250 MA's), (117, 41053), (121, 41059), (135, 41122), (138, 41131), (150, 41167), (156, 41191), (200, 41341),

Gene: TChen\_58 Start: 40664, Stop: 41011, Start Num: 90

Candidate Starts for TChen\_58:

(78, 40637), (Start: 84 @40655 has 1 MA's), (Start: 90 @40664 has 26 MA's), (101, 40676), (110, 40694), (114, 40703), (133, 40754), (135, 40775), (155, 40838), (160, 40859), (164, 40889),

Gene: TDanisky\_67 Start: 41576, Stop: 41941, Start Num: 89

Candidate Starts for TDanisky\_67:

(Start: 89 @41576 has 250 MA's), (110, 41609), (112, 41615), (121, 41627), (133, 41669), (138, 41699), (144, 41723), (145, 41726), (167, 41825), (168, 41831), (193, 41906),

Gene: Taj\_64 Start: 41975, Stop: 42340, Start Num: 89

Candidate Starts for Taj\_64:

(Start: 89 @41975 has 250 MA's), (110, 42008), (119, 42023), (121, 42026), (131, 42065), (133, 42068), (135, 42089), (144, 42122), (153, 42149), (160, 42182), (167, 42224), (168, 42230), (201, 42326),

Gene: Tandem\_71 Start: 44831, Stop: 44481, Start Num: 97

Candidate Starts for Tandem\_71:

(46, 44972), (71, 44888), (Start: 97 @44831 has 6 MA's), (115, 44804), (120, 44795), (122, 44792), (136, 44729), (141, 44705), (185, 44528), (188, 44513), (198, 44492),

Gene: TaylorSipht\_30 Start: 21627, Stop: 21286, Start Num: 92

Candidate Starts for TaylorSipht\_30:

(Start: 92 @21627 has 13 MA's), (Start: 107 @21606 has 1 MA's), (134, 21534), (171, 21363), (189, 21303),

Gene: Tbone\_46 Start: 33975, Stop: 34388, Start Num: 100

Candidate Starts for Tbone\_46:

(39, 33801), (58, 33873), (Start: 100 @33975 has 33 MA's), (126, 34029), (160, 34155), (169, 34209), (211, 34362), (213, 34380),

Gene: Tchotchke\_60 Start: 39968, Stop: 40333, Start Num: 89

Candidate Starts for Tchotchke\_60:

(Start: 89 @39968 has 250 MA's), (110, 40001), (112, 40007), (121, 40019), (133, 40061), (144, 40115), (145, 40118), (167, 40217), (168, 40223), (193, 40298),

Gene: ThayneTheZag\_81 Start: 42670, Stop: 43059, Start Num: 95

Candidate Starts for ThayneTheZag\_81:

(Start: 95 @42670 has 24 MA's), (141, 42793), (153, 42826), (156, 42841), (165, 42895),

Gene: ThetaBob\_62 Start: 40738, Stop: 41085, Start Num: 90

Candidate Starts for ThetaBob\_62:

(78, 40711), (Start: 84 @40729 has 1 MA's), (Start: 90 @40738 has 26 MA's), (101, 40750), (110, 40768), (114, 40777), (133, 40828), (135, 40849), (155, 40912), (160, 40933), (164, 40963),

Gene: ThetaBob\_63 Start: 41082, Stop: 41435, Start Num: 89

Candidate Starts for ThetaBob\_63:

(75, 41046), (Start: 89 @41082 has 250 MA's), (117, 41127), (121, 41133), (135, 41196), (138, 41205), (150, 41241), (156, 41265), (200, 41415),

Gene: ThetaBob\_65 Start: 41707, Stop: 42069, Start Num: 89

Candidate Starts for ThetaBob\_65:

(Start: 89 @41707 has 250 MA's), (110, 41740), (119, 41755), (121, 41758), (131, 41797), (133, 41800), (135, 41821), (138, 41830), (153, 41878), (167, 41953), (168, 41959), (201, 42055),

Gene: Thibault\_127 Start: 73673, Stop: 74026, Start Num: 93

Candidate Starts for Thibault\_127:

(48, 73550), (51, 73562), (Start: 93 @73673 has 33 MA's), (160, 73874), (167, 73916),

Gene: Thonko\_86 Start: 63155, Stop: 62742, Start Num: 80

Candidate Starts for Thonko\_86:

(14, 63593), (25, 63440), (29, 63365), (33, 63338), (60, 63224), (63, 63218), (Start: 80 @63155 has 1 MA's), (102, 63116), (116, 63086), (122, 63077), (135, 63014), (171, 62858), (174, 62846), (177, 62831), (195, 62783),

Gene: ThreeRngTarjay\_139 Start: 77261, Stop: 77614, Start Num: 93

Candidate Starts for ThreeRngTarjay\_139:

(Start: 93 @77261 has 33 MA's), (160, 77462), (167, 77504),

Gene: Tian\_45 Start: 34828, Stop: 35223, Start Num: 100

Candidate Starts for Tian\_45:

(7, 34264), (11, 34336), (12, 34345), (15, 34423), (37, 34654), (56, 34726), (Start: 100 @34828 has 33 MA's), (126, 34882), (160, 35008),

Gene: Tiff81\_72 Start: 40921, Stop: 41316, Start Num: 95

Candidate Starts for Tiff81\_72:

(Start: 95 @40921 has 24 MA's), (120, 40966), (153, 41092), (171, 41188), (204, 41290),

Gene: Toad24\_31 Start: 22672, Stop: 22322, Start Num: 92

Candidate Starts for Toad24\_31:

(Start: 92 @22672 has 13 MA's), (134, 22573), (191, 22339),

Gene: Tootsieroll\_61 Start: 39546, Stop: 39911, Start Num: 89

Candidate Starts for Tootsieroll\_61:

(Start: 89 @39546 has 250 MA's), (110, 39579), (119, 39594), (121, 39597), (133, 39639), (135, 39660), (144, 39693), (152, 39714), (153, 39720), (160, 39753), (167, 39795), (168, 39801), (201, 39897),

Gene: Totinger\_59 Start: 39476, Stop: 39841, Start Num: 89

Candidate Starts for Totinger\_59:

(Start: 89 @39476 has 250 MA's), (110, 39509), (119, 39524), (121, 39527), (131, 39566), (133, 39569), (135, 39590), (144, 39623), (153, 39650), (160, 39683), (167, 39725), (168, 39731), (201, 39827),

Gene: Tuck\_49 Start: 35489, Stop: 35893, Start Num: 100

Candidate Starts for Tuck\_49:

(Start: 100 @35489 has 33 MA's), (160, 35669), (169, 35723), (199, 35816), (209, 35867), (212, 35885),

Gene: Tutumahutu\_47 Start: 33397, Stop: 33810, Start Num: 100

Candidate Starts for Tutumahutu\_47:

(Start: 100 @33397 has 33 MA's), (126, 33451), (160, 33577), (169, 33631), (211, 33784), (213, 33802),

Gene: Tweety\_59 Start: 41367, Stop: 41732, Start Num: 89

Candidate Starts for Tweety\_59:

(Start: 89 @41367 has 250 MA's), (110, 41400), (112, 41406), (121, 41418), (133, 41460), (138, 41490), (144, 41514), (145, 41517), (167, 41616), (168, 41622), (193, 41697),

Gene: UncleRicky\_59 Start: 40457, Stop: 40822, Start Num: 89

Candidate Starts for UncleRicky\_59:

(Start: 89 @40457 has 250 MA's), (110, 40490), (119, 40505), (121, 40508), (131, 40547), (133, 40550), (135, 40571), (144, 40604), (152, 40625), (153, 40631), (160, 40664), (167, 40706), (168, 40712), (201, 40808),

Gene: Utz\_44 Start: 35948, Stop: 36310, Start Num: 89

Candidate Starts for Utz\_44:

(Start: 41 @35798 has 4 MA's), (43, 35804), (49, 35840), (66, 35879), (Start: 89 @35948 has 250 MA's), (136, 36077), (141, 36101),

Gene: VRedHorse\_60 Start: 39530, Stop: 39895, Start Num: 89

Candidate Starts for VRedHorse\_60:

(Start: 89 @39530 has 250 MA's), (110, 39563), (119, 39578), (121, 39581), (131, 39620), (133, 39623), (135, 39644), (144, 39677), (153, 39704), (160, 39737), (167, 39779), (168, 39785), (201, 39881),

Gene: Velveteen\_53 Start: 35652, Stop: 35999, Start Num: 90

Candidate Starts for Velveteen\_53:

(78, 35625), (Start: 84 @35643 has 1 MA's), (Start: 90 @35652 has 26 MA's), (110, 35682), (114, 35691), (124, 35709), (135, 35763), (144, 35790), (160, 35847), (164, 35877), (167, 35889),

Gene: Velveteen\_54 Start: 35996, Stop: 36349, Start Num: 89

Candidate Starts for Velveteen\_54:

(75, 35960), (Start: 89 @35996 has 250 MA's), (108, 36026), (110, 36029), (117, 36041), (121, 36047), (135, 36110), (138, 36119), (139, 36125), (167, 36239), (171, 36260), (192, 36317), (200, 36329),

Gene: Veteran\_57 Start: 39234, Stop: 39599, Start Num: 89

Candidate Starts for Veteran\_57:

(Start: 89 @39234 has 250 MA's), (110, 39267), (119, 39282), (121, 39285), (131, 39324), (133, 39327), (135, 39348), (144, 39381), (152, 39402), (153, 39408), (160, 39441), (167, 39483), (168, 39489), (201, 39585),

Gene: Vibaki\_44 Start: 34927, Stop: 35295, Start Num: 100

Candidate Starts for Vibaki\_44:

(Start: 100 @34927 has 33 MA's), (153, 35080), (160, 35113), (162, 35128),

Gene: Violac\_63 Start: 41600, Stop: 41965, Start Num: 89

Candidate Starts for Violac\_63:

(Start: 89 @41600 has 250 MA's), (110, 41633), (119, 41648), (121, 41651), (133, 41693), (135, 41714), (144, 41747), (152, 41768), (153, 41774), (160, 41807), (167, 41849), (168, 41855), (201, 41951),

Gene: Vitus\_44 Start: 33911, Stop: 34246, Start Num: 100

Candidate Starts for Vitus\_44:

(Start: 100 @33911 has 33 MA's), (153, 34061), (160, 34094),

Gene: Vivum\_63 Start: 40532, Stop: 40897, Start Num: 89

Candidate Starts for Vivum\_63:

(Start: 89 @40532 has 250 MA's), (110, 40565), (119, 40580), (121, 40583), (133, 40625), (135, 40646), (144, 40679), (152, 40700), (153, 40706), (160, 40739), (167, 40781), (168, 40787), (201, 40883),

Gene: Vulpecula\_30 Start: 22301, Stop: 21957, Start Num: 92

Candidate Starts for Vulpecula\_30:

(Start: 92 @22301 has 13 MA's), (Start: 107 @22280 has 1 MA's), (122, 22256), (134, 22208),

Gene: Wachhund\_61 Start: 40167, Stop: 40532, Start Num: 89

Candidate Starts for Wachhund\_61:

(Start: 89 @40167 has 250 MA's), (110, 40200), (114, 40209), (121, 40218), (133, 40260), (138, 40290), (144, 40314), (145, 40317), (167, 40416), (168, 40422), (193, 40497), (194, 40500), (196, 40503),

Gene: Wanda\_144 Start: 74968, Stop: 75321, Start Num: 93

Candidate Starts for Wanda\_144:

(Start: 93 @74968 has 33 MA's), (160, 75169), (167, 75211),

Gene: Warda\_46 Start: 33470, Stop: 33874, Start Num: 100

Candidate Starts for Warda\_46:

(Start: 100 @33470 has 33 MA's), (126, 33524), (160, 33650), (169, 33704), (211, 33848),

Gene: Wee\_64 Start: 42051, Stop: 42416, Start Num: 89

Candidate Starts for Wee\_64:

(Start: 89 @42051 has 250 MA's), (110, 42084), (119, 42099), (121, 42102), (131, 42141), (133, 42144), (135, 42165), (144, 42198), (153, 42225), (160, 42258), (167, 42300), (168, 42306), (201, 42402),

Gene: Westrich\_33 Start: 22349, Stop: 21999, Start Num: 92

Candidate Starts for Westrich\_33:

(Start: 92 @22349 has 13 MA's), (134, 22250), (191, 22016),

Gene: Whatsapiecost\_60 Start: 39457, Stop: 39822, Start Num: 89

Candidate Starts for Whatsapiecost\_60:

(Start: 89 @39457 has 250 MA's), (110, 39490), (112, 39496), (121, 39508), (133, 39550), (138, 39580), (144, 39604), (145, 39607), (167, 39706), (168, 39712), (193, 39787), (194, 39790), (196, 39793),

Gene: Whouxphf\_57 Start: 40126, Stop: 40491, Start Num: 89

Candidate Starts for Whouxphf\_57:

(Start: 89 @40126 has 250 MA's), (110, 40159), (119, 40174), (121, 40177), (131, 40216), (133, 40219), (135, 40240), (144, 40273), (153, 40300), (160, 40333), (167, 40375), (168, 40381), (201,

40477),

Gene: Wildwest\_45 Start: 33392, Stop: 33811, Start Num: 100

Candidate Starts for Wildwest\_45:

(6, 32825), (13, 32918), (39, 33218), (58, 33290), (Start: 100 @33392 has 33 MA's), (160, 33578), (211, 33785), (213, 33803),

Gene: WillSterrel\_61 Start: 42001, Stop: 42366, Start Num: 89

Candidate Starts for WillSterrel\_61:

(Start: 89 @42001 has 250 MA's), (110, 42034), (119, 42049), (121, 42052), (131, 42091), (133, 42094), (135, 42115), (153, 42175), (160, 42208), (167, 42250), (168, 42256), (201, 42352),

Gene: Windest\_79 Start: 41108, Stop: 41497, Start Num: 95

Candidate Starts for Windest\_79:

(Start: 95 @41108 has 24 MA's), (141, 41231), (153, 41264), (156, 41279), (165, 41333),

Gene: Wisp\_50 Start: 36176, Stop: 36538, Start Num: 89

Candidate Starts for Wisp\_50:

(49, 36068), (66, 36107), (Start: 89 @36176 has 250 MA's), (129, 36275), (135, 36302), (136, 36305), (141, 36329), (158, 36374),

Gene: Wolfstar\_76 Start: 46237, Stop: 45881, Start Num: 97

Candidate Starts for Wolfstar\_76:

(46, 46384), (71, 46300), (Start: 97 @46237 has 6 MA's), (118, 46201), (120, 46198), (127, 46171), (143, 46102), (149, 46081), (160, 46036), (166, 45997), (168, 45988), (185, 45928), (188, 45913), (193, 45904),

Gene: XFactor\_58 Start: 39256, Stop: 39621, Start Num: 89

Candidate Starts for XFactor\_58:

(Start: 89 @39256 has 250 MA's), (110, 39289), (112, 39295), (121, 39307), (133, 39349), (138, 39379), (144, 39403), (145, 39406), (167, 39505), (168, 39511), (193, 39586), (194, 39589),

Gene: Yang\_46 Start: 33276, Stop: 33626, Start Num: 100

Candidate Starts for Yang\_46:

(16, 32868), (17, 32877), (26, 33003), (34, 33066), (36, 33087), (40, 33096), (44, 33114), (45, 33123), (Start: 100 @33276 has 33 MA's), (126, 33330), (160, 33456),

Gene: Yeet\_138 Start: 76734, Stop: 77087, Start Num: 93

Candidate Starts for Yeet\_138:

(57, 76632), (Start: 93 @76734 has 33 MA's), (160, 76935), (167, 76977),

Gene: YesChef\_46 Start: 33373, Stop: 33786, Start Num: 100

Candidate Starts for YesChef\_46:

(Start: 100 @33373 has 33 MA's), (126, 33427), (160, 33553), (169, 33607), (211, 33760), (213, 33778),

Gene: Yorick\_59 Start: 40588, Stop: 40953, Start Num: 89

Candidate Starts for Yorick\_59:

(Start: 89 @40588 has 250 MA's), (110, 40621), (119, 40636), (121, 40639), (131, 40678), (133, 40681), (135, 40702), (144, 40735), (153, 40762), (160, 40795), (167, 40837), (168, 40843), (201, 40939),

Gene: Yoshi\_73 Start: 41971, Stop: 42333, Start Num: 89

Candidate Starts for Yoshi\_73:

(Start: 89 @41971 has 250 MA's), (110, 42004), (119, 42019), (121, 42022), (131, 42061), (133, 42064), (135, 42085), (138, 42094), (153, 42142), (167, 42217), (168, 42223), (201, 42319),

Gene: Yoshi\_71 Start: 41346, Stop: 41699, Start Num: 89

Candidate Starts for Yoshi\_71:

(75, 41310), (Start: 89 @41346 has 250 MA's), (117, 41391), (121, 41397), (135, 41460), (138, 41469), (150, 41505), (156, 41529), (200, 41679),

Gene: Yoshi\_70 Start: 41002, Stop: 41349, Start Num: 90

Candidate Starts for Yoshi\_70:

(78, 40975), (Start: 84 @40993 has 1 MA's), (Start: 90 @41002 has 26 MA's), (101, 41014), (110, 41032), (114, 41041), (133, 41092), (135, 41113), (155, 41176), (160, 41197), (164, 41227),

Gene: YoungHarleezy\_74 Start: 42016, Stop: 42417, Start Num: 95

Candidate Starts for YoungHarleezy\_74:

(Start: 95 @42016 has 24 MA's), (153, 42184), (165, 42253),

Gene: Zapner\_73 Start: 42130, Stop: 42495, Start Num: 89

Candidate Starts for Zapner\_73:

(Start: 89 @42130 has 250 MA's), (110, 42163), (119, 42178), (121, 42181), (131, 42220), (133, 42223), (135, 42244), (144, 42277), (153, 42304), (160, 42337), (167, 42379), (168, 42385), (201, 42481),

Gene: Zarbodnamra\_50 Start: 34890, Stop: 35252, Start Num: 89

Candidate Starts for Zarbodnamra\_50:

(43, 34746), (49, 34782), (66, 34821), (Start: 89 @34890 has 250 MA's), (136, 35019), (141, 35043),

Gene: Zelink\_139 Start: 77780, Stop: 78133, Start Num: 93

Candidate Starts for Zelink\_139:

(Start: 93 @77780 has 33 MA's), (160, 77981), (167, 78023),

Gene: Zenteno07\_93 Start: 66203, Stop: 65790, Start Num: 77

Candidate Starts for Zenteno07\_93:

(Start: 77 @66203 has 3 MA's), (116, 66122), (139, 66035), (153, 65993), (160, 65960), (174, 65885), (203, 65795),

Gene: Zerg\_60 Start: 40001, Stop: 40366, Start Num: 89

Candidate Starts for Zerg\_60:

(Start: 89 @40001 has 250 MA's), (110, 40034), (119, 40049), (121, 40052), (131, 40091), (133, 40094), (135, 40115), (144, 40148), (153, 40175), (160, 40208), (167, 40250), (168, 40256), (201, 40352),

Gene: Zhuangyuan\_36 Start: 22960, Stop: 22577, Start Num: 78

Candidate Starts for Zhuangyuan\_36:

(35, 23122), (78, 22960), (159, 22747), (189, 22615),

Gene: ZiggyZoo\_51 Start: 37223, Stop: 37585, Start Num: 89

Candidate Starts for ZiggyZoo\_51:

(49, 37115), (66, 37154), (Start: 89 @37223 has 250 MA's), (129, 37322), (135, 37349), (136, 37352), (141, 37376),

Gene: Zizzle\_64 Start: 41844, Stop: 42209, Start Num: 89



Candidate Starts for Zizzle\_64:

(Start: 89 @41844 has 250 MA's), (110, 41877), (119, 41892), (121, 41895), (131, 41934), (133, 41937), (135, 41958), (144, 41991), (153, 42018), (160, 42051), (167, 42093), (168, 42099), (201, 42195),

Gene: Zucker\_73 Start: 43088, Stop: 43483, Start Num: 95

Candidate Starts for Zucker\_73:

(31, 42881), (Start: 95 @43088 has 24 MA's), (120, 43133), (141, 43226), (153, 43259), (204, 43457),