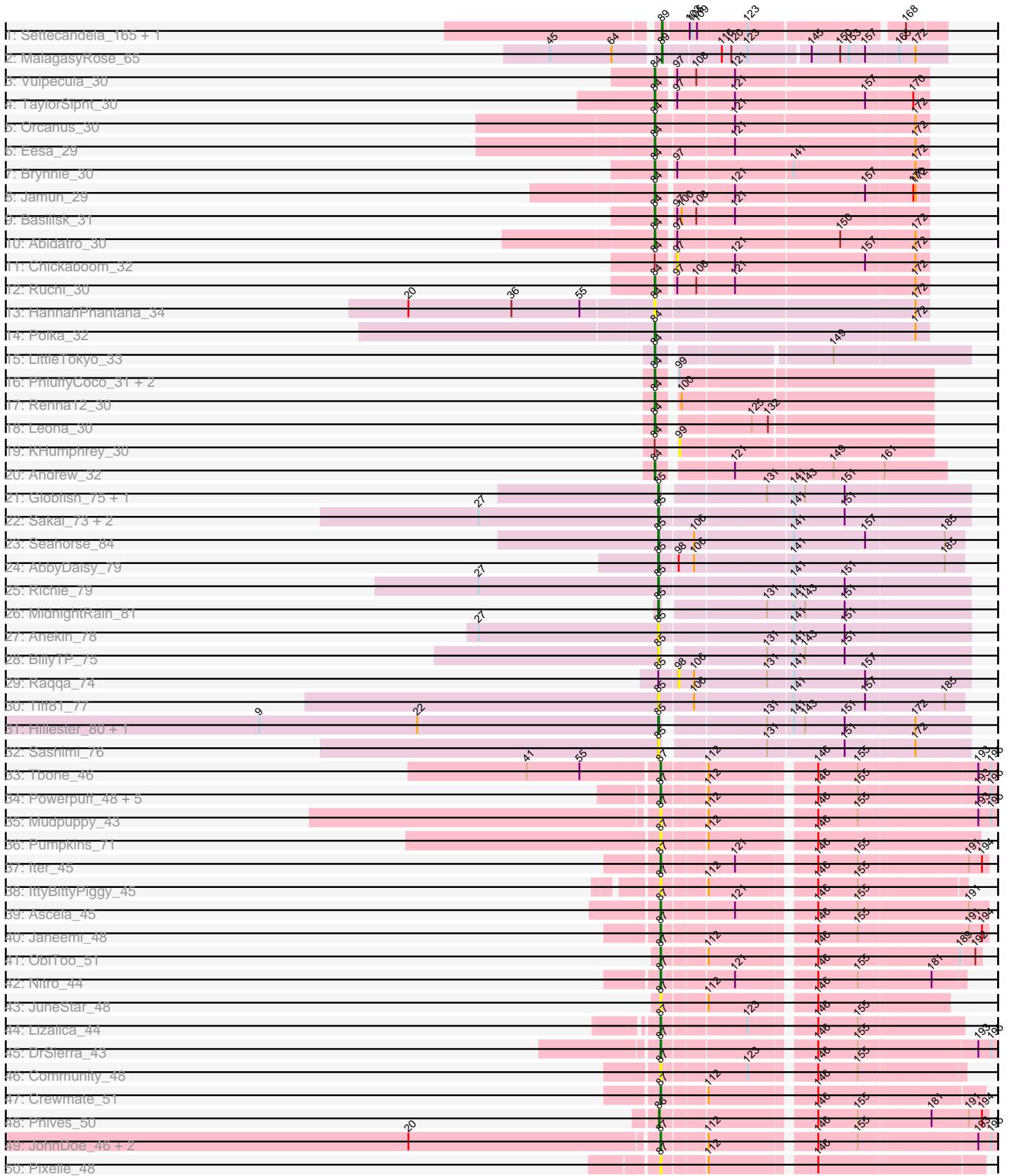
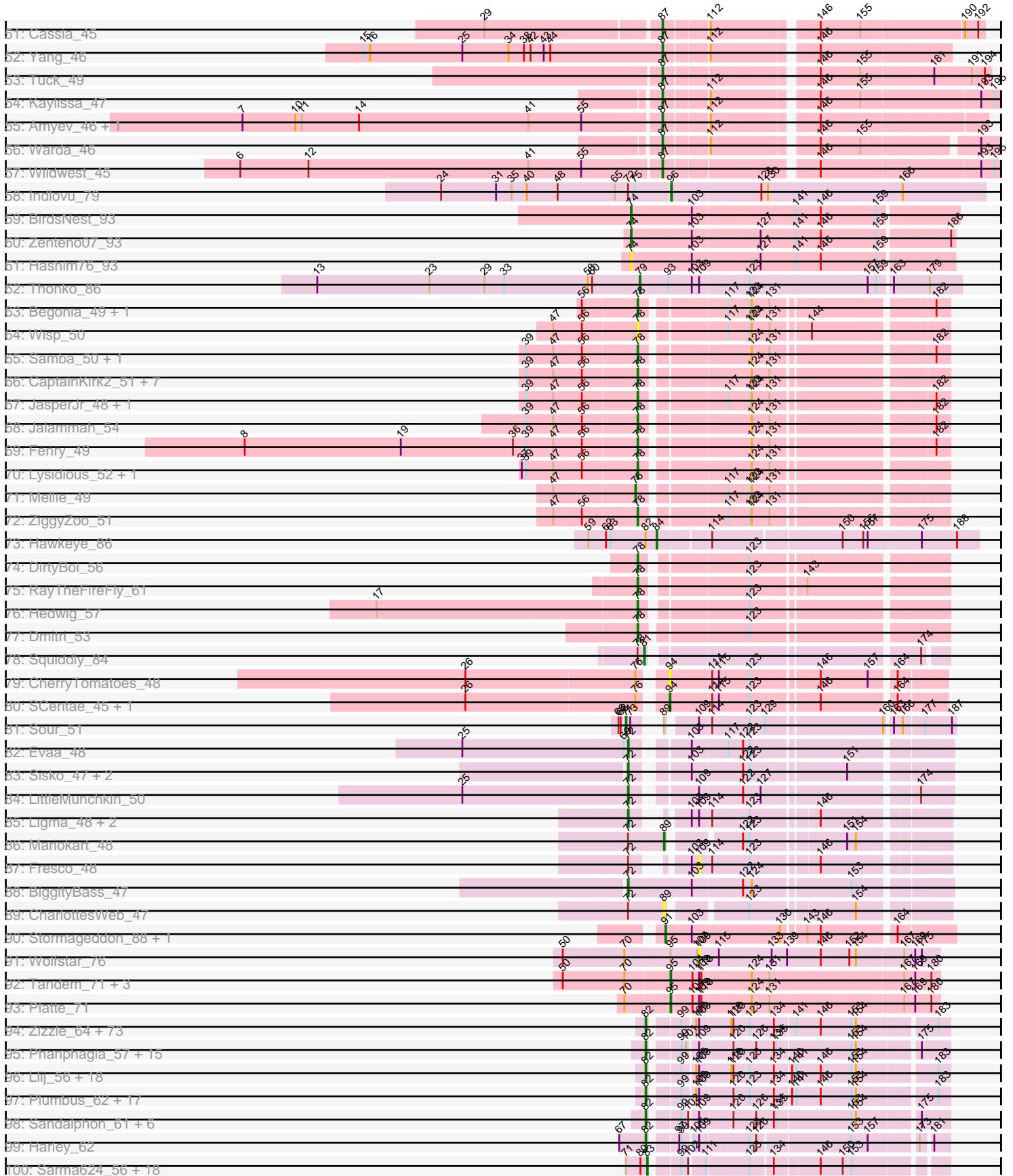


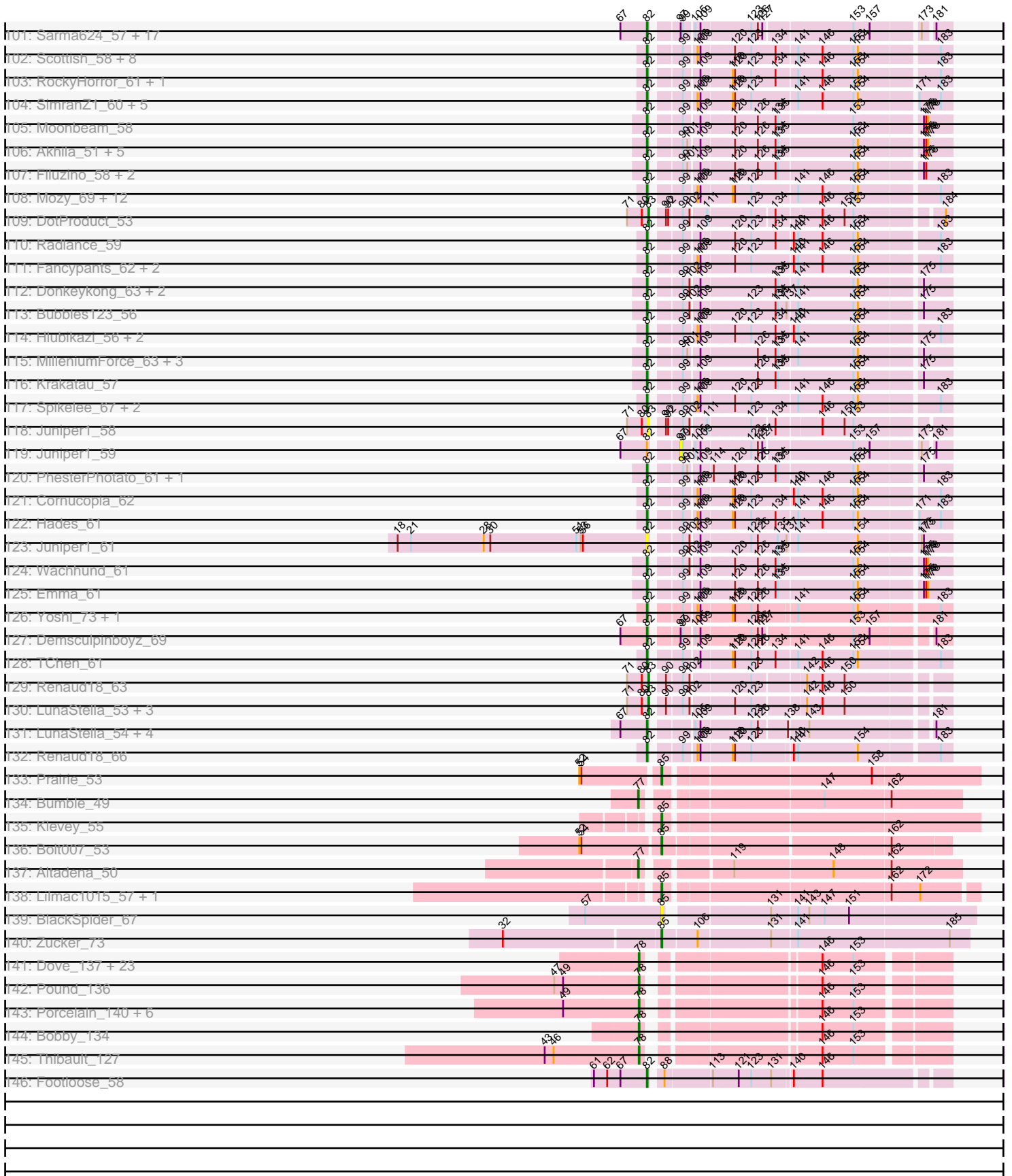
# Zoomed Pham 157492



# Zoomed Pham 157492



# Zoomed Pham 157492



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 157492 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157492 has 428 members, 56 are drafts.

Phages represented in each track:

- Track 1 : Settecandela\_165, Phrappuccino\_165
- Track 2 : MalagasyRose\_65
- Track 3 : Vulpecula\_30
- Track 4 : TaylorSipht\_30
- Track 5 : Orcanus\_30
- Track 6 : Eesa\_29
- Track 7 : Brynnie\_30
- Track 8 : Jamun\_29
- Track 9 : Basilisk\_31
- Track 10 : Abidatro\_30
- Track 11 : Chickaboom\_32
- Track 12 : Ruchi\_30
- Track 13 : HannahPhantana\_34
- Track 14 : Polka\_32
- Track 15 : LittleTokyo\_33
- Track 16 : PhluffyCoco\_31, RedFox\_31, Juno112\_30
- Track 17 : Renna12\_30
- Track 18 : Leona\_30
- Track 19 : KHumphrey\_30
- Track 20 : Andrew\_32
- Track 21 : Globfish\_75, EvePickles\_75
- Track 22 : Sakai\_73, Gorpy\_74, Aikyam\_75
- Track 23 : Seahorse\_84
- Track 24 : AbbyDaisy\_79
- Track 25 : Richie\_79
- Track 26 : MidnightRain\_81
- Track 27 : Anekin\_78
- Track 28 : BillyTP\_75
- Track 29 : Raqqa\_74
- Track 30 : Tiff81\_77
- Track 31 : Hillester\_80, RadFad\_81
- Track 32 : Sashimi\_76
- Track 33 : Tbone\_46
- Track 34 : Powerpuff\_48, YesChef\_46, Tutumahutu\_47, Lego\_45, AGrandiflora\_48, Cyan\_45
- Track 35 : Mudpuppy\_43
- Track 36 : Pumpkins\_71

- Track 37 : lter\_45
- Track 38 : IttyBittyPiggy\_45
- Track 39 : Ascela\_45
- Track 40 : Janeemi\_48
- Track 41 : ObiToo\_51
- Track 42 : Nitro\_44
- Track 43 : JuneStar\_48
- Track 44 : Lizalica\_44
- Track 45 : DrSierra\_43
- Track 46 : Community\_48
- Track 47 : Crewmate\_51
- Track 48 : Phives\_50
- Track 49 : JohnDoe\_46, Simpson\_48, Joemato\_48
- Track 50 : Pixelle\_48
- Track 51 : Cassia\_45
- Track 52 : Yang\_46
- Track 53 : Tuck\_49
- Track 54 : Kaylissa\_47
- Track 55 : Amyev\_46, Tian\_45
- Track 56 : Warda\_46
- Track 57 : Wildwest\_45
- Track 58 : Indlovu\_79
- Track 59 : BirdsNest\_93
- Track 60 : Zenteno07\_93
- Track 61 : Hashim76\_93
- Track 62 : Thonko\_86
- Track 63 : Begonia\_49, Malachai\_49
- Track 64 : Wisp\_50
- Track 65 : Samba\_50, Hitter\_51
- Track 66 : CaptainKirk2\_51, MintFen\_51, BlingBling\_48, Barco\_49, Melba\_50, Delian\_54, Zarbodnamra\_50, Archis\_54
- Track 67 : JasperJr\_48, Guacamole\_48
- Track 68 : Jalammah\_54
- Track 69 : Fenry\_49
- Track 70 : Lysidious\_52, Utz\_44
- Track 71 : Mellie\_49
- Track 72 : ZiggyZoo\_51
- Track 73 : Hawkeye\_86
- Track 74 : DirtyBoi\_56
- Track 75 : RayTheFireFly\_61
- Track 76 : Hedwig\_57
- Track 77 : Dmitri\_53
- Track 78 : Squiddly\_84
- Track 79 : CherryTomatoes\_48
- Track 80 : SCentae\_45, Pupper\_45
- Track 81 : Sour\_51
- Track 82 : Evaa\_48
- Track 83 : Sisko\_47, AnClar\_48, Yago84\_47
- Track 84 : LittleMunchkin\_50
- Track 85 : Ligma\_48, Axumite\_48, Shatter\_48
- Track 86 : Mariokart\_48
- Track 87 : Fresco\_48
- Track 88 : BiggityBass\_47

- Track 89 : CharlottesWeb\_47
- Track 90 : Stormageddon\_88, RedWattleHog\_91
- Track 91 : Wolfstar\_76
- Track 92 : Tandem\_71, Pioneer3\_71, Hortus1\_71, OlinDD\_71
- Track 93 : Platte\_71
- Track 94 : Zizzle\_64, Rita\_61, Zerg\_60, DeadP\_66, Soul22\_66, Martik\_60, AlpineSix\_65, Koella\_54, Zapner\_73, LittleShirley\_60, MinionDave\_59, Maravista\_61, Rockne\_61, Eish\_64, James\_64, Pippy\_58, SG4\_57, FreddyB\_61, LastJedi\_54, Dorothy\_58, Crumble\_55, Seabastian\_65, Taj\_64, Jinglebell\_65, Ochi17\_63, Jabbawokkie\_74, Totinger\_62, GUmbie\_58, Lizziana\_66, Priscilla\_60, Whouxphf\_57, VRedHorse\_60, Dante\_61, Yorick\_59, Chuckly\_63, PMC\_57, Modragons\_64, Blarby\_72, Boomer\_65, Mattes\_64, Firehouse51\_61, Inventum\_55, OwlsT2W\_60, Mutaforma13\_64, Starcevich\_60, ShowerHandel\_61, SiSi\_58, Burwell21\_58, SwagPiggett\_65, Hegedechwinu\_60, Pollywog\_61, IbOuu\_61, Saal\_62, BuzzLyseyear\_66, Alexphander\_64, OlympiaSaint\_62, DaWorst\_61, Karhdo\_57, Wee\_64, Sassafras\_58, OfUltron\_65, Oksu\_64, Llama\_65, CaptainTrips\_57, Brocalys\_55, BobaPhett\_64, Enby\_61, ShiLan\_59, NormanBulbieJr\_60, Clifton\_55, Eradicator\_53, Cabrinians\_61, Gorge\_64, Polka14\_58
- Track 95 : Phanphagia\_57, Beakin\_61, DLane\_55, ArcusAngelus\_62, TDanisky\_67, Bobi\_65, Ms6\_55, Melissauren88\_58, PopTart\_54, SuperGrey\_63, SassyB\_54, Ardmore\_52, Chevrolet\_68, Kenuha5\_57, Sparkdehlily\_67, Tweety\_59
- Track 96 : Llij\_56, Phatniss\_58, Job42\_62, UncleRicky\_59, Nivrat\_56, Avani\_68, Drago\_58, QuickMath\_62, Lorde\_60, Kimberlium\_63, Jarcob\_60, DirtMcgirt\_59, Estave1\_63, LilMoolah\_58, DRBy19\_63, Kersh\_62, Veteran\_57, Philus\_63, Rialto\_66
- Track 97 : Plumbus\_62, Daenerys\_54, ByChance\_52, Pacc40\_54, KingMidas\_59, BodEinwohner17\_60, Leozinho\_59, Leperchaun\_52, DosHalletts\_66, Tootsieroll\_61, JoeyJr\_55, PHappiness\_55, Doomphist\_60, Poenanya\_60, DaddyRickover\_59, Empress\_58, Spoonbill\_57, RitaG\_55
- Track 98 : Sandalphon\_61, Girafales\_69, Quico\_68, Florinda\_71, Minnie\_63, Bipolar\_58, Fruitloop\_57
- Track 99 : Harley\_62
- Track 100 : Sarma624\_56, Royals2015\_61, BigPhil\_54, Kingsley\_55, Cerasum\_54, Harley\_61, Starcevich\_57, Che8\_63, Coco12\_57, Ovechkin\_57, Seagreen\_58, Kimberlium\_60, QuickMath\_59, Demsculpinboyz\_68, JalFarm20\_71, Velveteen\_53, Che9d\_66, Juice456\_59, Cornie\_53
- Track 101 : Sarma624\_57, BigPhil\_55, Cerasum\_55, DotProduct\_54, QuickMath\_60, Starcevich\_58, Che8\_64, Coco12\_58, Ovechkin\_58, Seagreen\_59, Kimberlium\_61, JalFarm20\_72, Velveteen\_54, Che9d\_67, Juice456\_60, Cornie\_54, Kingsley\_56, Royals2015\_62
- Track 102 : Scottish\_58, EleanorGeorge\_61, Blexus\_58, ShroomBoi\_62, Mova\_61, KristaRAM\_63, Gandalph\_63, MadMen\_58, Madiba\_58
- Track 103 : RockyHorror\_61, Doug\_62
- Track 104 : SimranZ1\_60, Phasih\_58, lbhubesi\_60, Sabbb\_64, Demsculpinboyz\_71, DillTech15\_57
- Track 105 : Moonbeam\_58
- Track 106 : Akhila\_51, MilanaBonita\_50, Whatsapiecost\_60, Hamulus\_61, Ogopogo\_65, Flathead\_60
- Track 107 : Filuzino\_58, StAnnes\_58, XFactor\_58
- Track 108 : Mozy\_69, LunaBlu\_62, GigiOuiOui\_56, Girr\_58, Ruby\_56, IrishSherpFalk\_61, Mahavrat\_58, WillSterrel\_61, Latretium\_62, Cornie\_56, Spartacus\_62, MisterCuddles\_58, Galactic\_59
- Track 109 : DotProduct\_53

- Track 110 : Radiance\_59
- Track 111 : Fancypants\_62, BlueCrab\_60, Byougenkin\_58
- Track 112 : Donkeykong\_63, Squirty\_62, Shauna1\_58
- Track 113 : Bubbles123\_56
- Track 114 : Hlubikazi\_56, Mandlovu\_56, Strokeseat\_56
- Track 115 : MilleniumForce\_63, Ramsey\_59, Batiatus\_58, Aubs\_60
- Track 116 : Krakatau\_57
- Track 117 : Spikelee\_67, Marker\_67, OldBen\_57
- Track 118 : Juniper1\_58
- Track 119 : Juniper1\_59
- Track 120 : PhesterPhotato\_61, Phalconet\_58
- Track 121 : Cornucopia\_62
- Track 122 : Hades\_61
- Track 123 : Juniper1\_61
- Track 124 : Wachhund\_61
- Track 125 : Emma\_61
- Track 126 : Yoshi\_73, ThetaBob\_65
- Track 127 : Demsculpinboyz\_69
- Track 128 : TChen\_61
- Track 129 : Renaud18\_63
- Track 130 : LunaStella\_53, Yoshi\_70, ThetaBob\_62, TChen\_58
- Track 131 : LunaStella\_54, Renaud18\_64, Yoshi\_71, ThetaBob\_63, TChen\_59
- Track 132 : Renaud18\_66
- Track 133 : Prairie\_53
- Track 134 : Bumble\_49
- Track 135 : Klevey\_55
- Track 136 : Bolt007\_53
- Track 137 : Altadena\_50
- Track 138 : Lilmac1015\_57, CalWood4100\_57
- Track 139 : BlackSpider\_67
- Track 140 : Zucker\_73
- Track 141 : Dove\_137, NihilNomen\_146, Halley\_146, Minerva\_144, JuicyJay\_140, Optimus\_135, Hughesyang\_143, Wanda\_144, Odette\_148, DmpstrDiver\_145, Ejimix\_137, Klein\_142, Zelink\_139, Kalah2\_135, BAKA\_144, EricMillard\_136, Constella\_138, Schatzie\_140, Duke13\_140, ThreeRngTarjay\_139, Dallas\_145, Beem\_146, Phoebus\_144, Bombitas\_132
- Track 142 : Pound\_136
- Track 143 : Porcelain\_140, Yeet\_138, MiaZeal\_143, Redno2\_139, Lucky2013\_136, HokkenD\_137, KashFlow\_143
- Track 144 : Bobby\_134
- Track 145 : Thibault\_127
- Track 146 : 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 82, it was called in 213 of the 372 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_51, Alexphander\_64, AlpineSix\_65, ArcusAngelus\_62, Ardmore\_52, Aubs\_60, Avani\_68, Batiatus\_58, Beakin\_61, BigPhil\_55, Bipolar\_58, Blarby\_72, Blexus\_58, BlueCrab\_60, BobaPhett\_64, Bobi\_65, BodEinwohner17\_60, Boomer\_65, Brocalys\_55, Bubbles123\_56, Burwell21\_58, BuzzLyseyear\_66, ByChance\_52, Byougenkin\_58, Cabrinians\_61, CaptainTrips\_57, Cerasum\_55, Che8\_64, Che9d\_67, Chevrolet\_68, Chuckly\_63, Clifton\_55, Coco12\_58, Cornie\_54, Cornie\_56, Cornucopia\_62, Crumble\_55, DLane\_55, DRBy19\_63, DaWorst\_61, DaddyRickover\_59, Daenerys\_54, Dante\_61, DeadP\_66, Demsculpinboyz\_69, Demsculpinboyz\_71, DillTech15\_57, DirtMcgirt\_59, Donkeykong\_63, Doomphist\_60, Dorothy\_58, DosHalletts\_66, DotProduct\_54, Doug\_62, Drago\_58, Eish\_64, EleanorGeorge\_61, Emma\_61, Empress\_58, Enby\_61, Eradicator\_53, Estave1\_63, Fancypants\_62, Filuzino\_58, Firehouse51\_61, Flathead\_60, Florinda\_71, Footloose\_58, FreddyB\_61, Fruitloop\_57, GUmbe\_58, Galactic\_59, Gandolph\_63, GigiOuiOui\_56, Girafales\_69, Girr\_58, Gorge\_64, Hades\_61, Hamulus\_61, Harley\_62, Hegedechwinu\_60, Hlubikazi\_56, IbOuu\_61, Ibhubesi\_60, Inventum\_55, IrishSherpFalk\_61, Jabbawokkie\_74, JalFarm20\_72, James\_64, Jarcob\_60, Jinglebell\_65, Job42\_62, JoeyJr\_55, Juice456\_60, Juniper1\_61, Karhdo\_57, Kenuha5\_57, Kersh\_62, Kimberlium\_61, Kimberlium\_63, KingMidas\_59, Kingsley\_56, Koella\_54, Krakatau\_57, KristaRAM\_63, LastJedi\_54, Latretium\_62, Leozinho\_59, Leperchaun\_52, LilMoolah\_58, LittleShirley\_60, Lizziana\_66, Llama\_65, Llij\_56, Lorde\_60, LunaBlu\_62, LunaStella\_54, MadMen\_58, Madiba\_58, Mahavrat\_58, Mandlovu\_56, Maravista\_61, Marker\_67, Martik\_60, Mattes\_64, Melissauren88\_58, MilanaBonita\_50, MilleniumForce\_63, MinionDave\_59, Minnie\_63, MisterCuddles\_58, Modragons\_64, Moonbeam\_58, Mova\_61, Mozy\_69, Ms6\_55, Mutaforma13\_64, Nivrat\_56, NormanBulbieJr\_60, Ochi17\_63, OfUltron\_65, Ogoopogo\_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, PhesterPhotato\_61, Philus\_63, Pippy\_58, Plumbus\_62, Poenanya\_60, Polka14\_58, Pollywog\_61, PopTart\_54, Priscilla\_60, QuickMath\_60, QuickMath\_62, Quico\_68, Radiance\_59, Ramsey\_59, Renaud18\_64, Renaud18\_66, Rialto\_66, RitaG\_55, Rita\_61, Rockne\_61, RockyHorror\_61, Royals2015\_62, Ruby\_56, SG4\_57, Saal\_62, Sabbb\_64, Sandalphon\_61, Sarma624\_57, Sassafras\_58, SassyB\_54, Scottish\_58, Seabastian\_65, Seagreen\_59, Shauna1\_58, ShiLan\_59, ShowerHandel\_61, ShroomBoi\_62, SiSi\_58, SimranZ1\_60, 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, ThetaBob\_63, ThetaBob\_65, Tootsieroll\_61, Totinger\_62, Tweety\_59, UncleRicky\_59, VRedHorse\_60, Velveteen\_54, Veteran\_57, Wachhund\_61, Wee\_64, Whatsapiecost\_60, Whouxphf\_57, WillSterrel\_61, XFactor\_58, Yorick\_59, Yoshi\_71, Yoshi\_73, Zapner\_73, Zerg\_60, Zizzle\_64,

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

- Hawkeye\_86, Juniper1\_59,

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

- AGrandiflora\_48, AbbyDaisy\_79, Abidatro\_30, Aikyam\_75, Altadena\_50, Amyev\_46, AnClar\_48, Andrew\_32, Anekin\_78, Archis\_54, Ascela\_45, Axumite\_48, BAKA\_144, Barco\_49, Basilisk\_31, Beem\_146, Begonia\_49, BigPhil\_54, BiggityBass\_47, BillyTP\_75, BirdsNest\_93, BlackSpider\_67, BlingBling\_48, Bobby\_134, Bolt007\_53, Bombitas\_132, Brynnie\_30, Bumble\_49, CalWood4100\_57, CaptainKirk2\_51, Cassia\_45, Cerasum\_54, CharlottesWeb\_47, Che8\_63, Che9d\_66, CherryTomatoes\_48, Chickaboom\_32, Coco12\_57, Community\_48, Constella\_138,



Cornie\_53, Crewmate\_51, Cyan\_45, Dallas\_145, Delian\_54, Demsculpinboyz\_68, DirtyBoi\_56, Dmitri\_53, DmpstrDiver\_145, DotProduct\_53, Dove\_137, DrSierra\_43, Duke13\_140, Eesa\_29, Ejimix\_137, EricMillard\_136, Evaa\_48, EvePickles\_75, Ferry\_49, Fresco\_48, Globfish\_75, Gorpy\_74, Guacamole\_48, Halley\_146, HannahPhantana\_34, Harley\_61, Hashim76\_93, Hedwig\_57, Hillester\_80, Hitter\_51, HokkenD\_137, Hortus1\_71, Hughesyang\_143, Indlovu\_79, Iter\_45, IttyBittyPiggy\_45, JalFarm20\_71, Jalammah\_54, Jamun\_29, Janeemi\_48, JasperJr\_48, Joemato\_48, JohnDoe\_46, Juice456\_59, JuicyJay\_140, JuneStar\_48, Juniper1\_58, Juno112\_30, KHumphrey\_30, Kalah2\_135, KashFlow\_143, Kaylissa\_47, Kimberlium\_60, Kingsley\_55, Klein\_142, Klevey\_55, Lego\_45, Leona\_30, Ligma\_48, Lilmac1015\_57, LittleMunchkin\_50, LittleTokyo\_33, Lizalica\_44, Lucky2013\_136, LunaStella\_53, Lysidious\_52, Malachai\_49, MalagasyRose\_65, Mariokart\_48, Melba\_50, Mellie\_49, MiaZeal\_143, MidnightRain\_81, Minerva\_144, MintFen\_51, Mudpuppy\_43, NihilNomen\_146, Nitro\_44, ObiToo\_51, Odette\_148, OlinDD\_71, Optimus\_135, Orcanus\_30, Ovechkin\_57, Phives\_50, PhluffyCoco\_31, Phoebus\_144, Phrappuccino\_165, Pioneer3\_71, Pixelle\_48, Platte\_71, Polka\_32, Porcelain\_140, Pound\_136, Powerpuff\_48, Prairie\_53, Pumpkins\_71, Pupper\_45, QuickMath\_59, RadFad\_81, Raqqa\_74, RayTheFireFly\_61, RedFox\_31, RedWattleHog\_91, Redno2\_139, Renaud18\_63, Renna12\_30, Richie\_79, Royals2015\_61, Ruchi\_30, SCentae\_45, Sakai\_73, Samba\_50, Sarma624\_56, Sashimi\_76, Schatzie\_140, Seagreen\_58, Seahorse\_84, Settecandela\_165, Shatter\_48, Simpson\_48, Sisko\_47, Sour\_51, Squiddly\_84, Starcevich\_57, Stormageddon\_88, TChen\_58, Tandem\_71, TaylorSipt\_30, Tbone\_46, ThetaBob\_62, Thibault\_127, Thonko\_86, ThreeRngTarjay\_139, Tian\_45, Tiff81\_77, Tuck\_49, Tutumahutu\_47, Utz\_44, Velveteen\_53, Vulpecula\_30, Wanda\_144, Warda\_46, Wildwest\_45, Wisp\_50, Wolfstar\_76, Yago84\_47, Yang\_46, Yeet\_138, YesChef\_46, Yoshi\_70, Zarbodnamra\_50, Zelink\_139, Zenteno07\_93, ZiggyZoo\_51, Zucker\_73,

### Summary by start number:

#### Start 71:

- Found in 27 of 428 ( 6.3% ) of genes in pham
- Manual Annotations of this start: 1 of 372
- Called 3.7% of time when present
- Phage (with cluster) where this start called: Sour\_51 (DR),

#### Start 72:

- Found in 13 of 428 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 8 of 372
- Called 69.2% of time when present
- Phage (with cluster) where this start called: AnClar\_48 (DR), Axumite\_48 (DR), BiggityBass\_47 (DR), Evaa\_48 (DR), Ligma\_48 (DR), LittleMunchkin\_50 (DR), Shatter\_48 (DR), Sisko\_47 (DR), Yago84\_47 (DR),

#### Start 74:

- Found in 3 of 428 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 372
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdsNest\_93 (B13), Hashim76\_93 (B13), Zenteno07\_93 (B13),

#### Start 76:

- Found in 4 of 428 ( 0.9% ) of genes in pham

- Manual Annotations of this start: 1 of 372
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Mellie\_49 (CV),

#### Start 77:

- Found in 2 of 428 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 372
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altadena\_50 (FH), Bumble\_49 (FH),

#### Start 78:

- Found in 59 of 428 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 55 of 372
- Called 98.3% of time when present
- Phage (with cluster) where this start called: Archis\_54 (CV), BAKA\_144 (J), Barco\_49 (CV), Beem\_146 (J), Begonia\_49 (CV), BlingBling\_48 (CV), Bobby\_134 (J), Bombitas\_132 (J), CaptainKirk2\_51 (CV), Constella\_138 (J), Dallas\_145 (J), Delian\_54 (CV), DirtyBoi\_56 (DB), Dmitri\_53 (DB), DmpstrDiver\_145 (J), Dove\_137 (J), Duke13\_140 (J), Ejimix\_137 (J), EricMillard\_136 (J), Fenry\_49 (CV), Guacamole\_48 (CV), Halley\_146 (J), Hedwig\_57 (DB), Hitter\_51 (CV), HokkenD\_137 (J), Hughesyang\_143 (J), Jalammah\_54 (CV), JasperJr\_48 (CV), JuicyJay\_140 (J), Kalah2\_135 (J), KashFlow\_143 (J), Klein\_142 (J), Lucky2013\_136 (J), Lysidious\_52 (CV), Malachai\_49 (CV), Melba\_50 (CV), MiaZeal\_143 (J), Minerva\_144 (J), MintFen\_51 (CV), NihilNomen\_146 (J), Odette\_148 (J), Optimus\_135 (J), Phoebus\_144 (J), Porcelain\_140 (J), Pound\_136 (J), RayTheFireFly\_61 (DB), Redno2\_139 (J), Samba\_50 (CV), Schatzie\_140 (J), Thibault\_127 (J), ThreeRngTarjay\_139 (J), Utz\_44 (CV), Wanda\_144 (J), Wisp\_50 (CV), Yeet\_138 (J), Zarbodnamra\_50 (CV), Zelink\_139 (J), ZiggyZoo\_51 (CV),

#### Start 79:

- Found in 1 of 428 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 372
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Thonko\_86 (B8),

#### Start 81:

- Found in 1 of 428 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 372
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Squiddly\_84 (DN2),

#### Start 82:

- Found in 232 of 428 ( 54.2% ) of genes in pham
- Manual Annotations of this start: 213 of 372
- Called 99.1% of time when present
- Phage (with cluster) where this start called: Akhila\_51 (F1), Alexphander\_64 (F1), AlpineSix\_65 (F1), ArcusAngelus\_62 (F1), Ardmore\_52 (F1), Aubs\_60 (F1), Avani\_68 (F2), Batiatus\_58 (F1), Beakin\_61 (F1), BigPhil\_55 (F1), Bipolar\_58 (F1), Blarby\_72 (F), Blexus\_58 (F1), BlueCrab\_60 (F1), BobaPhett\_64 (F1), Bobi\_65 (F1), BodEinwohner17\_60 (F1), Boomer\_65 (F1), Brocalys\_55 (F1), Bubbles123\_56 (F1), Burwell21\_58 (F1), BuzzLyseyear\_66 (F1), ByChance\_52 (F1), Byougenkin\_58 (F1), Cabrinians\_61 (F1), CaptainTrips\_57 (F1), Cerasum\_55 (F1), Che8\_64 (F1), Che9d\_67 (F2), Chevrolet\_68 (F1), Chuckly\_63 (F1), Clifton\_55 (F1), Coco12\_58

(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), Demsculpinboyz\_69 (F2), Demsculpinboyz\_71 (F2), DillTech15\_57 (F1), DirtMcgirt\_59 (F1), Donkeykong\_63 (F1), Doomphist\_60 (F1), Dorothy\_58 (F1), DosHalletts\_66 (F1), DotProduct\_54 (F1), Doug\_62 (F1), Drago\_58 (F1), Eish\_64 (F1), EleanorGeorge\_61 (F1), Emma\_61 (F1), Empress\_58 (F1), Enby\_61 (F1), Eradicator\_53 (F1), Estave1\_63 (F1), Fancypants\_62 (F1), Filuzino\_58 (F1), Firehouse51\_61 (F1), Flathead\_60 (F1), Florinda\_71 (F1), Footloose\_58 (singleton), FreddyB\_61 (F1), Fruitloop\_57 (F1), GUmbe\_58 (F1), Galactic\_59 (F1), Gandolph\_63 (F1), GigiOuiOui\_56 (F1), Girafales\_69 (F1), Girr\_58 (F1), Gorge\_64 (F1), Hades\_61 (F1), Hamulus\_61 (F1), Harley\_62 (F1), Hegedechwinu\_60 (F1), Hlubikazi\_56 (F1), lbOuu\_61 (F1), lbhubesi\_60 (F1), Inventum\_55 (F1), IrishSherpFalk\_61 (F1), Jabbawokkie\_74 (F2), JalFarm20\_72 (F1), James\_64 (F1), Jarcob\_60 (F1), Jinglebell\_65 (F1), Job42\_62 (F1), JoeyJr\_55 (F1), Juice456\_60 (F1), Juniper1\_61 (F1), Karhdo\_57 (F1), Kenuha5\_57 (F1), Kersh\_62 (F1), Kimberlium\_61 (F1), Kimberlium\_63 (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\_60 (F1), Lizziana\_66 (F1), Llama\_65 (F1), Llij\_56 (F1), Lorde\_60 (F1), LunaBlu\_62 (F1), LunaStella\_54 (F4), MadMen\_58 (F1), Madiba\_58 (F1), Mahavrat\_58 (F1), Mandlovu\_56 (F1), Maravista\_61 (F1), Marker\_67 (F1), Martik\_60 (F1), Mattes\_64 (F1), Melissauren88\_58 (F1), MilanaBonita\_50 (F1), MilleniumForce\_63 (F1), MinionDave\_59 (F1), Minnie\_63 (F1), MisterCuddles\_58 (F1), Modragons\_64 (F1), Moonbeam\_58 (F1), Mova\_61 (F1), Mozy\_69 (F1), Ms6\_55 (F1), Mutaforma13\_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\_61 (F1), Philus\_63 (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), 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), Sandalphon\_61 (F1), Sarma624\_57 (F1), Sassafras\_58 (F1), SassyB\_54 (F1), Scottish\_58 (F1), Seabastian\_65 (F1), Seagreen\_59 (F1), Shauna1\_58 (F1), ShiLan\_59 (F1), ShowerHandel\_61 (F1), ShroomBoi\_62 (F1), SiSi\_58 (F1), SimranZ1\_60 (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), ThetaBob\_63 (F4), ThetaBob\_65 (F4), Tootsieroll\_61 (F1), Totinger\_62 (F1), Tweety\_59 (F1), UncleRicky\_59 (F1), VRedHorse\_60 (F1), Velveteen\_54 (F1), Veteran\_57 (F1), Wachhund\_61 (F1), Wee\_64 (F1), Whatsapiecost\_60 (F1), Whouxphf\_57 (F1), WillSterrel\_61 (F1), XFactor\_58 (F1), Yorick\_59 (F1), Yoshi\_71 (F2), Yoshi\_73 (F2), Zapner\_73 (F2), Zerg\_60 (F1), Zizzle\_64 (F1),

Start 83:

- Found in 26 of 428 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 24 of 372
- Called 100.0% of time when present

- Phage (with cluster) where this start called: BigPhil\_54 (F1), Cerasum\_54 (F1), Che8\_63 (F1), Che9d\_66 (F2), Coco12\_57 (F1), Cornie\_53 (F5), Demsculpinboyz\_68 (F2), DotProduct\_53 (F1), Harley\_61 (F1), JalFarm20\_71 (F1), Juice456\_59 (F1), Juniper1\_58 (F1), Kimberlium\_60 (F1), Kingsley\_55 (F1), LunaStella\_53 (F4), 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 84:

- Found in 21 of 428 ( 4.9% ) of genes in pham
- Manual Annotations of this start: 16 of 372
- Called 90.5% of time when present
- Phage (with cluster) where this start called: Abidatro\_30 (AS1), Andrew\_32 (AS3), Basilisk\_31 (AS1), Brynnie\_30 (AS1), Eesa\_29 (AS1), HannahPhantana\_34 (AS2), Hawkeye\_86 (D2), Jamun\_29 (AS1), Juno112\_30 (AS3), Leona\_30 (AS3), LittleTokyo\_33 (AS2), Orcanus\_30 (AS1), PhluffyCoco\_31 (AS3), Polka\_32 (AS2), RedFox\_31 (AS3), Renna12\_30 (AS3), Ruchi\_30 (AS1), TaylorSipht\_30 (AS1), Vulpecula\_30 (AS1),

#### Start 85:

- Found in 23 of 428 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 13 of 372
- Called 95.7% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_79 (AY), Aikyam\_75 (AY), Anekin\_78 (AY), BillyTP\_75 (AY), BlackSpider\_67 (FN), Bolt007\_53 (FH), CalWood4100\_57 (FH), EvePickles\_75 (AY), Globfish\_75 (AY), Gorpy\_74 (AY), Hillester\_80 (AY), Klevey\_55 (FH), Lilmac1015\_57 (FH), MidnightRain\_81 (AY), Prairie\_53 (FH), RadFad\_81 (AY), Richie\_79 (AY), Sakai\_73 (AY), Sashimi\_76 (AY), Seahorse\_84 (AY), Tiff81\_77 (AY), Zucker\_73 (FN),

#### Start 86:

- Found in 1 of 428 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 372
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phives\_50 (AZ1),

#### Start 87:

- Found in 32 of 428 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 20 of 372
- 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\_45 (AZ1), DrSierra\_43 (AZ1), Iter\_45 (AZ1), IttyBittyPiggy\_45 (AZ1), Janeemi\_48 (AZ1), Joemato\_48 (AZ1), JohnDoe\_46 (AZ1), JuneStar\_48 (AZ1), Kaylissa\_47 (AZ1), Lego\_45 (AZ1), Lizalica\_44 (AZ1), Mudpuppy\_43 (AZ1), Nitro\_44 (AZ1), ObiToo\_51 (AZ1), Pixelle\_48 (AZ1), Powerpuff\_48 (AZ1), Pumpkins\_71 (AZ1), Simpson\_48 (AZ1), Tbone\_46 (AZ1), Tian\_45 (AZ1), Tuck\_49 (AZ1), Tutumahutu\_47 (AZ1), Warda\_46 (AZ1), Wildwest\_45 (AZ1), Yang\_46 (AZ1), YesChef\_46 (AZ1),

#### Start 89:

- Found in 6 of 428 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 4 of 372
- Called 83.3% of time when present

- Phage (with cluster) where this start called: CharlottesWeb\_47 (DR), MalagasyRose\_65 (AG), Mariokart\_48 (DR), Phrappuccino\_165 (AA), Settecandela\_165 (AA),

Start 91:

- Found in 2 of 428 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 372
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RedWattleHog\_91 (DX), Stormageddon\_88 (DX),

Start 94:

- Found in 3 of 428 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 372
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CherryTomatoes\_48 (DO), Pupper\_45 (DO), SCentae\_45 (DO),

Start 95:

- Found in 6 of 428 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 5 of 372
- Called 83.3% 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),

Start 96:

- Found in 1 of 428 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 372
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlovu\_79 (B11),

Start 97:

- Found in 28 of 428 ( 6.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 7.1% of time when present
- Phage (with cluster) where this start called: Chickaboom\_32 (AS1), Juniper1\_59 (F1),

Start 98:

- Found in 2 of 428 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Raqqa\_74 (AY),

Start 99:

- Found in 255 of 428 ( 59.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.4% of time when present
- Phage (with cluster) where this start called: KHumphrey\_30 (AS3),

Start 109:

- Found in 245 of 428 ( 57.2% ) of genes in pham
- No Manual Annotations of this start.

- Called 0.8% of time when present
- Phage (with cluster) where this start called: Fresco\_48 (DR), Wolfstar\_76 (ED),

### **Summary by clusters:**

There are 29 clusters represented in this pham: AA, singleton, DO, DB, ED1, B13, DX, B11, FH, DR, FN, DN2, AS3, AS2, AS1, AG, F, ED, J, AY, CV, F1, F2, F3, F4, F5, B8, AZ1, D2,

Info for manual annotations of cluster AA:

- Start number 89 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AG:

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

Info for manual annotations of cluster AS1:

- Start number 84 was manually annotated 9 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 84 was manually annotated 2 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 84 was manually annotated 4 times for cluster AS3.

Info for manual annotations of cluster AY:

- Start number 85 was manually annotated 8 times for cluster AY.

Info for manual annotations of cluster AZ1:

- Start number 86 was manually annotated 1 time for cluster AZ1.
- Start number 87 was manually annotated 20 times for cluster AZ1.

Info for manual annotations of cluster B11:

- Start number 96 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B13:

- Start number 74 was manually annotated 2 times for cluster B13.

Info for manual annotations of cluster B8:

- Start number 79 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster CV:

- Start number 76 was manually annotated 1 time for cluster CV.
- Start number 78 was manually annotated 19 times for cluster CV.

Info for manual annotations of cluster D2:

- Start number 84 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DB:

- Start number 78 was manually annotated 4 times for cluster DB.

Info for manual annotations of cluster DN2:

- Start number 81 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DO:

- Start number 94 was manually annotated 2 times for cluster DO.

Info for manual annotations of cluster DR:

- Start number 71 was manually annotated 1 time for cluster DR.
- Start number 72 was manually annotated 8 times for cluster DR.
- Start number 89 was manually annotated 1 time for cluster DR.

Info for manual annotations of cluster DX:

- Start number 91 was manually annotated 2 times for cluster DX.

Info for manual annotations of cluster ED1:

- Start number 95 was manually annotated 5 times for cluster ED1.

Info for manual annotations of cluster F1:

- Start number 82 was manually annotated 194 times for cluster F1.
- Start number 83 was manually annotated 17 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 82 was manually annotated 9 times for cluster F2.
- Start number 83 was manually annotated 3 times for cluster F2.

Info for manual annotations of cluster F3:

- Start number 82 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 82 was manually annotated 6 times for cluster F4.
- Start number 83 was manually annotated 3 times for cluster F4.

Info for manual annotations of cluster F5:

- Start number 82 was manually annotated 2 times for cluster F5.
- Start number 83 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster FH:

- Start number 77 was manually annotated 2 times for cluster FH.
- Start number 85 was manually annotated 4 times for cluster FH.

Info for manual annotations of cluster FN:

- Start number 85 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster J:

- Start number 78 was manually annotated 32 times for cluster J.

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

Gene: AGrandiflora\_48 Start: 33790, Stop: 34203, Start Num: 87

Candidate Starts for AGrandiflora\_48:

(Start: 87 @33790 has 20 MA's), (112, 33844), (146, 33970), (155, 34024), (193, 34177), (195, 34195),

Gene: AbbyDaisy\_79 Start: 44094, Stop: 44489, Start Num: 85  
Candidate Starts for AbbyDaisy\_79:  
(Start: 85 @44094 has 13 MA's), (98, 44118), (106, 44139), (141, 44265), (185, 44463),

Gene: Abidatro\_30 Start: 21728, Stop: 21387, Start Num: 84  
Candidate Starts for Abidatro\_30:  
(Start: 84 @21728 has 16 MA's), (97, 21707), (150, 21497), (172, 21401),

Gene: Aikyam\_75 Start: 40510, Stop: 40911, Start Num: 85  
Candidate Starts for Aikyam\_75:  
(27, 40264), (Start: 85 @40510 has 13 MA's), (141, 40678), (151, 40747),

Gene: Akhila\_51 Start: 36387, Stop: 36752, Start Num: 82  
Candidate Starts for Akhila\_51:  
(Start: 82 @36387 has 213 MA's), (99, 36420), (101, 36426), (109, 36438), (120, 36480), (126, 36510), (134, 36534), (135, 36537), (153, 36636), (154, 36642), (175, 36717), (176, 36720), (178, 36723),

Gene: Alexphander\_64 Start: 40703, Stop: 41068, Start Num: 82  
Candidate Starts for Alexphander\_64:  
(Start: 82 @40703 has 213 MA's), (99, 40736), (106, 40751), (109, 40754), (118, 40793), (120, 40796), (123, 40817), (134, 40850), (141, 40877), (146, 40910), (153, 40952), (154, 40958), (183, 41054),

Gene: AlpineSix\_65 Start: 42816, Stop: 43181, Start Num: 82  
Candidate Starts for AlpineSix\_65:  
(Start: 82 @42816 has 213 MA's), (99, 42849), (106, 42864), (109, 42867), (118, 42906), (120, 42909), (123, 42930), (134, 42963), (141, 42990), (146, 43023), (153, 43065), (154, 43071), (183, 43167),

Gene: Altadena\_50 Start: 34978, Stop: 35370, Start Num: 77  
Candidate Starts for Altadena\_50:  
(Start: 77 @34978 has 2 MA's), (119, 35077), (148, 35206), (162, 35281),

Gene: Amyev\_46 Start: 34828, Stop: 35223, Start Num: 87  
Candidate Starts for Amyev\_46:  
(7, 34264), (10, 34336), (11, 34345), (14, 34423), (41, 34654), (55, 34726), (Start: 87 @34828 has 20 MA's), (112, 34882), (146, 35008),

Gene: AnClar\_48 Start: 43435, Stop: 43061, Start Num: 72  
Candidate Starts for AnClar\_48:  
(Start: 72 @43435 has 8 MA's), (103, 43375), (122, 43312), (123, 43303), (151, 43183),

Gene: Andrew\_32 Start: 21174, Stop: 20812, Start Num: 84  
Candidate Starts for Andrew\_32:  
(Start: 84 @21174 has 16 MA's), (121, 21087), (149, 20958), (161, 20892),

Gene: Anekin\_78 Start: 43082, Stop: 43483, Start Num: 85  
Candidate Starts for Anekin\_78:  
(27, 42836), (Start: 85 @43082 has 13 MA's), (141, 43250), (151, 43319),

Gene: Archis\_54 Start: 35570, Stop: 35932, Start Num: 78



Candidate Starts for Archis\_54:

(39, 35426), (47, 35462), (56, 35501), (Start: 78 @35570 has 55 MA's), (124, 35699), (131, 35723),

Gene: ArcusAngelus\_62 Start: 40946, Stop: 41311, Start Num: 82

Candidate Starts for ArcusAngelus\_62:

(Start: 82 @40946 has 213 MA's), (99, 40979), (101, 40985), (109, 40997), (120, 41039), (126, 41069), (134, 41093), (135, 41096), (153, 41195), (154, 41201), (175, 41276),

Gene: Ardmore\_52 Start: 38473, Stop: 38838, Start Num: 82

Candidate Starts for Ardmore\_52:

(Start: 82 @38473 has 213 MA's), (99, 38506), (101, 38512), (109, 38524), (120, 38566), (126, 38596), (134, 38620), (135, 38623), (153, 38722), (154, 38728), (175, 38803),

Gene: Ascela\_45 Start: 33111, Stop: 33515, Start Num: 87

Candidate Starts for Ascela\_45:

(Start: 87 @33111 has 20 MA's), (121, 33198), (146, 33291), (155, 33345), (191, 33489),

Gene: Aubs\_60 Start: 40637, Stop: 41002, Start Num: 82

Candidate Starts for Aubs\_60:

(Start: 82 @40637 has 213 MA's), (99, 40670), (101, 40676), (109, 40688), (126, 40760), (134, 40784), (135, 40787), (141, 40811), (153, 40886), (154, 40892), (175, 40967),

Gene: Avani\_68 Start: 41015, Stop: 41380, Start Num: 82

Candidate Starts for Avani\_68:

(Start: 82 @41015 has 213 MA's), (99, 41048), (106, 41063), (109, 41066), (118, 41105), (120, 41108), (123, 41129), (134, 41162), (140, 41183), (141, 41189), (146, 41222), (153, 41264), (154, 41270), (183, 41366),

Gene: Axumite\_48 Start: 41091, Stop: 40741, Start Num: 72

Candidate Starts for Axumite\_48:

(Start: 72 @41091 has 8 MA's), (103, 41046), (109, 41037), (114, 41022), (123, 40974), (146, 40893),

Gene: BAKA\_144 Start: 76097, Stop: 76450, Start Num: 78

Candidate Starts for BAKA\_144:

(Start: 78 @76097 has 55 MA's), (146, 76298), (153, 76340),

Gene: Barco\_49 Start: 34620, Stop: 34982, Start Num: 78

Candidate Starts for Barco\_49:

(39, 34476), (47, 34512), (56, 34551), (Start: 78 @34620 has 55 MA's), (124, 34749), (131, 34773),

Gene: Basilisk\_31 Start: 22679, Stop: 22335, Start Num: 84

Candidate Starts for Basilisk\_31:

(Start: 84 @22679 has 16 MA's), (97, 22658), (100, 22652), (108, 22634), (121, 22586),

Gene: Batiatus\_58 Start: 40347, Stop: 40712, Start Num: 82

Candidate Starts for Batiatus\_58:

(Start: 82 @40347 has 213 MA's), (99, 40380), (101, 40386), (109, 40398), (126, 40470), (134, 40494), (135, 40497), (141, 40521), (153, 40596), (154, 40602), (175, 40677),

Gene: Beakin\_61 Start: 39476, Stop: 39841, Start Num: 82

Candidate Starts for Beakin\_61:

(Start: 82 @39476 has 213 MA's), (99, 39509), (101, 39515), (109, 39527), (120, 39569), (126, 39599), (134, 39623), (135, 39626), (153, 39725), (154, 39731), (175, 39806),

Gene: Beem\_146 Start: 77695, Stop: 78048, Start Num: 78  
Candidate Starts for Beem\_146:  
(Start: 78 @77695 has 55 MA's), (146, 77896), (153, 77938),

Gene: Begonia\_49 Start: 37159, Stop: 37521, Start Num: 78  
Candidate Starts for Begonia\_49:  
(56, 37090), (Start: 78 @37159 has 55 MA's), (117, 37258), (123, 37285), (124, 37288), (131, 37312),  
(182, 37507),

Gene: BigPhil\_54 Start: 35652, Stop: 35999, Start Num: 83  
Candidate Starts for BigPhil\_54:  
(Start: 71 @35625 has 1 MA's), (80, 35643), (Start: 83 @35652 has 24 MA's), (99, 35682), (102,  
35691), (111, 35709), (123, 35763), (134, 35790), (146, 35847), (150, 35877), (153, 35889),

Gene: BigPhil\_55 Start: 35996, Stop: 36349, Start Num: 82  
Candidate Starts for BigPhil\_55:  
(67, 35960), (Start: 82 @35996 has 213 MA's), (97, 36026), (99, 36029), (105, 36041), (109, 36047),  
(123, 36110), (126, 36119), (127, 36125), (153, 36239), (157, 36260), (173, 36317), (181, 36329),

Gene: BiggityBass\_47 Start: 42936, Stop: 42535, Start Num: 72  
Candidate Starts for BiggityBass\_47:  
(Start: 72 @42936 has 8 MA's), (103, 42849), (122, 42786), (124, 42774), (153, 42651),

Gene: BillyTP\_75 Start: 43046, Stop: 43435, Start Num: 85  
Candidate Starts for BillyTP\_75:  
(Start: 85 @43046 has 13 MA's), (131, 43169), (141, 43202), (143, 43217), (151, 43271),

Gene: Bipolar\_58 Start: 40097, Stop: 40462, Start Num: 82  
Candidate Starts for Bipolar\_58:  
(Start: 82 @40097 has 213 MA's), (99, 40130), (102, 40139), (109, 40148), (120, 40190), (126,  
40220), (134, 40244), (135, 40247), (153, 40346), (154, 40352), (175, 40427),

Gene: BirdsNest\_93 Start: 66573, Stop: 66154, Start Num: 74  
Candidate Starts for BirdsNest\_93:  
(Start: 74 @66573 has 2 MA's), (103, 66492), (141, 66363), (146, 66330), (159, 66255),

Gene: BlackSpider\_67 Start: 39612, Stop: 40001, Start Num: 85  
Candidate Starts for BlackSpider\_67:  
(57, 39510), (Start: 85 @39612 has 13 MA's), (131, 39735), (141, 39768), (143, 39783), (147, 39804),  
(151, 39837),

Gene: Blarby\_72 Start: 42116, Stop: 42481, Start Num: 82  
Candidate Starts for Blarby\_72:  
(Start: 82 @42116 has 213 MA's), (99, 42149), (106, 42164), (109, 42167), (118, 42206), (120,  
42209), (123, 42230), (134, 42263), (141, 42290), (146, 42323), (153, 42365), (154, 42371), (183,  
42467),

Gene: Blexus\_58 Start: 40670, Stop: 41035, Start Num: 82  
Candidate Starts for Blexus\_58:  
(Start: 82 @40670 has 213 MA's), (99, 40703), (106, 40718), (109, 40721), (120, 40763), (123,  
40784), (134, 40817), (141, 40844), (146, 40877), (153, 40919), (154, 40925), (183, 41021),

Gene: BlingBling\_48 Start: 35583, Stop: 35945, Start Num: 78  
Candidate Starts for BlingBling\_48:  
(39, 35439), (47, 35475), (56, 35514), (Start: 78 @35583 has 55 MA's), (124, 35712), (131, 35736),

Gene: BlueCrab\_60 Start: 40975, Stop: 41340, Start Num: 82  
Candidate Starts for BlueCrab\_60:  
(Start: 82 @40975 has 213 MA's), (99, 41008), (106, 41023), (109, 41026), (120, 41068), (123, 41089), (140, 41143), (141, 41149), (146, 41182), (153, 41224), (154, 41230), (183, 41326),

Gene: BobaPhett\_64 Start: 42932, Stop: 43297, Start Num: 82  
Candidate Starts for BobaPhett\_64:  
(Start: 82 @42932 has 213 MA's), (99, 42965), (106, 42980), (109, 42983), (118, 43022), (120, 43025), (123, 43046), (134, 43079), (141, 43106), (146, 43139), (153, 43181), (154, 43187), (183, 43283),

Gene: Bobby\_134 Start: 77532, Stop: 77885, Start Num: 78  
Candidate Starts for Bobby\_134:  
(Start: 78 @77532 has 55 MA's), (146, 77733), (153, 77775),

Gene: Bobi\_65 Start: 41950, Stop: 42315, Start Num: 82  
Candidate Starts for Bobi\_65:  
(Start: 82 @41950 has 213 MA's), (99, 41983), (101, 41989), (109, 42001), (120, 42043), (126, 42073), (134, 42097), (135, 42100), (153, 42199), (154, 42205), (175, 42280),

Gene: BodEinwohner17\_60 Start: 39737, Stop: 40102, Start Num: 82  
Candidate Starts for BodEinwohner17\_60:  
(Start: 82 @39737 has 213 MA's), (99, 39770), (106, 39785), (109, 39788), (120, 39830), (123, 39851), (134, 39884), (140, 39905), (141, 39911), (146, 39944), (153, 39986), (154, 39992), (183, 40088),

Gene: Bolt007\_53 Start: 38007, Stop: 38369, Start Num: 85  
Candidate Starts for Bolt007\_53:  
(52, 37902), (54, 37905), (Start: 85 @38007 has 13 MA's), (162, 38295),

Gene: Bombitas\_132 Start: 75106, Stop: 75459, Start Num: 78  
Candidate Starts for Bombitas\_132:  
(Start: 78 @75106 has 55 MA's), (146, 75307), (153, 75349),

Gene: Boomer\_65 Start: 42607, Stop: 42972, Start Num: 82  
Candidate Starts for Boomer\_65:  
(Start: 82 @42607 has 213 MA's), (99, 42640), (106, 42655), (109, 42658), (118, 42697), (120, 42700), (123, 42721), (134, 42754), (141, 42781), (146, 42814), (153, 42856), (154, 42862), (183, 42958),

Gene: Brocalys\_55 Start: 37114, Stop: 37479, Start Num: 82  
Candidate Starts for Brocalys\_55:  
(Start: 82 @37114 has 213 MA's), (99, 37147), (106, 37162), (109, 37165), (118, 37204), (120, 37207), (123, 37228), (134, 37261), (141, 37288), (146, 37321), (153, 37363), (154, 37369), (183, 37465),

Gene: Brynnie\_30 Start: 22557, Stop: 22213, Start Num: 84  
Candidate Starts for Brynnie\_30:  
(Start: 84 @22557 has 16 MA's), (97, 22536), (141, 22389), (172, 22230),

Gene: Bubbles123\_56 Start: 40256, Stop: 40621, Start Num: 82

Candidate Starts for Bubbles123\_56:

(Start: 82 @40256 has 213 MA's), (99, 40289), (102, 40298), (109, 40307), (123, 40370), (134, 40403), (135, 40406), (137, 40418), (141, 40430), (153, 40505), (154, 40511), (175, 40586),

Gene: Bumble\_49 Start: 35709, Stop: 36101, Start Num: 77

Candidate Starts for Bumble\_49:

(Start: 77 @35709 has 2 MA's), (147, 35925), (162, 36012),

Gene: Burwell21\_58 Start: 40215, Stop: 40580, Start Num: 82

Candidate Starts for Burwell21\_58:

(Start: 82 @40215 has 213 MA's), (99, 40248), (106, 40263), (109, 40266), (118, 40305), (120, 40308), (123, 40329), (134, 40362), (141, 40389), (146, 40422), (153, 40464), (154, 40470), (183, 40566),

Gene: BuzzLyseyear\_66 Start: 41636, Stop: 42001, Start Num: 82

Candidate Starts for BuzzLyseyear\_66:

(Start: 82 @41636 has 213 MA's), (99, 41669), (106, 41684), (109, 41687), (118, 41726), (120, 41729), (123, 41750), (134, 41783), (141, 41810), (146, 41843), (153, 41885), (154, 41891), (183, 41987),

Gene: ByChance\_52 Start: 35903, Stop: 36268, Start Num: 82

Candidate Starts for ByChance\_52:

(Start: 82 @35903 has 213 MA's), (99, 35936), (106, 35951), (109, 35954), (120, 35996), (123, 36017), (134, 36050), (140, 36071), (141, 36077), (146, 36110), (153, 36152), (154, 36158), (183, 36254),

Gene: Byougenkin\_58 Start: 39979, Stop: 40344, Start Num: 82

Candidate Starts for Byougenkin\_58:

(Start: 82 @39979 has 213 MA's), (99, 40012), (106, 40027), (109, 40030), (120, 40072), (123, 40093), (140, 40147), (141, 40153), (146, 40186), (153, 40228), (154, 40234), (183, 40330),

Gene: Cabrinians\_61 Start: 40293, Stop: 40658, Start Num: 82

Candidate Starts for Cabrinians\_61:

(Start: 82 @40293 has 213 MA's), (99, 40326), (106, 40341), (109, 40344), (118, 40383), (120, 40386), (123, 40407), (134, 40440), (141, 40467), (146, 40500), (153, 40542), (154, 40548), (183, 40644),

Gene: CalWood4100\_57 Start: 38014, Stop: 38406, Start Num: 85

Candidate Starts for CalWood4100\_57:

(Start: 85 @38014 has 13 MA's), (162, 38299), (172, 38335),

Gene: CaptainKirk2\_51 Start: 34868, Stop: 35230, Start Num: 78

Candidate Starts for CaptainKirk2\_51:

(39, 34724), (47, 34760), (56, 34799), (Start: 78 @34868 has 55 MA's), (124, 34997), (131, 35021),

Gene: CaptainTrips\_57 Start: 39789, Stop: 40154, Start Num: 82

Candidate Starts for CaptainTrips\_57:

(Start: 82 @39789 has 213 MA's), (99, 39822), (106, 39837), (109, 39840), (118, 39879), (120, 39882), (123, 39903), (134, 39936), (141, 39963), (146, 39996), (153, 40038), (154, 40044), (183, 40140),

Gene: Cassia\_45 Start: 33045, Stop: 33434, Start Num: 87

Candidate Starts for Cassia\_45:

(29, 32820), (Start: 87 @33045 has 20 MA's), (112, 33099), (146, 33225), (155, 33279), (190, 33408), (192, 33426),

Gene: Cerasum\_55 Start: 36014, Stop: 36367, Start Num: 82

Candidate Starts for Cerasum\_55:

(67, 35978), (Start: 82 @36014 has 213 MA's), (97, 36044), (99, 36047), (105, 36059), (109, 36065), (123, 36128), (126, 36137), (127, 36143), (153, 36257), (157, 36278), (173, 36335), (181, 36347),

Gene: Cerasum\_54 Start: 35670, Stop: 36017, Start Num: 83

Candidate Starts for Cerasum\_54:

(Start: 71 @35643 has 1 MA's), (80, 35661), (Start: 83 @35670 has 24 MA's), (99, 35700), (102, 35709), (111, 35727), (123, 35781), (134, 35808), (146, 35865), (150, 35895), (153, 35907),

Gene: CharlottesWeb\_47 Start: 40439, Stop: 40119, Start Num: 89

Candidate Starts for CharlottesWeb\_47:

(Start: 72 @40457 has 8 MA's), (Start: 89 @40439 has 4 MA's), (123, 40352), (154, 40223),

Gene: Che8\_64 Start: 42503, Stop: 42856, Start Num: 82

Candidate Starts for Che8\_64:

(67, 42467), (Start: 82 @42503 has 213 MA's), (97, 42533), (99, 42536), (105, 42548), (109, 42554), (123, 42617), (126, 42626), (127, 42632), (153, 42746), (157, 42767), (173, 42824), (181, 42836),

Gene: Che8\_63 Start: 42159, Stop: 42506, Start Num: 83

Candidate Starts for Che8\_63:

(Start: 71 @42132 has 1 MA's), (80, 42150), (Start: 83 @42159 has 24 MA's), (99, 42189), (102, 42198), (111, 42216), (123, 42270), (134, 42297), (146, 42354), (150, 42384), (153, 42396),

Gene: Che9d\_67 Start: 39585, Stop: 39938, Start Num: 82

Candidate Starts for Che9d\_67:

(67, 39549), (Start: 82 @39585 has 213 MA's), (97, 39615), (99, 39618), (105, 39630), (109, 39636), (123, 39699), (126, 39708), (127, 39714), (153, 39828), (157, 39849), (173, 39906), (181, 39918),

Gene: Che9d\_66 Start: 39241, Stop: 39588, Start Num: 83

Candidate Starts for Che9d\_66:

(Start: 71 @39214 has 1 MA's), (80, 39232), (Start: 83 @39241 has 24 MA's), (99, 39271), (102, 39280), (111, 39298), (123, 39352), (134, 39379), (146, 39436), (150, 39466), (153, 39478),

Gene: CherryTomatoes\_48 Start: 15930, Stop: 16262, Start Num: 94

Candidate Starts for CherryTomatoes\_48:

(26, 15675), (Start: 76 @15903 has 1 MA's), (Start: 94 @15930 has 2 MA's), (114, 15984), (115, 15993), (123, 16032), (146, 16116), (157, 16179), (164, 16206),

Gene: Chevrolet\_68 Start: 40947, Stop: 41312, Start Num: 82

Candidate Starts for Chevrolet\_68:

(Start: 82 @40947 has 213 MA's), (99, 40980), (101, 40986), (109, 40998), (120, 41040), (126, 41070), (134, 41094), (135, 41097), (153, 41196), (154, 41202), (175, 41277),

Gene: Chickaboom\_32 Start: 21673, Stop: 21350, Start Num: 97

Candidate Starts for Chickaboom\_32:

(Start: 84 @21694 has 16 MA's), (97, 21673), (121, 21601), (157, 21430), (172, 21367),

Gene: Chuckly\_63 Start: 40935, Stop: 41300, Start Num: 82

Candidate Starts for Chuckly\_63:

(Start: 82 @40935 has 213 MA's), (99, 40968), (106, 40983), (109, 40986), (118, 41025), (120, 41028), (123, 41049), (134, 41082), (141, 41109), (146, 41142), (153, 41184), (154, 41190), (183, 41286),

Gene: Clifton\_55 Start: 37465, Stop: 37830, Start Num: 82

Candidate Starts for Clifton\_55:

(Start: 82 @37465 has 213 MA's), (99, 37498), (106, 37513), (109, 37516), (118, 37555), (120, 37558), (123, 37579), (134, 37612), (141, 37639), (146, 37672), (153, 37714), (154, 37720), (183, 37816),

Gene: Coco12\_57 Start: 39727, Stop: 40074, Start Num: 83

Candidate Starts for Coco12\_57:

(Start: 71 @39700 has 1 MA's), (80, 39718), (Start: 83 @39727 has 24 MA's), (99, 39757), (102, 39766), (111, 39784), (123, 39838), (134, 39865), (146, 39922), (150, 39952), (153, 39964),

Gene: Coco12\_58 Start: 40071, Stop: 40424, Start Num: 82

Candidate Starts for Coco12\_58:

(67, 40035), (Start: 82 @40071 has 213 MA's), (97, 40101), (99, 40104), (105, 40116), (109, 40122), (123, 40185), (126, 40194), (127, 40200), (153, 40314), (157, 40335), (173, 40392), (181, 40404),

Gene: Community\_48 Start: 35107, Stop: 35478, Start Num: 87

Candidate Starts for Community\_48:

(Start: 87 @35107 has 20 MA's), (123, 35209), (146, 35287), (155, 35341),

Gene: Constella\_138 Start: 76348, Stop: 76701, Start Num: 78

Candidate Starts for Constella\_138:

(Start: 78 @76348 has 55 MA's), (146, 76549), (153, 76591),

Gene: Cornie\_53 Start: 37745, Stop: 38092, Start Num: 83

Candidate Starts for Cornie\_53:

(Start: 71 @37718 has 1 MA's), (80, 37736), (Start: 83 @37745 has 24 MA's), (99, 37775), (102, 37784), (111, 37802), (123, 37856), (134, 37883), (146, 37940), (150, 37970), (153, 37982),

Gene: Cornie\_56 Start: 38714, Stop: 39079, Start Num: 82

Candidate Starts for Cornie\_56:

(Start: 82 @38714 has 213 MA's), (99, 38747), (106, 38762), (109, 38765), (118, 38804), (120, 38807), (123, 38828), (141, 38888), (146, 38921), (153, 38963), (154, 38969), (183, 39065),

Gene: Cornie\_54 Start: 38089, Stop: 38442, Start Num: 82

Candidate Starts for Cornie\_54:

(67, 38053), (Start: 82 @38089 has 213 MA's), (97, 38119), (99, 38122), (105, 38134), (109, 38140), (123, 38203), (126, 38212), (127, 38218), (153, 38332), (157, 38353), (173, 38410), (181, 38422),

Gene: Cornucopia\_62 Start: 40943, Stop: 41308, Start Num: 82

Candidate Starts for Cornucopia\_62:

(Start: 82 @40943 has 213 MA's), (99, 40976), (106, 40991), (109, 40994), (118, 41033), (120, 41036), (123, 41057), (140, 41111), (141, 41117), (146, 41150), (153, 41192), (154, 41198), (183, 41294),

Gene: Crewmate\_51 Start: 33740, Stop: 34135, Start Num: 87

Candidate Starts for Crewmate\_51:

(Start: 87 @33740 has 20 MA's), (112, 33794), (146, 33920),

Gene: Crumble\_55 Start: 36229, Stop: 36594, Start Num: 82

Candidate Starts for Crumble\_55:

(Start: 82 @36229 has 213 MA's), (99, 36262), (106, 36277), (109, 36280), (118, 36319), (120, 36322), (123, 36343), (134, 36376), (141, 36403), (146, 36436), (153, 36478), (154, 36484), (183, 36580),

Gene: Cyan\_45 Start: 33389, Stop: 33802, Start Num: 87

Candidate Starts for Cyan\_45:

(Start: 87 @33389 has 20 MA's), (112, 33443), (146, 33569), (155, 33623), (193, 33776), (195, 33794),

Gene: DLane\_55 Start: 38997, Stop: 39362, Start Num: 82

Candidate Starts for DLane\_55:

(Start: 82 @38997 has 213 MA's), (99, 39030), (101, 39036), (109, 39048), (120, 39090), (126, 39120), (134, 39144), (135, 39147), (153, 39246), (154, 39252), (175, 39327),

Gene: DRBy19\_63 Start: 41390, Stop: 41755, Start Num: 82

Candidate Starts for DRBy19\_63:

(Start: 82 @41390 has 213 MA's), (99, 41423), (106, 41438), (109, 41441), (118, 41480), (120, 41483), (123, 41504), (134, 41537), (140, 41558), (141, 41564), (146, 41597), (153, 41639), (154, 41645), (183, 41741),

Gene: DaWorst\_61 Start: 40694, Stop: 41059, Start Num: 82

Candidate Starts for DaWorst\_61:

(Start: 82 @40694 has 213 MA's), (99, 40727), (106, 40742), (109, 40745), (118, 40784), (120, 40787), (123, 40808), (134, 40841), (141, 40868), (146, 40901), (153, 40943), (154, 40949), (183, 41045),

Gene: DaddyRickover\_59 Start: 40432, Stop: 40797, Start Num: 82

Candidate Starts for DaddyRickover\_59:

(Start: 82 @40432 has 213 MA's), (99, 40465), (106, 40480), (109, 40483), (120, 40525), (123, 40546), (134, 40579), (140, 40600), (141, 40606), (146, 40639), (153, 40681), (154, 40687), (183, 40783),

Gene: Daenerys\_54 Start: 38542, Stop: 38907, Start Num: 82

Candidate Starts for Daenerys\_54:

(Start: 82 @38542 has 213 MA's), (99, 38575), (106, 38590), (109, 38593), (120, 38635), (123, 38656), (134, 38689), (140, 38710), (141, 38716), (146, 38749), (153, 38791), (154, 38797), (183, 38893),

Gene: Dallas\_145 Start: 77162, Stop: 77515, Start Num: 78

Candidate Starts for Dallas\_145:

(Start: 78 @77162 has 55 MA's), (146, 77363), (153, 77405),

Gene: Dante\_61 Start: 40217, Stop: 40582, Start Num: 82

Candidate Starts for Dante\_61:

(Start: 82 @40217 has 213 MA's), (99, 40250), (106, 40265), (109, 40268), (118, 40307), (120, 40310), (123, 40331), (134, 40364), (141, 40391), (146, 40424), (153, 40466), (154, 40472), (183, 40568),

Gene: DeadP\_66 Start: 42861, Stop: 43226, Start Num: 82

Candidate Starts for DeadP\_66:

(Start: 82 @42861 has 213 MA's), (99, 42894), (106, 42909), (109, 42912), (118, 42951), (120, 42954), (123, 42975), (134, 43008), (141, 43035), (146, 43068), (153, 43110), (154, 43116), (183, 43212),

Gene: Delian\_54 Start: 34866, Stop: 35228, Start Num: 78

Candidate Starts for Delian\_54:

(39, 34722), (47, 34758), (56, 34797), (Start: 78 @34866 has 55 MA's), (124, 34995), (131, 35019),

Gene: Demsculpinboyz\_69 Start: 39586, Stop: 39939, Start Num: 82

Candidate Starts for Demsculpinboyz\_69:

(67, 39550), (Start: 82 @39586 has 213 MA's), (97, 39616), (99, 39619), (105, 39631), (109, 39637), (123, 39700), (126, 39709), (127, 39715), (153, 39829), (157, 39850), (181, 39919),

Gene: Demsculpinboyz\_68 Start: 39242, Stop: 39589, Start Num: 83

Candidate Starts for Demsculpinboyz\_68:

(Start: 71 @39215 has 1 MA's), (80, 39233), (Start: 83 @39242 has 24 MA's), (99, 39272), (102, 39281), (111, 39299), (123, 39353), (134, 39380), (146, 39437), (150, 39467), (153, 39479),

Gene: Demsculpinboyz\_71 Start: 40214, Stop: 40579, Start Num: 82

Candidate Starts for Demsculpinboyz\_71:

(Start: 82 @40214 has 213 MA's), (99, 40247), (106, 40262), (109, 40265), (118, 40304), (120, 40307), (123, 40328), (141, 40388), (146, 40421), (153, 40463), (154, 40469), (171, 40538), (183, 40565),

Gene: DillTech15\_57 Start: 38876, Stop: 39241, Start Num: 82

Candidate Starts for DillTech15\_57:

(Start: 82 @38876 has 213 MA's), (99, 38909), (106, 38924), (109, 38927), (118, 38966), (120, 38969), (123, 38990), (141, 39050), (146, 39083), (153, 39125), (154, 39131), (171, 39200), (183, 39227),

Gene: DirtMcgirt\_59 Start: 38957, Stop: 39322, Start Num: 82

Candidate Starts for DirtMcgirt\_59:

(Start: 82 @38957 has 213 MA's), (99, 38990), (106, 39005), (109, 39008), (118, 39047), (120, 39050), (123, 39071), (134, 39104), (140, 39125), (141, 39131), (146, 39164), (153, 39206), (154, 39212), (183, 39308),

Gene: DirtyBoi\_56 Start: 37313, Stop: 37675, Start Num: 78

Candidate Starts for DirtyBoi\_56:

(Start: 78 @37313 has 55 MA's), (123, 37436),

Gene: Dmitri\_53 Start: 39335, Stop: 39700, Start Num: 78

Candidate Starts for Dmitri\_53:

(Start: 78 @39335 has 55 MA's), (123, 39461),

Gene: DmpstrDiver\_145 Start: 77081, Stop: 77434, Start Num: 78

Candidate Starts for DmpstrDiver\_145:

(Start: 78 @77081 has 55 MA's), (146, 77282), (153, 77324),

Gene: Donkeykong\_63 Start: 42892, Stop: 43257, Start Num: 82

Candidate Starts for Donkeykong\_63:

(Start: 82 @42892 has 213 MA's), (99, 42925), (102, 42934), (109, 42943), (134, 43039), (135, 43042), (141, 43066), (153, 43141), (154, 43147), (175, 43222),



Gene: Doomphist\_60 Start: 41387, Stop: 41752, Start Num: 82

Candidate Starts for Doomphist\_60:

(Start: 82 @41387 has 213 MA's), (99, 41420), (106, 41435), (109, 41438), (120, 41480), (123, 41501), (134, 41534), (140, 41555), (141, 41561), (146, 41594), (153, 41636), (154, 41642), (183, 41738),

Gene: Dorothy\_58 Start: 39606, Stop: 39971, Start Num: 82

Candidate Starts for Dorothy\_58:

(Start: 82 @39606 has 213 MA's), (99, 39639), (106, 39654), (109, 39657), (118, 39696), (120, 39699), (123, 39720), (134, 39753), (141, 39780), (146, 39813), (153, 39855), (154, 39861), (183, 39957),

Gene: DosHalletts\_66 Start: 41742, Stop: 42107, Start Num: 82

Candidate Starts for DosHalletts\_66:

(Start: 82 @41742 has 213 MA's), (99, 41775), (106, 41790), (109, 41793), (120, 41835), (123, 41856), (134, 41889), (140, 41910), (141, 41916), (146, 41949), (153, 41991), (154, 41997), (183, 42093),

Gene: DotProduct\_53 Start: 38248, Stop: 38595, Start Num: 83

Candidate Starts for DotProduct\_53:

(Start: 71 @38221 has 1 MA's), (80, 38239), (Start: 83 @38248 has 24 MA's), (90, 38260), (92, 38263), (99, 38278), (102, 38287), (111, 38305), (123, 38359), (134, 38386), (146, 38443), (150, 38473), (153, 38485), (184, 38587),

Gene: DotProduct\_54 Start: 38592, Stop: 38945, Start Num: 82

Candidate Starts for DotProduct\_54:

(67, 38556), (Start: 82 @38592 has 213 MA's), (97, 38622), (99, 38625), (105, 38637), (109, 38643), (123, 38706), (126, 38715), (127, 38721), (153, 38835), (157, 38856), (173, 38913), (181, 38925),

Gene: Doug\_62 Start: 40960, Stop: 41325, Start Num: 82

Candidate Starts for Doug\_62:

(Start: 82 @40960 has 213 MA's), (99, 40993), (109, 41011), (118, 41050), (120, 41053), (123, 41074), (134, 41107), (141, 41134), (146, 41167), (153, 41209), (154, 41215), (183, 41311),

Gene: Dove\_137 Start: 72680, Stop: 73033, Start Num: 78

Candidate Starts for Dove\_137:

(Start: 78 @72680 has 55 MA's), (146, 72881), (153, 72923),

Gene: DrSierra\_43 Start: 31383, Stop: 31799, Start Num: 87

Candidate Starts for DrSierra\_43:

(Start: 87 @31383 has 20 MA's), (146, 31566), (155, 31620), (193, 31773), (195, 31791),

Gene: Drago\_58 Start: 38960, Stop: 39325, Start Num: 82

Candidate Starts for Drago\_58:

(Start: 82 @38960 has 213 MA's), (99, 38993), (106, 39008), (109, 39011), (118, 39050), (120, 39053), (123, 39074), (134, 39107), (140, 39128), (141, 39134), (146, 39167), (153, 39209), (154, 39215), (183, 39311),

Gene: Duke13\_140 Start: 74382, Stop: 74735, Start Num: 78

Candidate Starts for Duke13\_140:

(Start: 78 @74382 has 55 MA's), (146, 74583), (153, 74625),

Gene: Eesa\_29 Start: 22456, Stop: 22103, Start Num: 84  
Candidate Starts for Eesa\_29:  
(Start: 84 @22456 has 16 MA's), (121, 22357), (172, 22120),

Gene: Eish\_64 Start: 41209, Stop: 41574, Start Num: 82  
Candidate Starts for Eish\_64:  
(Start: 82 @41209 has 213 MA's), (99, 41242), (106, 41257), (109, 41260), (118, 41299), (120, 41302), (123, 41323), (134, 41356), (141, 41383), (146, 41416), (153, 41458), (154, 41464), (183, 41560),

Gene: Ejimix\_137 Start: 77230, Stop: 77583, Start Num: 78  
Candidate Starts for Ejimix\_137:  
(Start: 78 @77230 has 55 MA's), (146, 77431), (153, 77473),

Gene: EleanorGeorge\_61 Start: 41073, Stop: 41438, Start Num: 82  
Candidate Starts for EleanorGeorge\_61:  
(Start: 82 @41073 has 213 MA's), (99, 41106), (106, 41121), (109, 41124), (120, 41166), (123, 41187), (134, 41220), (141, 41247), (146, 41280), (153, 41322), (154, 41328), (183, 41424),

Gene: Emma\_61 Start: 40009, Stop: 40374, Start Num: 82  
Candidate Starts for Emma\_61:  
(Start: 82 @40009 has 213 MA's), (99, 40042), (109, 40060), (120, 40102), (126, 40132), (134, 40156), (135, 40159), (153, 40258), (154, 40264), (175, 40339), (176, 40342), (178, 40345),

Gene: Empress\_58 Start: 39956, Stop: 40321, Start Num: 82  
Candidate Starts for Empress\_58:  
(Start: 82 @39956 has 213 MA's), (99, 39989), (106, 40004), (109, 40007), (120, 40049), (123, 40070), (134, 40103), (140, 40124), (141, 40130), (146, 40163), (153, 40205), (154, 40211), (183, 40307),

Gene: Enby\_61 Start: 39236, Stop: 39601, Start Num: 82  
Candidate Starts for Enby\_61:  
(Start: 82 @39236 has 213 MA's), (99, 39269), (106, 39284), (109, 39287), (118, 39326), (120, 39329), (123, 39350), (134, 39383), (141, 39410), (146, 39443), (153, 39485), (154, 39491), (183, 39587),

Gene: Eradicator\_53 Start: 38486, Stop: 38851, Start Num: 82  
Candidate Starts for Eradicator\_53:  
(Start: 82 @38486 has 213 MA's), (99, 38519), (106, 38534), (109, 38537), (118, 38576), (120, 38579), (123, 38600), (134, 38633), (141, 38660), (146, 38693), (153, 38735), (154, 38741), (183, 38837),

Gene: EricMillard\_136 Start: 75734, Stop: 76087, Start Num: 78  
Candidate Starts for EricMillard\_136:  
(Start: 78 @75734 has 55 MA's), (146, 75935), (153, 75977),

Gene: Estave1\_63 Start: 41407, Stop: 41772, Start Num: 82  
Candidate Starts for Estave1\_63:  
(Start: 82 @41407 has 213 MA's), (99, 41440), (106, 41455), (109, 41458), (118, 41497), (120, 41500), (123, 41521), (134, 41554), (140, 41575), (141, 41581), (146, 41614), (153, 41656), (154, 41662), (183, 41758),

Gene: Evaa\_48 Start: 41735, Stop: 41361, Start Num: 72

Candidate Starts for Evaa\_48:

(25, 41960), (69, 41741), (Start: 72 @41735 has 8 MA's), (103, 41675), (117, 41630), (122, 41612), (123, 41603),

Gene: EvePickles\_75 Start: 42959, Stop: 43348, Start Num: 85

Candidate Starts for EvePickles\_75:

(Start: 85 @42959 has 13 MA's), (131, 43082), (141, 43115), (143, 43130), (151, 43184),

Gene: Fancypants\_62 Start: 40927, Stop: 41292, Start Num: 82

Candidate Starts for Fancypants\_62:

(Start: 82 @40927 has 213 MA's), (99, 40960), (106, 40975), (109, 40978), (120, 41020), (123, 41041), (140, 41095), (141, 41101), (146, 41134), (153, 41176), (154, 41182), (183, 41278),

Gene: Fenry\_49 Start: 36364, Stop: 36726, Start Num: 78

Candidate Starts for Fenry\_49:

(8, 35836), (19, 36049), (36, 36202), (39, 36220), (47, 36256), (56, 36295), (Start: 78 @36364 has 55 MA's), (124, 36493), (131, 36517), (182, 36712),

Gene: Filuzino\_58 Start: 39299, Stop: 39664, Start Num: 82

Candidate Starts for Filuzino\_58:

(Start: 82 @39299 has 213 MA's), (99, 39332), (101, 39338), (109, 39350), (120, 39392), (126, 39422), (134, 39446), (135, 39449), (153, 39548), (154, 39554), (175, 39629), (176, 39632),

Gene: Firehouse51\_61 Start: 43811, Stop: 44176, Start Num: 82

Candidate Starts for Firehouse51\_61:

(Start: 82 @43811 has 213 MA's), (99, 43844), (106, 43859), (109, 43862), (118, 43901), (120, 43904), (123, 43925), (134, 43958), (141, 43985), (146, 44018), (153, 44060), (154, 44066), (183, 44162),

Gene: Flathead\_60 Start: 40766, Stop: 41131, Start Num: 82

Candidate Starts for Flathead\_60:

(Start: 82 @40766 has 213 MA's), (99, 40799), (101, 40805), (109, 40817), (120, 40859), (126, 40889), (134, 40913), (135, 40916), (153, 41015), (154, 41021), (175, 41096), (176, 41099), (178, 41102),

Gene: Florinda\_71 Start: 42396, Stop: 42761, Start Num: 82

Candidate Starts for Florinda\_71:

(Start: 82 @42396 has 213 MA's), (99, 42429), (102, 42438), (109, 42447), (120, 42489), (126, 42519), (134, 42543), (135, 42546), (153, 42645), (154, 42651), (175, 42726),

Gene: Footloose\_58 Start: 33452, Stop: 33814, Start Num: 82

Candidate Starts for Footloose\_58:

(61, 33380), (62, 33398), (67, 33416), (Start: 82 @33452 has 213 MA's), (88, 33464), (113, 33524), (121, 33557), (123, 33572), (131, 33599), (140, 33623), (146, 33659),

Gene: FreddyB\_61 Start: 39138, Stop: 39503, Start Num: 82

Candidate Starts for FreddyB\_61:

(Start: 82 @39138 has 213 MA's), (99, 39171), (106, 39186), (109, 39189), (118, 39228), (120, 39231), (123, 39252), (134, 39285), (141, 39312), (146, 39345), (153, 39387), (154, 39393), (183, 39489),

Gene: Fresco\_48 Start: 41037, Stop: 40741, Start Num: 109

Candidate Starts for Fresco\_48:

(Start: 72 @41091 has 8 MA's), (103, 41046), (109, 41037), (114, 41022), (123, 40974), (146, 40893),

Gene: Fruitloop\_57 Start: 40613, Stop: 40978, Start Num: 82

Candidate Starts for Fruitloop\_57:

(Start: 82 @40613 has 213 MA's), (99, 40646), (102, 40655), (109, 40664), (120, 40706), (126, 40736), (134, 40760), (135, 40763), (153, 40862), (154, 40868), (175, 40943),

Gene: GUmbie\_58 Start: 39713, Stop: 40078, Start Num: 82

Candidate Starts for GUmbie\_58:

(Start: 82 @39713 has 213 MA's), (99, 39746), (106, 39761), (109, 39764), (118, 39803), (120, 39806), (123, 39827), (134, 39860), (141, 39887), (146, 39920), (153, 39962), (154, 39968), (183, 40064),

Gene: Galactic\_59 Start: 40176, Stop: 40541, Start Num: 82

Candidate Starts for Galactic\_59:

(Start: 82 @40176 has 213 MA's), (99, 40209), (106, 40224), (109, 40227), (118, 40266), (120, 40269), (123, 40290), (141, 40350), (146, 40383), (153, 40425), (154, 40431), (183, 40527),

Gene: Gandalph\_63 Start: 40535, Stop: 40900, Start Num: 82

Candidate Starts for Gandalph\_63:

(Start: 82 @40535 has 213 MA's), (99, 40568), (106, 40583), (109, 40586), (120, 40628), (123, 40649), (134, 40682), (141, 40709), (146, 40742), (153, 40784), (154, 40790), (183, 40886),

Gene: GigiOuiOui\_56 Start: 39153, Stop: 39518, Start Num: 82

Candidate Starts for GigiOuiOui\_56:

(Start: 82 @39153 has 213 MA's), (99, 39186), (106, 39201), (109, 39204), (118, 39243), (120, 39246), (123, 39267), (141, 39327), (146, 39360), (153, 39402), (154, 39408), (183, 39504),

Gene: Girafales\_69 Start: 42187, Stop: 42552, Start Num: 82

Candidate Starts for Girafales\_69:

(Start: 82 @42187 has 213 MA's), (99, 42220), (102, 42229), (109, 42238), (120, 42280), (126, 42310), (134, 42334), (135, 42337), (153, 42436), (154, 42442), (175, 42517),

Gene: Girr\_58 Start: 40017, Stop: 40382, Start Num: 82

Candidate Starts for Girr\_58:

(Start: 82 @40017 has 213 MA's), (99, 40050), (106, 40065), (109, 40068), (118, 40107), (120, 40110), (123, 40131), (141, 40191), (146, 40224), (153, 40266), (154, 40272), (183, 40368),

Gene: Globfish\_75 Start: 41426, Stop: 41815, Start Num: 85

Candidate Starts for Globfish\_75:

(Start: 85 @41426 has 13 MA's), (131, 41549), (141, 41582), (143, 41597), (151, 41651),

Gene: Gorge\_64 Start: 41655, Stop: 42020, Start Num: 82

Candidate Starts for Gorge\_64:

(Start: 82 @41655 has 213 MA's), (99, 41688), (106, 41703), (109, 41706), (118, 41745), (120, 41748), (123, 41769), (134, 41802), (141, 41829), (146, 41862), (153, 41904), (154, 41910), (183, 42006),

Gene: Gorpy\_74 Start: 42930, Stop: 43331, Start Num: 85

Candidate Starts for Gorpy\_74:

(27, 42684), (Start: 85 @42930 has 13 MA's), (141, 43098), (151, 43167),

Gene: Guacamole\_48 Start: 35005, Stop: 35367, Start Num: 78

Candidate Starts for Guacamole\_48:

(39, 34861), (47, 34897), (56, 34936), (Start: 78 @35005 has 55 MA's), (117, 35104), (123, 35131), (124, 35134), (131, 35158), (182, 35353),

Gene: Hades\_61 Start: 41111, Stop: 41476, Start Num: 82

Candidate Starts for Hades\_61:

(Start: 82 @41111 has 213 MA's), (99, 41144), (106, 41159), (109, 41162), (118, 41201), (120, 41204), (123, 41225), (134, 41258), (141, 41285), (146, 41318), (153, 41360), (154, 41366), (171, 41435), (183, 41462),

Gene: Halley\_146 Start: 77546, Stop: 77899, Start Num: 78

Candidate Starts for Halley\_146:

(Start: 78 @77546 has 55 MA's), (146, 77747), (153, 77789),

Gene: Hamulus\_61 Start: 40756, Stop: 41121, Start Num: 82

Candidate Starts for Hamulus\_61:

(Start: 82 @40756 has 213 MA's), (99, 40789), (101, 40795), (109, 40807), (120, 40849), (126, 40879), (134, 40903), (135, 40906), (153, 41005), (154, 41011), (175, 41086), (176, 41089), (178, 41092),

Gene: HannahPhantana\_34 Start: 21861, Stop: 21511, Start Num: 84

Candidate Starts for HannahPhantana\_34:

(20, 22185), (36, 22044), (55, 21951), (Start: 84 @21861 has 16 MA's), (172, 21528),

Gene: Harley\_62 Start: 40658, Stop: 41011, Start Num: 82

Candidate Starts for Harley\_62:

(67, 40622), (Start: 82 @40658 has 213 MA's), (97, 40688), (99, 40691), (105, 40703), (109, 40709), (123, 40772), (126, 40781), (153, 40901), (157, 40922), (173, 40979), (181, 40991),

Gene: Harley\_61 Start: 40314, Stop: 40661, Start Num: 83

Candidate Starts for Harley\_61:

(Start: 71 @40287 has 1 MA's), (80, 40305), (Start: 83 @40314 has 24 MA's), (99, 40344), (102, 40353), (111, 40371), (123, 40425), (134, 40452), (146, 40509), (150, 40539), (153, 40551),

Gene: Hashim76\_93 Start: 66062, Stop: 65649, Start Num: 74

Candidate Starts for Hashim76\_93:

(Start: 74 @66062 has 2 MA's), (103, 65981), (127, 65894), (141, 65852), (146, 65819), (159, 65744),

Gene: Hawkeye\_86 Start: 58033, Stop: 58440, Start Num: 84

Candidate Starts for Hawkeye\_86:

(59, 57952), (62, 57976), (63, 57982), (Start: 82 @58030 has 213 MA's), (Start: 84 @58033 has 16 MA's), (114, 58096), (150, 58261), (156, 58288), (157, 58294), (175, 58363), (188, 58411),

Gene: Hedwig\_57 Start: 38509, Stop: 38871, Start Num: 78

Candidate Starts for Hedwig\_57:

(17, 38158), (Start: 78 @38509 has 55 MA's), (123, 38632),

Gene: Hegedechwinu\_60 Start: 39325, Stop: 39690, Start Num: 82

Candidate Starts for Hegedechwinu\_60:

(Start: 82 @39325 has 213 MA's), (99, 39358), (106, 39373), (109, 39376), (118, 39415), (120, 39418), (123, 39439), (134, 39472), (141, 39499), (146, 39532), (153, 39574), (154, 39580), (183, 39676),

Gene: Hillester\_80 Start: 42975, Stop: 43364, Start Num: 85  
Candidate Starts for Hillester\_80:  
(1, 41406), (2, 41541), (3, 41652), (4, 41688), (5, 41751), (9, 42429), (22, 42645), (Start: 85 @42975 has 13 MA's), (131, 43098), (141, 43131), (143, 43146), (151, 43200), (172, 43290),

Gene: Hitter\_51 Start: 34662, Stop: 35024, Start Num: 78  
Candidate Starts for Hitter\_51:  
(39, 34518), (47, 34554), (56, 34593), (Start: 78 @34662 has 55 MA's), (124, 34791), (131, 34815), (182, 35010),

Gene: Hlubikazi\_56 Start: 38331, Stop: 38696, Start Num: 82  
Candidate Starts for Hlubikazi\_56:  
(Start: 82 @38331 has 213 MA's), (99, 38364), (106, 38379), (109, 38382), (120, 38424), (123, 38445), (134, 38478), (140, 38499), (141, 38505), (153, 38580), (154, 38586), (183, 38682),

Gene: HokkenD\_137 Start: 76705, Stop: 77058, Start Num: 78  
Candidate Starts for HokkenD\_137:  
(49, 76603), (Start: 78 @76705 has 55 MA's), (146, 76906), (153, 76948),

Gene: Hortus1\_71 Start: 44930, Stop: 44580, Start Num: 95  
Candidate Starts for Hortus1\_71:  
(50, 45071), (70, 44987), (Start: 95 @44930 has 5 MA's), (104, 44903), (109, 44894), (110, 44891), (124, 44828), (131, 44804), (167, 44627), (169, 44612), (180, 44591),

Gene: Hughesyang\_143 Start: 77316, Stop: 77669, Start Num: 78  
Candidate Starts for Hughesyang\_143:  
(Start: 78 @77316 has 55 MA's), (146, 77517), (153, 77559),

Gene: lbOuu\_61 Start: 40693, Stop: 41058, Start Num: 82  
Candidate Starts for lbOuu\_61:  
(Start: 82 @40693 has 213 MA's), (99, 40726), (106, 40741), (109, 40744), (118, 40783), (120, 40786), (123, 40807), (134, 40840), (141, 40867), (146, 40900), (153, 40942), (154, 40948), (183, 41044),

Gene: lbhubesi\_60 Start: 40300, Stop: 40665, Start Num: 82  
Candidate Starts for lbhubesi\_60:  
(Start: 82 @40300 has 213 MA's), (99, 40333), (106, 40348), (109, 40351), (118, 40390), (120, 40393), (123, 40414), (141, 40474), (146, 40507), (153, 40549), (154, 40555), (171, 40624), (183, 40651),

Gene: Indlovu\_79 Start: 64345, Stop: 63932, Start Num: 96  
Candidate Starts for Indlovu\_79:  
(24, 64654), (31, 64579), (35, 64558), (40, 64537), (48, 64495), (65, 64417), (Start: 72 @64399 has 8 MA's), (75, 64390), (Start: 96 @64345 has 1 MA's), (128, 64231), (130, 64222), (166, 64042),

Gene: Inventum\_55 Start: 39804, Stop: 40169, Start Num: 82  
Candidate Starts for Inventum\_55:  
(Start: 82 @39804 has 213 MA's), (99, 39837), (106, 39852), (109, 39855), (118, 39894), (120, 39897), (123, 39918), (134, 39951), (141, 39978), (146, 40011), (153, 40053), (154, 40059), (183, 40155),

Gene: IrishSherpFalk\_61 Start: 41968, Stop: 42333, Start Num: 82  
Candidate Starts for IrishSherpFalk\_61:

(Start: 82 @41968 has 213 MA's), (99, 42001), (106, 42016), (109, 42019), (118, 42058), (120, 42061), (123, 42082), (141, 42142), (146, 42175), (153, 42217), (154, 42223), (183, 42319),

Gene: Iter\_45 Start: 33105, Stop: 33509, Start Num: 87

Candidate Starts for Iter\_45:

(Start: 87 @33105 has 20 MA's), (121, 33192), (146, 33285), (155, 33339), (191, 33483), (194, 33501),

Gene: IttyBittyPiggy\_45 Start: 32844, Stop: 33215, Start Num: 87

Candidate Starts for IttyBittyPiggy\_45:

(Start: 87 @32844 has 20 MA's), (112, 32898), (146, 33024), (155, 33078),

Gene: Jabbawokkie\_74 Start: 42036, Stop: 42401, Start Num: 82

Candidate Starts for Jabbawokkie\_74:

(Start: 82 @42036 has 213 MA's), (99, 42069), (106, 42084), (109, 42087), (118, 42126), (120, 42129), (123, 42150), (134, 42183), (141, 42210), (146, 42243), (153, 42285), (154, 42291), (183, 42387),

Gene: JalFarm20\_71 Start: 43462, Stop: 43809, Start Num: 83

Candidate Starts for JalFarm20\_71:

(Start: 71 @43435 has 1 MA's), (80, 43453), (Start: 83 @43462 has 24 MA's), (99, 43492), (102, 43501), (111, 43519), (123, 43573), (134, 43600), (146, 43657), (150, 43687), (153, 43699),

Gene: JalFarm20\_72 Start: 43806, Stop: 44159, Start Num: 82

Candidate Starts for JalFarm20\_72:

(67, 43770), (Start: 82 @43806 has 213 MA's), (97, 43836), (99, 43839), (105, 43851), (109, 43857), (123, 43920), (126, 43929), (127, 43935), (153, 44049), (157, 44070), (173, 44127), (181, 44139),

Gene: Jalammah\_54 Start: 37665, Stop: 38027, Start Num: 78

Candidate Starts for Jalammah\_54:

(39, 37521), (47, 37557), (56, 37596), (Start: 78 @37665 has 55 MA's), (124, 37794), (131, 37818), (182, 38013),

Gene: James\_64 Start: 41780, Stop: 42145, Start Num: 82

Candidate Starts for James\_64:

(Start: 82 @41780 has 213 MA's), (99, 41813), (106, 41828), (109, 41831), (118, 41870), (120, 41873), (123, 41894), (134, 41927), (141, 41954), (146, 41987), (153, 42029), (154, 42035), (183, 42131),

Gene: Jamun\_29 Start: 21575, Stop: 21234, Start Num: 84

Candidate Starts for Jamun\_29:

(Start: 84 @21575 has 16 MA's), (121, 21482), (157, 21311), (170, 21251), (172, 21248),

Gene: Janeemi\_48 Start: 35112, Stop: 35516, Start Num: 87

Candidate Starts for Janeemi\_48:

(Start: 87 @35112 has 20 MA's), (146, 35292), (155, 35346), (191, 35490), (194, 35508),

Gene: Jacob\_60 Start: 40261, Stop: 40626, Start Num: 82

Candidate Starts for Jacob\_60:

(Start: 82 @40261 has 213 MA's), (99, 40294), (106, 40309), (109, 40312), (118, 40351), (120, 40354), (123, 40375), (134, 40408), (140, 40429), (141, 40435), (146, 40468), (153, 40510), (154, 40516), (183, 40612),

Gene: JasperJr\_48 Start: 35005, Stop: 35367, Start Num: 78  
Candidate Starts for JasperJr\_48:  
(39, 34861), (47, 34897), (56, 34936), (Start: 78 @35005 has 55 MA's), (117, 35104), (123, 35131),  
(124, 35134), (131, 35158), (182, 35353),

Gene: Jinglebell\_65 Start: 42815, Stop: 43180, Start Num: 82  
Candidate Starts for Jinglebell\_65:  
(Start: 82 @42815 has 213 MA's), (99, 42848), (106, 42863), (109, 42866), (118, 42905), (120,  
42908), (123, 42929), (134, 42962), (141, 42989), (146, 43022), (153, 43064), (154, 43070), (183,  
43166),

Gene: Job42\_62 Start: 42198, Stop: 42563, Start Num: 82  
Candidate Starts for Job42\_62:  
(Start: 82 @42198 has 213 MA's), (99, 42231), (106, 42246), (109, 42249), (118, 42288), (120,  
42291), (123, 42312), (134, 42345), (140, 42366), (141, 42372), (146, 42405), (153, 42447), (154,  
42453), (183, 42549),

Gene: Joemato\_48 Start: 33415, Stop: 33828, Start Num: 87  
Candidate Starts for Joemato\_48:  
(20, 33085), (Start: 87 @33415 has 20 MA's), (112, 33469), (146, 33595), (155, 33649), (193, 33802),  
(195, 33820),

Gene: JoeyJr\_55 Start: 38710, Stop: 39075, Start Num: 82  
Candidate Starts for JoeyJr\_55:  
(Start: 82 @38710 has 213 MA's), (99, 38743), (106, 38758), (109, 38761), (120, 38803), (123,  
38824), (134, 38857), (140, 38878), (141, 38884), (146, 38917), (153, 38959), (154, 38965), (183,  
39061),

Gene: JohnDoe\_46 Start: 33411, Stop: 33824, Start Num: 87  
Candidate Starts for JohnDoe\_46:  
(20, 33081), (Start: 87 @33411 has 20 MA's), (112, 33465), (146, 33591), (155, 33645), (193, 33798),  
(195, 33816),

Gene: Juice456\_60 Start: 41762, Stop: 42115, Start Num: 82  
Candidate Starts for Juice456\_60:  
(67, 41726), (Start: 82 @41762 has 213 MA's), (97, 41792), (99, 41795), (105, 41807), (109, 41813),  
(123, 41876), (126, 41885), (127, 41891), (153, 42005), (157, 42026), (173, 42083), (181, 42095),

Gene: Juice456\_59 Start: 41418, Stop: 41765, Start Num: 83  
Candidate Starts for Juice456\_59:  
(Start: 71 @41391 has 1 MA's), (80, 41409), (Start: 83 @41418 has 24 MA's), (99, 41448), (102,  
41457), (111, 41475), (123, 41529), (134, 41556), (146, 41613), (150, 41643), (153, 41655),

Gene: JuicyJay\_140 Start: 78831, Stop: 79184, Start Num: 78  
Candidate Starts for JuicyJay\_140:  
(Start: 78 @78831 has 55 MA's), (146, 79032), (153, 79074),

Gene: JuneStar\_48 Start: 35661, Stop: 36011, Start Num: 87  
Candidate Starts for JuneStar\_48:  
(Start: 87 @35661 has 20 MA's), (112, 35715), (146, 35841),

Gene: Juniper1\_58 Start: 39354, Stop: 39701, Start Num: 83  
Candidate Starts for Juniper1\_58:



(Start: 71 @39327 has 1 MA's), (80, 39345), (Start: 83 @39354 has 24 MA's), (90, 39366), (92, 39369), (99, 39384), (102, 39393), (111, 39411), (123, 39465), (134, 39492), (146, 39549), (150, 39579), (153, 39591),

Gene: Juniper1\_59 Start: 39728, Stop: 40051, Start Num: 97

Candidate Starts for Juniper1\_59:

(67, 39662), (Start: 82 @39698 has 213 MA's), (97, 39728), (99, 39731), (105, 39743), (109, 39749), (123, 39812), (126, 39821), (127, 39827), (153, 39941), (157, 39962), (173, 40019), (181, 40031),

Gene: Juniper1\_61 Start: 40443, Stop: 40808, Start Num: 82

Candidate Starts for Juniper1\_61:

(18, 40104), (21, 40122), (28, 40221), (30, 40230), (51, 40347), (53, 40353), (56, 40356), (Start: 82 @40443 has 213 MA's), (99, 40476), (102, 40485), (109, 40494), (123, 40557), (126, 40566), (135, 40593), (137, 40605), (141, 40617), (154, 40698), (173, 40770), (175, 40773),

Gene: Juno112\_30 Start: 21210, Stop: 20869, Start Num: 84

Candidate Starts for Juno112\_30:

(Start: 84 @21210 has 16 MA's), (99, 21192),

Gene: KHumphrey\_30 Start: 21190, Stop: 20867, Start Num: 99

Candidate Starts for KHumphrey\_30:

(Start: 84 @21208 has 16 MA's), (99, 21190),

Gene: Kalah2\_135 Start: 76437, Stop: 76790, Start Num: 78

Candidate Starts for Kalah2\_135:

(Start: 78 @76437 has 55 MA's), (146, 76638), (153, 76680),

Gene: Karhdo\_57 Start: 39806, Stop: 40171, Start Num: 82

Candidate Starts for Karhdo\_57:

(Start: 82 @39806 has 213 MA's), (99, 39839), (106, 39854), (109, 39857), (118, 39896), (120, 39899), (123, 39920), (134, 39953), (141, 39980), (146, 40013), (153, 40055), (154, 40061), (183, 40157),

Gene: KashFlow\_143 Start: 75737, Stop: 76090, Start Num: 78

Candidate Starts for KashFlow\_143:

(49, 75635), (Start: 78 @75737 has 55 MA's), (146, 75938), (153, 75980),

Gene: Kaylissa\_47 Start: 33807, Stop: 34220, Start Num: 87

Candidate Starts for Kaylissa\_47:

(Start: 87 @33807 has 20 MA's), (112, 33861), (146, 33987), (155, 34041), (193, 34194), (195, 34212),

Gene: Kenuha5\_57 Start: 38874, Stop: 39239, Start Num: 82

Candidate Starts for Kenuha5\_57:

(Start: 82 @38874 has 213 MA's), (99, 38907), (101, 38913), (109, 38925), (120, 38967), (126, 38997), (134, 39021), (135, 39024), (153, 39123), (154, 39129), (175, 39204),

Gene: Kersh\_62 Start: 42556, Stop: 42921, Start Num: 82

Candidate Starts for Kersh\_62:

(Start: 82 @42556 has 213 MA's), (99, 42589), (106, 42604), (109, 42607), (118, 42646), (120, 42649), (123, 42670), (134, 42703), (140, 42724), (141, 42730), (146, 42763), (153, 42805), (154, 42811), (183, 42907),

Gene: Kimberlium\_63 Start: 42089, Stop: 42454, Start Num: 82

Candidate Starts for Kimberlium\_63:

(Start: 82 @42089 has 213 MA's), (99, 42122), (106, 42137), (109, 42140), (118, 42179), (120, 42182), (123, 42203), (134, 42236), (140, 42257), (141, 42263), (146, 42296), (153, 42338), (154, 42344), (183, 42440),

Gene: Kimberlium\_60 Start: 41117, Stop: 41464, Start Num: 83

Candidate Starts for Kimberlium\_60:

(Start: 71 @41090 has 1 MA's), (80, 41108), (Start: 83 @41117 has 24 MA's), (99, 41147), (102, 41156), (111, 41174), (123, 41228), (134, 41255), (146, 41312), (150, 41342), (153, 41354),

Gene: Kimberlium\_61 Start: 41461, Stop: 41814, Start Num: 82

Candidate Starts for Kimberlium\_61:

(67, 41425), (Start: 82 @41461 has 213 MA's), (97, 41491), (99, 41494), (105, 41506), (109, 41512), (123, 41575), (126, 41584), (127, 41590), (153, 41704), (157, 41725), (173, 41782), (181, 41794),

Gene: KingMidas\_59 Start: 40372, Stop: 40737, Start Num: 82

Candidate Starts for KingMidas\_59:

(Start: 82 @40372 has 213 MA's), (99, 40405), (106, 40420), (109, 40423), (120, 40465), (123, 40486), (134, 40519), (140, 40540), (141, 40546), (146, 40579), (153, 40621), (154, 40627), (183, 40723),

Gene: Kingsley\_55 Start: 38460, Stop: 38807, Start Num: 83

Candidate Starts for Kingsley\_55:

(Start: 71 @38433 has 1 MA's), (80, 38451), (Start: 83 @38460 has 24 MA's), (99, 38490), (102, 38499), (111, 38517), (123, 38571), (134, 38598), (146, 38655), (150, 38685), (153, 38697),

Gene: Kingsley\_56 Start: 38804, Stop: 39157, Start Num: 82

Candidate Starts for Kingsley\_56:

(67, 38768), (Start: 82 @38804 has 213 MA's), (97, 38834), (99, 38837), (105, 38849), (109, 38855), (123, 38918), (126, 38927), (127, 38933), (153, 39047), (157, 39068), (173, 39125), (181, 39137),

Gene: Klein\_142 Start: 75039, Stop: 75392, Start Num: 78

Candidate Starts for Klein\_142:

(Start: 78 @75039 has 55 MA's), (146, 75240), (153, 75282),

Gene: Klevey\_55 Start: 37550, Stop: 37951, Start Num: 85

Candidate Starts for Klevey\_55:

(Start: 85 @37550 has 13 MA's),

Gene: Koella\_54 Start: 36191, Stop: 36556, Start Num: 82

Candidate Starts for Koella\_54:

(Start: 82 @36191 has 213 MA's), (99, 36224), (106, 36239), (109, 36242), (118, 36281), (120, 36284), (123, 36305), (134, 36338), (141, 36365), (146, 36398), (153, 36440), (154, 36446), (183, 36542),

Gene: Krakatau\_57 Start: 39569, Stop: 39934, Start Num: 82

Candidate Starts for Krakatau\_57:

(Start: 82 @39569 has 213 MA's), (99, 39602), (109, 39620), (126, 39692), (134, 39716), (135, 39719), (153, 39818), (154, 39824), (175, 39899),

Gene: KristaRAM\_63 Start: 42760, Stop: 43125, Start Num: 82

Candidate Starts for KristaRAM\_63:

(Start: 82 @42760 has 213 MA's), (99, 42793), (106, 42808), (109, 42811), (120, 42853), (123, 42874), (134, 42907), (141, 42934), (146, 42967), (153, 43009), (154, 43015), (183, 43111),

Gene: LastJedi\_54 Start: 37508, Stop: 37873, Start Num: 82

Candidate Starts for LastJedi\_54:

(Start: 82 @37508 has 213 MA's), (99, 37541), (106, 37556), (109, 37559), (118, 37598), (120, 37601), (123, 37622), (134, 37655), (141, 37682), (146, 37715), (153, 37757), (154, 37763), (183, 37859),

Gene: Latretium\_62 Start: 40834, Stop: 41199, Start Num: 82

Candidate Starts for Latretium\_62:

(Start: 82 @40834 has 213 MA's), (99, 40867), (106, 40882), (109, 40885), (118, 40924), (120, 40927), (123, 40948), (141, 41008), (146, 41041), (153, 41083), (154, 41089), (183, 41185),

Gene: Lego\_45 Start: 33126, Stop: 33539, Start Num: 87

Candidate Starts for Lego\_45:

(Start: 87 @33126 has 20 MA's), (112, 33180), (146, 33306), (155, 33360), (193, 33513), (195, 33531),

Gene: Leona\_30 Start: 21281, Stop: 20940, Start Num: 84

Candidate Starts for Leona\_30:

(Start: 84 @21281 has 16 MA's), (125, 21173), (132, 21152),

Gene: Leozinho\_59 Start: 39590, Stop: 39955, Start Num: 82

Candidate Starts for Leozinho\_59:

(Start: 82 @39590 has 213 MA's), (99, 39623), (106, 39638), (109, 39641), (120, 39683), (123, 39704), (134, 39737), (140, 39758), (141, 39764), (146, 39797), (153, 39839), (154, 39845), (183, 39941),

Gene: Leperchaun\_52 Start: 37940, Stop: 38305, Start Num: 82

Candidate Starts for Leperchaun\_52:

(Start: 82 @37940 has 213 MA's), (99, 37973), (106, 37988), (109, 37991), (120, 38033), (123, 38054), (134, 38087), (140, 38108), (141, 38114), (146, 38147), (153, 38189), (154, 38195), (183, 38291),

Gene: Ligma\_48 Start: 41091, Stop: 40741, Start Num: 72

Candidate Starts for Ligma\_48:

(Start: 72 @41091 has 8 MA's), (103, 41046), (109, 41037), (114, 41022), (123, 40974), (146, 40893),

Gene: LilMoolah\_58 Start: 39703, Stop: 40068, Start Num: 82

Candidate Starts for LilMoolah\_58:

(Start: 82 @39703 has 213 MA's), (99, 39736), (106, 39751), (109, 39754), (118, 39793), (120, 39796), (123, 39817), (134, 39850), (140, 39871), (141, 39877), (146, 39910), (153, 39952), (154, 39958), (183, 40054),

Gene: Lilmac1015\_57 Start: 38014, Stop: 38406, Start Num: 85

Candidate Starts for Lilmac1015\_57:

(Start: 85 @38014 has 13 MA's), (162, 38299), (172, 38335),

Gene: LittleMunchkin\_50 Start: 44298, Stop: 43924, Start Num: 72

Candidate Starts for LittleMunchkin\_50:

(25, 44523), (Start: 72 @44298 has 8 MA's), (109, 44229), (122, 44175), (127, 44151), (174, 43965),

Gene: LittleShirley\_60 Start: 40750, Stop: 41115, Start Num: 82

Candidate Starts for LittleShirley\_60:

(Start: 82 @40750 has 213 MA's), (99, 40783), (106, 40798), (109, 40801), (118, 40840), (120, 40843), (123, 40864), (134, 40897), (141, 40924), (146, 40957), (153, 40999), (154, 41005), (183, 41101),

Gene: LittleTokyo\_33 Start: 21980, Stop: 21597, Start Num: 84

Candidate Starts for LittleTokyo\_33:

(Start: 84 @21980 has 16 MA's), (149, 21776),

Gene: Lizalica\_44 Start: 32567, Stop: 32941, Start Num: 87

Candidate Starts for Lizalica\_44:

(Start: 87 @32567 has 20 MA's), (123, 32672), (146, 32750), (155, 32804),

Gene: Lizziana\_66 Start: 41261, Stop: 41626, Start Num: 82

Candidate Starts for Lizziana\_66:

(Start: 82 @41261 has 213 MA's), (99, 41294), (106, 41309), (109, 41312), (118, 41351), (120, 41354), (123, 41375), (134, 41408), (141, 41435), (146, 41468), (153, 41510), (154, 41516), (183, 41612),

Gene: Llama\_65 Start: 42669, Stop: 43034, Start Num: 82

Candidate Starts for Llama\_65:

(Start: 82 @42669 has 213 MA's), (99, 42702), (106, 42717), (109, 42720), (118, 42759), (120, 42762), (123, 42783), (134, 42816), (141, 42843), (146, 42876), (153, 42918), (154, 42924), (183, 43020),

Gene: Llij\_56 Start: 39114, Stop: 39479, Start Num: 82

Candidate Starts for Llij\_56:

(Start: 82 @39114 has 213 MA's), (99, 39147), (106, 39162), (109, 39165), (118, 39204), (120, 39207), (123, 39228), (134, 39261), (140, 39282), (141, 39288), (146, 39321), (153, 39363), (154, 39369), (183, 39465),

Gene: Lorde\_60 Start: 38401, Stop: 38766, Start Num: 82

Candidate Starts for Lorde\_60:

(Start: 82 @38401 has 213 MA's), (99, 38434), (106, 38449), (109, 38452), (118, 38491), (120, 38494), (123, 38515), (134, 38548), (140, 38569), (141, 38575), (146, 38608), (153, 38650), (154, 38656), (183, 38752),

Gene: Lucky2013\_136 Start: 72791, Stop: 73144, Start Num: 78

Candidate Starts for Lucky2013\_136:

(49, 72689), (Start: 78 @72791 has 55 MA's), (146, 72992), (153, 73034),

Gene: LunaBlu\_62 Start: 40835, Stop: 41200, Start Num: 82

Candidate Starts for LunaBlu\_62:

(Start: 82 @40835 has 213 MA's), (99, 40868), (106, 40883), (109, 40886), (118, 40925), (120, 40928), (123, 40949), (141, 41009), (146, 41042), (153, 41084), (154, 41090), (183, 41186),

Gene: LunaStella\_53 Start: 38713, Stop: 39060, Start Num: 83

Candidate Starts for LunaStella\_53:

(Start: 71 @38686 has 1 MA's), (80, 38704), (Start: 83 @38713 has 24 MA's), (90, 38725), (99, 38743), (102, 38752), (120, 38803), (123, 38824), (142, 38887), (146, 38908), (150, 38938),

Gene: LunaStella\_54 Start: 39057, Stop: 39410, Start Num: 82

Candidate Starts for LunaStella\_54:

(67, 39021), (Start: 82 @39057 has 213 MA's), (105, 39102), (109, 39108), (123, 39171), (126, 39180), (138, 39216), (143, 39240), (181, 39390),

Gene: Lysidious\_52 Start: 36936, Stop: 37298, Start Num: 78

Candidate Starts for Lysidious\_52:

(37, 36786), (39, 36792), (47, 36828), (56, 36867), (Start: 78 @36936 has 55 MA's), (124, 37065), (131, 37089),

Gene: MadMen\_58 Start: 40038, Stop: 40403, Start Num: 82

Candidate Starts for MadMen\_58:

(Start: 82 @40038 has 213 MA's), (99, 40071), (106, 40086), (109, 40089), (120, 40131), (123, 40152), (134, 40185), (141, 40212), (146, 40245), (153, 40287), (154, 40293), (183, 40389),

Gene: Madiba\_58 Start: 39287, Stop: 39652, Start Num: 82

Candidate Starts for Madiba\_58:

(Start: 82 @39287 has 213 MA's), (99, 39320), (106, 39335), (109, 39338), (120, 39380), (123, 39401), (134, 39434), (141, 39461), (146, 39494), (153, 39536), (154, 39542), (183, 39638),

Gene: Mahavrat\_58 Start: 39663, Stop: 40028, Start Num: 82

Candidate Starts for Mahavrat\_58:

(Start: 82 @39663 has 213 MA's), (99, 39696), (106, 39711), (109, 39714), (118, 39753), (120, 39756), (123, 39777), (141, 39837), (146, 39870), (153, 39912), (154, 39918), (183, 40014),

Gene: Malachai\_49 Start: 37159, Stop: 37521, Start Num: 78

Candidate Starts for Malachai\_49:

(56, 37090), (Start: 78 @37159 has 55 MA's), (117, 37258), (123, 37285), (124, 37288), (131, 37312), (182, 37507),

Gene: MalagasyRose\_65 Start: 42032, Stop: 42385, Start Num: 89

Candidate Starts for MalagasyRose\_65:

(45, 41891), (64, 41975), (Start: 89 @42032 has 4 MA's), (116, 42101), (120, 42113), (123, 42134), (145, 42209), (150, 42248), (153, 42260), (157, 42281), (165, 42323), (172, 42344),

Gene: Mandlovu\_56 Start: 38273, Stop: 38638, Start Num: 82

Candidate Starts for Mandlovu\_56:

(Start: 82 @38273 has 213 MA's), (99, 38306), (106, 38321), (109, 38324), (120, 38366), (123, 38387), (134, 38420), (140, 38441), (141, 38447), (153, 38522), (154, 38528), (183, 38624),

Gene: Maravista\_61 Start: 41710, Stop: 42075, Start Num: 82

Candidate Starts for Maravista\_61:

(Start: 82 @41710 has 213 MA's), (99, 41743), (106, 41758), (109, 41761), (118, 41800), (120, 41803), (123, 41824), (134, 41857), (141, 41884), (146, 41917), (153, 41959), (154, 41965), (183, 42061),

Gene: Mariokart\_48 Start: 41216, Stop: 40896, Start Num: 89

Candidate Starts for Mariokart\_48:

(Start: 72 @41234 has 8 MA's), (Start: 89 @41216 has 4 MA's), (122, 41138), (123, 41129), (151, 41012), (154, 41000),

Gene: Marker\_67 Start: 40381, Stop: 40746, Start Num: 82

Candidate Starts for Marker\_67:

(Start: 82 @40381 has 213 MA's), (99, 40414), (106, 40429), (109, 40432), (120, 40474), (123, 40495), (141, 40555), (146, 40588), (153, 40630), (154, 40636), (183, 40732),

Gene: Martik\_60 Start: 40214, Stop: 40579, Start Num: 82

Candidate Starts for Martik\_60:

(Start: 82 @40214 has 213 MA's), (99, 40247), (106, 40262), (109, 40265), (118, 40304), (120, 40307), (123, 40328), (134, 40361), (141, 40388), (146, 40421), (153, 40463), (154, 40469), (183, 40565),

Gene: Mattes\_64 Start: 41780, Stop: 42145, Start Num: 82

Candidate Starts for Mattes\_64:

(Start: 82 @41780 has 213 MA's), (99, 41813), (106, 41828), (109, 41831), (118, 41870), (120, 41873), (123, 41894), (134, 41927), (141, 41954), (146, 41987), (153, 42029), (154, 42035), (183, 42131),

Gene: Melba\_50 Start: 35408, Stop: 35770, Start Num: 78

Candidate Starts for Melba\_50:

(39, 35264), (47, 35300), (56, 35339), (Start: 78 @35408 has 55 MA's), (124, 35537), (131, 35561),

Gene: Melissauren88\_58 Start: 39794, Stop: 40159, Start Num: 82

Candidate Starts for Melissauren88\_58:

(Start: 82 @39794 has 213 MA's), (99, 39827), (101, 39833), (109, 39845), (120, 39887), (126, 39917), (134, 39941), (135, 39944), (153, 40043), (154, 40049), (175, 40124),

Gene: Mellie\_49 Start: 35048, Stop: 35410, Start Num: 76

Candidate Starts for Mellie\_49:

(47, 34943), (Start: 76 @35048 has 1 MA's), (117, 35147), (123, 35174), (124, 35177), (131, 35201),

Gene: MiaZeal\_143 Start: 73930, Stop: 74283, Start Num: 78

Candidate Starts for MiaZeal\_143:

(49, 73828), (Start: 78 @73930 has 55 MA's), (146, 74131), (153, 74173),

Gene: MidnightRain\_81 Start: 43270, Stop: 43659, Start Num: 85

Candidate Starts for MidnightRain\_81:

(Start: 85 @43270 has 13 MA's), (131, 43393), (141, 43426), (143, 43441), (151, 43495),

Gene: MilanaBonita\_50 Start: 36387, Stop: 36752, Start Num: 82

Candidate Starts for MilanaBonita\_50:

(Start: 82 @36387 has 213 MA's), (99, 36420), (101, 36426), (109, 36438), (120, 36480), (126, 36510), (134, 36534), (135, 36537), (153, 36636), (154, 36642), (175, 36717), (176, 36720), (178, 36723),

Gene: MilleniumForce\_63 Start: 42482, Stop: 42847, Start Num: 82

Candidate Starts for MilleniumForce\_63:

(Start: 82 @42482 has 213 MA's), (99, 42515), (101, 42521), (109, 42533), (126, 42605), (134, 42629), (135, 42632), (141, 42656), (153, 42731), (154, 42737), (175, 42812),

Gene: Minerva\_144 Start: 76488, Stop: 76841, Start Num: 78

Candidate Starts for Minerva\_144:

(Start: 78 @76488 has 55 MA's), (146, 76689), (153, 76731),

Gene: MinionDave\_59 Start: 40561, Stop: 40926, Start Num: 82

Candidate Starts for MinionDave\_59:

(Start: 82 @40561 has 213 MA's), (99, 40594), (106, 40609), (109, 40612), (118, 40651), (120, 40654), (123, 40675), (134, 40708), (141, 40735), (146, 40768), (153, 40810), (154, 40816), (183, 40912),

Gene: Minnie\_63 Start: 41784, Stop: 42149, Start Num: 82

Candidate Starts for Minnie\_63:

(Start: 82 @41784 has 213 MA's), (99, 41817), (102, 41826), (109, 41835), (120, 41877), (126, 41907), (134, 41931), (135, 41934), (153, 42033), (154, 42039), (175, 42114),

Gene: MintFen\_51 Start: 35482, Stop: 35844, Start Num: 78

Candidate Starts for MintFen\_51:

(39, 35338), (47, 35374), (56, 35413), (Start: 78 @35482 has 55 MA's), (124, 35611), (131, 35635),

Gene: MisterCuddles\_58 Start: 40017, Stop: 40382, Start Num: 82

Candidate Starts for MisterCuddles\_58:

(Start: 82 @40017 has 213 MA's), (99, 40050), (106, 40065), (109, 40068), (118, 40107), (120, 40110), (123, 40131), (141, 40191), (146, 40224), (153, 40266), (154, 40272), (183, 40368),

Gene: Modragons\_64 Start: 42659, Stop: 43024, Start Num: 82

Candidate Starts for Modragons\_64:

(Start: 82 @42659 has 213 MA's), (99, 42692), (106, 42707), (109, 42710), (118, 42749), (120, 42752), (123, 42773), (134, 42806), (141, 42833), (146, 42866), (153, 42908), (154, 42914), (183, 43010),

Gene: Moonbeam\_58 Start: 39938, Stop: 40303, Start Num: 82

Candidate Starts for Moonbeam\_58:

(Start: 82 @39938 has 213 MA's), (99, 39971), (109, 39989), (120, 40031), (126, 40061), (134, 40085), (135, 40088), (153, 40187), (175, 40268), (176, 40271), (178, 40274),

Gene: Mova\_61 Start: 39791, Stop: 40156, Start Num: 82

Candidate Starts for Mova\_61:

(Start: 82 @39791 has 213 MA's), (99, 39824), (106, 39839), (109, 39842), (120, 39884), (123, 39905), (134, 39938), (141, 39965), (146, 39998), (153, 40040), (154, 40046), (183, 40142),

Gene: Mozy\_69 Start: 42795, Stop: 43160, Start Num: 82

Candidate Starts for Mozy\_69:

(Start: 82 @42795 has 213 MA's), (99, 42828), (106, 42843), (109, 42846), (118, 42885), (120, 42888), (123, 42909), (141, 42969), (146, 43002), (153, 43044), (154, 43050), (183, 43146),

Gene: Ms6\_55 Start: 35525, Stop: 35890, Start Num: 82

Candidate Starts for Ms6\_55:

(Start: 82 @35525 has 213 MA's), (99, 35558), (101, 35564), (109, 35576), (120, 35618), (126, 35648), (134, 35672), (135, 35675), (153, 35774), (154, 35780), (175, 35855),

Gene: Mudpuppy\_43 Start: 33064, Stop: 33480, Start Num: 87

Candidate Starts for Mudpuppy\_43:

(Start: 87 @33064 has 20 MA's), (112, 33118), (146, 33244), (155, 33298), (193, 33454), (195, 33472),

Gene: Mutaforma13\_64 Start: 43121, Stop: 43486, Start Num: 82

Candidate Starts for Mutaforma13\_64:

(Start: 82 @43121 has 213 MA's), (99, 43154), (106, 43169), (109, 43172), (118, 43211), (120, 43214), (123, 43235), (134, 43268), (141, 43295), (146, 43328), (153, 43370), (154, 43376), (183,

43472),

Gene: NihilNomen\_146 Start: 76776, Stop: 77129, Start Num: 78

Candidate Starts for NihilNomen\_146:

(Start: 78 @76776 has 55 MA's), (146, 76977), (153, 77019),

Gene: Nitro\_44 Start: 33699, Stop: 34070, Start Num: 87

Candidate Starts for Nitro\_44:

(Start: 87 @33699 has 20 MA's), (121, 33786), (146, 33879), (155, 33933), (181, 34026),

Gene: Nivrat\_56 Start: 39576, Stop: 39941, Start Num: 82

Candidate Starts for Nivrat\_56:

(Start: 82 @39576 has 213 MA's), (99, 39609), (106, 39624), (109, 39627), (118, 39666), (120, 39669), (123, 39690), (134, 39723), (140, 39744), (141, 39750), (146, 39783), (153, 39825), (154, 39831), (183, 39927),

Gene: NormanBulbieJr\_60 Start: 40204, Stop: 40569, Start Num: 82

Candidate Starts for NormanBulbieJr\_60:

(Start: 82 @40204 has 213 MA's), (99, 40237), (106, 40252), (109, 40255), (118, 40294), (120, 40297), (123, 40318), (134, 40351), (141, 40378), (146, 40411), (153, 40453), (154, 40459), (183, 40555),

Gene: ObiToo\_51 Start: 34185, Stop: 34577, Start Num: 87

Candidate Starts for ObiToo\_51:

(Start: 87 @34185 has 20 MA's), (112, 34239), (146, 34365), (189, 34551), (192, 34569),

Gene: Ochi17\_63 Start: 42266, Stop: 42631, Start Num: 82

Candidate Starts for Ochi17\_63:

(Start: 82 @42266 has 213 MA's), (99, 42299), (106, 42314), (109, 42317), (118, 42356), (120, 42359), (123, 42380), (134, 42413), (141, 42440), (146, 42473), (153, 42515), (154, 42521), (183, 42617),

Gene: Odette\_148 Start: 78919, Stop: 79272, Start Num: 78

Candidate Starts for Odette\_148:

(Start: 78 @78919 has 55 MA's), (146, 79120), (153, 79162),

Gene: OfUltron\_65 Start: 42815, Stop: 43180, Start Num: 82

Candidate Starts for OfUltron\_65:

(Start: 82 @42815 has 213 MA's), (99, 42848), (106, 42863), (109, 42866), (118, 42905), (120, 42908), (123, 42929), (134, 42962), (141, 42989), (146, 43022), (153, 43064), (154, 43070), (183, 43166),

Gene: Ogopogo\_65 Start: 40778, Stop: 41143, Start Num: 82

Candidate Starts for Ogopogo\_65:

(Start: 82 @40778 has 213 MA's), (99, 40811), (101, 40817), (109, 40829), (120, 40871), (126, 40901), (134, 40925), (135, 40928), (153, 41027), (154, 41033), (175, 41108), (176, 41111), (178, 41114),

Gene: Oksu\_64 Start: 43078, Stop: 43443, Start Num: 82

Candidate Starts for Oksu\_64:

(Start: 82 @43078 has 213 MA's), (99, 43111), (106, 43126), (109, 43129), (118, 43168), (120, 43171), (123, 43192), (134, 43225), (141, 43252), (146, 43285), (153, 43327), (154, 43333), (183, 43429),



Gene: OldBen\_57 Start: 40129, Stop: 40494, Start Num: 82

Candidate Starts for OldBen\_57:

(Start: 82 @40129 has 213 MA's), (99, 40162), (106, 40177), (109, 40180), (120, 40222), (123, 40243), (141, 40303), (146, 40336), (153, 40378), (154, 40384), (183, 40480),

Gene: OlinDD\_71 Start: 44929, Stop: 44579, Start Num: 95

Candidate Starts for OlinDD\_71:

(50, 45070), (70, 44986), (Start: 95 @44929 has 5 MA's), (104, 44902), (109, 44893), (110, 44890), (124, 44827), (131, 44803), (167, 44626), (169, 44611), (180, 44590),

Gene: OlympiaSaint\_62 Start: 40722, Stop: 41087, Start Num: 82

Candidate Starts for OlympiaSaint\_62:

(Start: 82 @40722 has 213 MA's), (99, 40755), (106, 40770), (109, 40773), (118, 40812), (120, 40815), (123, 40836), (134, 40869), (141, 40896), (146, 40929), (153, 40971), (154, 40977), (183, 41073),

Gene: Optimus\_135 Start: 74056, Stop: 74409, Start Num: 78

Candidate Starts for Optimus\_135:

(Start: 78 @74056 has 55 MA's), (146, 74257), (153, 74299),

Gene: Orcanus\_30 Start: 22223, Stop: 21873, Start Num: 84

Candidate Starts for Orcanus\_30:

(Start: 84 @22223 has 16 MA's), (121, 22124), (172, 21890),

Gene: Ovechkin\_57 Start: 39962, Stop: 40309, Start Num: 83

Candidate Starts for Ovechkin\_57:

(Start: 71 @39935 has 1 MA's), (80, 39953), (Start: 83 @39962 has 24 MA's), (99, 39992), (102, 40001), (111, 40019), (123, 40073), (134, 40100), (146, 40157), (150, 40187), (153, 40199),

Gene: Ovechkin\_58 Start: 40306, Stop: 40659, Start Num: 82

Candidate Starts for Ovechkin\_58:

(67, 40270), (Start: 82 @40306 has 213 MA's), (97, 40336), (99, 40339), (105, 40351), (109, 40357), (123, 40420), (126, 40429), (127, 40435), (153, 40549), (157, 40570), (173, 40627), (181, 40639),

Gene: OwlsT2W\_60 Start: 40441, Stop: 40806, Start Num: 82

Candidate Starts for OwlsT2W\_60:

(Start: 82 @40441 has 213 MA's), (99, 40474), (106, 40489), (109, 40492), (118, 40531), (120, 40534), (123, 40555), (134, 40588), (141, 40615), (146, 40648), (153, 40690), (154, 40696), (183, 40792),

Gene: PHappiness\_55 Start: 38486, Stop: 38851, Start Num: 82

Candidate Starts for PHappiness\_55:

(Start: 82 @38486 has 213 MA's), (99, 38519), (106, 38534), (109, 38537), (120, 38579), (123, 38600), (134, 38633), (140, 38654), (141, 38660), (146, 38693), (153, 38735), (154, 38741), (183, 38837),

Gene: PMC\_57 Start: 40831, Stop: 41196, Start Num: 82

Candidate Starts for PMC\_57:

(Start: 82 @40831 has 213 MA's), (99, 40864), (106, 40879), (109, 40882), (118, 40921), (120, 40924), (123, 40945), (134, 40978), (141, 41005), (146, 41038), (153, 41080), (154, 41086), (183, 41182),

Gene: Pacc40\_54 Start: 38560, Stop: 38925, Start Num: 82

Candidate Starts for Pacc40\_54:

(Start: 82 @38560 has 213 MA's), (99, 38593), (106, 38608), (109, 38611), (120, 38653), (123, 38674), (134, 38707), (140, 38728), (141, 38734), (146, 38767), (153, 38809), (154, 38815), (183, 38911),

Gene: Phalconet\_58 Start: 39065, Stop: 39430, Start Num: 82

Candidate Starts for Phalconet\_58:

(Start: 82 @39065 has 213 MA's), (99, 39098), (101, 39104), (109, 39116), (114, 39131), (120, 39158), (126, 39188), (134, 39212), (135, 39215), (153, 39314), (154, 39320), (175, 39395),

Gene: Phanphagia\_57 Start: 40656, Stop: 41021, Start Num: 82

Candidate Starts for Phanphagia\_57:

(Start: 82 @40656 has 213 MA's), (99, 40689), (101, 40695), (109, 40707), (120, 40749), (126, 40779), (134, 40803), (135, 40806), (153, 40905), (154, 40911), (175, 40986),

Gene: Phasih\_58 Start: 40630, Stop: 40995, Start Num: 82

Candidate Starts for Phasih\_58:

(Start: 82 @40630 has 213 MA's), (99, 40663), (106, 40678), (109, 40681), (118, 40720), (120, 40723), (123, 40744), (141, 40804), (146, 40837), (153, 40879), (154, 40885), (171, 40954), (183, 40981),

Gene: Phatniss\_58 Start: 40209, Stop: 40574, Start Num: 82

Candidate Starts for Phatniss\_58:

(Start: 82 @40209 has 213 MA's), (99, 40242), (106, 40257), (109, 40260), (118, 40299), (120, 40302), (123, 40323), (134, 40356), (140, 40377), (141, 40383), (146, 40416), (153, 40458), (154, 40464), (183, 40560),

Gene: PhesterPhotato\_61 Start: 39882, Stop: 40247, Start Num: 82

Candidate Starts for PhesterPhotato\_61:

(Start: 82 @39882 has 213 MA's), (99, 39915), (101, 39921), (109, 39933), (114, 39948), (120, 39975), (126, 40005), (134, 40029), (135, 40032), (153, 40131), (154, 40137), (175, 40212),

Gene: Philus\_63 Start: 41366, Stop: 41731, Start Num: 82

Candidate Starts for Philus\_63:

(Start: 82 @41366 has 213 MA's), (99, 41399), (106, 41414), (109, 41417), (118, 41456), (120, 41459), (123, 41480), (134, 41513), (140, 41534), (141, 41540), (146, 41573), (153, 41615), (154, 41621), (183, 41717),

Gene: Phives\_50 Start: 35604, Stop: 36011, Start Num: 86

Candidate Starts for Phives\_50:

(Start: 86 @35604 has 1 MA's), (146, 35787), (155, 35841), (181, 35934), (191, 35985), (194, 36003),

Gene: PhluffyCoco\_31 Start: 21194, Stop: 20853, Start Num: 84

Candidate Starts for PhluffyCoco\_31:

(Start: 84 @21194 has 16 MA's), (99, 21176),

Gene: Phoebus\_144 Start: 78670, Stop: 79023, Start Num: 78

Candidate Starts for Phoebus\_144:

(Start: 78 @78670 has 55 MA's), (146, 78871), (153, 78913),

Gene: Phrappuccino\_165 Start: 110158, Stop: 110505, Start Num: 89

Candidate Starts for Phrappuccino\_165:

(Start: 89 @110158 has 4 MA's), (103, 110191), (105, 110194), (109, 110200), (123, 110263), (168, 110455),

Gene: Pioneer3\_71 Start: 44751, Stop: 44401, Start Num: 95

Candidate Starts for Pioneer3\_71:

(50, 44892), (70, 44808), (Start: 95 @44751 has 5 MA's), (104, 44724), (109, 44715), (110, 44712), (124, 44649), (131, 44625), (167, 44448), (169, 44433), (180, 44412),

Gene: Pippy\_58 Start: 39072, Stop: 39437, Start Num: 82

Candidate Starts for Pippy\_58:

(Start: 82 @39072 has 213 MA's), (99, 39105), (106, 39120), (109, 39123), (118, 39162), (120, 39165), (123, 39186), (134, 39219), (141, 39246), (146, 39279), (153, 39321), (154, 39327), (183, 39423),

Gene: Pixelle\_48 Start: 35172, Stop: 35567, Start Num: 87

Candidate Starts for Pixelle\_48:

(Start: 87 @35172 has 20 MA's), (112, 35226), (146, 35352),

Gene: Platte\_71 Start: 44704, Stop: 44354, Start Num: 95

Candidate Starts for Platte\_71:

(70, 44761), (Start: 95 @44704 has 5 MA's), (104, 44677), (109, 44668), (110, 44665), (124, 44602), (131, 44578), (167, 44401), (169, 44386), (180, 44365),

Gene: Plumbus\_62 Start: 40530, Stop: 40895, Start Num: 82

Candidate Starts for Plumbus\_62:

(Start: 82 @40530 has 213 MA's), (99, 40563), (106, 40578), (109, 40581), (120, 40623), (123, 40644), (134, 40677), (140, 40698), (141, 40704), (146, 40737), (153, 40779), (154, 40785), (183, 40881),

Gene: Poenanya\_60 Start: 41387, Stop: 41752, Start Num: 82

Candidate Starts for Poenanya\_60:

(Start: 82 @41387 has 213 MA's), (99, 41420), (106, 41435), (109, 41438), (120, 41480), (123, 41501), (134, 41534), (140, 41555), (141, 41561), (146, 41594), (153, 41636), (154, 41642), (183, 41738),

Gene: Polka\_32 Start: 21713, Stop: 21363, Start Num: 84

Candidate Starts for Polka\_32:

(Start: 84 @21713 has 16 MA's), (172, 21380),

Gene: Polka14\_58 Start: 39583, Stop: 39948, Start Num: 82

Candidate Starts for Polka14\_58:

(Start: 82 @39583 has 213 MA's), (99, 39616), (106, 39631), (109, 39634), (118, 39673), (120, 39676), (123, 39697), (134, 39730), (141, 39757), (146, 39790), (153, 39832), (154, 39838), (183, 39934),

Gene: Pollywog\_61 Start: 41040, Stop: 41405, Start Num: 82

Candidate Starts for Pollywog\_61:

(Start: 82 @41040 has 213 MA's), (99, 41073), (106, 41088), (109, 41091), (118, 41130), (120, 41133), (123, 41154), (134, 41187), (141, 41214), (146, 41247), (153, 41289), (154, 41295), (183, 41391),

Gene: PopTart\_54 Start: 38690, Stop: 39055, Start Num: 82

Candidate Starts for PopTart\_54:

(Start: 82 @38690 has 213 MA's), (99, 38723), (101, 38729), (109, 38741), (120, 38783), (126, 38813), (134, 38837), (135, 38840), (153, 38939), (154, 38945), (175, 39020),

Gene: Porcelain\_140 Start: 73737, Stop: 74090, Start Num: 78

Candidate Starts for Porcelain\_140:

(49, 73635), (Start: 78 @73737 has 55 MA's), (146, 73938), (153, 73980),

Gene: Pound\_136 Start: 76489, Stop: 76842, Start Num: 78

Candidate Starts for Pound\_136:

(47, 76375), (49, 76387), (Start: 78 @76489 has 55 MA's), (146, 76690), (153, 76732),

Gene: Powerpuff\_48 Start: 34514, Stop: 34927, Start Num: 87

Candidate Starts for Powerpuff\_48:

(Start: 87 @34514 has 20 MA's), (112, 34568), (146, 34694), (155, 34748), (193, 34901), (195, 34919),

Gene: Prairie\_53 Start: 36909, Stop: 37310, Start Num: 85

Candidate Starts for Prairie\_53:

(52, 36807), (54, 36810), (Start: 85 @36909 has 13 MA's), (158, 37170),

Gene: Priscilla\_60 Start: 40303, Stop: 40668, Start Num: 82

Candidate Starts for Priscilla\_60:

(Start: 82 @40303 has 213 MA's), (99, 40336), (106, 40351), (109, 40354), (118, 40393), (120, 40396), (123, 40417), (134, 40450), (141, 40477), (146, 40510), (153, 40552), (154, 40558), (183, 40654),

Gene: Pumpkins\_71 Start: 33566, Stop: 33961, Start Num: 87

Candidate Starts for Pumpkins\_71:

(Start: 87 @33566 has 20 MA's), (112, 33620), (146, 33749),

Gene: Pupper\_45 Start: 15769, Stop: 16101, Start Num: 94

Candidate Starts for Pupper\_45:

(26, 15514), (Start: 76 @15742 has 1 MA's), (Start: 94 @15769 has 2 MA's), (114, 15823), (115, 15832), (123, 15871), (146, 15955), (164, 16045),

Gene: QuickMath\_62 Start: 42312, Stop: 42677, Start Num: 82

Candidate Starts for QuickMath\_62:

(Start: 82 @42312 has 213 MA's), (99, 42345), (106, 42360), (109, 42363), (118, 42402), (120, 42405), (123, 42426), (134, 42459), (140, 42480), (141, 42486), (146, 42519), (153, 42561), (154, 42567), (183, 42663),

Gene: QuickMath\_60 Start: 41684, Stop: 42037, Start Num: 82

Candidate Starts for QuickMath\_60:

(67, 41648), (Start: 82 @41684 has 213 MA's), (97, 41714), (99, 41717), (105, 41729), (109, 41735), (123, 41798), (126, 41807), (127, 41813), (153, 41927), (157, 41948), (173, 42005), (181, 42017),

Gene: QuickMath\_59 Start: 41340, Stop: 41687, Start Num: 83

Candidate Starts for QuickMath\_59:

(Start: 71 @41313 has 1 MA's), (80, 41331), (Start: 83 @41340 has 24 MA's), (99, 41370), (102, 41379), (111, 41397), (123, 41451), (134, 41478), (146, 41535), (150, 41565), (153, 41577),

Gene: Quico\_68 Start: 42216, Stop: 42581, Start Num: 82

Candidate Starts for Quico\_68:

(Start: 82 @42216 has 213 MA's), (99, 42249), (102, 42258), (109, 42267), (120, 42309), (126, 42339), (134, 42363), (135, 42366), (153, 42465), (154, 42471), (175, 42546),

Gene: RadFad\_81 Start: 42975, Stop: 43364, Start Num: 85

Candidate Starts for RadFad\_81:

(1, 41406), (2, 41541), (3, 41652), (4, 41688), (5, 41751), (9, 42429), (22, 42645), (Start: 85 @42975 has 13 MA's), (131, 43098), (141, 43131), (143, 43146), (151, 43200), (172, 43290),

Gene: Radiance\_59 Start: 40325, Stop: 40690, Start Num: 82

Candidate Starts for Radiance\_59:

(Start: 82 @40325 has 213 MA's), (99, 40358), (109, 40376), (120, 40418), (123, 40439), (134, 40472), (140, 40493), (141, 40499), (146, 40532), (153, 40574), (154, 40580), (183, 40676),

Gene: Ramsey\_59 Start: 40638, Stop: 41003, Start Num: 82

Candidate Starts for Ramsey\_59:

(Start: 82 @40638 has 213 MA's), (99, 40671), (101, 40677), (109, 40689), (126, 40761), (134, 40785), (135, 40788), (141, 40812), (153, 40887), (154, 40893), (175, 40968),

Gene: Raqqa\_74 Start: 42460, Stop: 42840, Start Num: 98

Candidate Starts for Raqqa\_74:

(Start: 85 @42436 has 13 MA's), (98, 42460), (106, 42481), (131, 42574), (141, 42607), (157, 42703),

Gene: RayTheFireFly\_61 Start: 39688, Stop: 40050, Start Num: 78

Candidate Starts for RayTheFireFly\_61:

(Start: 78 @39688 has 55 MA's), (123, 39811), (143, 39877),

Gene: RedFox\_31 Start: 21207, Stop: 20866, Start Num: 84

Candidate Starts for RedFox\_31:

(Start: 84 @21207 has 16 MA's), (99, 21189),

Gene: RedWattleHog\_91 Start: 82425, Stop: 82775, Start Num: 91

Candidate Starts for RedWattleHog\_91:

(Start: 91 @82425 has 2 MA's), (103, 82461), (136, 82572), (143, 82599), (146, 82617), (164, 82707),

Gene: Redno2\_139 Start: 74778, Stop: 75131, Start Num: 78

Candidate Starts for Redno2\_139:

(49, 74676), (Start: 78 @74778 has 55 MA's), (146, 74979), (153, 75021),

Gene: Renaud18\_63 Start: 40118, Stop: 40465, Start Num: 83

Candidate Starts for Renaud18\_63:

(Start: 71 @40091 has 1 MA's), (80, 40109), (Start: 83 @40118 has 24 MA's), (90, 40130), (99, 40148), (102, 40157), (123, 40229), (142, 40292), (146, 40313), (150, 40343),

Gene: Renaud18\_64 Start: 40462, Stop: 40815, Start Num: 82

Candidate Starts for Renaud18\_64:

(67, 40426), (Start: 82 @40462 has 213 MA's), (105, 40507), (109, 40513), (123, 40576), (126, 40585), (138, 40621), (143, 40645), (181, 40795),

Gene: Renaud18\_66 Start: 41090, Stop: 41452, Start Num: 82

Candidate Starts for Renaud18\_66:

(Start: 82 @41090 has 213 MA's), (99, 41123), (106, 41138), (109, 41141), (118, 41180), (120, 41183), (123, 41204), (140, 41255), (141, 41261), (154, 41342), (183, 41438),

Gene: Renna12\_30 Start: 21228, Stop: 20887, Start Num: 84  
Candidate Starts for Renna12\_30:  
(Start: 84 @21228 has 16 MA's), (100, 21207),

Gene: Rialto\_66 Start: 43107, Stop: 43472, Start Num: 82  
Candidate Starts for Rialto\_66:  
(Start: 82 @43107 has 213 MA's), (99, 43140), (106, 43155), (109, 43158), (118, 43197), (120, 43200), (123, 43221), (134, 43254), (140, 43275), (141, 43281), (146, 43314), (153, 43356), (154, 43362), (183, 43458),

Gene: Richie\_79 Start: 43614, Stop: 44015, Start Num: 85  
Candidate Starts for Richie\_79:  
(27, 43368), (Start: 85 @43614 has 13 MA's), (141, 43782), (151, 43851),

Gene: Rita\_61 Start: 38934, Stop: 39299, Start Num: 82  
Candidate Starts for Rita\_61:  
(Start: 82 @38934 has 213 MA's), (99, 38967), (106, 38982), (109, 38985), (118, 39024), (120, 39027), (123, 39048), (134, 39081), (141, 39108), (146, 39141), (153, 39183), (154, 39189), (183, 39285),

Gene: RitaG\_55 Start: 38831, Stop: 39196, Start Num: 82  
Candidate Starts for RitaG\_55:  
(Start: 82 @38831 has 213 MA's), (99, 38864), (106, 38879), (109, 38882), (120, 38924), (123, 38945), (134, 38978), (140, 38999), (141, 39005), (146, 39038), (153, 39080), (154, 39086), (183, 39182),

Gene: Rockne\_61 Start: 40843, Stop: 41208, Start Num: 82  
Candidate Starts for Rockne\_61:  
(Start: 82 @40843 has 213 MA's), (99, 40876), (106, 40891), (109, 40894), (118, 40933), (120, 40936), (123, 40957), (134, 40990), (141, 41017), (146, 41050), (153, 41092), (154, 41098), (183, 41194),

Gene: RockyHorror\_61 Start: 39889, Stop: 40254, Start Num: 82  
Candidate Starts for RockyHorror\_61:  
(Start: 82 @39889 has 213 MA's), (99, 39922), (109, 39940), (118, 39979), (120, 39982), (123, 40003), (134, 40036), (141, 40063), (146, 40096), (153, 40138), (154, 40144), (183, 40240),

Gene: Royals2015\_61 Start: 39482, Stop: 39829, Start Num: 83  
Candidate Starts for Royals2015\_61:  
(Start: 71 @39455 has 1 MA's), (80, 39473), (Start: 83 @39482 has 24 MA's), (99, 39512), (102, 39521), (111, 39539), (123, 39593), (134, 39620), (146, 39677), (150, 39707), (153, 39719),

Gene: Royals2015\_62 Start: 39826, Stop: 40179, Start Num: 82  
Candidate Starts for Royals2015\_62:  
(67, 39790), (Start: 82 @39826 has 213 MA's), (97, 39856), (99, 39859), (105, 39871), (109, 39877), (123, 39940), (126, 39949), (127, 39955), (153, 40069), (157, 40090), (173, 40147), (181, 40159),

Gene: Ruby\_56 Start: 40018, Stop: 40383, Start Num: 82  
Candidate Starts for Ruby\_56:  
(Start: 82 @40018 has 213 MA's), (99, 40051), (106, 40066), (109, 40069), (118, 40108), (120, 40111), (123, 40132), (141, 40192), (146, 40225), (153, 40267), (154, 40273), (183, 40369),

Gene: Ruchi\_30 Start: 22625, Stop: 22281, Start Num: 84

Candidate Starts for Ruchi\_30:

(Start: 84 @22625 has 16 MA's), (97, 22604), (108, 22580), (121, 22532), (172, 22298),

Gene: SCentae\_45 Start: 15768, Stop: 16100, Start Num: 94

Candidate Starts for SCentae\_45:

(26, 15513), (Start: 76 @15741 has 1 MA's), (Start: 94 @15768 has 2 MA's), (114, 15822), (115, 15831), (123, 15870), (146, 15954), (164, 16044),

Gene: SG4\_57 Start: 39721, Stop: 40086, Start Num: 82

Candidate Starts for SG4\_57:

(Start: 82 @39721 has 213 MA's), (99, 39754), (106, 39769), (109, 39772), (118, 39811), (120, 39814), (123, 39835), (134, 39868), (141, 39895), (146, 39928), (153, 39970), (154, 39976), (183, 40072),

Gene: Saal\_62 Start: 41474, Stop: 41839, Start Num: 82

Candidate Starts for Saal\_62:

(Start: 82 @41474 has 213 MA's), (99, 41507), (106, 41522), (109, 41525), (118, 41564), (120, 41567), (123, 41588), (134, 41621), (141, 41648), (146, 41681), (153, 41723), (154, 41729), (183, 41825),

Gene: Sabbb\_64 Start: 41162, Stop: 41527, Start Num: 82

Candidate Starts for Sabbb\_64:

(Start: 82 @41162 has 213 MA's), (99, 41195), (106, 41210), (109, 41213), (118, 41252), (120, 41255), (123, 41276), (141, 41336), (146, 41369), (153, 41411), (154, 41417), (171, 41486), (183, 41513),

Gene: Sakai\_73 Start: 41641, Stop: 42042, Start Num: 85

Candidate Starts for Sakai\_73:

(27, 41395), (Start: 85 @41641 has 13 MA's), (141, 41809), (151, 41878),

Gene: Samba\_50 Start: 37695, Stop: 38057, Start Num: 78

Candidate Starts for Samba\_50:

(39, 37551), (47, 37587), (56, 37626), (Start: 78 @37695 has 55 MA's), (124, 37824), (131, 37848), (182, 38043),

Gene: Sandalphon\_61 Start: 40762, Stop: 41127, Start Num: 82

Candidate Starts for Sandalphon\_61:

(Start: 82 @40762 has 213 MA's), (99, 40795), (102, 40804), (109, 40813), (120, 40855), (126, 40885), (134, 40909), (135, 40912), (153, 41011), (154, 41017), (175, 41092),

Gene: Sarma624\_56 Start: 35652, Stop: 35999, Start Num: 83

Candidate Starts for Sarma624\_56:

(Start: 71 @35625 has 1 MA's), (80, 35643), (Start: 83 @35652 has 24 MA's), (99, 35682), (102, 35691), (111, 35709), (123, 35763), (134, 35790), (146, 35847), (150, 35877), (153, 35889),

Gene: Sarma624\_57 Start: 35996, Stop: 36349, Start Num: 82

Candidate Starts for Sarma624\_57:

(67, 35960), (Start: 82 @35996 has 213 MA's), (97, 36026), (99, 36029), (105, 36041), (109, 36047), (123, 36110), (126, 36119), (127, 36125), (153, 36239), (157, 36260), (173, 36317), (181, 36329),

Gene: Sashimi\_76 Start: 42326, Stop: 42715, Start Num: 85

Candidate Starts for Sashimi\_76:

(Start: 85 @42326 has 13 MA's), (131, 42449), (151, 42551), (172, 42641),

Gene: Sassafras\_58 Start: 39803, Stop: 40168, Start Num: 82

Candidate Starts for Sassafras\_58:

(Start: 82 @39803 has 213 MA's), (99, 39836), (106, 39851), (109, 39854), (118, 39893), (120, 39896), (123, 39917), (134, 39950), (141, 39977), (146, 40010), (153, 40052), (154, 40058), (183, 40154),

Gene: SassyB\_54 Start: 38690, Stop: 39055, Start Num: 82

Candidate Starts for SassyB\_54:

(Start: 82 @38690 has 213 MA's), (99, 38723), (101, 38729), (109, 38741), (120, 38783), (126, 38813), (134, 38837), (135, 38840), (153, 38939), (154, 38945), (175, 39020),

Gene: Schatzie\_140 Start: 77338, Stop: 77691, Start Num: 78

Candidate Starts for Schatzie\_140:

(Start: 78 @77338 has 55 MA's), (146, 77539), (153, 77581),

Gene: Scottish\_58 Start: 39849, Stop: 40214, Start Num: 82

Candidate Starts for Scottish\_58:

(Start: 82 @39849 has 213 MA's), (99, 39882), (106, 39897), (109, 39900), (120, 39942), (123, 39963), (134, 39996), (141, 40023), (146, 40056), (153, 40098), (154, 40104), (183, 40200),

Gene: Seabastian\_65 Start: 42816, Stop: 43181, Start Num: 82

Candidate Starts for Seabastian\_65:

(Start: 82 @42816 has 213 MA's), (99, 42849), (106, 42864), (109, 42867), (118, 42906), (120, 42909), (123, 42930), (134, 42963), (141, 42990), (146, 43023), (153, 43065), (154, 43071), (183, 43167),

Gene: Seagreen\_58 Start: 39051, Stop: 39398, Start Num: 83

Candidate Starts for Seagreen\_58:

(Start: 71 @39024 has 1 MA's), (80, 39042), (Start: 83 @39051 has 24 MA's), (99, 39081), (102, 39090), (111, 39108), (123, 39162), (134, 39189), (146, 39246), (150, 39276), (153, 39288),

Gene: Seagreen\_59 Start: 39395, Stop: 39748, Start Num: 82

Candidate Starts for Seagreen\_59:

(67, 39359), (Start: 82 @39395 has 213 MA's), (97, 39425), (99, 39428), (105, 39440), (109, 39446), (123, 39509), (126, 39518), (127, 39524), (153, 39638), (157, 39659), (173, 39716), (181, 39728),

Gene: Seahorse\_84 Start: 47304, Stop: 47699, Start Num: 85

Candidate Starts for Seahorse\_84:

(Start: 85 @47304 has 13 MA's), (106, 47349), (141, 47475), (157, 47571), (185, 47673),

Gene: Settecandela\_165 Start: 110158, Stop: 110505, Start Num: 89

Candidate Starts for Settecandela\_165:

(Start: 89 @110158 has 4 MA's), (103, 110191), (105, 110194), (109, 110200), (123, 110263), (168, 110455),

Gene: Shatter\_48 Start: 41091, Stop: 40741, Start Num: 72

Candidate Starts for Shatter\_48:

(Start: 72 @41091 has 8 MA's), (103, 41046), (109, 41037), (114, 41022), (123, 40974), (146, 40893),

Gene: Shauna1\_58 Start: 40565, Stop: 40930, Start Num: 82

Candidate Starts for Shauna1\_58:



(Start: 82 @40565 has 213 MA's), (99, 40598), (102, 40607), (109, 40616), (134, 40712), (135, 40715), (141, 40739), (153, 40814), (154, 40820), (175, 40895),

Gene: ShiLan\_59 Start: 40250, Stop: 40615, Start Num: 82

Candidate Starts for ShiLan\_59:

(Start: 82 @40250 has 213 MA's), (99, 40283), (106, 40298), (109, 40301), (118, 40340), (120, 40343), (123, 40364), (134, 40397), (141, 40424), (146, 40457), (153, 40499), (154, 40505), (183, 40601),

Gene: ShowerHandel\_61 Start: 40214, Stop: 40579, Start Num: 82

Candidate Starts for ShowerHandel\_61:

(Start: 82 @40214 has 213 MA's), (99, 40247), (106, 40262), (109, 40265), (118, 40304), (120, 40307), (123, 40328), (134, 40361), (141, 40388), (146, 40421), (153, 40463), (154, 40469), (183, 40565),

Gene: ShroomBoi\_62 Start: 41174, Stop: 41539, Start Num: 82

Candidate Starts for ShroomBoi\_62:

(Start: 82 @41174 has 213 MA's), (99, 41207), (106, 41222), (109, 41225), (120, 41267), (123, 41288), (134, 41321), (141, 41348), (146, 41381), (153, 41423), (154, 41429), (183, 41525),

Gene: SiSi\_58 Start: 39623, Stop: 39988, Start Num: 82

Candidate Starts for SiSi\_58:

(Start: 82 @39623 has 213 MA's), (99, 39656), (106, 39671), (109, 39674), (118, 39713), (120, 39716), (123, 39737), (134, 39770), (141, 39797), (146, 39830), (153, 39872), (154, 39878), (183, 39974),

Gene: Simpson\_48 Start: 33419, Stop: 33832, Start Num: 87

Candidate Starts for Simpson\_48:

(20, 33089), (Start: 87 @33419 has 20 MA's), (112, 33473), (146, 33599), (155, 33653), (193, 33806), (195, 33824),

Gene: SimranZ1\_60 Start: 40397, Stop: 40762, Start Num: 82

Candidate Starts for SimranZ1\_60:

(Start: 82 @40397 has 213 MA's), (99, 40430), (106, 40445), (109, 40448), (118, 40487), (120, 40490), (123, 40511), (141, 40571), (146, 40604), (153, 40646), (154, 40652), (171, 40721), (183, 40748),

Gene: Sisko\_47 Start: 41439, Stop: 41065, Start Num: 72

Candidate Starts for Sisko\_47:

(Start: 72 @41439 has 8 MA's), (103, 41379), (122, 41316), (123, 41307), (151, 41187),

Gene: Soul22\_66 Start: 41808, Stop: 42173, Start Num: 82

Candidate Starts for Soul22\_66:

(Start: 82 @41808 has 213 MA's), (99, 41841), (106, 41856), (109, 41859), (118, 41898), (120, 41901), (123, 41922), (134, 41955), (141, 41982), (146, 42015), (153, 42057), (154, 42063), (183, 42159),

Gene: Sour\_51 Start: 44771, Stop: 44406, Start Num: 71

Candidate Starts for Sour\_51:

(66, 44777), (68, 44774), (Start: 71 @44771 has 1 MA's), (73, 44765), (Start: 89 @44750 has 4 MA's), (109, 44717), (114, 44702), (123, 44654), (129, 44633), (160, 44489), (163, 44483), (166, 44471), (177, 44444), (187, 44411),

Gene: Sparkdehlily\_67 Start: 41576, Stop: 41941, Start Num: 82

Candidate Starts for Sparkdehlily\_67:

(Start: 82 @41576 has 213 MA's), (99, 41609), (101, 41615), (109, 41627), (120, 41669), (126, 41699), (134, 41723), (135, 41726), (153, 41825), (154, 41831), (175, 41906),

Gene: Spartacus\_62 Start: 40884, Stop: 41249, Start Num: 82

Candidate Starts for Spartacus\_62:

(Start: 82 @40884 has 213 MA's), (99, 40917), (106, 40932), (109, 40935), (118, 40974), (120, 40977), (123, 40998), (141, 41058), (146, 41091), (153, 41133), (154, 41139), (183, 41235),

Gene: Spikelee\_67 Start: 42504, Stop: 42869, Start Num: 82

Candidate Starts for Spikelee\_67:

(Start: 82 @42504 has 213 MA's), (99, 42537), (106, 42552), (109, 42555), (120, 42597), (123, 42618), (141, 42678), (146, 42711), (153, 42753), (154, 42759), (183, 42855),

Gene: Spoonbill\_57 Start: 38791, Stop: 39156, Start Num: 82

Candidate Starts for Spoonbill\_57:

(Start: 82 @38791 has 213 MA's), (99, 38824), (106, 38839), (109, 38842), (120, 38884), (123, 38905), (134, 38938), (140, 38959), (141, 38965), (146, 38998), (153, 39040), (154, 39046), (183, 39142),

Gene: Squiddly\_84 Start: 50073, Stop: 50414, Start Num: 81

Candidate Starts for Squiddly\_84:

(Start: 78 @50064 has 55 MA's), (Start: 81 @50073 has 1 MA's), (174, 50388),

Gene: Squirty\_62 Start: 41343, Stop: 41708, Start Num: 82

Candidate Starts for Squirty\_62:

(Start: 82 @41343 has 213 MA's), (99, 41376), (102, 41385), (109, 41394), (134, 41490), (135, 41493), (141, 41517), (153, 41592), (154, 41598), (175, 41673),

Gene: StAnnes\_58 Start: 40743, Stop: 41108, Start Num: 82

Candidate Starts for StAnnes\_58:

(Start: 82 @40743 has 213 MA's), (99, 40776), (101, 40782), (109, 40794), (120, 40836), (126, 40866), (134, 40890), (135, 40893), (153, 40992), (154, 40998), (175, 41073), (176, 41076),

Gene: Starcevich\_57 Start: 39411, Stop: 39758, Start Num: 83

Candidate Starts for Starcevich\_57:

(Start: 71 @39384 has 1 MA's), (80, 39402), (Start: 83 @39411 has 24 MA's), (99, 39441), (102, 39450), (111, 39468), (123, 39522), (134, 39549), (146, 39606), (150, 39636), (153, 39648),

Gene: Starcevich\_58 Start: 39755, Stop: 40108, Start Num: 82

Candidate Starts for Starcevich\_58:

(67, 39719), (Start: 82 @39755 has 213 MA's), (97, 39785), (99, 39788), (105, 39800), (109, 39806), (123, 39869), (126, 39878), (127, 39884), (153, 39998), (157, 40019), (173, 40076), (181, 40088),

Gene: Starcevich\_60 Start: 40380, Stop: 40745, Start Num: 82

Candidate Starts for Starcevich\_60:

(Start: 82 @40380 has 213 MA's), (99, 40413), (106, 40428), (109, 40431), (118, 40470), (120, 40473), (123, 40494), (134, 40527), (141, 40554), (146, 40587), (153, 40629), (154, 40635), (183, 40731),

Gene: Stormageddon\_88 Start: 82406, Stop: 82756, Start Num: 91

Candidate Starts for Stormageddon\_88:

(Start: 91 @82406 has 2 MA's), (103, 82442), (136, 82553), (143, 82580), (146, 82598), (164, 82688),

Gene: Strokeseat\_56 Start: 38330, Stop: 38695, Start Num: 82

Candidate Starts for Strokeseat\_56:

(Start: 82 @38330 has 213 MA's), (99, 38363), (106, 38378), (109, 38381), (120, 38423), (123, 38444), (134, 38477), (140, 38498), (141, 38504), (153, 38579), (154, 38585), (183, 38681),

Gene: SuperGrey\_63 Start: 42051, Stop: 42416, Start Num: 82

Candidate Starts for SuperGrey\_63:

(Start: 82 @42051 has 213 MA's), (99, 42084), (101, 42090), (109, 42102), (120, 42144), (126, 42174), (134, 42198), (135, 42201), (153, 42300), (154, 42306), (175, 42381),

Gene: SwagPigglett\_65 Start: 42522, Stop: 42887, Start Num: 82

Candidate Starts for SwagPigglett\_65:

(Start: 82 @42522 has 213 MA's), (99, 42555), (106, 42570), (109, 42573), (118, 42612), (120, 42615), (123, 42636), (134, 42669), (141, 42696), (146, 42729), (153, 42771), (154, 42777), (183, 42873),

Gene: TChen\_61 Start: 41633, Stop: 41998, Start Num: 82

Candidate Starts for TChen\_61:

(Start: 82 @41633 has 213 MA's), (99, 41666), (109, 41684), (118, 41723), (120, 41726), (123, 41747), (126, 41756), (134, 41780), (141, 41807), (146, 41840), (153, 41882), (154, 41888), (183, 41984),

Gene: TChen\_59 Start: 41008, Stop: 41361, Start Num: 82

Candidate Starts for TChen\_59:

(67, 40972), (Start: 82 @41008 has 213 MA's), (105, 41053), (109, 41059), (123, 41122), (126, 41131), (138, 41167), (143, 41191), (181, 41341),

Gene: TChen\_58 Start: 40664, Stop: 41011, Start Num: 83

Candidate Starts for TChen\_58:

(Start: 71 @40637 has 1 MA's), (80, 40655), (Start: 83 @40664 has 24 MA's), (90, 40676), (99, 40694), (102, 40703), (120, 40754), (123, 40775), (142, 40838), (146, 40859), (150, 40889),

Gene: TDanisky\_67 Start: 41576, Stop: 41941, Start Num: 82

Candidate Starts for TDanisky\_67:

(Start: 82 @41576 has 213 MA's), (99, 41609), (101, 41615), (109, 41627), (120, 41669), (126, 41699), (134, 41723), (135, 41726), (153, 41825), (154, 41831), (175, 41906),

Gene: Taj\_64 Start: 41975, Stop: 42340, Start Num: 82

Candidate Starts for Taj\_64:

(Start: 82 @41975 has 213 MA's), (99, 42008), (106, 42023), (109, 42026), (118, 42065), (120, 42068), (123, 42089), (134, 42122), (141, 42149), (146, 42182), (153, 42224), (154, 42230), (183, 42326),

Gene: Tandem\_71 Start: 44831, Stop: 44481, Start Num: 95

Candidate Starts for Tandem\_71:

(50, 44972), (70, 44888), (Start: 95 @44831 has 5 MA's), (104, 44804), (109, 44795), (110, 44792), (124, 44729), (131, 44705), (167, 44528), (169, 44513), (180, 44492),

Gene: TaylorSipht\_30 Start: 21627, Stop: 21286, Start Num: 84

Candidate Starts for TaylorSipht\_30:

(Start: 84 @21627 has 16 MA's), (97, 21606), (121, 21534), (157, 21363), (170, 21303),

Gene: Tbone\_46 Start: 33975, Stop: 34388, Start Num: 87

Candidate Starts for Tbone\_46:

(41, 33801), (55, 33873), (Start: 87 @33975 has 20 MA's), (112, 34029), (146, 34155), (155, 34209), (193, 34362), (195, 34380),

Gene: ThetaBob\_62 Start: 40738, Stop: 41085, Start Num: 83

Candidate Starts for ThetaBob\_62:

(Start: 71 @40711 has 1 MA's), (80, 40729), (Start: 83 @40738 has 24 MA's), (90, 40750), (99, 40768), (102, 40777), (120, 40828), (123, 40849), (142, 40912), (146, 40933), (150, 40963),

Gene: ThetaBob\_63 Start: 41082, Stop: 41435, Start Num: 82

Candidate Starts for ThetaBob\_63:

(67, 41046), (Start: 82 @41082 has 213 MA's), (105, 41127), (109, 41133), (123, 41196), (126, 41205), (138, 41241), (143, 41265), (181, 41415),

Gene: ThetaBob\_65 Start: 41707, Stop: 42069, Start Num: 82

Candidate Starts for ThetaBob\_65:

(Start: 82 @41707 has 213 MA's), (99, 41740), (106, 41755), (109, 41758), (118, 41797), (120, 41800), (123, 41821), (126, 41830), (141, 41878), (153, 41953), (154, 41959), (183, 42055),

Gene: Thibault\_127 Start: 73673, Stop: 74026, Start Num: 78

Candidate Starts for Thibault\_127:

(43, 73550), (46, 73562), (Start: 78 @73673 has 55 MA's), (146, 73874), (153, 73916),

Gene: Thonko\_86 Start: 63155, Stop: 62742, Start Num: 79

Candidate Starts for Thonko\_86:

(13, 63593), (23, 63440), (29, 63365), (33, 63338), (58, 63224), (60, 63218), (Start: 79 @63155 has 1 MA's), (93, 63116), (103, 63086), (109, 63077), (123, 63014), (157, 62858), (159, 62846), (163, 62831), (179, 62783),

Gene: ThreeRngTarjay\_139 Start: 77261, Stop: 77614, Start Num: 78

Candidate Starts for ThreeRngTarjay\_139:

(Start: 78 @77261 has 55 MA's), (146, 77462), (153, 77504),

Gene: Tian\_45 Start: 34828, Stop: 35223, Start Num: 87

Candidate Starts for Tian\_45:

(7, 34264), (10, 34336), (11, 34345), (14, 34423), (41, 34654), (55, 34726), (Start: 87 @34828 has 20 MA's), (112, 34882), (146, 35008),

Gene: Tiff81\_77 Start: 40921, Stop: 41316, Start Num: 85

Candidate Starts for Tiff81\_77:

(Start: 85 @40921 has 13 MA's), (106, 40966), (141, 41092), (157, 41188), (185, 41290),

Gene: Tootsieroll\_61 Start: 39546, Stop: 39911, Start Num: 82

Candidate Starts for Tootsieroll\_61:

(Start: 82 @39546 has 213 MA's), (99, 39579), (106, 39594), (109, 39597), (120, 39639), (123, 39660), (134, 39693), (140, 39714), (141, 39720), (146, 39753), (153, 39795), (154, 39801), (183, 39897),

Gene: Totinger\_62 Start: 39476, Stop: 39841, Start Num: 82

Candidate Starts for Totinger\_62:

(Start: 82 @39476 has 213 MA's), (99, 39509), (106, 39524), (109, 39527), (118, 39566), (120, 39569), (123, 39590), (134, 39623), (141, 39650), (146, 39683), (153, 39725), (154, 39731), (183, 39827),

Gene: Tuck\_49 Start: 35489, Stop: 35893, Start Num: 87

Candidate Starts for Tuck\_49:

(Start: 87 @35489 has 20 MA's), (146, 35669), (155, 35723), (181, 35816), (191, 35867), (194, 35885),

Gene: Tutumahutu\_47 Start: 33397, Stop: 33810, Start Num: 87

Candidate Starts for Tutumahutu\_47:

(Start: 87 @33397 has 20 MA's), (112, 33451), (146, 33577), (155, 33631), (193, 33784), (195, 33802),

Gene: Tweety\_59 Start: 41367, Stop: 41732, Start Num: 82

Candidate Starts for Tweety\_59:

(Start: 82 @41367 has 213 MA's), (99, 41400), (101, 41406), (109, 41418), (120, 41460), (126, 41490), (134, 41514), (135, 41517), (153, 41616), (154, 41622), (175, 41697),

Gene: UncleRicky\_59 Start: 40457, Stop: 40822, Start Num: 82

Candidate Starts for UncleRicky\_59:

(Start: 82 @40457 has 213 MA's), (99, 40490), (106, 40505), (109, 40508), (118, 40547), (120, 40550), (123, 40571), (134, 40604), (140, 40625), (141, 40631), (146, 40664), (153, 40706), (154, 40712), (183, 40808),

Gene: Utz\_44 Start: 35948, Stop: 36310, Start Num: 78

Candidate Starts for Utz\_44:

(37, 35798), (39, 35804), (47, 35840), (56, 35879), (Start: 78 @35948 has 55 MA's), (124, 36077), (131, 36101),

Gene: VRedHorse\_60 Start: 39530, Stop: 39895, Start Num: 82

Candidate Starts for VRedHorse\_60:

(Start: 82 @39530 has 213 MA's), (99, 39563), (106, 39578), (109, 39581), (118, 39620), (120, 39623), (123, 39644), (134, 39677), (141, 39704), (146, 39737), (153, 39779), (154, 39785), (183, 39881),

Gene: Velveteen\_53 Start: 35652, Stop: 35999, Start Num: 83

Candidate Starts for Velveteen\_53:

(Start: 71 @35625 has 1 MA's), (80, 35643), (Start: 83 @35652 has 24 MA's), (99, 35682), (102, 35691), (111, 35709), (123, 35763), (134, 35790), (146, 35847), (150, 35877), (153, 35889),

Gene: Velveteen\_54 Start: 35996, Stop: 36349, Start Num: 82

Candidate Starts for Velveteen\_54:

(67, 35960), (Start: 82 @35996 has 213 MA's), (97, 36026), (99, 36029), (105, 36041), (109, 36047), (123, 36110), (126, 36119), (127, 36125), (153, 36239), (157, 36260), (173, 36317), (181, 36329),

Gene: Veteran\_57 Start: 39234, Stop: 39599, Start Num: 82

Candidate Starts for Veteran\_57:

(Start: 82 @39234 has 213 MA's), (99, 39267), (106, 39282), (109, 39285), (118, 39324), (120, 39327), (123, 39348), (134, 39381), (140, 39402), (141, 39408), (146, 39441), (153, 39483), (154, 39489), (183, 39585),

Gene: Vulpecula\_30 Start: 22301, Stop: 21957, Start Num: 84

Candidate Starts for Vulpecula\_30:

(Start: 84 @22301 has 16 MA's), (97, 22280), (108, 22256), (121, 22208),

Gene: Wachhund\_61 Start: 40167, Stop: 40532, Start Num: 82

Candidate Starts for Wachhund\_61:

(Start: 82 @40167 has 213 MA's), (99, 40200), (102, 40209), (109, 40218), (120, 40260), (126, 40290), (134, 40314), (135, 40317), (153, 40416), (154, 40422), (175, 40497), (176, 40500), (178, 40503),

Gene: Wanda\_144 Start: 74968, Stop: 75321, Start Num: 78

Candidate Starts for Wanda\_144:

(Start: 78 @74968 has 55 MA's), (146, 75169), (153, 75211),

Gene: Warda\_46 Start: 33470, Stop: 33874, Start Num: 87

Candidate Starts for Warda\_46:

(Start: 87 @33470 has 20 MA's), (112, 33524), (146, 33650), (155, 33704), (193, 33848),

Gene: Wee\_64 Start: 42051, Stop: 42416, Start Num: 82

Candidate Starts for Wee\_64:

(Start: 82 @42051 has 213 MA's), (99, 42084), (106, 42099), (109, 42102), (118, 42141), (120, 42144), (123, 42165), (134, 42198), (141, 42225), (146, 42258), (153, 42300), (154, 42306), (183, 42402),

Gene: Whatsapiecost\_60 Start: 39457, Stop: 39822, Start Num: 82

Candidate Starts for Whatsapiecost\_60:

(Start: 82 @39457 has 213 MA's), (99, 39490), (101, 39496), (109, 39508), (120, 39550), (126, 39580), (134, 39604), (135, 39607), (153, 39706), (154, 39712), (175, 39787), (176, 39790), (178, 39793),

Gene: Whouxphf\_57 Start: 40126, Stop: 40491, Start Num: 82

Candidate Starts for Whouxphf\_57:

(Start: 82 @40126 has 213 MA's), (99, 40159), (106, 40174), (109, 40177), (118, 40216), (120, 40219), (123, 40240), (134, 40273), (141, 40300), (146, 40333), (153, 40375), (154, 40381), (183, 40477),

Gene: Wildwest\_45 Start: 33392, Stop: 33811, Start Num: 87

Candidate Starts for Wildwest\_45:

(6, 32825), (12, 32918), (41, 33218), (55, 33290), (Start: 87 @33392 has 20 MA's), (146, 33578), (193, 33785), (195, 33803),

Gene: WillSterrel\_61 Start: 42001, Stop: 42366, Start Num: 82

Candidate Starts for WillSterrel\_61:

(Start: 82 @42001 has 213 MA's), (99, 42034), (106, 42049), (109, 42052), (118, 42091), (120, 42094), (123, 42115), (141, 42175), (146, 42208), (153, 42250), (154, 42256), (183, 42352),

Gene: Wisp\_50 Start: 36176, Stop: 36538, Start Num: 78

Candidate Starts for Wisp\_50:

(47, 36068), (56, 36107), (Start: 78 @36176 has 55 MA's), (117, 36275), (123, 36302), (124, 36305), (131, 36329), (144, 36374),

Gene: Wolfstar\_76 Start: 46198, Stop: 45881, Start Num: 109

Candidate Starts for Wolfstar\_76:

(50, 46384), (70, 46300), (Start: 95 @46237 has 5 MA's), (107, 46201), (109, 46198), (115, 46171), (133, 46102), (139, 46081), (146, 46036), (152, 45997), (154, 45988), (167, 45928), (169, 45913), (175, 45904),

Gene: XFactor\_58 Start: 39256, Stop: 39621, Start Num: 82

Candidate Starts for XFactor\_58:

(Start: 82 @39256 has 213 MA's), (99, 39289), (101, 39295), (109, 39307), (120, 39349), (126, 39379), (134, 39403), (135, 39406), (153, 39505), (154, 39511), (175, 39586), (176, 39589),

Gene: Yago84\_47 Start: 41514, Stop: 41140, Start Num: 72

Candidate Starts for Yago84\_47:

(Start: 72 @41514 has 8 MA's), (103, 41454), (122, 41391), (123, 41382), (151, 41262),

Gene: Yang\_46 Start: 33276, Stop: 33626, Start Num: 87

Candidate Starts for Yang\_46:

(15, 32868), (16, 32877), (25, 33003), (34, 33066), (38, 33087), (42, 33096), (43, 33114), (44, 33123), (Start: 87 @33276 has 20 MA's), (112, 33330), (146, 33456),

Gene: Yeet\_138 Start: 76734, Stop: 77087, Start Num: 78

Candidate Starts for Yeet\_138:

(49, 76632), (Start: 78 @76734 has 55 MA's), (146, 76935), (153, 76977),

Gene: YesChef\_46 Start: 33373, Stop: 33786, Start Num: 87

Candidate Starts for YesChef\_46:

(Start: 87 @33373 has 20 MA's), (112, 33427), (146, 33553), (155, 33607), (193, 33760), (195, 33778),

Gene: Yorick\_59 Start: 40588, Stop: 40953, Start Num: 82

Candidate Starts for Yorick\_59:

(Start: 82 @40588 has 213 MA's), (99, 40621), (106, 40636), (109, 40639), (118, 40678), (120, 40681), (123, 40702), (134, 40735), (141, 40762), (146, 40795), (153, 40837), (154, 40843), (183, 40939),

Gene: Yoshi\_73 Start: 41971, Stop: 42333, Start Num: 82

Candidate Starts for Yoshi\_73:

(Start: 82 @41971 has 213 MA's), (99, 42004), (106, 42019), (109, 42022), (118, 42061), (120, 42064), (123, 42085), (126, 42094), (141, 42142), (153, 42217), (154, 42223), (183, 42319),

Gene: Yoshi\_71 Start: 41346, Stop: 41699, Start Num: 82

Candidate Starts for Yoshi\_71:

(67, 41310), (Start: 82 @41346 has 213 MA's), (105, 41391), (109, 41397), (123, 41460), (126, 41469), (138, 41505), (143, 41529), (181, 41679),

Gene: Yoshi\_70 Start: 41002, Stop: 41349, Start Num: 83

Candidate Starts for Yoshi\_70:

(Start: 71 @40975 has 1 MA's), (80, 40993), (Start: 83 @41002 has 24 MA's), (90, 41014), (99, 41032), (102, 41041), (120, 41092), (123, 41113), (142, 41176), (146, 41197), (150, 41227),

Gene: Zapner\_73 Start: 42130, Stop: 42495, Start Num: 82

Candidate Starts for Zapner\_73:

(Start: 82 @42130 has 213 MA's), (99, 42163), (106, 42178), (109, 42181), (118, 42220), (120, 42223), (123, 42244), (134, 42277), (141, 42304), (146, 42337), (153, 42379), (154, 42385), (183, 42481),

Gene: Zarbodnamra\_50 Start: 34890, Stop: 35252, Start Num: 78

Candidate Starts for Zarbodnamra\_50:

(39, 34746), (47, 34782), (56, 34821), (Start: 78 @34890 has 55 MA's), (124, 35019), (131, 35043),

Gene: Zelink\_139 Start: 77780, Stop: 78133, Start Num: 78

Candidate Starts for Zelink\_139:

(Start: 78 @77780 has 55 MA's), (146, 77981), (153, 78023),

Gene: Zenteno07\_93 Start: 66203, Stop: 65790, Start Num: 74

Candidate Starts for Zenteno07\_93:

(Start: 74 @66203 has 2 MA's), (103, 66122), (127, 66035), (141, 65993), (146, 65960), (159, 65885), (186, 65795),

Gene: Zerg\_60 Start: 40001, Stop: 40366, Start Num: 82

Candidate Starts for Zerg\_60:

(Start: 82 @40001 has 213 MA's), (99, 40034), (106, 40049), (109, 40052), (118, 40091), (120, 40094), (123, 40115), (134, 40148), (141, 40175), (146, 40208), (153, 40250), (154, 40256), (183, 40352),

Gene: ZiggyZoo\_51 Start: 37223, Stop: 37585, Start Num: 78

Candidate Starts for ZiggyZoo\_51:

(47, 37115), (56, 37154), (Start: 78 @37223 has 55 MA's), (117, 37322), (123, 37349), (124, 37352), (131, 37376),

Gene: Zizzle\_64 Start: 41844, Stop: 42209, Start Num: 82

Candidate Starts for Zizzle\_64:

(Start: 82 @41844 has 213 MA's), (99, 41877), (106, 41892), (109, 41895), (118, 41934), (120, 41937), (123, 41958), (134, 41991), (141, 42018), (146, 42051), (153, 42093), (154, 42099), (183, 42195),

Gene: Zucker\_73 Start: 43088, Stop: 43483, Start Num: 85

Candidate Starts for Zucker\_73:

(32, 42881), (Start: 85 @43088 has 13 MA's), (106, 43133), (131, 43226), (141, 43259), (185, 43457),