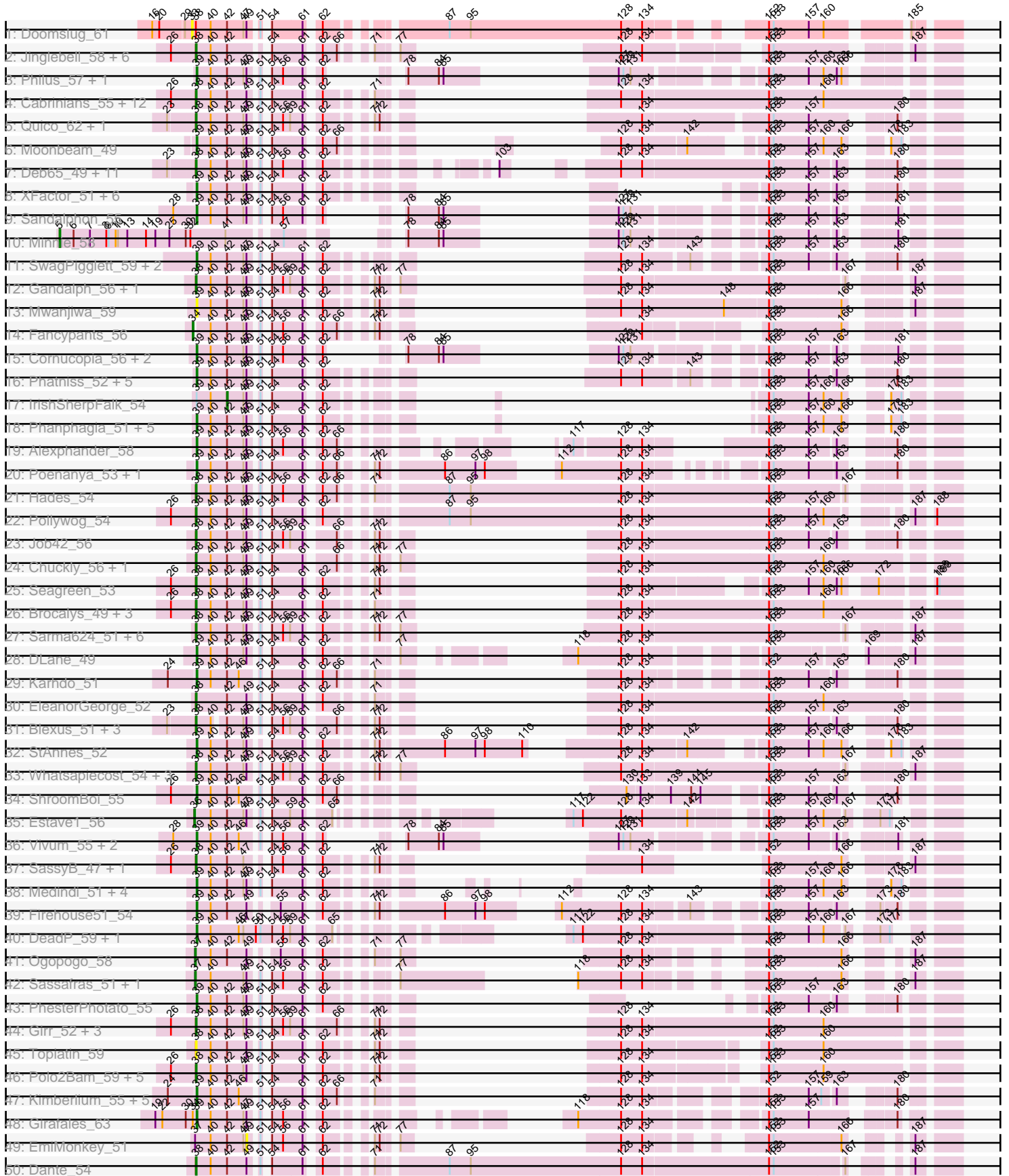
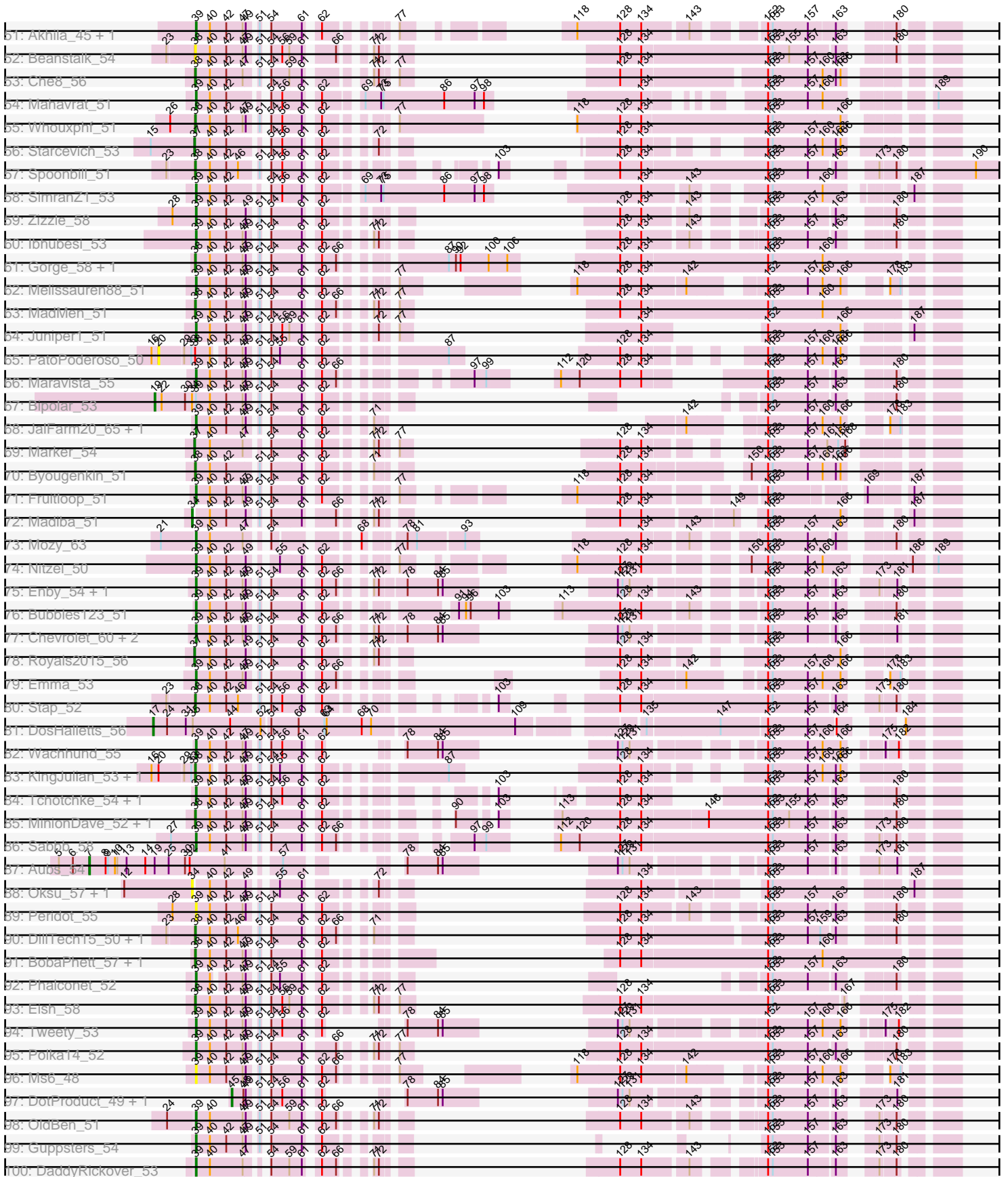


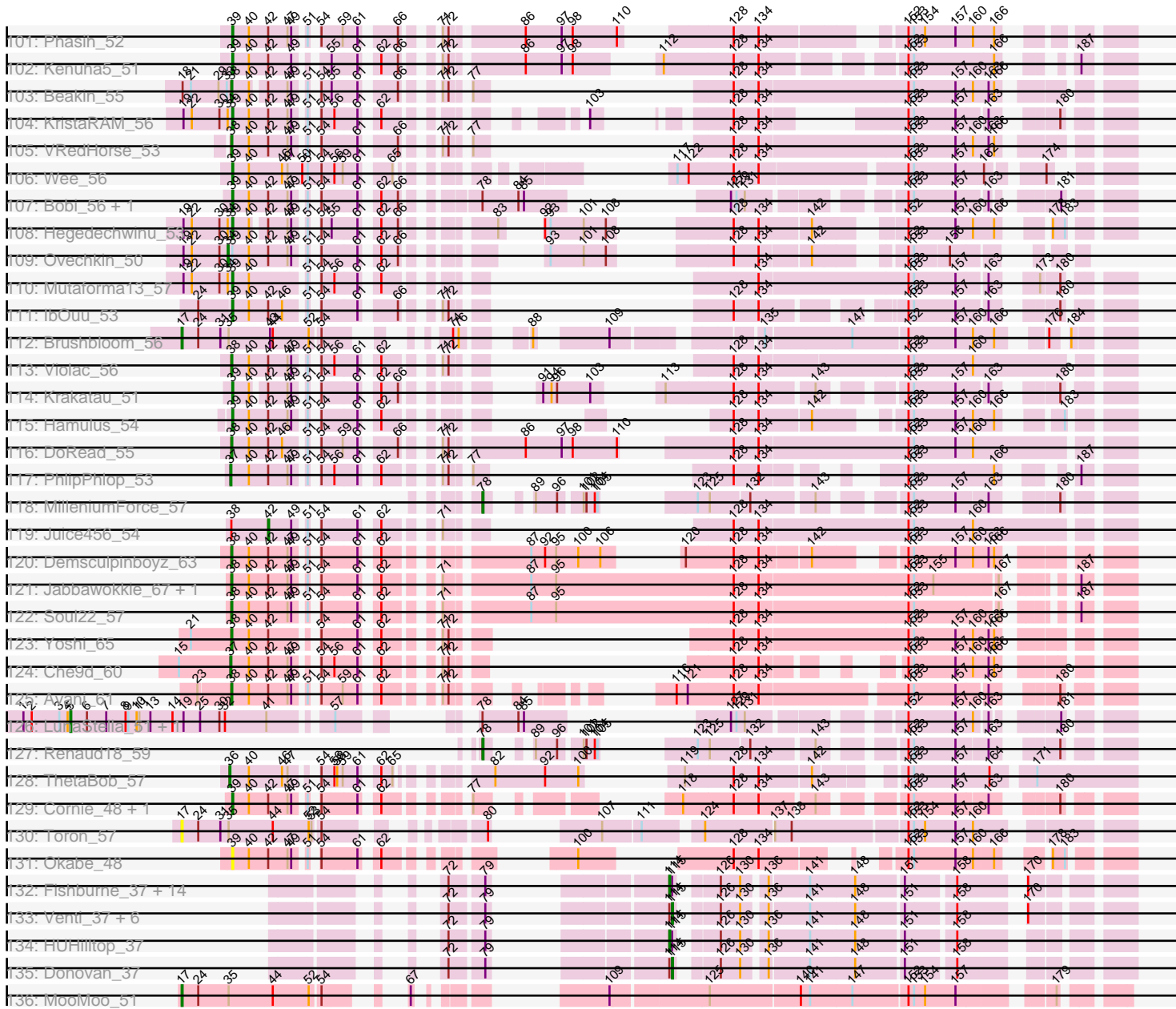
Pham 303040



Pham 303040



Pham 303040



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 303040 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303040 has 264 members, 28 are drafts.

Phages represented in each track:

- Track 1 : Doomslug\_61
- Track 2 : Jinglebell\_58, OfUltron\_58, Ochi17\_56, Llama\_58, Modragons\_57, Seabastian\_58, AlpineSix\_58
- Track 3 : Philus\_57, DRBy19\_57
- Track 4 : Cabrinians\_55, Burwell21\_52, Jarcob\_54, Koella\_48, Martik\_54, Lizziana\_60, ShowerHandel\_57, NormanBulbieJr\_54, ShiLan\_53, Priscilla\_54, FreddyB\_55, Crumble\_49, Yorick\_53
- Track 5 : Quico\_62, Florinda\_65
- Track 6 : Moonbeam\_49
- Track 7 : Deb65\_49, Nimbo\_48, Leperchaun\_46, JoeyJr\_49, PHappiness\_49, RitaG\_49, Scottish\_52, Geralt\_49, Daenerys\_48, Pacc40\_48, Empress\_52, KingMidas\_53
- Track 8 : XFactor\_51, Doug\_56, DaWorst\_55, RockyHorror\_54, Sparkdehlily\_61, TDanisky\_61, Zerg\_53
- Track 9 : Sandalphon\_55
- Track 10 : Minnie\_58
- Track 11 : SwagPigglett\_59, LilMoolah\_52, Nivrat\_50
- Track 12 : Gandalph\_56, Mova\_54
- Track 13 : Mwanjiwa\_59
- Track 14 : Fancypants\_56
- Track 15 : Cornucopia\_56, Ardmore\_45, OwlsT2W\_54
- Track 16 : Phatniss\_52, Llij\_50, Drago\_52, DirtMcgirt\_53, UncleRicky\_53, Lucia\_53
- Track 17 : IrishSherpFalk\_54
- Track 18 : Phanphagia\_51, Shauna1\_52, Spartacus\_55, SuperGrey\_57, WillSterrel\_54, SilverChicken\_63
- Track 19 : Alexphander\_58
- Track 20 : Poenanya\_53, Doomphist\_53
- Track 21 : Hades\_54
- Track 22 : Pollywog\_54
- Track 23 : Job42\_56
- Track 24 : Chuckly\_56, Clank\_58
- Track 25 : Seagreen\_53
- Track 26 : Brocalys\_49, Clifton\_49, Pippy\_52, LastJedi\_48
- Track 27 : Sarma624\_51, Velveteen\_48, Kingsley\_50, BigPhil\_49, Brookers\_50, Coco12\_52, Cerasum\_49
- Track 28 : DLane\_49
- Track 29 : Karhdo\_51

- Track 30 : EleanorGeorge\_52
- Track 31 : Blexus\_51, Kersh\_55, Ramsey\_54, Tootsieroll\_55
- Track 32 : StAnnes\_52
- Track 33 : Whatsapiecost\_54, PMC\_50, Boomer\_58, Rockne\_54
- Track 34 : ShroomBoi\_55
- Track 35 : Estave1\_56
- Track 36 : Vivum\_55, Radiance\_53, BodEinwohner17\_54
- Track 37 : SassyB\_47, PopTart\_47
- Track 38 : Medindi\_51, Batiatus\_51, IMpilo\_50, Jant\_57, Filuzino\_51
- Track 39 : Firehouse51\_54
- Track 40 : DeadP\_59, Taj\_57
- Track 41 : Ogopogo\_58
- Track 42 : Sassafras\_51, Inventum\_48
- Track 43 : PhesterPhotato\_55
- Track 44 : Girr\_52, Leozinho\_53, Ruby\_50, MisterCuddles\_52
- Track 45 : Topiatin\_59
- Track 46 : Polo2Bam\_59, SeaLumen\_58, LunaBlu\_56, NewHope4\_55, Galactic\_53, Enzomatic\_60
- Track 47 : Kimberlium\_55, QuickMath\_54, SiSi\_51, Mantra\_49, MulchExplorer\_55, Plumbus\_55
- Track 48 : Girafales\_63
- Track 49 : EmiMonkey\_51
- Track 50 : Dante\_54
- Track 51 : Akhila\_45, MilanaBonita\_44
- Track 52 : Beanstalk\_54
- Track 53 : Che8\_56
- Track 54 : Mahavrat\_51
- Track 55 : Whouxphf\_51
- Track 56 : Starcevich\_53
- Track 57 : Spoonbill\_51
- Track 58 : SimranZ1\_53
- Track 59 : Zizzle\_58
- Track 60 : lbhubesi\_53
- Track 61 : Gorge\_58, Saal\_56
- Track 62 : Melissauren88\_51
- Track 63 : MadMen\_51
- Track 64 : Juniper1\_51
- Track 65 : PatoPoderoso\_50
- Track 66 : Maravista\_55
- Track 67 : Bipolar\_53
- Track 68 : JalFarm20\_65, Flathead\_53
- Track 69 : Marker\_54
- Track 70 : Byougenkin\_51
- Track 71 : Fruitloop\_51
- Track 72 : Madiba\_51
- Track 73 : Mozy\_63
- Track 74 : Nitzel\_50
- Track 75 : Enby\_54, SG4\_50
- Track 76 : Bubbles123\_51
- Track 77 : Chevrolet\_60, ArcusAngelus\_57, Lorde\_54
- Track 78 : Royals2015\_56
- Track 79 : Emma\_53
- Track 80 : Stap\_52

- Track 81 : DosHalletts\_56
- Track 82 : Wachhund\_55
- Track 83 : KingJulian\_53, Corium\_50
- Track 84 : Tchotchke\_54, Spikelee\_60
- Track 85 : MinionDave\_52, CaptainTrips\_50
- Track 86 : Sabbb\_58
- Track 87 : Aubs\_54
- Track 88 : Oksu\_57, Nichirin\_58
- Track 89 : Peridot\_55
- Track 90 : DillTech15\_50, Fastidio\_53
- Track 91 : BobaPhett\_57, Jennelsea\_51
- Track 92 : Phalconet\_52
- Track 93 : Eish\_58
- Track 94 : Tweety\_53
- Track 95 : Polka14\_52
- Track 96 : Ms6\_48
- Track 97 : DotProduct\_49, GigiOuiOui\_50
- Track 98 : OldBen\_51
- Track 99 : Guppsters\_54
- Track 100 : DaddyRickover\_53
- Track 101 : Phasih\_52
- Track 102 : Kenuha5\_51
- Track 103 : Beakin\_55
- Track 104 : KristaRAM\_56
- Track 105 : VRedHorse\_53
- Track 106 : Wee\_56
- Track 107 : Bobi\_56, Harley\_55
- Track 108 : Hegedechwinu\_53
- Track 109 : Ovechkin\_50
- Track 110 : Mutaforma13\_57
- Track 111 : IbOuu\_53
- Track 112 : Brushbloom\_56
- Track 113 : Violac\_56
- Track 114 : Krakatau\_51
- Track 115 : Hamulus\_54
- Track 116 : DoRead\_55
- Track 117 : PhlipPhlop\_53
- Track 118 : MilleniumForce\_57
- Track 119 : Juice456\_54
- Track 120 : Demsculpinboyz\_63
- Track 121 : Jabbawokkie\_67, Zapner\_66
- Track 122 : Soul22\_57
- Track 123 : Yoshi\_65
- Track 124 : Che9d\_60
- Track 125 : Avani\_61
- Track 126 : LunaStella\_51, TChen\_53
- Track 127 : Renaud18\_59
- Track 128 : ThetaBob\_57
- Track 129 : Cornie\_48, Cheese puff\_59
- Track 130 : Toron\_57
- Track 131 : Okabe\_48
- Track 132 : Fishburne\_37, GaloreK\_37, Majeke\_37, BronnyJr\_37, Mangethe\_37, Phineas\_37, Vidya\_37, Necropolis\_37, Zilizebeth\_37, Chubbello\_37, Arib1\_37,

- Bartholomew\_36, Etoile\_37, Techage\_37, Jebeks\_38
- Track 133 : Venti\_37, Dynamo\_37, Langerak\_37, Kari\_37, FirstPlacePfu\_37, Sonah\_37, Phegasus\_37
  - Track 134 : HUHilltop\_37
  - Track 135 : Donovan\_37
  - Track 136 : MooMoo\_51

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

The start number called the most often in the published annotations is 38, it was called in 96 of the 236 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AlpineSix\_58, Avani\_61, Beakin\_55, Beanstalk\_54, BigPhil\_49, Blexus\_51, BobaPhett\_57, Boomer\_58, Brocalys\_49, Brookers\_50, Burwell21\_52, Byougenkin\_51, Cabrinians\_55, CaptainTrips\_50, Cerasum\_49, Che8\_56, Chuckly\_56, Clank\_58, Clifton\_49, Coco12\_52, Corium\_50, Crumble\_49, Daenerys\_48, Dante\_54, Deb65\_49, Demsculpinboyz\_63, DillTech15\_50, DoRead\_55, Eish\_58, EleanorGeorge\_52, Empress\_52, Enzomatic\_60, Fastidio\_53, Florinda\_65, FreddyB\_55, Galactic\_53, Gandalph\_56, Geralt\_49, Girr\_52, Gorge\_58, Hades\_54, Jabbawokkie\_67, Jarcob\_54, Jennelsea\_51, Jinglebell\_58, Job42\_56, JoeyJr\_49, Kersh\_55, KingJulian\_53, KingMidas\_53, Kingsley\_50, Koella\_48, LastJedi\_48, Leozinho\_53, Leperchaun\_46, Lizziana\_60, Llama\_58, LunaBlu\_56, MadMen\_51, Martik\_54, MinionDave\_52, MisterCuddles\_52, Modragons\_57, Mova\_54, NewHope4\_55, Nimbo\_48, NormanBulbieJr\_54, Ochi17\_56, OfUltron\_58, PHappiness\_49, PMC\_50, Pacc40\_48, Pippy\_52, Pollywog\_54, Polo2Bam\_59, PopTart\_47, Priscilla\_54, Quico\_62, Ramsey\_54, RitaG\_49, Rockne\_54, Ruby\_50, Saal\_56, Sarma624\_51, SassyB\_47, Scottish\_52, SeaLumen\_58, Seabastian\_58, Seagreen\_53, ShiLan\_53, ShowerHandel\_57, Soul22\_57, Spoonbill\_51, Stap\_52, Tootsieroll\_55, Topiatin\_59, VRedHorse\_53, Velveteen\_48, Violac\_56, Whatsapiecost\_54, Whouxphf\_51, Yorick\_53, Yoshi\_65, Zapner\_66,

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

- Doomslug\_61, Juice456\_54, PatoPoderoso\_50,

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

- Akhila\_45, Alexphander\_58, ArcusAngelus\_57, Ardmore\_45, Arib1\_37, Aubs\_54, Bartholomew\_36, Batiatus\_51, Bipolar\_53, Bobi\_56, BodEinwohner17\_54, BronnyJr\_37, Brushbloom\_56, Bubbles123\_51, Che9d\_60, CheesePuff\_59, Chevrolet\_60, Chubbello\_37, Cornie\_48, Cornucopia\_56, DLane\_49, DRBy19\_57, DaWorst\_55, DaddyRickover\_53, DeadP\_59, DirtMcGirt\_53, Donovan\_37, Doomphist\_53, DosHalletts\_56, DotProduct\_49, Doug\_56, Drago\_52, Dynamo\_37, EmiMonkey\_51, Emma\_53, Enby\_54, Estave1\_56, Etoile\_37, Fancypants\_56, Filuzino\_51, Firehouse51\_54, FirstPlacePfu\_37, Fishburne\_37, Flathead\_53, Fruitloop\_51, GaloreK\_37, GigiOuiOui\_50, Girafales\_63, Guppsters\_54, HUHilltop\_37, Hamulus\_54, Harley\_55, Hegedechwinu\_53, IMpilo\_50, IbOuu\_53, Ihubesi\_53, Inventum\_48, IrishSherpFalk\_54, JalFarm20\_65, Jant\_57, Jebeks\_38, Juniper1\_51, Karhdo\_51, Kari\_37, Kenuha5\_51, Kimberlium\_55, Krakatau\_51, KristaRAM\_56, Langerak\_37, LilMoolah\_52, Llij\_50, Lorde\_54, Lucia\_53, LunaStella\_51, Madiba\_51, Mahavrat\_51, Majeke\_37, Mangethe\_37, Mantra\_49,

Maravista\_55, Marker\_54, Medindi\_51, Melissauren88\_51, MilanaBonita\_44, MilleniumForce\_57, Minnie\_58, MooMoo\_51, Moonbeam\_49, Mozy\_63, Ms6\_48, MulchExplorer\_55, Mutaforma13\_57, Mwanjiwa\_59, Necropolis\_37, Nichirin\_58, Nitzel\_50, Nivrat\_50, Ogopogo\_58, Okabe\_48, Oksu\_57, OldBen\_51, Ovechkin\_50, OwlsT2W\_54, Peridot\_55, Phalconet\_52, Phanphagia\_51, Phasih\_52, Phatniss\_52, Phegasus\_37, PhesterPhotato\_55, Philus\_57, Phineas\_37, PhilipPhlop\_53, Plumbus\_55, Poenanya\_53, Polka14\_52, QuickMath\_54, Radiance\_53, Renaud18\_59, RockyHorror\_54, Royals2015\_56, SG4\_50, Sabbb\_58, Sandalphon\_55, Sassafras\_51, Shauna1\_52, ShroomBoi\_55, SiSi\_51, SilverChicken\_63, SimranZ1\_53, Sonah\_37, Sparkdehlily\_61, Spartacus\_55, Spikelee\_60, StAnnes\_52, Starcevich\_53, SuperGrey\_57, SwagPiggett\_59, TChen\_53, TDanisky\_61, Taj\_57, Tchotchke\_54, Techage\_37, ThetaBob\_57, Toron\_57, Tweety\_53, UncleRicky\_53, Venti\_37, Vidya\_37, Vivum\_55, Wachhund\_55, Wee\_56, WillSterrel\_54, XFactor\_51, Zerg\_53, Zilizebeth\_37, Zizzle\_58,

### Summary by start number:

#### Start 5:

- Found in 4 of 264 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 3 of 236
- Called 75.0% of time when present
- Phage (with cluster) where this start called: LunaStella\_51 (F4), Minnie\_58 (F1), TChen\_53 (F4),

#### Start 7:

- Found in 4 of 264 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 236
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Aubs\_54 (F1),

#### Start 17:

- Found in 4 of 264 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 3 of 236
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Brushbloom\_56 (F1), DosHalletts\_56 (F1), MooMoo\_51 (singleton), Toron\_57 (F6),

#### Start 19:

- Found in 10 of 264 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 1 of 236
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Bipolar\_53 (F1),

#### Start 20:

- Found in 4 of 264 ( 1.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: PatoPoderoso\_50 (F1),

#### Start 33:

- Found in 5 of 264 ( 1.9% ) of genes in pham
- No Manual Annotations of this start.

- Called 20.0% of time when present
- Phage (with cluster) where this start called: Doomslug\_61 (F),

#### Start 34:

- Found in 10 of 264 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 3 of 236
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Fancypants\_56 (F1), Madiba\_51 (F1), Nichirin\_58 (F1), Oksu\_57 (F1), Ovechkin\_50 (F1),

#### Start 36:

- Found in 2 of 264 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 236
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Estave1\_56 (F1), ThetaBob\_57 (F4),

#### Start 37:

- Found in 9 of 264 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 8 of 236
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Che9d\_60 (F2), Inventum\_48 (F1), Marker\_54 (F1), OgoPogo\_58 (F1), PhlipPhlop\_53 (F1), Royals2015\_56 (F1), Sassafras\_51 (F1), Starcevich\_53 (F1),

#### Start 38:

- Found in 107 of 264 ( 40.5% ) of genes in pham
- Manual Annotations of this start: 96 of 236
- Called 97.2% of time when present
- Phage (with cluster) where this start called: AlpineSix\_58 (F1), Avani\_61 (F2), Beakin\_55 (F1), Beanstalk\_54 (F1), BigPhil\_49 (F1), Blexus\_51 (F1), BobaPhett\_57 (F1), Boomer\_58 (F1), Brocalys\_49 (F1), Brookers\_50 (F1), Burwell21\_52 (F1), Byougenkin\_51 (F1), Cabrinians\_55 (F1), CaptainTrips\_50 (F1), Cerasum\_49 (F1), Che8\_56 (F1), Chuckly\_56 (F1), Clank\_58 (F), Clifton\_49 (F1), Coco12\_52 (F1), Corium\_50 (F1), Crumble\_49 (F1), Daenerys\_48 (F1), Dante\_54 (F1), Deb65\_49 (F1), Demsculpinboyz\_63 (F2), DillTech15\_50 (F1), DoRead\_55 (F1), Eish\_58 (F1), EleanorGeorge\_52 (F1), Empress\_52 (F1), Enzomatic\_60 (F1), Fastidio\_53 (F1), Florinda\_65 (F1), FreddyB\_55 (F1), Galactic\_53 (F1), Gandalph\_56 (F1), Geralt\_49 (F1), Girr\_52 (F1), Gorge\_58 (F1), Hades\_54 (F1), Jabbawokkie\_67 (F2), Jarcob\_54 (F1), Jennelsea\_51 (F1), Jinglebell\_58 (F1), Job42\_56 (F1), JoeyJr\_49 (F1), Kersh\_55 (F1), KingJulian\_53 (F1), KingMidas\_53 (F1), Kingsley\_50 (F1), Koella\_48 (F1), LastJedi\_48 (F1), Leozinho\_53 (F1), Leperchaun\_46 (F1), Lizziana\_60 (F1), Llama\_58 (F1), LunaBlu\_56 (F1), MadMen\_51 (F1), Martik\_54 (F1), MinionDave\_52 (F1), MisterCuddles\_52 (F1), Modragons\_57 (F1), Mova\_54 (F1), NewHope4\_55 (F1), Nimbo\_48 (F1), NormanBulbieJr\_54 (F1), Ochi17\_56 (F1), OfUltron\_58 (F1), PHappiness\_49 (F1), PMC\_50 (F1), Pacc40\_48 (F1), Pippy\_52 (F1), Pollywog\_54 (F1), Polo2Bam\_59 (F1), PopTart\_47 (F1), Priscilla\_54 (F1), Quico\_62 (F1), Ramsey\_54 (F1), RitaG\_49 (F1), Rockne\_54 (F1), Ruby\_50 (F1), Saal\_56 (F1), Sarma624\_51 (F1), SassyB\_47 (F1), Scottish\_52 (F1), SeaLumen\_58 (F1), Seabastian\_58 (F1), Seagreen\_53 (F1), ShiLan\_53 (F1), ShowerHandel\_57 (F1), Soul22\_57 (F2), Spoonbill\_51 (F1), Stap\_52 (F1), Tootsieroll\_55 (F1), Topiatin\_59 (F1), VRedHorse\_53 (F1), Velveteen\_48 (F1), Violac\_56 (F1), Whatsapiecost\_54 (F1), Whouxphf\_51 (F1), Yorick\_53 (F1), Yoshi\_65 (F2), Zapner\_66 (F2),

Start 39:

- Found in 106 of 264 ( 40.2% ) of genes in pham
- Manual Annotations of this start: 93 of 236
- Called 97.2% of time when present
- Phage (with cluster) where this start called: Akhila\_45 (F1), Alexphander\_58 (F1), ArcusAngelus\_57 (F1), Ardmore\_45 (F1), Batiatus\_51 (F1), Bobi\_56 (F1), BodEinwohner17\_54 (F1), Bubbles123\_51 (F1), Cheesepuff\_59 (F1), Chevrolet\_60 (F1), Cornie\_48 (F5), Cornucopia\_56 (F1), DLane\_49 (F1), DRBy19\_57 (F1), DaWorst\_55 (F1), DaddyRickover\_53 (F1), DeadP\_59 (F1), DirtMcgirt\_53 (F1), Doomphist\_53 (F1), Doug\_56 (F1), Drago\_52 (F1), Emma\_53 (F1), Enby\_54 (F1), Filuzino\_51 (F1), Firehouse51\_54 (F1), Flathead\_53 (F1), Fruitloop\_51 (F1), Girafales\_63 (F1), Guppsters\_54 (F1), Hamulus\_54 (F1), Harley\_55 (F1), Hegedechwinu\_53 (F1), IMpilo\_50 (F1), IbOuu\_53 (F1), Ibhubesi\_53 (F1), JalFarm20\_65 (F1), Jant\_57 (F1), Juniper1\_51 (F1), Karhdo\_51 (F1), Kenuha5\_51 (F1), Kimberlium\_55 (F1), Krakatau\_51 (F1), KristaRAM\_56 (F1), LilMoolah\_52 (F1), Llij\_50 (F1), Lorde\_54 (F1), Lucia\_53 (F1), Mahavrat\_51 (F1), Mantra\_49 (F1), Maravista\_55 (F1), Medindi\_51 (F1), Melissauren88\_51 (F1), MilanaBonita\_44 (F1), Moonbeam\_49 (F1), Mozy\_63 (F1), Ms6\_48 (F1), MulchExplorer\_55 (F1), Mutaforma13\_57 (F1), Mwanjiwa\_59 (F1), Nitzel\_50 (F1), Nivrat\_50 (F1), Okabe\_48 (F8), OldBen\_51 (F1), OwlsT2W\_54 (F1), Peridot\_55 (F1), Phalconet\_52 (F1), Phanphagia\_51 (F1), Phasih\_52 (F1), Phatniss\_52 (F1), PhesterPhotato\_55 (F1), Philus\_57 (F1), Plumbus\_55 (F1), Poenanya\_53 (F1), Polka14\_52 (F1), QuickMath\_54 (F1), Radiance\_53 (F1), RockyHorror\_54 (F1), SG4\_50 (F1), Sabbb\_58 (F1), Sandalphon\_55 (F1), Shauna1\_52 (F1), ShroomBoi\_55 (F1), SiSi\_51 (F1), SilverChicken\_63 (F2), SimranZ1\_53 (F1), Sparkdehlily\_61 (F1), Spartacus\_55 (F1), Spikelee\_60 (F1), StAnnes\_52 (F1), SuperGrey\_57 (F1), SwagPiggett\_59 (F1), TDanisky\_61 (F1), Taj\_57 (F1), Tchotchke\_54 (F1), Tweety\_53 (F1), UncleRicky\_53 (F1), Vivum\_55 (F1), Wachhund\_55 (F1), Wee\_56 (F1), WillSterrel\_54 (F1), XFactor\_51 (F1), Zerg\_53 (F1), Zizzle\_58 (F1),

Start 42:

- Found in 217 of 264 ( 82.2% ) of genes in pham
- Manual Annotations of this start: 2 of 236
- Called 0.9% of time when present
- Phage (with cluster) where this start called: IrishSherpFalk\_54 (F1), Juice456\_54 (F1),

Start 45:

- Found in 2 of 264 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 236
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DotProduct\_49 (F1), GigiOuiOui\_50 (F1),

Start 49:

- Found in 190 of 264 ( 72.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.5% of time when present
- Phage (with cluster) where this start called: EmiMonkey\_51 (F1),

Start 78:

- Found in 27 of 264 ( 10.2% ) of genes in pham
- Manual Annotations of this start: 2 of 236

- Called 7.4% of time when present
- Phage (with cluster) where this start called: MilleniumForce\_57 (F1), Renaud18\_59 (F4),

#### Start 114:

- Found in 24 of 264 ( 9.1% ) of genes in pham
- Manual Annotations of this start: 12 of 236
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Arib1\_37 (P1), Bartholomew\_36 (P1), BronnyJr\_37 (P1), Chubbello\_37 (P1), Etoile\_37 (P1), Fishburne\_37 (P1), GaloreK\_37 (P1), HUHilltop\_37 (P1), Jebeks\_38 (P1), Majeke\_37 (P1), Mangethe\_37 (P1), Necropolis\_37 (P1), Phineas\_37 (P1), Techage\_37 (P1), Vidya\_37 (P1), Zilizebeth\_37 (P1),

#### Start 115:

- Found in 24 of 264 ( 9.1% ) of genes in pham
- Manual Annotations of this start: 8 of 236
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Donovan\_37 (P1), Dynamo\_37 (P1), FirstPlacePfu\_37 (P1), Kari\_37 (P1), Langerak\_37 (P1), Phegasus\_37 (P1), Sonah\_37 (P1), Venti\_37 (P1),

### Summary by clusters:

There are 9 clusters represented in this pham: F1, F2, P1, F4, F5, F6, F, F8, singleton,

#### Info for manual annotations of cluster F1:

- Start number 5 was manually annotated 1 time for cluster F1.
- Start number 7 was manually annotated 1 time for cluster F1.
- Start number 17 was manually annotated 2 times for cluster F1.
- Start number 19 was manually annotated 1 time for cluster F1.
- Start number 34 was manually annotated 3 times for cluster F1.
- Start number 36 was manually annotated 1 time for cluster F1.
- Start number 37 was manually annotated 7 times for cluster F1.
- Start number 38 was manually annotated 90 times for cluster F1.
- Start number 39 was manually annotated 92 times for cluster F1.
- Start number 42 was manually annotated 2 times for cluster F1.
- Start number 45 was manually annotated 2 times for cluster F1.
- Start number 78 was manually annotated 1 time for cluster F1.

#### Info for manual annotations of cluster F2:

- Start number 37 was manually annotated 1 time for cluster F2.
- Start number 38 was manually annotated 6 times for cluster F2.

#### Info for manual annotations of cluster F4:

- Start number 5 was manually annotated 2 times for cluster F4.
- Start number 36 was manually annotated 1 time for cluster F4.
- Start number 78 was manually annotated 1 time for cluster F4.

#### Info for manual annotations of cluster F5:

- Start number 39 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster P1:

- Start number 114 was manually annotated 12 times for cluster P1.
- Start number 115 was manually annotated 8 times for cluster P1.

**Gene Information:**

Gene: Akhila\_45 Start: 33238, Stop: 33918, Start Num: 39

Candidate Starts for Akhila\_45:

(Start: 39 @33238 has 93 MA's), (40, 33256), (Start: 42 @33277 has 2 MA's), (47, 33298), (49, 33301), (51, 33310), (54, 33313), (61, 33349), (62, 33361), (77, 33418), (118, 33526), (128, 33580), (134, 33607), (143, 33661), (152, 33730), (153, 33736), (157, 33781), (163, 33811), (180, 33859),

Gene: Alexphander\_58 Start: 38096, Stop: 38746, Start Num: 39

Candidate Starts for Alexphander\_58:

(Start: 39 @38096 has 93 MA's), (40, 38114), (Start: 42 @38135 has 2 MA's), (47, 38156), (49, 38159), (51, 38168), (54, 38171), (56, 38183), (61, 38207), (62, 38219), (66, 38237), (117, 38384), (128, 38438), (134, 38465), (152, 38558), (153, 38564), (157, 38609), (163, 38639), (180, 38687),

Gene: AlpineSix\_58 Start: 39417, Stop: 40004, Start Num: 38

Candidate Starts for AlpineSix\_58:

(26, 39387), (Start: 38 @39417 has 96 MA's), (40, 39435), (Start: 42 @39456 has 2 MA's), (54, 39492), (61, 39528), (62, 39540), (66, 39558), (71, 39579), (77, 39597), (128, 39663), (134, 39690), (152, 39813), (153, 39819), (187, 39957),

Gene: ArcusAngelus\_57 Start: 38680, Stop: 39342, Start Num: 39

Candidate Starts for ArcusAngelus\_57:

(Start: 39 @38680 has 93 MA's), (40, 38698), (Start: 42 @38719 has 2 MA's), (47, 38740), (49, 38743), (51, 38752), (54, 38755), (61, 38791), (62, 38803), (66, 38821), (71, 38842), (72, 38848), (Start: 78 @38878 has 2 MA's), (84, 38917), (85, 38923), (127, 39004), (129, 39010), (131, 39019), (152, 39154), (153, 39160), (157, 39205), (163, 39235), (181, 39283),

Gene: Ardmore\_45 Start: 35444, Stop: 36049, Start Num: 39

Candidate Starts for Ardmore\_45:

(Start: 39 @35444 has 93 MA's), (40, 35462), (Start: 42 @35483 has 2 MA's), (47, 35504), (49, 35507), (51, 35516), (54, 35519), (56, 35531), (61, 35555), (62, 35567), (Start: 78 @35585 has 2 MA's), (84, 35624), (85, 35630), (127, 35711), (129, 35717), (131, 35726), (152, 35861), (153, 35867), (157, 35912), (163, 35942), (181, 35990),

Gene: Arib1\_37 Start: 29346, Stop: 29747, Start Num: 114

Candidate Starts for Arib1\_37:

(72, 29202), (79, 29235), (Start: 114 @29346 has 12 MA's), (Start: 115 @29349 has 8 MA's), (126, 29379), (130, 29400), (136, 29421), (141, 29460), (148, 29508), (151, 29556), (158, 29604), (170, 29655),

Gene: Aubs\_54 Start: 37500, Stop: 38252, Start Num: 7

Candidate Starts for Aubs\_54:

(Start: 5 @37461 has 3 MA's), (6, 37479), (Start: 7 @37500 has 1 MA's), (8, 37521), (9, 37524), (10, 37533), (11, 37536), (13, 37548), (14, 37572), (Start: 19 @37584 has 1 MA's), (25, 37602), (30,

37623), (32, 37629), (41, 37674), (57, 37728), (Start: 78 @37788 has 2 MA's), (84, 37827), (85, 37833), (127, 37914), (129, 37920), (131, 37929), (152, 38064), (153, 38070), (157, 38115), (163, 38145), (173, 38175), (181, 38193),

Gene: Avani\_61 Start: 37581, Stop: 38282, Start Num: 38

Candidate Starts for Avani\_61:

(23, 37551), (Start: 38 @37581 has 96 MA's), (40, 37599), (Start: 42 @37620 has 2 MA's), (47, 37641), (49, 37644), (51, 37653), (54, 37656), (59, 37677), (61, 37692), (62, 37704), (71, 37743), (72, 37749), (116, 37860), (121, 37872), (128, 37920), (134, 37947), (152, 38094), (153, 38100), (157, 38145), (163, 38175), (180, 38223),

Gene: Bartholomew\_36 Start: 29343, Stop: 29744, Start Num: 114

Candidate Starts for Bartholomew\_36:

(72, 29199), (79, 29232), (Start: 114 @29343 has 12 MA's), (Start: 115 @29346 has 8 MA's), (126, 29376), (130, 29397), (136, 29418), (141, 29457), (148, 29505), (151, 29553), (158, 29601), (170, 29652),

Gene: Batiatus\_51 Start: 37273, Stop: 37695, Start Num: 39

Candidate Starts for Batiatus\_51:

(Start: 39 @37273 has 93 MA's), (40, 37291), (Start: 42 @37312 has 2 MA's), (47, 37333), (49, 37336), (51, 37345), (54, 37348), (61, 37384), (62, 37396), (152, 37507), (153, 37513), (157, 37558), (160, 37576), (166, 37597), (178, 37627), (183, 37639),

Gene: Beakin\_55 Start: 37066, Stop: 37683, Start Num: 38

Candidate Starts for Beakin\_55:

(18, 37015), (21, 37024), (29, 37054), (33, 37063), (Start: 38 @37066 has 96 MA's), (40, 37084), (Start: 42 @37096 has 2 MA's), (47, 37117), (49, 37120), (51, 37129), (54, 37132), (55, 37141), (61, 37168), (66, 37198), (71, 37219), (72, 37225), (77, 37237), (128, 37297), (134, 37324), (152, 37483), (153, 37489), (157, 37534), (160, 37552), (163, 37567), (166, 37573),

Gene: Beanstalk\_54 Start: 36451, Stop: 37065, Start Num: 38

Candidate Starts for Beanstalk\_54:

(23, 36421), (Start: 38 @36451 has 96 MA's), (40, 36469), (Start: 42 @36490 has 2 MA's), (47, 36511), (49, 36514), (51, 36523), (54, 36526), (56, 36538), (59, 36547), (61, 36562), (66, 36592), (71, 36613), (72, 36619), (128, 36691), (134, 36718), (152, 36877), (153, 36883), (155, 36904), (157, 36928), (163, 36958), (180, 37006),

Gene: BigPhil\_49 Start: 33538, Stop: 34161, Start Num: 38

Candidate Starts for BigPhil\_49:

(Start: 38 @33538 has 96 MA's), (40, 33556), (Start: 42 @33577 has 2 MA's), (47, 33598), (49, 33601), (51, 33610), (54, 33613), (56, 33625), (59, 33634), (61, 33649), (62, 33661), (71, 33700), (72, 33706), (77, 33718), (128, 33784), (134, 33811), (152, 33970), (153, 33976), (167, 34060), (187, 34114),

Gene: Bipolar\_53 Start: 37987, Stop: 38499, Start Num: 19

Candidate Starts for Bipolar\_53:

(Start: 19 @37987 has 1 MA's), (22, 37996), (30, 38026), (Start: 34 @38035 has 3 MA's), (Start: 39 @38038 has 93 MA's), (40, 38056), (Start: 42 @38077 has 2 MA's), (47, 38098), (49, 38101), (51, 38110), (54, 38113), (61, 38149), (62, 38161), (152, 38311), (153, 38317), (157, 38362), (163, 38392), (180, 38440),

Gene: Blexus\_51 Start: 37239, Stop: 37844, Start Num: 38

Candidate Starts for Blexus\_51:

(23, 37209), (Start: 38 @37239 has 96 MA's), (40, 37257), (Start: 42 @37269 has 2 MA's), (47, 37290), (49, 37293), (51, 37302), (54, 37305), (56, 37317), (59, 37326), (61, 37341), (66, 37371), (71, 37392), (72, 37398), (128, 37470), (134, 37497), (152, 37656), (153, 37662), (157, 37707), (163, 37737), (180, 37785),

Gene: BobaPhett\_57 Start: 40029, Stop: 40682, Start Num: 38

Candidate Starts for BobaPhett\_57:

(Start: 38 @40029 has 96 MA's), (40, 40047), (Start: 42 @40068 has 2 MA's), (47, 40089), (49, 40092), (51, 40101), (54, 40104), (61, 40140), (62, 40152), (128, 40275), (134, 40302), (152, 40461), (153, 40467), (160, 40530),

Gene: Bobi\_56 Start: 38447, Stop: 39109, Start Num: 39

Candidate Starts for Bobi\_56:

(Start: 39 @38447 has 93 MA's), (40, 38465), (Start: 42 @38486 has 2 MA's), (47, 38507), (49, 38510), (51, 38519), (54, 38522), (61, 38558), (62, 38570), (66, 38588), (Start: 78 @38645 has 2 MA's), (84, 38684), (85, 38690), (127, 38771), (129, 38777), (131, 38786), (152, 38921), (153, 38927), (157, 38972), (163, 39002), (181, 39050),

Gene: BodEinwohner17\_54 Start: 37181, Stop: 37786, Start Num: 39

Candidate Starts for BodEinwohner17\_54:

(28, 37151), (Start: 39 @37181 has 93 MA's), (40, 37199), (Start: 42 @37220 has 2 MA's), (46, 37235), (51, 37253), (54, 37256), (56, 37268), (61, 37292), (62, 37304), (Start: 78 @37322 has 2 MA's), (84, 37361), (85, 37367), (127, 37448), (129, 37454), (131, 37463), (152, 37598), (153, 37604), (157, 37649), (163, 37679), (181, 37727),

Gene: Boomer\_58 Start: 39232, Stop: 39855, Start Num: 38

Candidate Starts for Boomer\_58:

(Start: 38 @39232 has 96 MA's), (40, 39250), (Start: 42 @39271 has 2 MA's), (47, 39292), (49, 39295), (51, 39304), (54, 39307), (56, 39319), (59, 39328), (61, 39343), (62, 39355), (71, 39394), (72, 39400), (77, 39412), (128, 39478), (134, 39505), (152, 39664), (153, 39670), (167, 39754), (187, 39808),

Gene: Brocalys\_49 Start: 34514, Stop: 35161, Start Num: 38

Candidate Starts for Brocalys\_49:

(26, 34484), (Start: 38 @34514 has 96 MA's), (40, 34532), (Start: 42 @34553 has 2 MA's), (47, 34574), (49, 34577), (51, 34586), (54, 34589), (61, 34625), (62, 34637), (71, 34676), (128, 34754), (134, 34781), (152, 34940), (153, 34946), (160, 35009),

Gene: BronnyJr\_37 Start: 29840, Stop: 30241, Start Num: 114

Candidate Starts for BronnyJr\_37:

(72, 29696), (79, 29729), (Start: 114 @29840 has 12 MA's), (Start: 115 @29843 has 8 MA's), (126, 29873), (130, 29894), (136, 29915), (141, 29954), (148, 30002), (151, 30050), (158, 30098), (170, 30149),

Gene: Brookers\_50 Start: 36489, Stop: 37112, Start Num: 38

Candidate Starts for Brookers\_50:

(Start: 38 @36489 has 96 MA's), (40, 36507), (Start: 42 @36528 has 2 MA's), (47, 36549), (49, 36552), (51, 36561), (54, 36564), (56, 36576), (59, 36585), (61, 36600), (62, 36612), (71, 36651), (72, 36657), (77, 36669), (128, 36735), (134, 36762), (152, 36921), (153, 36927), (167, 37011), (187, 37065),

Gene: Brushbloom\_56 Start: 38072, Stop: 38854, Start Num: 17

Candidate Starts for Brushbloom\_56:

(Start: 17 @38072 has 3 MA's), (24, 38090), (31, 38114), (35, 38123), (43, 38168), (44, 38171), (52, 38210), (54, 38219), (74, 38285), (76, 38291), (88, 38336), (109, 38393), (135, 38522), (147, 38609),

(152, 38666), (157, 38717), (160, 38735), (166, 38756), (176, 38786), (184, 38798),

Gene: Bubbles123\_51 Start: 37879, Stop: 38607, Start Num: 39

Candidate Starts for Bubbles123\_51:

(Start: 39 @37879 has 93 MA's), (40, 37897), (Start: 42 @37918 has 2 MA's), (47, 37939), (49, 37942), (51, 37951), (54, 37954), (61, 37990), (62, 38002), (91, 38122), (94, 38131), (96, 38137), (103, 38173), (113, 38197), (128, 38269), (134, 38296), (143, 38350), (152, 38419), (153, 38425), (157, 38470), (163, 38500), (180, 38548),

Gene: Burwell21\_52 Start: 37612, Stop: 38259, Start Num: 38

Candidate Starts for Burwell21\_52:

(26, 37582), (Start: 38 @37612 has 96 MA's), (40, 37630), (Start: 42 @37651 has 2 MA's), (49, 37675), (51, 37684), (54, 37687), (61, 37723), (62, 37735), (71, 37774), (128, 37852), (134, 37879), (152, 38038), (153, 38044), (160, 38107),

Gene: Byougenkin\_51 Start: 37130, Stop: 37723, Start Num: 38

Candidate Starts for Byougenkin\_51:

(Start: 38 @37130 has 96 MA's), (40, 37148), (Start: 42 @37169 has 2 MA's), (51, 37202), (54, 37205), (61, 37241), (62, 37253), (71, 37292), (128, 37370), (134, 37397), (150, 37502), (152, 37523), (153, 37529), (157, 37574), (160, 37592), (163, 37607), (166, 37613),

Gene: Cabrinians\_55 Start: 37690, Stop: 38337, Start Num: 38

Candidate Starts for Cabrinians\_55:

(26, 37660), (Start: 38 @37690 has 96 MA's), (40, 37708), (Start: 42 @37729 has 2 MA's), (49, 37753), (51, 37762), (54, 37765), (61, 37801), (62, 37813), (71, 37852), (128, 37930), (134, 37957), (152, 38116), (153, 38122), (160, 38185),

Gene: CaptainTrips\_50 Start: 36293, Stop: 37006, Start Num: 38

Candidate Starts for CaptainTrips\_50:

(Start: 38 @36293 has 96 MA's), (40, 36311), (Start: 42 @36332 has 2 MA's), (47, 36353), (49, 36356), (51, 36365), (54, 36368), (61, 36404), (62, 36416), (90, 36503), (103, 36539), (113, 36563), (128, 36635), (134, 36662), (146, 36743), (152, 36818), (153, 36824), (155, 36845), (157, 36869), (163, 36899), (180, 36947),

Gene: Cerasum\_49 Start: 33556, Stop: 34179, Start Num: 38

Candidate Starts for Cerasum\_49:

(Start: 38 @33556 has 96 MA's), (40, 33574), (Start: 42 @33595 has 2 MA's), (47, 33616), (49, 33619), (51, 33628), (54, 33631), (56, 33643), (59, 33652), (61, 33667), (62, 33679), (71, 33718), (72, 33724), (77, 33736), (128, 33802), (134, 33829), (152, 33988), (153, 33994), (167, 34078), (187, 34132),

Gene: Che8\_56 Start: 38547, Stop: 39161, Start Num: 38

Candidate Starts for Che8\_56:

(Start: 38 @38547 has 96 MA's), (40, 38565), (Start: 42 @38586 has 2 MA's), (47, 38607), (51, 38619), (54, 38622), (59, 38643), (61, 38658), (71, 38709), (72, 38715), (77, 38727), (128, 38787), (134, 38814), (152, 38961), (153, 38967), (157, 39012), (160, 39030), (163, 39045), (166, 39051),

Gene: Che9d\_60 Start: 37007, Stop: 37564, Start Num: 37

Candidate Starts for Che9d\_60:

(15, 36953), (Start: 37 @37007 has 8 MA's), (40, 37025), (Start: 42 @37046 has 2 MA's), (47, 37067), (49, 37070), (54, 37082), (56, 37094), (61, 37118), (62, 37130), (71, 37169), (72, 37175), (128, 37253), (134, 37280), (152, 37364), (153, 37370), (157, 37415), (160, 37433), (163, 37448), (166, 37454),

Gene: Cheese puff\_59 Start: 39214, Stop: 39894, Start Num: 39

Candidate Starts for Cheese puff\_59:

(Start: 39 @39214 has 93 MA's), (40, 39232), (Start: 42 @39253 has 2 MA's), (47, 39274), (49, 39277), (51, 39286), (54, 39289), (61, 39325), (62, 39337), (77, 39394), (118, 39502), (128, 39556), (134, 39583), (143, 39637), (152, 39706), (153, 39712), (157, 39757), (163, 39787), (180, 39835),

Gene: Chevrolet\_60 Start: 38681, Stop: 39343, Start Num: 39

Candidate Starts for Chevrolet\_60:

(Start: 39 @38681 has 93 MA's), (40, 38699), (Start: 42 @38720 has 2 MA's), (47, 38741), (49, 38744), (51, 38753), (54, 38756), (61, 38792), (62, 38804), (66, 38822), (71, 38843), (72, 38849), (Start: 78 @38879 has 2 MA's), (84, 38918), (85, 38924), (127, 39005), (129, 39011), (131, 39020), (152, 39155), (153, 39161), (157, 39206), (163, 39236), (181, 39284),

Gene: Chubbello\_37 Start: 29339, Stop: 29740, Start Num: 114

Candidate Starts for Chubbello\_37:

(72, 29195), (79, 29228), (Start: 114 @29339 has 12 MA's), (Start: 115 @29342 has 8 MA's), (126, 29372), (130, 29393), (136, 29414), (141, 29453), (148, 29501), (151, 29549), (158, 29597), (170, 29648),

Gene: Chuckly\_56 Start: 38038, Stop: 38685, Start Num: 38

Candidate Starts for Chuckly\_56:

(Start: 38 @38038 has 96 MA's), (40, 38056), (Start: 42 @38077 has 2 MA's), (47, 38098), (49, 38101), (51, 38110), (54, 38113), (61, 38149), (66, 38179), (71, 38200), (72, 38206), (77, 38218), (128, 38278), (134, 38305), (152, 38464), (153, 38470), (160, 38533),

Gene: Clank\_58 Start: 38368, Stop: 39015, Start Num: 38

Candidate Starts for Clank\_58:

(Start: 38 @38368 has 96 MA's), (40, 38386), (Start: 42 @38407 has 2 MA's), (47, 38428), (49, 38431), (51, 38440), (54, 38443), (61, 38479), (66, 38509), (71, 38530), (72, 38536), (77, 38548), (128, 38608), (134, 38635), (152, 38794), (153, 38800), (160, 38863),

Gene: Clifton\_49 Start: 34865, Stop: 35512, Start Num: 38

Candidate Starts for Clifton\_49:

(26, 34835), (Start: 38 @34865 has 96 MA's), (40, 34883), (Start: 42 @34904 has 2 MA's), (47, 34925), (49, 34928), (51, 34937), (54, 34940), (61, 34976), (62, 34988), (71, 35027), (128, 35105), (134, 35132), (152, 35291), (153, 35297), (160, 35360),

Gene: Coco12\_52 Start: 37613, Stop: 38236, Start Num: 38

Candidate Starts for Coco12\_52:

(Start: 38 @37613 has 96 MA's), (40, 37631), (Start: 42 @37652 has 2 MA's), (47, 37673), (49, 37676), (51, 37685), (54, 37688), (56, 37700), (59, 37709), (61, 37724), (62, 37736), (71, 37775), (72, 37781), (77, 37793), (128, 37859), (134, 37886), (152, 38045), (153, 38051), (167, 38135), (187, 38189),

Gene: Corium\_50 Start: 36569, Stop: 37195, Start Num: 38

Candidate Starts for Corium\_50:

(16, 36518), (20, 36527), (29, 36557), (33, 36566), (Start: 38 @36569 has 96 MA's), (40, 36587), (Start: 42 @36599 has 2 MA's), (47, 36620), (49, 36623), (51, 36632), (54, 36635), (55, 36644), (61, 36671), (62, 36683), (87, 36803), (128, 36875), (134, 36902), (152, 36995), (153, 37001), (157, 37046), (160, 37064), (163, 37079), (166, 37085),

Gene: Cornie\_48 Start: 35673, Stop: 36353, Start Num: 39

Candidate Starts for Cornie\_48:

(Start: 39 @35673 has 93 MA's), (40, 35691), (Start: 42 @35712 has 2 MA's), (47, 35733), (49, 35736), (51, 35745), (54, 35748), (61, 35784), (62, 35796), (77, 35853), (118, 35961), (128, 36015), (134,

36042), (143, 36096), (152, 36165), (153, 36171), (157, 36216), (163, 36246), (180, 36294),

Gene: Cornucopia\_56 Start: 38383, Stop: 38988, Start Num: 39

Candidate Starts for Cornucopia\_56:

(Start: 39 @38383 has 93 MA's), (40, 38401), (Start: 42 @38422 has 2 MA's), (47, 38443), (49, 38446), (51, 38455), (54, 38458), (56, 38470), (61, 38494), (62, 38506), (Start: 78 @38524 has 2 MA's), (84, 38563), (85, 38569), (127, 38650), (129, 38656), (131, 38665), (152, 38800), (153, 38806), (157, 38851), (163, 38881), (181, 38929),

Gene: Crumble\_49 Start: 33626, Stop: 34273, Start Num: 38

Candidate Starts for Crumble\_49:

(26, 33596), (Start: 38 @33626 has 96 MA's), (40, 33644), (Start: 42 @33665 has 2 MA's), (49, 33689), (51, 33698), (54, 33701), (61, 33737), (62, 33749), (71, 33788), (128, 33866), (134, 33893), (152, 34052), (153, 34058), (160, 34121),

Gene: DLane\_49 Start: 36378, Stop: 37049, Start Num: 39

Candidate Starts for DLane\_49:

(Start: 39 @36378 has 93 MA's), (40, 36396), (Start: 42 @36417 has 2 MA's), (47, 36438), (49, 36441), (51, 36450), (54, 36453), (61, 36489), (62, 36501), (77, 36558), (118, 36666), (128, 36720), (134, 36747), (152, 36870), (153, 36876), (169, 36960), (187, 37002),

Gene: DRBy19\_57 Start: 38817, Stop: 39434, Start Num: 39

Candidate Starts for DRBy19\_57:

(Start: 39 @38817 has 93 MA's), (40, 38835), (Start: 42 @38856 has 2 MA's), (47, 38877), (49, 38880), (51, 38889), (54, 38892), (56, 38904), (61, 38928), (62, 38940), (Start: 78 @38958 has 2 MA's), (84, 38997), (85, 39003), (127, 39084), (129, 39090), (131, 39099), (152, 39234), (153, 39240), (157, 39285), (160, 39303), (163, 39318), (166, 39324),

Gene: DaWorst\_55 Start: 38273, Stop: 38734, Start Num: 39

Candidate Starts for DaWorst\_55:

(Start: 39 @38273 has 93 MA's), (40, 38291), (Start: 42 @38312 has 2 MA's), (47, 38333), (49, 38336), (51, 38345), (54, 38348), (61, 38384), (62, 38396), (152, 38546), (153, 38552), (157, 38597), (163, 38627), (180, 38675),

Gene: DaddyRickover\_53 Start: 37900, Stop: 38478, Start Num: 39

Candidate Starts for DaddyRickover\_53:

(Start: 39 @37900 has 93 MA's), (40, 37918), (47, 37960), (54, 37975), (59, 37996), (61, 38011), (62, 38023), (66, 38041), (71, 38062), (72, 38068), (128, 38140), (134, 38167), (143, 38221), (152, 38290), (153, 38296), (157, 38341), (163, 38371), (173, 38401), (180, 38419),

Gene: Daenerys\_48 Start: 35908, Stop: 36597, Start Num: 38

Candidate Starts for Daenerys\_48:

(23, 35878), (Start: 38 @35908 has 96 MA's), (40, 35926), (Start: 42 @35947 has 2 MA's), (47, 35968), (49, 35971), (51, 35980), (54, 35983), (56, 35995), (61, 36019), (62, 36031), (103, 36151), (128, 36223), (134, 36250), (152, 36409), (153, 36415), (157, 36460), (163, 36490), (180, 36538),

Gene: Dante\_54 Start: 37263, Stop: 38090, Start Num: 38

Candidate Starts for Dante\_54:

(Start: 38 @37263 has 96 MA's), (40, 37281), (Start: 42 @37302 has 2 MA's), (49, 37326), (51, 37335), (54, 37338), (61, 37374), (62, 37386), (71, 37425), (87, 37506), (95, 37533), (128, 37725), (134, 37752), (152, 37911), (153, 37917), (167, 38001), (187, 38043),

Gene: DeadP\_59 Start: 39156, Stop: 39872, Start Num: 39

Candidate Starts for DeadP\_59:

(Start: 39 @39156 has 93 MA's), (40, 39174), (46, 39210), (47, 39216), (50, 39231), (51, 39237), (54, 39252), (56, 39264), (59, 39273), (61, 39288), (65, 39312), (117, 39450), (122, 39462), (128, 39510), (134, 39537), (152, 39684), (153, 39690), (157, 39735), (160, 39753), (167, 39774), (173, 39804), (177, 39816),

Gene: Deb65\_49 Start: 35877, Stop: 36566, Start Num: 38

Candidate Starts for Deb65\_49:

(23, 35847), (Start: 38 @35877 has 96 MA's), (40, 35895), (Start: 42 @35916 has 2 MA's), (47, 35937), (49, 35940), (51, 35949), (54, 35952), (56, 35964), (61, 35988), (62, 36000), (103, 36120), (128, 36192), (134, 36219), (152, 36378), (153, 36384), (157, 36429), (163, 36459), (180, 36507),

Gene: Demsculpinboyz\_63 Start: 37137, Stop: 37874, Start Num: 38

Candidate Starts for Demsculpinboyz\_63:

(Start: 38 @37137 has 96 MA's), (40, 37155), (Start: 42 @37176 has 2 MA's), (47, 37197), (49, 37200), (51, 37209), (54, 37212), (61, 37248), (62, 37260), (87, 37380), (92, 37395), (95, 37407), (100, 37431), (106, 37455), (120, 37476), (128, 37527), (134, 37554), (142, 37605), (152, 37674), (153, 37680), (157, 37725), (160, 37743), (163, 37758), (166, 37764),

Gene: DillTech15\_50 Start: 36028, Stop: 36630, Start Num: 38

Candidate Starts for DillTech15\_50:

(23, 35998), (Start: 38 @36028 has 96 MA's), (40, 36046), (Start: 42 @36067 has 2 MA's), (46, 36082), (51, 36100), (54, 36103), (61, 36139), (62, 36151), (66, 36169), (71, 36190), (128, 36268), (134, 36295), (152, 36442), (153, 36448), (157, 36493), (159, 36508), (163, 36523), (180, 36571),

Gene: DirtMcgirt\_53 Start: 36388, Stop: 36972, Start Num: 39

Candidate Starts for DirtMcgirt\_53:

(Start: 39 @36388 has 93 MA's), (40, 36406), (Start: 42 @36427 has 2 MA's), (47, 36448), (49, 36451), (51, 36460), (54, 36463), (61, 36499), (62, 36511), (128, 36634), (134, 36661), (143, 36715), (152, 36784), (153, 36790), (157, 36835), (163, 36865), (180, 36913),

Gene: DoRead\_55 Start: 36444, Stop: 37262, Start Num: 38

Candidate Starts for DoRead\_55:

(Start: 38 @36444 has 96 MA's), (40, 36462), (Start: 42 @36483 has 2 MA's), (46, 36498), (51, 36516), (54, 36519), (59, 36540), (61, 36555), (66, 36585), (71, 36606), (72, 36612), (86, 36681), (97, 36720), (98, 36732), (110, 36780), (128, 36855), (134, 36882), (152, 37041), (153, 37047), (157, 37092), (160, 37110),

Gene: Donovan\_37 Start: 29365, Stop: 29763, Start Num: 115

Candidate Starts for Donovan\_37:

(72, 29218), (79, 29251), (Start: 114 @29362 has 12 MA's), (Start: 115 @29365 has 8 MA's), (126, 29395), (130, 29416), (136, 29437), (141, 29476), (148, 29524), (151, 29572), (158, 29620),

Gene: Doomphist\_53 Start: 38418, Stop: 39137, Start Num: 39

Candidate Starts for Doomphist\_53:

(Start: 39 @38418 has 93 MA's), (40, 38436), (Start: 42 @38457 has 2 MA's), (47, 38478), (49, 38481), (51, 38490), (54, 38493), (61, 38529), (62, 38541), (66, 38559), (71, 38580), (72, 38586), (86, 38655), (97, 38694), (98, 38706), (112, 38754), (128, 38829), (134, 38856), (152, 38949), (153, 38955), (157, 39000), (163, 39030), (180, 39078),

Gene: Doomslug\_61 Start: 37233, Stop: 38018, Start Num: 33

Candidate Starts for Doomslug\_61:

(16, 37185), (20, 37194), (29, 37224), (33, 37233), (Start: 38 @37236 has 96 MA's), (40, 37254), (Start: 42 @37275 has 2 MA's), (47, 37296), (49, 37299), (51, 37308), (54, 37311), (61, 37347), (62, 37359), (87, 37479), (95, 37506), (128, 37698), (134, 37725), (152, 37818), (153, 37824), (157, 37869), (160, 37887), (185, 37968),

Gene: DosHalletts\_56 Start: 38883, Stop: 39794, Start Num: 17

Candidate Starts for DosHalletts\_56:

(Start: 17 @38883 has 3 MA's), (24, 38901), (31, 38925), (35, 38934), (44, 38982), (52, 39021), (54, 39030), (60, 39063), (63, 39096), (64, 39099), (68, 39144), (70, 39156), (109, 39333), (135, 39462), (147, 39549), (152, 39606), (157, 39657), (164, 39687), (184, 39735),

Gene: DotProduct\_49 Start: 36494, Stop: 37054, Start Num: 45

Candidate Starts for DotProduct\_49:

(Start: 45 @36494 has 2 MA's), (48, 36509), (49, 36512), (51, 36521), (54, 36524), (56, 36536), (61, 36560), (62, 36572), (Start: 78 @36590 has 2 MA's), (84, 36629), (85, 36635), (127, 36716), (129, 36722), (131, 36731), (152, 36866), (153, 36872), (157, 36917), (163, 36947), (181, 36995),

Gene: Doug\_56 Start: 38539, Stop: 39000, Start Num: 39

Candidate Starts for Doug\_56:

(Start: 39 @38539 has 93 MA's), (40, 38557), (Start: 42 @38578 has 2 MA's), (47, 38599), (49, 38602), (51, 38611), (54, 38614), (61, 38650), (62, 38662), (152, 38812), (153, 38818), (157, 38863), (163, 38893), (180, 38941),

Gene: Drago\_52 Start: 36391, Stop: 36975, Start Num: 39

Candidate Starts for Drago\_52:

(Start: 39 @36391 has 93 MA's), (40, 36409), (Start: 42 @36430 has 2 MA's), (47, 36451), (49, 36454), (51, 36463), (54, 36466), (61, 36502), (62, 36514), (128, 36637), (134, 36664), (143, 36718), (152, 36787), (153, 36793), (157, 36838), (163, 36868), (180, 36916),

Gene: Dynamo\_37 Start: 29754, Stop: 30152, Start Num: 115

Candidate Starts for Dynamo\_37:

(72, 29607), (79, 29640), (Start: 114 @29751 has 12 MA's), (Start: 115 @29754 has 8 MA's), (126, 29784), (130, 29805), (136, 29826), (141, 29865), (148, 29913), (151, 29961), (158, 30009), (170, 30060),

Gene: Eish\_58 Start: 38625, Stop: 39248, Start Num: 38

Candidate Starts for Eish\_58:

(Start: 38 @38625 has 96 MA's), (40, 38643), (Start: 42 @38664 has 2 MA's), (47, 38685), (49, 38688), (51, 38697), (54, 38700), (56, 38712), (59, 38721), (61, 38736), (62, 38748), (71, 38787), (72, 38793), (77, 38805), (128, 38871), (134, 38898), (152, 39057), (153, 39063), (167, 39147),

Gene: EleanorGeorge\_52 Start: 36852, Stop: 37499, Start Num: 38

Candidate Starts for EleanorGeorge\_52:

(Start: 38 @36852 has 96 MA's), (Start: 42 @36891 has 2 MA's), (49, 36915), (51, 36924), (54, 36927), (61, 36963), (62, 36975), (71, 37014), (128, 37092), (134, 37119), (152, 37278), (153, 37284), (160, 37347),

Gene: EmiMonkey\_51 Start: 38692, Stop: 39168, Start Num: 49

Candidate Starts for EmiMonkey\_51:

(Start: 37 @38629 has 8 MA's), (40, 38647), (Start: 42 @38668 has 2 MA's), (47, 38689), (49, 38692), (51, 38701), (54, 38704), (56, 38716), (61, 38740), (62, 38752), (71, 38791), (72, 38797), (77, 38809), (128, 38869), (134, 38896), (152, 38989), (153, 38995), (166, 39079), (187, 39121),

Gene: Emma\_53 Start: 36635, Stop: 37219, Start Num: 39

Candidate Starts for Emma\_53:

(Start: 39 @36635 has 93 MA's), (40, 36653), (Start: 42 @36674 has 2 MA's), (47, 36695), (49, 36698), (51, 36707), (54, 36710), (61, 36746), (62, 36758), (66, 36776), (128, 36881), (134, 36908), (142, 36962), (152, 37031), (153, 37037), (157, 37082), (160, 37100), (166, 37121), (178, 37151), (183, 37163),

Gene: Empress\_52 Start: 37322, Stop: 38011, Start Num: 38

Candidate Starts for Empress\_52:

(23, 37292), (Start: 38 @37322 has 96 MA's), (40, 37340), (Start: 42 @37361 has 2 MA's), (47, 37382), (49, 37385), (51, 37394), (54, 37397), (56, 37409), (61, 37433), (62, 37445), (103, 37565), (128, 37637), (134, 37664), (152, 37823), (153, 37829), (157, 37874), (163, 37904), (180, 37952),

Gene: Enby\_54 Start: 35779, Stop: 36441, Start Num: 39

Candidate Starts for Enby\_54:

(Start: 39 @35779 has 93 MA's), (40, 35797), (Start: 42 @35818 has 2 MA's), (47, 35839), (49, 35842), (51, 35851), (54, 35854), (61, 35890), (62, 35902), (66, 35920), (71, 35941), (72, 35947), (Start: 78 @35977 has 2 MA's), (84, 36016), (85, 36022), (127, 36103), (129, 36109), (131, 36118), (152, 36253), (153, 36259), (157, 36304), (163, 36334), (173, 36364), (181, 36382),

Gene: Enzomatic\_60 Start: 37497, Stop: 38108, Start Num: 38

Candidate Starts for Enzomatic\_60:

(26, 37467), (Start: 38 @37497 has 96 MA's), (40, 37515), (Start: 42 @37536 has 2 MA's), (47, 37557), (49, 37560), (51, 37569), (54, 37572), (61, 37608), (62, 37620), (71, 37659), (72, 37665), (128, 37737), (134, 37764), (152, 37887), (153, 37893), (160, 37956),

Gene: Estave1\_56 Start: 37990, Stop: 38661, Start Num: 36

Candidate Starts for Estave1\_56:

(Start: 36 @37990 has 2 MA's), (40, 38008), (Start: 42 @38029 has 2 MA's), (47, 38050), (49, 38053), (51, 38062), (54, 38065), (59, 38086), (61, 38101), (65, 38125), (117, 38263), (122, 38275), (128, 38323), (134, 38350), (142, 38404), (152, 38473), (153, 38479), (157, 38524), (160, 38542), (167, 38563), (173, 38593), (177, 38605),

Gene: Etoile\_37 Start: 29343, Stop: 29744, Start Num: 114

Candidate Starts for Etoile\_37:

(72, 29199), (79, 29232), (Start: 114 @29343 has 12 MA's), (Start: 115 @29346 has 8 MA's), (126, 29376), (130, 29397), (136, 29418), (141, 29457), (148, 29505), (151, 29553), (158, 29601), (170, 29652),

Gene: Fancypants\_56 Start: 38391, Stop: 38969, Start Num: 34

Candidate Starts for Fancypants\_56:

(Start: 34 @38391 has 3 MA's), (40, 38409), (Start: 42 @38430 has 2 MA's), (47, 38451), (49, 38454), (51, 38463), (54, 38466), (56, 38478), (61, 38502), (62, 38514), (66, 38532), (71, 38553), (72, 38559), (134, 38658), (152, 38778), (153, 38784), (166, 38868),

Gene: Fastidio\_53 Start: 36175, Stop: 36777, Start Num: 38

Candidate Starts for Fastidio\_53:

(23, 36145), (Start: 38 @36175 has 96 MA's), (40, 36193), (Start: 42 @36214 has 2 MA's), (46, 36229), (51, 36247), (54, 36250), (61, 36286), (62, 36298), (66, 36316), (71, 36337), (128, 36415), (134, 36442), (152, 36589), (153, 36595), (157, 36640), (159, 36655), (163, 36670), (180, 36718),

Gene: Filuzino\_51 Start: 36320, Stop: 36742, Start Num: 39

Candidate Starts for Filuzino\_51:

(Start: 39 @36320 has 93 MA's), (40, 36338), (Start: 42 @36359 has 2 MA's), (47, 36380), (49, 36383), (51, 36392), (54, 36395), (61, 36431), (62, 36443), (152, 36554), (153, 36560), (157, 36605), (160, 36623), (166, 36644), (178, 36674), (183, 36686),

Gene: Firehouse51\_54 Start: 40200, Stop: 40946, Start Num: 39

Candidate Starts for Firehouse51\_54:

(Start: 39 @40200 has 93 MA's), (40, 40218), (Start: 42 @40239 has 2 MA's), (49, 40263), (55, 40284), (61, 40311), (62, 40323), (71, 40362), (72, 40368), (86, 40437), (97, 40476), (98, 40488), (112, 40536), (128, 40611), (134, 40638), (143, 40689), (152, 40758), (153, 40764), (157, 40809), (163, 40839), (173, 40869), (180, 40887),

Gene: FirstPlacePfu\_37 Start: 29378, Stop: 29776, Start Num: 115

Candidate Starts for FirstPlacePfu\_37:

(72, 29231), (79, 29264), (Start: 114 @29375 has 12 MA's), (Start: 115 @29378 has 8 MA's), (126, 29408), (130, 29429), (136, 29450), (141, 29489), (148, 29537), (151, 29585), (158, 29633), (170, 29684),

Gene: Fishburne\_37 Start: 29343, Stop: 29744, Start Num: 114

Candidate Starts for Fishburne\_37:

(72, 29199), (79, 29232), (Start: 114 @29343 has 12 MA's), (Start: 115 @29346 has 8 MA's), (126, 29376), (130, 29397), (136, 29418), (141, 29457), (148, 29505), (151, 29553), (158, 29601), (170, 29652),

Gene: Flathead\_53 Start: 37749, Stop: 38234, Start Num: 39

Candidate Starts for Flathead\_53:

(Start: 39 @37749 has 93 MA's), (40, 37767), (Start: 42 @37788 has 2 MA's), (47, 37809), (49, 37812), (51, 37821), (54, 37824), (61, 37860), (62, 37872), (71, 37911), (142, 37974), (152, 38046), (157, 38097), (160, 38115), (166, 38136), (178, 38166), (183, 38178),

Gene: Florinda\_65 Start: 39887, Stop: 40492, Start Num: 38

Candidate Starts for Florinda\_65:

(23, 39857), (Start: 38 @39887 has 96 MA's), (40, 39905), (Start: 42 @39926 has 2 MA's), (47, 39947), (49, 39950), (51, 39959), (54, 39962), (56, 39974), (59, 39983), (61, 39998), (62, 40010), (71, 40049), (72, 40055), (134, 40154), (152, 40301), (153, 40307), (157, 40352), (180, 40433),

Gene: FreddyB\_55 Start: 36538, Stop: 37185, Start Num: 38

Candidate Starts for FreddyB\_55:

(26, 36508), (Start: 38 @36538 has 96 MA's), (40, 36556), (Start: 42 @36577 has 2 MA's), (49, 36601), (51, 36610), (54, 36613), (61, 36649), (62, 36661), (71, 36700), (128, 36778), (134, 36805), (152, 36964), (153, 36970), (160, 37033),

Gene: Fruitloop\_51 Start: 37994, Stop: 38665, Start Num: 39

Candidate Starts for Fruitloop\_51:

(Start: 39 @37994 has 93 MA's), (40, 38012), (Start: 42 @38033 has 2 MA's), (47, 38054), (49, 38057), (51, 38066), (54, 38069), (61, 38105), (62, 38117), (77, 38174), (118, 38282), (128, 38336), (134, 38363), (152, 38486), (153, 38492), (169, 38576), (187, 38618),

Gene: Galactic\_53 Start: 37613, Stop: 38224, Start Num: 38

Candidate Starts for Galactic\_53:

(26, 37583), (Start: 38 @37613 has 96 MA's), (40, 37631), (Start: 42 @37652 has 2 MA's), (47, 37673), (49, 37676), (51, 37685), (54, 37688), (61, 37724), (62, 37736), (71, 37775), (72, 37781), (128, 37853), (134, 37880), (152, 38003), (153, 38009), (160, 38072),

Gene: GaloreK\_37 Start: 29336, Stop: 29737, Start Num: 114

Candidate Starts for GaloreK\_37:

(72, 29192), (79, 29225), (Start: 114 @29336 has 12 MA's), (Start: 115 @29339 has 8 MA's), (126, 29369), (130, 29390), (136, 29411), (141, 29450), (148, 29498), (151, 29546), (158, 29594), (170, 29645),

Gene: Gandalph\_56 Start: 37657, Stop: 38280, Start Num: 38

Candidate Starts for Gandalph\_56:

(Start: 38 @37657 has 96 MA's), (40, 37675), (Start: 42 @37696 has 2 MA's), (47, 37717), (49, 37720), (51, 37729), (54, 37732), (56, 37744), (59, 37753), (61, 37768), (62, 37780), (71, 37819), (72, 37825), (77, 37837), (128, 37903), (134, 37930), (152, 38089), (153, 38095), (167, 38179), (187, 38233),

Gene: Geralt\_49 Start: 35876, Stop: 36565, Start Num: 38

Candidate Starts for Geralt\_49:

(23, 35846), (Start: 38 @35876 has 96 MA's), (40, 35894), (Start: 42 @35915 has 2 MA's), (47, 35936), (49, 35939), (51, 35948), (54, 35951), (56, 35963), (61, 35987), (62, 35999), (103, 36119), (128, 36191), (134, 36218), (152, 36377), (153, 36383), (157, 36428), (163, 36458), (180, 36506),

Gene: GigiOuiOui\_50 Start: 36639, Stop: 37199, Start Num: 45

Candidate Starts for GigiOuiOui\_50:

(Start: 45 @36639 has 2 MA's), (48, 36654), (49, 36657), (51, 36666), (54, 36669), (56, 36681), (61, 36705), (62, 36717), (Start: 78 @36735 has 2 MA's), (84, 36774), (85, 36780), (127, 36861), (129, 36867), (131, 36876), (152, 37011), (153, 37017), (157, 37062), (163, 37092), (181, 37140),

Gene: Girafales\_63 Start: 39600, Stop: 40283, Start Num: 39

Candidate Starts for Girafales\_63:

(Start: 19 @39549 has 1 MA's), (22, 39558), (30, 39588), (Start: 34 @39597 has 3 MA's), (Start: 39 @39600 has 93 MA's), (40, 39618), (Start: 42 @39639 has 2 MA's), (47, 39660), (49, 39663), (51, 39672), (54, 39675), (56, 39687), (61, 39711), (62, 39723), (118, 39888), (128, 39942), (134, 39969), (152, 40092), (153, 40098), (157, 40143), (180, 40224),

Gene: Girr\_52 Start: 37416, Stop: 38063, Start Num: 38

Candidate Starts for Girr\_52:

(26, 37386), (Start: 38 @37416 has 96 MA's), (40, 37434), (Start: 42 @37455 has 2 MA's), (47, 37476), (49, 37479), (51, 37488), (54, 37491), (56, 37503), (59, 37512), (61, 37527), (66, 37557), (71, 37578), (72, 37584), (128, 37656), (134, 37683), (152, 37842), (153, 37848), (160, 37911),

Gene: Gorge\_58 Start: 38905, Stop: 39702, Start Num: 38

Candidate Starts for Gorge\_58:

(Start: 38 @38905 has 96 MA's), (40, 38923), (Start: 42 @38944 has 2 MA's), (47, 38965), (49, 38968), (51, 38977), (54, 38980), (61, 39016), (62, 39028), (66, 39046), (87, 39148), (90, 39157), (92, 39163), (100, 39199), (106, 39223), (128, 39295), (134, 39322), (152, 39481), (153, 39487), (160, 39550),

Gene: Guppsters\_54 Start: 36848, Stop: 37258, Start Num: 39

Candidate Starts for Guppsters\_54:

(Start: 39 @36848 has 93 MA's), (40, 36866), (Start: 42 @36887 has 2 MA's), (47, 36908), (49, 36911), (51, 36920), (54, 36923), (61, 36959), (62, 36971), (152, 37070), (153, 37076), (157, 37121), (163, 37151), (173, 37181), (180, 37199),

Gene: HUHilltop\_37 Start: 29373, Stop: 29774, Start Num: 114

Candidate Starts for HUHilltop\_37:

(72, 29229), (79, 29262), (Start: 114 @29373 has 12 MA's), (Start: 115 @29376 has 8 MA's), (126, 29406), (130, 29427), (136, 29448), (141, 29487), (148, 29535), (151, 29583), (158, 29631),

Gene: Hades\_54 Start: 37504, Stop: 38343, Start Num: 38

Candidate Starts for Hades\_54:

(Start: 38 @37504 has 96 MA's), (40, 37522), (Start: 42 @37543 has 2 MA's), (47, 37564), (49, 37567), (51, 37576), (54, 37579), (56, 37591), (61, 37615), (62, 37627), (66, 37645), (71, 37666), (87, 37747), (95, 37774), (128, 37966), (134, 37993), (152, 38152), (153, 38158), (167, 38242),

Gene: Hamulus\_54 Start: 38023, Stop: 38607, Start Num: 39

Candidate Starts for Hamulus\_54:

(Start: 39 @38023 has 93 MA's), (40, 38041), (Start: 42 @38062 has 2 MA's), (47, 38083), (49, 38086), (51, 38095), (54, 38098), (61, 38134), (62, 38146), (128, 38269), (134, 38296), (142, 38350), (152, 38419), (153, 38425), (157, 38470), (160, 38488), (166, 38509), (183, 38551),

Gene: Harley\_55 Start: 37379, Stop: 38041, Start Num: 39

Candidate Starts for Harley\_55:

(Start: 39 @37379 has 93 MA's), (40, 37397), (Start: 42 @37418 has 2 MA's), (47, 37439), (49, 37442), (51, 37451), (54, 37454), (61, 37490), (62, 37502), (66, 37520), (Start: 78 @37577 has 2 MA's), (84, 37616), (85, 37622), (127, 37703), (129, 37709), (131, 37718), (152, 37853), (153, 37859), (157, 37904), (163, 37934), (181, 37982),

Gene: Hegedechwinu\_53 Start: 35958, Stop: 36644, Start Num: 39

Candidate Starts for Hegedechwinu\_53:

(Start: 19 @35907 has 1 MA's), (22, 35916), (30, 35946), (Start: 34 @35955 has 3 MA's), (Start: 39 @35958 has 93 MA's), (40, 35976), (Start: 42 @35988 has 2 MA's), (47, 36009), (49, 36012), (51, 36021), (54, 36024), (55, 36033), (61, 36060), (62, 36072), (66, 36090), (83, 36156), (92, 36165), (93, 36171), (101, 36207), (108, 36231), (128, 36303), (134, 36330), (142, 36384), (152, 36456), (157, 36507), (160, 36525), (166, 36546), (178, 36576), (183, 36588),

Gene: IMpilo\_50 Start: 35763, Stop: 36185, Start Num: 39

Candidate Starts for IMpilo\_50:

(Start: 39 @35763 has 93 MA's), (40, 35781), (Start: 42 @35802 has 2 MA's), (47, 35823), (49, 35826), (51, 35835), (54, 35838), (61, 35874), (62, 35886), (152, 35997), (153, 36003), (157, 36048), (160, 36066), (166, 36087), (178, 36117), (183, 36129),

Gene: lbOuu\_53 Start: 38158, Stop: 38736, Start Num: 39

Candidate Starts for lbOuu\_53:

(24, 38128), (Start: 39 @38158 has 93 MA's), (40, 38176), (Start: 42 @38197 has 2 MA's), (46, 38212), (51, 38230), (54, 38233), (61, 38269), (66, 38299), (71, 38320), (72, 38326), (128, 38398), (134, 38425), (152, 38548), (153, 38554), (157, 38599), (163, 38629), (180, 38677),

Gene: lbhubesi\_53 Start: 36972, Stop: 37550, Start Num: 39

Candidate Starts for lbhubesi\_53:

(Start: 39 @36972 has 93 MA's), (40, 36990), (Start: 42 @37011 has 2 MA's), (47, 37032), (49, 37035), (51, 37044), (54, 37047), (61, 37083), (62, 37095), (71, 37134), (72, 37140), (128, 37212), (134, 37239), (143, 37293), (152, 37362), (153, 37368), (157, 37413), (163, 37443), (180, 37491),

Gene: Inventum\_48 Start: 36392, Stop: 37033, Start Num: 37

Candidate Starts for Inventum\_48:

(Start: 37 @36392 has 8 MA's), (40, 36410), (47, 36452), (49, 36455), (51, 36464), (54, 36467), (56, 36479), (61, 36503), (62, 36515), (77, 36572), (118, 36680), (128, 36734), (134, 36761), (152, 36854), (153, 36860), (166, 36944), (187, 36986),

Gene: IrishSherpFalk\_54 Start: 38745, Stop: 39116, Start Num: 42

Candidate Starts for IrishSherpFalk\_54:

(Start: 39 @38706 has 93 MA's), (40, 38724), (Start: 42 @38745 has 2 MA's), (47, 38766), (49, 38769), (51, 38778), (54, 38781), (61, 38817), (62, 38829), (152, 38928), (153, 38934), (157, 38979), (160, 38997), (166, 39018), (178, 39048), (183, 39060),

Gene: Jabbawokkie\_67 Start: 38459, Stop: 39289, Start Num: 38

Candidate Starts for Jabbawokkie\_67:

(Start: 38 @38459 has 96 MA's), (40, 38477), (Start: 42 @38498 has 2 MA's), (47, 38519), (49, 38522), (51, 38531), (54, 38534), (61, 38570), (62, 38582), (71, 38621), (87, 38702), (95, 38729), (128, 38921), (134, 38948), (152, 39107), (153, 39113), (155, 39134), (167, 39197), (187, 39242),

Gene: JalFarm20\_65 Start: 40779, Stop: 41264, Start Num: 39

Candidate Starts for JalFarm20\_65:

(Start: 39 @40779 has 93 MA's), (40, 40797), (Start: 42 @40818 has 2 MA's), (47, 40839), (49, 40842), (51, 40851), (54, 40854), (61, 40890), (62, 40902), (71, 40941), (142, 41004), (152, 41076), (157, 41127), (160, 41145), (166, 41166), (178, 41196), (183, 41208),

Gene: Jant\_57 Start: 39083, Stop: 39544, Start Num: 39

Candidate Starts for Jant\_57:

(Start: 39 @39083 has 93 MA's), (40, 39101), (Start: 42 @39122 has 2 MA's), (47, 39143), (49, 39146), (51, 39155), (54, 39158), (61, 39194), (62, 39206), (152, 39356), (153, 39362), (157, 39407), (160, 39425), (166, 39446), (178, 39476), (183, 39488),

Gene: Jacob\_54 Start: 37658, Stop: 38305, Start Num: 38

Candidate Starts for Jacob\_54:

(26, 37628), (Start: 38 @37658 has 96 MA's), (40, 37676), (Start: 42 @37697 has 2 MA's), (49, 37721), (51, 37730), (54, 37733), (61, 37769), (62, 37781), (71, 37820), (128, 37898), (134, 37925), (152, 38084), (153, 38090), (160, 38153),

Gene: Jebeks\_38 Start: 29328, Stop: 29729, Start Num: 114

Candidate Starts for Jebeks\_38:

(72, 29184), (79, 29217), (Start: 114 @29328 has 12 MA's), (Start: 115 @29331 has 8 MA's), (126, 29361), (130, 29382), (136, 29403), (141, 29442), (148, 29490), (151, 29538), (158, 29586), (170, 29637),

Gene: Jennelsea\_51 Start: 36337, Stop: 36990, Start Num: 38

Candidate Starts for Jennelsea\_51:

(Start: 38 @36337 has 96 MA's), (40, 36355), (Start: 42 @36376 has 2 MA's), (47, 36397), (49, 36400), (51, 36409), (54, 36412), (61, 36448), (62, 36460), (128, 36583), (134, 36610), (152, 36769), (153, 36775), (160, 36838),

Gene: Jinglebell\_58 Start: 39416, Stop: 40003, Start Num: 38

Candidate Starts for Jinglebell\_58:

(26, 39386), (Start: 38 @39416 has 96 MA's), (40, 39434), (Start: 42 @39455 has 2 MA's), (54, 39491), (61, 39527), (62, 39539), (66, 39557), (71, 39578), (77, 39596), (128, 39662), (134, 39689), (152, 39812), (153, 39818), (187, 39956),

Gene: Job42\_56 Start: 39633, Stop: 40247, Start Num: 38

Candidate Starts for Job42\_56:

(Start: 38 @39633 has 96 MA's), (40, 39651), (Start: 42 @39672 has 2 MA's), (47, 39693), (49, 39696), (51, 39705), (54, 39708), (56, 39720), (59, 39729), (61, 39744), (66, 39774), (71, 39795), (72, 39801), (128, 39873), (134, 39900), (152, 40059), (153, 40065), (157, 40110), (163, 40140), (180, 40188),

Gene: JoeyJr\_49 Start: 36076, Stop: 36765, Start Num: 38

Candidate Starts for JoeyJr\_49:

(23, 36046), (Start: 38 @36076 has 96 MA's), (40, 36094), (Start: 42 @36115 has 2 MA's), (47, 36136), (49, 36139), (51, 36148), (54, 36151), (56, 36163), (61, 36187), (62, 36199), (103, 36319), (128, 36391), (134, 36418), (152, 36577), (153, 36583), (157, 36628), (163, 36658), (180, 36706),

Gene: Juice456\_54 Start: 38793, Stop: 39401, Start Num: 42

Candidate Starts for Juice456\_54:

(Start: 38 @38754 has 96 MA's), (Start: 42 @38793 has 2 MA's), (49, 38817), (51, 38826), (54, 38829), (61, 38865), (62, 38877), (71, 38916), (128, 38994), (134, 39021), (152, 39180), (153, 39186), (160, 39249),

Gene: Juniper1\_51 Start: 36864, Stop: 37370, Start Num: 39

Candidate Starts for Juniper1\_51:

(Start: 39 @36864 has 93 MA's), (40, 36882), (Start: 42 @36903 has 2 MA's), (47, 36924), (49, 36927), (51, 36936), (54, 36939), (56, 36951), (59, 36960), (61, 36975), (62, 36987), (72, 37032), (77, 37044), (134, 37131), (152, 37179), (166, 37269), (187, 37323),

Gene: Karhdo\_51 Start: 37236, Stop: 37814, Start Num: 39

Candidate Starts for Karhdo\_51:

(24, 37206), (Start: 39 @37236 has 93 MA's), (40, 37254), (Start: 42 @37275 has 2 MA's), (46, 37290), (51, 37308), (54, 37311), (61, 37347), (62, 37359), (66, 37377), (71, 37398), (128, 37476), (134, 37503), (152, 37626), (157, 37677), (163, 37707), (180, 37755),

Gene: Kari\_37 Start: 29343, Stop: 29741, Start Num: 115

Candidate Starts for Kari\_37:

(72, 29196), (79, 29229), (Start: 114 @29340 has 12 MA's), (Start: 115 @29343 has 8 MA's), (126, 29373), (130, 29394), (136, 29415), (141, 29454), (148, 29502), (151, 29550), (158, 29598), (170, 29649),

Gene: Kenuha5\_51 Start: 36362, Stop: 37102, Start Num: 39

Candidate Starts for Kenuha5\_51:

(Start: 39 @36362 has 93 MA's), (40, 36380), (Start: 42 @36401 has 2 MA's), (49, 36425), (55, 36446), (61, 36473), (62, 36485), (66, 36503), (71, 36524), (72, 36530), (86, 36599), (97, 36638), (98, 36650), (112, 36698), (128, 36773), (134, 36800), (152, 36923), (153, 36929), (166, 37013), (187, 37055),

Gene: Kersh\_55 Start: 39189, Stop: 39803, Start Num: 38

Candidate Starts for Kersh\_55:

(23, 39159), (Start: 38 @39189 has 96 MA's), (40, 39207), (Start: 42 @39228 has 2 MA's), (47, 39249), (49, 39252), (51, 39261), (54, 39264), (56, 39276), (59, 39285), (61, 39300), (66, 39330), (71, 39351), (72, 39357), (128, 39429), (134, 39456), (152, 39615), (153, 39621), (157, 39666), (163, 39696), (180, 39744),

Gene: Kimberlium\_55 Start: 39048, Stop: 39626, Start Num: 39

Candidate Starts for Kimberlium\_55:

(24, 39018), (Start: 39 @39048 has 93 MA's), (40, 39066), (Start: 42 @39087 has 2 MA's), (46, 39102), (51, 39120), (54, 39123), (61, 39159), (62, 39171), (66, 39189), (71, 39210), (128, 39288), (134, 39315), (152, 39438), (157, 39489), (159, 39504), (163, 39519), (180, 39567),

Gene: KingJulian\_53 Start: 36569, Stop: 37195, Start Num: 38

Candidate Starts for KingJulian\_53:

(16, 36518), (20, 36527), (29, 36557), (33, 36566), (Start: 38 @36569 has 96 MA's), (40, 36587), (Start: 42 @36599 has 2 MA's), (47, 36620), (49, 36623), (51, 36632), (54, 36635), (55, 36644), (61,

36671), (62, 36683), (87, 36803), (128, 36875), (134, 36902), (152, 36995), (153, 37001), (157, 37046), (160, 37064), (163, 37079), (166, 37085),

Gene: KingMidas\_53 Start: 37738, Stop: 38427, Start Num: 38

Candidate Starts for KingMidas\_53:

(23, 37708), (Start: 38 @37738 has 96 MA's), (40, 37756), (Start: 42 @37777 has 2 MA's), (47, 37798), (49, 37801), (51, 37810), (54, 37813), (56, 37825), (61, 37849), (62, 37861), (103, 37981), (128, 38053), (134, 38080), (152, 38239), (153, 38245), (157, 38290), (163, 38320), (180, 38368),

Gene: Kingsley\_50 Start: 36346, Stop: 36969, Start Num: 38

Candidate Starts for Kingsley\_50:

(Start: 38 @36346 has 96 MA's), (40, 36364), (Start: 42 @36385 has 2 MA's), (47, 36406), (49, 36409), (51, 36418), (54, 36421), (56, 36433), (59, 36442), (61, 36457), (62, 36469), (71, 36508), (72, 36514), (77, 36526), (128, 36592), (134, 36619), (152, 36778), (153, 36784), (167, 36868), (187, 36922),

Gene: Koella\_48 Start: 33588, Stop: 34235, Start Num: 38

Candidate Starts for Koella\_48:

(26, 33558), (Start: 38 @33588 has 96 MA's), (40, 33606), (Start: 42 @33627 has 2 MA's), (49, 33651), (51, 33660), (54, 33663), (61, 33699), (62, 33711), (71, 33750), (128, 33828), (134, 33855), (152, 34014), (153, 34020), (160, 34083),

Gene: Krakatau\_51 Start: 37074, Stop: 37757, Start Num: 39

Candidate Starts for Krakatau\_51:

(Start: 39 @37074 has 93 MA's), (40, 37092), (Start: 42 @37104 has 2 MA's), (47, 37125), (49, 37128), (51, 37137), (54, 37140), (61, 37176), (62, 37188), (66, 37206), (91, 37272), (94, 37281), (96, 37287), (103, 37323), (113, 37347), (128, 37419), (134, 37446), (143, 37500), (152, 37569), (153, 37575), (157, 37620), (163, 37650), (180, 37698),

Gene: KristaRAM\_56 Start: 39407, Stop: 40030, Start Num: 39

Candidate Starts for KristaRAM\_56:

(Start: 19 @39356 has 1 MA's), (22, 39365), (30, 39395), (Start: 34 @39404 has 3 MA's), (Start: 39 @39407 has 93 MA's), (40, 39425), (Start: 42 @39446 has 2 MA's), (47, 39467), (49, 39470), (51, 39479), (54, 39482), (56, 39494), (61, 39518), (62, 39530), (103, 39650), (128, 39722), (134, 39749), (152, 39842), (153, 39848), (157, 39893), (163, 39923), (180, 39971),

Gene: Langerak\_37 Start: 29359, Stop: 29757, Start Num: 115

Candidate Starts for Langerak\_37:

(72, 29212), (79, 29245), (Start: 114 @29356 has 12 MA's), (Start: 115 @29359 has 8 MA's), (126, 29389), (130, 29410), (136, 29431), (141, 29470), (148, 29518), (151, 29566), (158, 29614), (170, 29665),

Gene: LastJedi\_48 Start: 34908, Stop: 35555, Start Num: 38

Candidate Starts for LastJedi\_48:

(26, 34878), (Start: 38 @34908 has 96 MA's), (40, 34926), (Start: 42 @34947 has 2 MA's), (47, 34968), (49, 34971), (51, 34980), (54, 34983), (61, 35019), (62, 35031), (71, 35070), (128, 35148), (134, 35175), (152, 35334), (153, 35340), (160, 35403),

Gene: Leozinho\_53 Start: 36989, Stop: 37636, Start Num: 38

Candidate Starts for Leozinho\_53:

(26, 36959), (Start: 38 @36989 has 96 MA's), (40, 37007), (Start: 42 @37028 has 2 MA's), (47, 37049), (49, 37052), (51, 37061), (54, 37064), (56, 37076), (59, 37085), (61, 37100), (66, 37130), (71, 37151), (72, 37157), (128, 37229), (134, 37256), (152, 37415), (153, 37421), (160, 37484),

Gene: Leperchaun\_46 Start: 35306, Stop: 35995, Start Num: 38

Candidate Starts for Leperchaun\_46:

(23, 35276), (Start: 38 @35306 has 96 MA's), (40, 35324), (Start: 42 @35345 has 2 MA's), (47, 35366), (49, 35369), (51, 35378), (54, 35381), (56, 35393), (61, 35417), (62, 35429), (103, 35549), (128, 35621), (134, 35648), (152, 35807), (153, 35813), (157, 35858), (163, 35888), (180, 35936),

Gene: LilMoolah\_52 Start: 37168, Stop: 37752, Start Num: 39

Candidate Starts for LilMoolah\_52:

(Start: 39 @37168 has 93 MA's), (40, 37186), (Start: 42 @37207 has 2 MA's), (47, 37228), (49, 37231), (51, 37240), (54, 37243), (61, 37279), (62, 37291), (128, 37414), (134, 37441), (143, 37495), (152, 37564), (153, 37570), (157, 37615), (163, 37645), (180, 37693),

Gene: Lizziana\_60 Start: 38661, Stop: 39308, Start Num: 38

Candidate Starts for Lizziana\_60:

(26, 38631), (Start: 38 @38661 has 96 MA's), (40, 38679), (Start: 42 @38700 has 2 MA's), (49, 38724), (51, 38733), (54, 38736), (61, 38772), (62, 38784), (71, 38823), (128, 38901), (134, 38928), (152, 39087), (153, 39093), (160, 39156),

Gene: Llama\_58 Start: 39414, Stop: 40001, Start Num: 38

Candidate Starts for Llama\_58:

(26, 39384), (Start: 38 @39414 has 96 MA's), (40, 39432), (Start: 42 @39453 has 2 MA's), (54, 39489), (61, 39525), (62, 39537), (66, 39555), (71, 39576), (77, 39594), (128, 39660), (134, 39687), (152, 39810), (153, 39816), (187, 39954),

Gene: Llij\_50 Start: 36545, Stop: 37129, Start Num: 39

Candidate Starts for Llij\_50:

(Start: 39 @36545 has 93 MA's), (40, 36563), (Start: 42 @36584 has 2 MA's), (47, 36605), (49, 36608), (51, 36617), (54, 36620), (61, 36656), (62, 36668), (128, 36791), (134, 36818), (143, 36872), (152, 36941), (153, 36947), (157, 36992), (163, 37022), (180, 37070),

Gene: Lorde\_54 Start: 35754, Stop: 36416, Start Num: 39

Candidate Starts for Lorde\_54:

(Start: 39 @35754 has 93 MA's), (40, 35772), (Start: 42 @35793 has 2 MA's), (47, 35814), (49, 35817), (51, 35826), (54, 35829), (61, 35865), (62, 35877), (66, 35895), (71, 35916), (72, 35922), (Start: 78 @35952 has 2 MA's), (84, 35991), (85, 35997), (127, 36078), (129, 36084), (131, 36093), (152, 36228), (153, 36234), (157, 36279), (163, 36309), (181, 36357),

Gene: Lucia\_53 Start: 36689, Stop: 37273, Start Num: 39

Candidate Starts for Lucia\_53:

(Start: 39 @36689 has 93 MA's), (40, 36707), (Start: 42 @36728 has 2 MA's), (47, 36749), (49, 36752), (51, 36761), (54, 36764), (61, 36800), (62, 36812), (128, 36935), (134, 36962), (143, 37016), (152, 37085), (153, 37091), (157, 37136), (163, 37166), (180, 37214),

Gene: LunaBlu\_56 Start: 38272, Stop: 38883, Start Num: 38

Candidate Starts for LunaBlu\_56:

(26, 38242), (Start: 38 @38272 has 96 MA's), (40, 38290), (Start: 42 @38311 has 2 MA's), (47, 38332), (49, 38335), (51, 38344), (54, 38347), (61, 38383), (62, 38395), (71, 38434), (72, 38440), (128, 38512), (134, 38539), (152, 38662), (153, 38668), (160, 38731),

Gene: LunaStella\_51 Start: 35924, Stop: 36715, Start Num: 5

Candidate Starts for LunaStella\_51:

(1, 35873), (2, 35882), (3, 35912), (4, 35921), (Start: 5 @35924 has 3 MA's), (6, 35942), (Start: 7 @35963 has 1 MA's), (8, 35984), (9, 35987), (10, 35996), (11, 35999), (13, 36011), (14, 36035), (Start:

19 @36047 has 1 MA's), (25, 36065), (30, 36086), (32, 36092), (41, 36137), (57, 36191), (Start: 78 @36251 has 2 MA's), (84, 36290), (85, 36296), (127, 36377), (129, 36383), (131, 36392), (152, 36527), (157, 36578), (160, 36596), (163, 36608), (181, 36656),

Gene: MadMen\_51 Start: 37141, Stop: 37788, Start Num: 38

Candidate Starts for MadMen\_51:

(Start: 38 @37141 has 96 MA's), (40, 37159), (Start: 42 @37180 has 2 MA's), (47, 37201), (49, 37204), (51, 37213), (54, 37216), (61, 37252), (62, 37264), (66, 37282), (71, 37303), (72, 37309), (77, 37321), (128, 37381), (134, 37408), (152, 37567), (153, 37573), (160, 37636),

Gene: Madiba\_51 Start: 35891, Stop: 36466, Start Num: 34

Candidate Starts for Madiba\_51:

(Start: 34 @35891 has 3 MA's), (40, 35909), (Start: 42 @35930 has 2 MA's), (49, 35954), (51, 35963), (54, 35966), (61, 36002), (66, 36032), (71, 36053), (72, 36059), (128, 36131), (134, 36158), (149, 36266), (152, 36287), (153, 36293), (166, 36377), (187, 36419),

Gene: Mahavrat\_51 Start: 36698, Stop: 37408, Start Num: 39

Candidate Starts for Mahavrat\_51:

(Start: 39 @36698 has 93 MA's), (40, 36716), (Start: 42 @36737 has 2 MA's), (54, 36773), (56, 36785), (61, 36809), (62, 36821), (69, 36860), (73, 36878), (75, 36881), (86, 36959), (97, 36998), (98, 37010), (134, 37115), (152, 37208), (153, 37214), (157, 37259), (160, 37277), (189, 37379),

Gene: Majeke\_37 Start: 29381, Stop: 29782, Start Num: 114

Candidate Starts for Majeke\_37:

(72, 29237), (79, 29270), (Start: 114 @29381 has 12 MA's), (Start: 115 @29384 has 8 MA's), (126, 29414), (130, 29435), (136, 29456), (141, 29495), (148, 29543), (151, 29591), (158, 29639), (170, 29690),

Gene: Mangethe\_37 Start: 29381, Stop: 29782, Start Num: 114

Candidate Starts for Mangethe\_37:

(72, 29237), (79, 29270), (Start: 114 @29381 has 12 MA's), (Start: 115 @29384 has 8 MA's), (126, 29414), (130, 29435), (136, 29456), (141, 29495), (148, 29543), (151, 29591), (158, 29639), (170, 29690),

Gene: Mantra\_49 Start: 36324, Stop: 36902, Start Num: 39

Candidate Starts for Mantra\_49:

(24, 36294), (Start: 39 @36324 has 93 MA's), (40, 36342), (Start: 42 @36363 has 2 MA's), (46, 36378), (51, 36396), (54, 36399), (61, 36435), (62, 36447), (66, 36465), (71, 36486), (128, 36564), (134, 36591), (152, 36714), (157, 36765), (159, 36780), (163, 36795), (180, 36843),

Gene: Maravista\_55 Start: 39079, Stop: 39756, Start Num: 39

Candidate Starts for Maravista\_55:

(Start: 39 @39079 has 93 MA's), (40, 39097), (Start: 42 @39118 has 2 MA's), (47, 39139), (49, 39142), (51, 39151), (54, 39154), (61, 39190), (62, 39202), (66, 39220), (97, 39322), (99, 39337), (112, 39373), (120, 39397), (128, 39448), (134, 39475), (152, 39568), (153, 39574), (157, 39619), (163, 39649), (180, 39697),

Gene: Marker\_54 Start: 37382, Stop: 37948, Start Num: 37

Candidate Starts for Marker\_54:

(Start: 37 @37382 has 8 MA's), (40, 37400), (47, 37442), (54, 37457), (61, 37493), (62, 37505), (71, 37544), (72, 37550), (77, 37562), (128, 37628), (134, 37655), (152, 37748), (153, 37754), (157, 37799), (161, 37823), (165, 37835), (168, 37844),

Gene: Martik\_54 Start: 37614, Stop: 38261, Start Num: 38

Candidate Starts for Martik\_54:

(26, 37584), (Start: 38 @37614 has 96 MA's), (40, 37632), (Start: 42 @37653 has 2 MA's), (49, 37677), (51, 37686), (54, 37689), (61, 37725), (62, 37737), (71, 37776), (128, 37854), (134, 37881), (152, 38040), (153, 38046), (160, 38109),

Gene: Medindi\_51 Start: 35601, Stop: 36023, Start Num: 39

Candidate Starts for Medindi\_51:

(Start: 39 @35601 has 93 MA's), (40, 35619), (Start: 42 @35640 has 2 MA's), (47, 35661), (49, 35664), (51, 35673), (54, 35676), (61, 35712), (62, 35724), (152, 35835), (153, 35841), (157, 35886), (160, 35904), (166, 35925), (178, 35955), (183, 35967),

Gene: Melissauren88\_51 Start: 36531, Stop: 37214, Start Num: 39

Candidate Starts for Melissauren88\_51:

(Start: 39 @36531 has 93 MA's), (40, 36549), (Start: 42 @36570 has 2 MA's), (47, 36591), (49, 36594), (51, 36603), (54, 36606), (61, 36642), (62, 36654), (77, 36711), (118, 36819), (128, 36873), (134, 36900), (142, 36954), (152, 37026), (157, 37077), (160, 37095), (166, 37116), (178, 37146), (183, 37158),

Gene: MilanaBonita\_44 Start: 33238, Stop: 33918, Start Num: 39

Candidate Starts for MilanaBonita\_44:

(Start: 39 @33238 has 93 MA's), (40, 33256), (Start: 42 @33277 has 2 MA's), (47, 33298), (49, 33301), (51, 33310), (54, 33313), (61, 33349), (62, 33361), (77, 33418), (118, 33526), (128, 33580), (134, 33607), (143, 33661), (152, 33730), (153, 33736), (157, 33781), (163, 33811), (180, 33859),

Gene: MilleniumForce\_57 Start: 39630, Stop: 40112, Start Num: 78

Candidate Starts for MilleniumForce\_57:

(Start: 78 @39630 has 2 MA's), (89, 39648), (96, 39669), (101, 39690), (102, 39693), (104, 39702), (105, 39705), (123, 39741), (125, 39753), (132, 39792), (143, 39855), (152, 39924), (153, 39930), (157, 39975), (163, 40005), (180, 40053),

Gene: MinionDave\_52 Start: 37068, Stop: 37781, Start Num: 38

Candidate Starts for MinionDave\_52:

(Start: 38 @37068 has 96 MA's), (40, 37086), (Start: 42 @37107 has 2 MA's), (47, 37128), (49, 37131), (51, 37140), (54, 37143), (61, 37179), (62, 37191), (90, 37278), (103, 37314), (113, 37338), (128, 37410), (134, 37437), (146, 37518), (152, 37593), (153, 37599), (155, 37620), (157, 37644), (163, 37674), (180, 37722),

Gene: Minnie\_58 Start: 39392, Stop: 40183, Start Num: 5

Candidate Starts for Minnie\_58:

(Start: 5 @39392 has 3 MA's), (6, 39410), (Start: 7 @39431 has 1 MA's), (8, 39452), (9, 39455), (10, 39464), (11, 39467), (13, 39479), (14, 39503), (Start: 19 @39515 has 1 MA's), (25, 39533), (30, 39554), (32, 39560), (41, 39605), (57, 39659), (Start: 78 @39719 has 2 MA's), (84, 39758), (85, 39764), (127, 39845), (129, 39851), (131, 39860), (152, 39995), (153, 40001), (157, 40046), (163, 40076), (181, 40124),

Gene: MisterCuddles\_52 Start: 37416, Stop: 38063, Start Num: 38

Candidate Starts for MisterCuddles\_52:

(26, 37386), (Start: 38 @37416 has 96 MA's), (40, 37434), (Start: 42 @37455 has 2 MA's), (47, 37476), (49, 37479), (51, 37488), (54, 37491), (56, 37503), (59, 37512), (61, 37527), (66, 37557), (71, 37578), (72, 37584), (128, 37656), (134, 37683), (152, 37842), (153, 37848), (160, 37911),

Gene: Modragons\_57 Start: 39260, Stop: 39847, Start Num: 38

Candidate Starts for Modragons\_57:

(26, 39230), (Start: 38 @39260 has 96 MA's), (40, 39278), (Start: 42 @39299 has 2 MA's), (54, 39335), (61, 39371), (62, 39383), (66, 39401), (71, 39422), (77, 39440), (128, 39506), (134, 39533), (152, 39656), (153, 39662), (187, 39800),

Gene: MooMoo\_51 Start: 36852, Stop: 37634, Start Num: 17

Candidate Starts for MooMoo\_51:

(Start: 17 @36852 has 3 MA's), (24, 36870), (35, 36903), (44, 36951), (52, 36990), (54, 36999), (67, 37038), (109, 37140), (125, 37239), (140, 37332), (141, 37341), (147, 37386), (152, 37443), (153, 37449), (154, 37461), (157, 37494), (179, 37578),

Gene: Moonbeam\_49 Start: 36588, Stop: 37172, Start Num: 39

Candidate Starts for Moonbeam\_49:

(Start: 39 @36588 has 93 MA's), (40, 36606), (Start: 42 @36627 has 2 MA's), (47, 36648), (49, 36651), (51, 36660), (54, 36663), (61, 36699), (62, 36711), (66, 36729), (128, 36834), (134, 36861), (142, 36915), (152, 36984), (153, 36990), (157, 37035), (160, 37053), (166, 37074), (178, 37104), (183, 37116),

Gene: Mova\_54 Start: 36914, Stop: 37537, Start Num: 38

Candidate Starts for Mova\_54:

(Start: 38 @36914 has 96 MA's), (40, 36932), (Start: 42 @36953 has 2 MA's), (47, 36974), (49, 36977), (51, 36986), (54, 36989), (56, 37001), (59, 37010), (61, 37025), (62, 37037), (71, 37076), (72, 37082), (77, 37094), (128, 37160), (134, 37187), (152, 37346), (153, 37352), (167, 37436), (187, 37490),

Gene: Mozy\_63 Start: 40170, Stop: 40844, Start Num: 39

Candidate Starts for Mozy\_63:

(21, 40128), (Start: 39 @40170 has 93 MA's), (40, 40188), (47, 40230), (54, 40245), (68, 40320), (Start: 78 @40359 has 2 MA's), (81, 40371), (93, 40428), (134, 40533), (143, 40584), (152, 40656), (153, 40662), (157, 40707), (163, 40737), (180, 40785),

Gene: Ms6\_48 Start: 32289, Stop: 32969, Start Num: 39

Candidate Starts for Ms6\_48:

(Start: 39 @32289 has 93 MA's), (40, 32307), (Start: 42 @32328 has 2 MA's), (47, 32349), (49, 32352), (51, 32361), (54, 32364), (61, 32400), (62, 32412), (66, 32430), (77, 32469), (118, 32577), (128, 32631), (134, 32658), (142, 32712), (152, 32781), (153, 32787), (157, 32832), (160, 32850), (166, 32871), (178, 32901), (183, 32913),

Gene: MulchExplorer\_55 Start: 39047, Stop: 39625, Start Num: 39

Candidate Starts for MulchExplorer\_55:

(24, 39017), (Start: 39 @39047 has 93 MA's), (40, 39065), (Start: 42 @39086 has 2 MA's), (46, 39101), (51, 39119), (54, 39122), (61, 39158), (62, 39170), (66, 39188), (71, 39209), (128, 39287), (134, 39314), (152, 39437), (157, 39488), (159, 39503), (163, 39518), (180, 39566),

Gene: Mutaforma13\_57 Start: 39642, Stop: 40256, Start Num: 39

Candidate Starts for Mutaforma13\_57:

(Start: 19 @39591 has 1 MA's), (22, 39600), (30, 39630), (Start: 34 @39639 has 3 MA's), (Start: 39 @39642 has 93 MA's), (40, 39660), (51, 39714), (54, 39717), (56, 39729), (61, 39753), (62, 39765), (134, 39909), (152, 40068), (153, 40074), (157, 40119), (163, 40149), (173, 40179), (180, 40197),

Gene: Mwanjiwa\_59 Start: 38024, Stop: 38641, Start Num: 39

Candidate Starts for Mwanjiwa\_59:

(Start: 39 @38024 has 93 MA's), (40, 38042), (Start: 42 @38063 has 2 MA's), (47, 38084), (49, 38087), (51, 38096), (54, 38099), (61, 38135), (62, 38147), (71, 38186), (72, 38192), (128, 38264), (134,

38291), (148, 38396), (152, 38450), (153, 38456), (166, 38540), (187, 38594),

Gene: Necropolis\_37 Start: 29340, Stop: 29741, Start Num: 114

Candidate Starts for Necropolis\_37:

(72, 29196), (79, 29229), (Start: 114 @29340 has 12 MA's), (Start: 115 @29343 has 8 MA's), (126, 29373), (130, 29394), (136, 29415), (141, 29454), (148, 29502), (151, 29550), (158, 29598), (170, 29649),

Gene: NewHope4\_55 Start: 37643, Stop: 38254, Start Num: 38

Candidate Starts for NewHope4\_55:

(26, 37613), (Start: 38 @37643 has 96 MA's), (40, 37661), (Start: 42 @37682 has 2 MA's), (47, 37703), (49, 37706), (51, 37715), (54, 37718), (61, 37754), (62, 37766), (71, 37805), (72, 37811), (128, 37883), (134, 37910), (152, 38033), (153, 38039), (160, 38102),

Gene: Nichirin\_58 Start: 38943, Stop: 39521, Start Num: 34

Candidate Starts for Nichirin\_58:

(12, 38856), (Start: 34 @38943 has 3 MA's), (40, 38961), (Start: 42 @38982 has 2 MA's), (49, 39006), (55, 39027), (61, 39054), (72, 39111), (134, 39210), (152, 39330), (153, 39336), (187, 39474),

Gene: Nimbo\_48 Start: 35879, Stop: 36568, Start Num: 38

Candidate Starts for Nimbo\_48:

(23, 35849), (Start: 38 @35879 has 96 MA's), (40, 35897), (Start: 42 @35918 has 2 MA's), (47, 35939), (49, 35942), (51, 35951), (54, 35954), (56, 35966), (61, 35990), (62, 36002), (103, 36122), (128, 36194), (134, 36221), (152, 36380), (153, 36386), (157, 36431), (163, 36461), (180, 36509),

Gene: Nitzel\_50 Start: 36307, Stop: 37011, Start Num: 39

Candidate Starts for Nitzel\_50:

(Start: 39 @36307 has 93 MA's), (40, 36325), (Start: 42 @36346 has 2 MA's), (49, 36370), (55, 36391), (61, 36418), (62, 36430), (77, 36487), (118, 36595), (128, 36649), (134, 36676), (150, 36784), (152, 36805), (153, 36811), (157, 36856), (160, 36874), (186, 36961), (189, 36982),

Gene: Nivrat\_50 Start: 37041, Stop: 37625, Start Num: 39

Candidate Starts for Nivrat\_50:

(Start: 39 @37041 has 93 MA's), (40, 37059), (Start: 42 @37080 has 2 MA's), (47, 37101), (49, 37104), (51, 37113), (54, 37116), (61, 37152), (62, 37164), (128, 37287), (134, 37314), (143, 37368), (152, 37437), (153, 37443), (157, 37488), (163, 37518), (180, 37566),

Gene: NormanBulbieJr\_54 Start: 37601, Stop: 38248, Start Num: 38

Candidate Starts for NormanBulbieJr\_54:

(26, 37571), (Start: 38 @37601 has 96 MA's), (40, 37619), (Start: 42 @37640 has 2 MA's), (49, 37664), (51, 37673), (54, 37676), (61, 37712), (62, 37724), (71, 37763), (128, 37841), (134, 37868), (152, 38027), (153, 38033), (160, 38096),

Gene: Ochi17\_56 Start: 38867, Stop: 39454, Start Num: 38

Candidate Starts for Ochi17\_56:

(26, 38837), (Start: 38 @38867 has 96 MA's), (40, 38885), (Start: 42 @38906 has 2 MA's), (54, 38942), (61, 38978), (62, 38990), (66, 39008), (71, 39029), (77, 39047), (128, 39113), (134, 39140), (152, 39263), (153, 39269), (187, 39407),

Gene: OfUltron\_58 Start: 39416, Stop: 40003, Start Num: 38

Candidate Starts for OfUltron\_58:

(26, 39386), (Start: 38 @39416 has 96 MA's), (40, 39434), (Start: 42 @39455 has 2 MA's), (54, 39491), (61, 39527), (62, 39539), (66, 39557), (71, 39578), (77, 39596), (128, 39662), (134, 39689), (152,

39812), (153, 39818), (187, 39956),

Gene: Ogotogo\_58 Start: 38167, Stop: 38712, Start Num: 37

Candidate Starts for Ogotogo\_58:

(Start: 37 @38167 has 8 MA's), (40, 38185), (Start: 42 @38206 has 2 MA's), (49, 38230), (55, 38251), (61, 38278), (62, 38290), (71, 38329), (77, 38347), (128, 38413), (134, 38440), (152, 38533), (153, 38539), (166, 38623), (187, 38665),

Gene: Okabe\_48 Start: 33507, Stop: 34151, Start Num: 39

Candidate Starts for Okabe\_48:

(Start: 39 @33507 has 93 MA's), (40, 33525), (Start: 42 @33546 has 2 MA's), (47, 33567), (49, 33570), (51, 33579), (54, 33582), (61, 33618), (62, 33630), (100, 33741), (128, 33840), (134, 33867), (152, 33963), (153, 33969), (157, 34014), (160, 34032), (166, 34053), (178, 34083), (183, 34095),

Gene: Oksu\_57 Start: 39625, Stop: 40206, Start Num: 34

Candidate Starts for Oksu\_57:

(12, 39538), (Start: 34 @39625 has 3 MA's), (40, 39643), (Start: 42 @39664 has 2 MA's), (49, 39688), (55, 39709), (61, 39736), (72, 39793), (134, 39892), (152, 40015), (153, 40021), (187, 40159),

Gene: OldBen\_51 Start: 37594, Stop: 38172, Start Num: 39

Candidate Starts for OldBen\_51:

(24, 37564), (Start: 39 @37594 has 93 MA's), (40, 37612), (47, 37654), (49, 37657), (51, 37666), (54, 37669), (59, 37690), (61, 37705), (62, 37717), (66, 37735), (71, 37756), (72, 37762), (128, 37834), (134, 37861), (143, 37915), (152, 37984), (153, 37990), (157, 38035), (163, 38065), (173, 38095), (180, 38113),

Gene: Ovechkin\_50 Start: 36858, Stop: 37478, Start Num: 34

Candidate Starts for Ovechkin\_50:

(Start: 19 @36810 has 1 MA's), (22, 36819), (30, 36849), (Start: 34 @36858 has 3 MA's), (Start: 39 @36861 has 93 MA's), (40, 36879), (Start: 42 @36900 has 2 MA's), (47, 36921), (49, 36924), (51, 36933), (54, 36936), (61, 36972), (62, 36984), (66, 37002), (93, 37071), (101, 37107), (108, 37131), (128, 37203), (134, 37230), (142, 37281), (152, 37350), (153, 37356), (156, 37392),

Gene: OwlsT2W\_54 Start: 37885, Stop: 38490, Start Num: 39

Candidate Starts for OwlsT2W\_54:

(Start: 39 @37885 has 93 MA's), (40, 37903), (Start: 42 @37924 has 2 MA's), (47, 37945), (49, 37948), (51, 37957), (54, 37960), (56, 37972), (61, 37996), (62, 38008), (Start: 78 @38026 has 2 MA's), (84, 38065), (85, 38071), (127, 38152), (129, 38158), (131, 38167), (152, 38302), (153, 38308), (157, 38353), (163, 38383), (181, 38431),

Gene: PHappiness\_49 Start: 35852, Stop: 36541, Start Num: 38

Candidate Starts for PHappiness\_49:

(23, 35822), (Start: 38 @35852 has 96 MA's), (40, 35870), (Start: 42 @35891 has 2 MA's), (47, 35912), (49, 35915), (51, 35924), (54, 35927), (56, 35939), (61, 35963), (62, 35975), (103, 36095), (128, 36167), (134, 36194), (152, 36353), (153, 36359), (157, 36404), (163, 36434), (180, 36482),

Gene: PMC\_50 Start: 37468, Stop: 38091, Start Num: 38

Candidate Starts for PMC\_50:

(Start: 38 @37468 has 96 MA's), (40, 37486), (Start: 42 @37507 has 2 MA's), (47, 37528), (49, 37531), (51, 37540), (54, 37543), (56, 37555), (59, 37564), (61, 37579), (62, 37591), (71, 37630), (72, 37636), (77, 37648), (128, 37714), (134, 37741), (152, 37900), (153, 37906), (167, 37990), (187, 38044),

Gene: Pacc40\_48 Start: 35926, Stop: 36615, Start Num: 38

Candidate Starts for Pacc40\_48:

(23, 35896), (Start: 38 @35926 has 96 MA's), (40, 35944), (Start: 42 @35965 has 2 MA's), (47, 35986), (49, 35989), (51, 35998), (54, 36001), (56, 36013), (61, 36037), (62, 36049), (103, 36169), (128, 36241), (134, 36268), (152, 36427), (153, 36433), (157, 36478), (163, 36508), (180, 36556),

Gene: PatoPoderoso\_50 Start: 36527, Stop: 37195, Start Num: 20

Candidate Starts for PatoPoderoso\_50:

(16, 36518), (20, 36527), (29, 36557), (33, 36566), (Start: 38 @36569 has 96 MA's), (40, 36587), (Start: 42 @36599 has 2 MA's), (47, 36620), (49, 36623), (51, 36632), (54, 36635), (55, 36644), (61, 36671), (62, 36683), (87, 36803), (128, 36875), (134, 36902), (152, 36995), (153, 37001), (157, 37046), (160, 37064), (163, 37079), (166, 37085),

Gene: Peridot\_55 Start: 37128, Stop: 37712, Start Num: 39

Candidate Starts for Peridot\_55:

(28, 37098), (Start: 39 @37128 has 93 MA's), (40, 37146), (Start: 42 @37167 has 2 MA's), (47, 37188), (49, 37191), (51, 37200), (54, 37203), (61, 37239), (62, 37251), (128, 37374), (134, 37401), (143, 37455), (152, 37524), (153, 37530), (157, 37575), (163, 37605), (180, 37653),

Gene: Phalconet\_52 Start: 36835, Stop: 37287, Start Num: 39

Candidate Starts for Phalconet\_52:

(Start: 39 @36835 has 93 MA's), (40, 36853), (Start: 42 @36865 has 2 MA's), (47, 36886), (49, 36889), (51, 36898), (54, 36901), (55, 36910), (61, 36937), (62, 36949), (152, 37099), (153, 37105), (157, 37150), (163, 37180), (180, 37228),

Gene: Phanphagia\_51 Start: 37739, Stop: 38149, Start Num: 39

Candidate Starts for Phanphagia\_51:

(Start: 39 @37739 has 93 MA's), (40, 37757), (Start: 42 @37778 has 2 MA's), (47, 37799), (49, 37802), (51, 37811), (54, 37814), (61, 37850), (62, 37862), (152, 37961), (153, 37967), (157, 38012), (160, 38030), (166, 38051), (178, 38081), (183, 38093),

Gene: Phasih\_52 Start: 37932, Stop: 38681, Start Num: 39

Candidate Starts for Phasih\_52:

(Start: 39 @37932 has 93 MA's), (40, 37950), (Start: 42 @37971 has 2 MA's), (47, 37992), (49, 37995), (51, 38004), (54, 38007), (59, 38028), (61, 38043), (66, 38073), (71, 38094), (72, 38100), (86, 38169), (97, 38208), (98, 38220), (110, 38268), (128, 38343), (134, 38370), (152, 38493), (153, 38499), (154, 38511), (157, 38544), (160, 38562), (166, 38583),

Gene: Phatniss\_52 Start: 37640, Stop: 38224, Start Num: 39

Candidate Starts for Phatniss\_52:

(Start: 39 @37640 has 93 MA's), (40, 37658), (Start: 42 @37679 has 2 MA's), (47, 37700), (49, 37703), (51, 37712), (54, 37715), (61, 37751), (62, 37763), (128, 37886), (134, 37913), (143, 37967), (152, 38036), (153, 38042), (157, 38087), (163, 38117), (180, 38165),

Gene: Phegasus\_37 Start: 29351, Stop: 29749, Start Num: 115

Candidate Starts for Phegasus\_37:

(72, 29204), (79, 29237), (Start: 114 @29348 has 12 MA's), (Start: 115 @29351 has 8 MA's), (126, 29381), (130, 29402), (136, 29423), (141, 29462), (148, 29510), (151, 29558), (158, 29606), (170, 29657),

Gene: PhesterPhotato\_55 Start: 37823, Stop: 38284, Start Num: 39

Candidate Starts for PhesterPhotato\_55:

(Start: 39 @37823 has 93 MA's), (40, 37841), (Start: 42 @37862 has 2 MA's), (47, 37883), (49, 37886), (51, 37895), (54, 37898), (61, 37934), (62, 37946), (152, 38096), (153, 38102), (157, 38147), (163,

38177), (180, 38225),

Gene: Philus\_57 Start: 38793, Stop: 39410, Start Num: 39

Candidate Starts for Philus\_57:

(Start: 39 @38793 has 93 MA's), (40, 38811), (Start: 42 @38832 has 2 MA's), (47, 38853), (49, 38856), (51, 38865), (54, 38868), (56, 38880), (61, 38904), (62, 38916), (Start: 78 @38934 has 2 MA's), (84, 38973), (85, 38979), (127, 39060), (129, 39066), (131, 39075), (152, 39210), (153, 39216), (157, 39261), (160, 39279), (163, 39294), (166, 39300),

Gene: Phineas\_37 Start: 29711, Stop: 30112, Start Num: 114

Candidate Starts for Phineas\_37:

(72, 29567), (79, 29600), (Start: 114 @29711 has 12 MA's), (Start: 115 @29714 has 8 MA's), (126, 29744), (130, 29765), (136, 29786), (141, 29825), (148, 29873), (151, 29921), (158, 29969), (170, 30020),

Gene: PhlipPhlop\_53 Start: 38629, Stop: 39168, Start Num: 37

Candidate Starts for PhlipPhlop\_53:

(Start: 37 @38629 has 8 MA's), (40, 38647), (Start: 42 @38668 has 2 MA's), (47, 38689), (49, 38692), (51, 38701), (54, 38704), (56, 38716), (61, 38740), (62, 38752), (71, 38791), (72, 38797), (77, 38809), (128, 38869), (134, 38896), (152, 38989), (153, 38995), (166, 39079), (187, 39121),

Gene: Pippy\_52 Start: 36472, Stop: 37119, Start Num: 38

Candidate Starts for Pippy\_52:

(26, 36442), (Start: 38 @36472 has 96 MA's), (40, 36490), (Start: 42 @36511 has 2 MA's), (47, 36532), (49, 36535), (51, 36544), (54, 36547), (61, 36583), (62, 36595), (71, 36634), (128, 36712), (134, 36739), (152, 36898), (153, 36904), (160, 36967),

Gene: Plumbus\_55 Start: 37701, Stop: 38279, Start Num: 39

Candidate Starts for Plumbus\_55:

(24, 37671), (Start: 39 @37701 has 93 MA's), (40, 37719), (Start: 42 @37740 has 2 MA's), (46, 37755), (51, 37773), (54, 37776), (61, 37812), (62, 37824), (66, 37842), (71, 37863), (128, 37941), (134, 37968), (152, 38091), (157, 38142), (159, 38157), (163, 38172), (180, 38220),

Gene: Poenanya\_53 Start: 38418, Stop: 39137, Start Num: 39

Candidate Starts for Poenanya\_53:

(Start: 39 @38418 has 93 MA's), (40, 38436), (Start: 42 @38457 has 2 MA's), (47, 38478), (49, 38481), (51, 38490), (54, 38493), (61, 38529), (62, 38541), (66, 38559), (71, 38580), (72, 38586), (86, 38655), (97, 38694), (98, 38706), (112, 38754), (128, 38829), (134, 38856), (152, 38949), (153, 38955), (157, 39000), (163, 39030), (180, 39078),

Gene: Polka14\_52 Start: 37024, Stop: 37638, Start Num: 39

Candidate Starts for Polka14\_52:

(Start: 39 @37024 has 93 MA's), (40, 37042), (Start: 42 @37063 has 2 MA's), (47, 37084), (49, 37087), (51, 37096), (54, 37099), (61, 37135), (66, 37165), (71, 37186), (72, 37192), (77, 37204), (128, 37264), (134, 37291), (152, 37450), (153, 37456), (157, 37501), (163, 37531), (180, 37579),

Gene: Pollywog\_54 Start: 38085, Stop: 38915, Start Num: 38

Candidate Starts for Pollywog\_54:

(26, 38055), (Start: 38 @38085 has 96 MA's), (40, 38103), (Start: 42 @38124 has 2 MA's), (47, 38145), (49, 38148), (51, 38157), (54, 38160), (61, 38196), (62, 38208), (87, 38328), (95, 38355), (128, 38547), (134, 38574), (152, 38733), (153, 38739), (157, 38784), (160, 38802), (187, 38868), (188, 38883),

Gene: Polo2Bam\_59 Start: 37497, Stop: 38108, Start Num: 38

Candidate Starts for Polo2Bam\_59:

(26, 37467), (Start: 38 @37497 has 96 MA's), (40, 37515), (Start: 42 @37536 has 2 MA's), (47, 37557), (49, 37560), (51, 37569), (54, 37572), (61, 37608), (62, 37620), (71, 37659), (72, 37665), (128, 37737), (134, 37764), (152, 37887), (153, 37893), (160, 37956),

Gene: PopTart\_47 Start: 36238, Stop: 36744, Start Num: 38

Candidate Starts for PopTart\_47:

(26, 36208), (Start: 38 @36238 has 96 MA's), (40, 36256), (Start: 42 @36277 has 2 MA's), (47, 36298), (54, 36313), (56, 36325), (61, 36349), (62, 36361), (71, 36400), (72, 36406), (134, 36505), (152, 36553), (166, 36643), (187, 36697),

Gene: Priscilla\_54 Start: 37700, Stop: 38347, Start Num: 38

Candidate Starts for Priscilla\_54:

(26, 37670), (Start: 38 @37700 has 96 MA's), (40, 37718), (Start: 42 @37739 has 2 MA's), (49, 37763), (51, 37772), (54, 37775), (61, 37811), (62, 37823), (71, 37862), (128, 37940), (134, 37967), (152, 38126), (153, 38132), (160, 38195),

Gene: QuickMath\_54 Start: 39271, Stop: 39849, Start Num: 39

Candidate Starts for QuickMath\_54:

(24, 39241), (Start: 39 @39271 has 93 MA's), (40, 39289), (Start: 42 @39310 has 2 MA's), (46, 39325), (51, 39343), (54, 39346), (61, 39382), (62, 39394), (66, 39412), (71, 39433), (128, 39511), (134, 39538), (152, 39661), (157, 39712), (159, 39727), (163, 39742), (180, 39790),

Gene: Quico\_62 Start: 39707, Stop: 40312, Start Num: 38

Candidate Starts for Quico\_62:

(23, 39677), (Start: 38 @39707 has 96 MA's), (40, 39725), (Start: 42 @39746 has 2 MA's), (47, 39767), (49, 39770), (51, 39779), (54, 39782), (56, 39794), (59, 39803), (61, 39818), (62, 39830), (71, 39869), (72, 39875), (134, 39974), (152, 40121), (153, 40127), (157, 40172), (180, 40253),

Gene: Radiance\_53 Start: 37766, Stop: 38371, Start Num: 39

Candidate Starts for Radiance\_53:

(28, 37736), (Start: 39 @37766 has 93 MA's), (40, 37784), (Start: 42 @37805 has 2 MA's), (46, 37820), (51, 37838), (54, 37841), (56, 37853), (61, 37877), (62, 37889), (Start: 78 @37907 has 2 MA's), (84, 37946), (85, 37952), (127, 38033), (129, 38039), (131, 38048), (152, 38183), (153, 38189), (157, 38234), (163, 38264), (181, 38312),

Gene: Ramsey\_54 Start: 38423, Stop: 39037, Start Num: 38

Candidate Starts for Ramsey\_54:

(23, 38393), (Start: 38 @38423 has 96 MA's), (40, 38441), (Start: 42 @38462 has 2 MA's), (47, 38483), (49, 38486), (51, 38495), (54, 38498), (56, 38510), (59, 38519), (61, 38534), (66, 38564), (71, 38585), (72, 38591), (128, 38663), (134, 38690), (152, 38849), (153, 38855), (157, 38900), (163, 38930), (180, 38978),

Gene: Renaud18\_59 Start: 38442, Stop: 38924, Start Num: 78

Candidate Starts for Renaud18\_59:

(Start: 78 @38442 has 2 MA's), (89, 38460), (96, 38481), (101, 38502), (102, 38505), (104, 38514), (105, 38517), (123, 38553), (125, 38565), (132, 38604), (143, 38667), (152, 38736), (153, 38742), (157, 38787), (163, 38817), (180, 38865),

Gene: RitaG\_49 Start: 36197, Stop: 36886, Start Num: 38

Candidate Starts for RitaG\_49:

(23, 36167), (Start: 38 @36197 has 96 MA's), (40, 36215), (Start: 42 @36236 has 2 MA's), (47, 36257), (49, 36260), (51, 36269), (54, 36272), (56, 36284), (61, 36308), (62, 36320), (103, 36440), (128,

36512), (134, 36539), (152, 36698), (153, 36704), (157, 36749), (163, 36779), (180, 36827),

Gene: Rockne\_54 Start: 37468, Stop: 38091, Start Num: 38

Candidate Starts for Rockne\_54:

(Start: 38 @37468 has 96 MA's), (40, 37486), (Start: 42 @37507 has 2 MA's), (47, 37528), (49, 37531), (51, 37540), (54, 37543), (56, 37555), (59, 37564), (61, 37579), (62, 37591), (71, 37630), (72, 37636), (77, 37648), (128, 37714), (134, 37741), (152, 37900), (153, 37906), (167, 37990), (187, 38044),

Gene: RockyHorror\_54 Start: 37296, Stop: 37757, Start Num: 39

Candidate Starts for RockyHorror\_54:

(Start: 39 @37296 has 93 MA's), (40, 37314), (Start: 42 @37335 has 2 MA's), (47, 37356), (49, 37359), (51, 37368), (54, 37371), (61, 37407), (62, 37419), (152, 37569), (153, 37575), (157, 37620), (163, 37650), (180, 37698),

Gene: Royals2015\_56 Start: 37542, Stop: 38093, Start Num: 37

Candidate Starts for Royals2015\_56:

(Start: 37 @37542 has 8 MA's), (40, 37560), (Start: 42 @37581 has 2 MA's), (49, 37605), (51, 37614), (54, 37617), (61, 37653), (62, 37665), (71, 37704), (72, 37710), (128, 37782), (134, 37809), (152, 37902), (153, 37908), (166, 37992),

Gene: Ruby\_50 Start: 37417, Stop: 38064, Start Num: 38

Candidate Starts for Ruby\_50:

(26, 37387), (Start: 38 @37417 has 96 MA's), (40, 37435), (Start: 42 @37456 has 2 MA's), (47, 37477), (49, 37480), (51, 37489), (54, 37492), (56, 37504), (59, 37513), (61, 37528), (66, 37558), (71, 37579), (72, 37585), (128, 37657), (134, 37684), (152, 37843), (153, 37849), (160, 37912),

Gene: SG4\_50 Start: 36264, Stop: 36926, Start Num: 39

Candidate Starts for SG4\_50:

(Start: 39 @36264 has 93 MA's), (40, 36282), (Start: 42 @36303 has 2 MA's), (47, 36324), (49, 36327), (51, 36336), (54, 36339), (61, 36375), (62, 36387), (66, 36405), (71, 36426), (72, 36432), (Start: 78 @36462 has 2 MA's), (84, 36501), (85, 36507), (127, 36588), (129, 36594), (131, 36603), (152, 36738), (153, 36744), (157, 36789), (163, 36819), (173, 36849), (181, 36867),

Gene: Saal\_56 Start: 38724, Stop: 39521, Start Num: 38

Candidate Starts for Saal\_56:

(Start: 38 @38724 has 96 MA's), (40, 38742), (Start: 42 @38763 has 2 MA's), (47, 38784), (49, 38787), (51, 38796), (54, 38799), (61, 38835), (62, 38847), (66, 38865), (87, 38967), (90, 38976), (92, 38982), (100, 39018), (106, 39042), (128, 39114), (134, 39141), (152, 39300), (153, 39306), (160, 39369),

Gene: Sabbb\_58 Start: 38465, Stop: 39208, Start Num: 39

Candidate Starts for Sabbb\_58:

(27, 38435), (Start: 39 @38465 has 93 MA's), (40, 38483), (Start: 42 @38504 has 2 MA's), (47, 38525), (49, 38528), (51, 38537), (54, 38540), (61, 38576), (62, 38588), (66, 38606), (97, 38708), (99, 38723), (112, 38759), (120, 38783), (128, 38834), (134, 38861), (152, 39020), (153, 39026), (157, 39071), (163, 39101), (173, 39131), (180, 39149),

Gene: Sandalphon\_55 Start: 38373, Stop: 38978, Start Num: 39

Candidate Starts for Sandalphon\_55:

(28, 38343), (Start: 39 @38373 has 93 MA's), (40, 38391), (Start: 42 @38412 has 2 MA's), (47, 38433), (49, 38436), (51, 38445), (54, 38448), (56, 38460), (61, 38484), (62, 38496), (Start: 78 @38514 has 2 MA's), (84, 38553), (85, 38559), (127, 38640), (129, 38646), (131, 38655), (152, 38790), (153, 38796), (157, 38841), (163, 38871), (181, 38919),

Gene: Sarma624\_51 Start: 33538, Stop: 34161, Start Num: 38

Candidate Starts for Sarma624\_51:

(Start: 38 @33538 has 96 MA's), (40, 33556), (Start: 42 @33577 has 2 MA's), (47, 33598), (49, 33601), (51, 33610), (54, 33613), (56, 33625), (59, 33634), (61, 33649), (62, 33661), (71, 33700), (72, 33706), (77, 33718), (128, 33784), (134, 33811), (152, 33970), (153, 33976), (167, 34060), (187, 34114),

Gene: Sassafras\_51 Start: 36391, Stop: 37032, Start Num: 37

Candidate Starts for Sassafras\_51:

(Start: 37 @36391 has 8 MA's), (40, 36409), (47, 36451), (49, 36454), (51, 36463), (54, 36466), (56, 36478), (61, 36502), (62, 36514), (77, 36571), (118, 36679), (128, 36733), (134, 36760), (152, 36853), (153, 36859), (166, 36943), (187, 36985),

Gene: SassyB\_47 Start: 36238, Stop: 36744, Start Num: 38

Candidate Starts for SassyB\_47:

(26, 36208), (Start: 38 @36238 has 96 MA's), (40, 36256), (Start: 42 @36277 has 2 MA's), (47, 36298), (54, 36313), (56, 36325), (61, 36349), (62, 36361), (71, 36400), (72, 36406), (134, 36505), (152, 36553), (166, 36643), (187, 36697),

Gene: Scottish\_52 Start: 37209, Stop: 37898, Start Num: 38

Candidate Starts for Scottish\_52:

(23, 37179), (Start: 38 @37209 has 96 MA's), (40, 37227), (Start: 42 @37248 has 2 MA's), (47, 37269), (49, 37272), (51, 37281), (54, 37284), (56, 37296), (61, 37320), (62, 37332), (103, 37452), (128, 37524), (134, 37551), (152, 37710), (153, 37716), (157, 37761), (163, 37791), (180, 37839),

Gene: SeaLumen\_58 Start: 37497, Stop: 38108, Start Num: 38

Candidate Starts for SeaLumen\_58:

(26, 37467), (Start: 38 @37497 has 96 MA's), (40, 37515), (Start: 42 @37536 has 2 MA's), (47, 37557), (49, 37560), (51, 37569), (54, 37572), (61, 37608), (62, 37620), (71, 37659), (72, 37665), (128, 37737), (134, 37764), (152, 37887), (153, 37893), (160, 37956),

Gene: Seabastian\_58 Start: 39417, Stop: 40004, Start Num: 38

Candidate Starts for Seabastian\_58:

(26, 39387), (Start: 38 @39417 has 96 MA's), (40, 39435), (Start: 42 @39456 has 2 MA's), (54, 39492), (61, 39528), (62, 39540), (66, 39558), (71, 39579), (77, 39597), (128, 39663), (134, 39690), (152, 39813), (153, 39819), (187, 39957),

Gene: Seagreen\_53 Start: 36966, Stop: 37559, Start Num: 38

Candidate Starts for Seagreen\_53:

(26, 36936), (Start: 38 @36966 has 96 MA's), (40, 36984), (Start: 42 @37005 has 2 MA's), (47, 37026), (49, 37029), (51, 37038), (54, 37041), (61, 37077), (62, 37089), (71, 37128), (72, 37134), (128, 37206), (134, 37233), (152, 37356), (153, 37362), (157, 37407), (160, 37425), (163, 37440), (166, 37446), (172, 37476), (188, 37527), (189, 37530),

Gene: Shauna1\_52 Start: 37720, Stop: 38130, Start Num: 39

Candidate Starts for Shauna1\_52:

(Start: 39 @37720 has 93 MA's), (40, 37738), (Start: 42 @37759 has 2 MA's), (47, 37780), (49, 37783), (51, 37792), (54, 37795), (61, 37831), (62, 37843), (152, 37942), (153, 37948), (157, 37993), (160, 38011), (166, 38032), (178, 38062), (183, 38074),

Gene: ShiLan\_53 Start: 37647, Stop: 38294, Start Num: 38

Candidate Starts for ShiLan\_53:

(26, 37617), (Start: 38 @37647 has 96 MA's), (40, 37665), (Start: 42 @37686 has 2 MA's), (49, 37710), (51, 37719), (54, 37722), (61, 37758), (62, 37770), (71, 37809), (128, 37887), (134, 37914), (152,

38073), (153, 38079), (160, 38142),

Gene: ShowerHandel\_57 Start: 37614, Stop: 38261, Start Num: 38

Candidate Starts for ShowerHandel\_57:

(26, 37584), (Start: 38 @37614 has 96 MA's), (40, 37632), (Start: 42 @37653 has 2 MA's), (49, 37677), (51, 37686), (54, 37689), (61, 37725), (62, 37737), (71, 37776), (128, 37854), (134, 37881), (152, 38040), (153, 38046), (160, 38109),

Gene: ShroomBoi\_55 Start: 37834, Stop: 38421, Start Num: 39

Candidate Starts for ShroomBoi\_55:

(26, 37804), (Start: 39 @37834 has 93 MA's), (40, 37852), (Start: 42 @37873 has 2 MA's), (46, 37888), (51, 37906), (54, 37909), (61, 37945), (62, 37957), (66, 37975), (130, 38077), (133, 38092), (139, 38128), (144, 38152), (145, 38164), (152, 38233), (153, 38239), (157, 38284), (163, 38314), (180, 38362),

Gene: SiSi\_51 Start: 36788, Stop: 37366, Start Num: 39

Candidate Starts for SiSi\_51:

(24, 36758), (Start: 39 @36788 has 93 MA's), (40, 36806), (Start: 42 @36827 has 2 MA's), (46, 36842), (51, 36860), (54, 36863), (61, 36899), (62, 36911), (66, 36929), (71, 36950), (128, 37028), (134, 37055), (152, 37178), (157, 37229), (159, 37244), (163, 37259), (180, 37307),

Gene: SilverChicken\_63 Start: 37324, Stop: 37746, Start Num: 39

Candidate Starts for SilverChicken\_63:

(Start: 39 @37324 has 93 MA's), (40, 37342), (Start: 42 @37363 has 2 MA's), (47, 37384), (49, 37387), (51, 37396), (54, 37399), (61, 37435), (62, 37447), (152, 37558), (153, 37564), (157, 37609), (160, 37627), (166, 37648), (178, 37678), (183, 37690),

Gene: SimranZ1\_53 Start: 36878, Stop: 37609, Start Num: 39

Candidate Starts for SimranZ1\_53:

(Start: 39 @36878 has 93 MA's), (40, 36896), (Start: 42 @36917 has 2 MA's), (54, 36953), (56, 36965), (61, 36989), (62, 37001), (69, 37040), (73, 37058), (75, 37061), (86, 37139), (97, 37178), (98, 37190), (134, 37295), (143, 37349), (152, 37418), (153, 37424), (160, 37487), (187, 37562),

Gene: Sonah\_37 Start: 29332, Stop: 29730, Start Num: 115

Candidate Starts for Sonah\_37:

(72, 29185), (79, 29218), (Start: 114 @29329 has 12 MA's), (Start: 115 @29332 has 8 MA's), (126, 29362), (130, 29383), (136, 29404), (141, 29443), (148, 29491), (151, 29539), (158, 29587), (170, 29638),

Gene: Soul22\_57 Start: 37584, Stop: 38414, Start Num: 38

Candidate Starts for Soul22\_57:

(Start: 38 @37584 has 96 MA's), (40, 37602), (Start: 42 @37623 has 2 MA's), (47, 37644), (49, 37647), (51, 37656), (54, 37659), (61, 37695), (62, 37707), (71, 37746), (87, 37827), (95, 37854), (128, 38046), (134, 38073), (152, 38232), (153, 38238), (167, 38322), (187, 38367),

Gene: Sparkdehlily\_61 Start: 39036, Stop: 39497, Start Num: 39

Candidate Starts for Sparkdehlily\_61:

(Start: 39 @39036 has 93 MA's), (40, 39054), (Start: 42 @39075 has 2 MA's), (47, 39096), (49, 39099), (51, 39108), (54, 39111), (61, 39147), (62, 39159), (152, 39309), (153, 39315), (157, 39360), (163, 39390), (180, 39438),

Gene: Spartacus\_55 Start: 37623, Stop: 38033, Start Num: 39

Candidate Starts for Spartacus\_55:

(Start: 39 @37623 has 93 MA's), (40, 37641), (Start: 42 @37662 has 2 MA's), (47, 37683), (49, 37686), (51, 37695), (54, 37698), (61, 37734), (62, 37746), (152, 37845), (153, 37851), (157, 37896), (160, 37914), (166, 37935), (178, 37965), (183, 37977),

Gene: Spikelee\_60 Start: 39125, Stop: 39748, Start Num: 39

Candidate Starts for Spikelee\_60:

(Start: 39 @39125 has 93 MA's), (40, 39143), (Start: 42 @39164 has 2 MA's), (47, 39185), (49, 39188), (51, 39197), (54, 39200), (56, 39212), (61, 39236), (62, 39248), (103, 39368), (128, 39440), (134, 39467), (152, 39560), (153, 39566), (157, 39611), (163, 39641), (180, 39689),

Gene: Spoonbill\_51 Start: 36151, Stop: 36924, Start Num: 38

Candidate Starts for Spoonbill\_51:

(23, 36121), (Start: 38 @36151 has 96 MA's), (40, 36169), (Start: 42 @36190 has 2 MA's), (46, 36205), (51, 36223), (54, 36226), (56, 36238), (61, 36262), (62, 36274), (103, 36394), (128, 36466), (134, 36493), (152, 36652), (153, 36658), (157, 36703), (163, 36733), (173, 36763), (180, 36781), (190, 36859),

Gene: StAnnes\_52 Start: 37618, Stop: 38367, Start Num: 39

Candidate Starts for StAnnes\_52:

(Start: 39 @37618 has 93 MA's), (40, 37636), (Start: 42 @37657 has 2 MA's), (47, 37678), (49, 37681), (54, 37693), (61, 37729), (62, 37741), (71, 37780), (72, 37786), (86, 37855), (97, 37894), (98, 37906), (110, 37954), (128, 38029), (134, 38056), (142, 38110), (152, 38179), (153, 38185), (157, 38230), (160, 38248), (166, 38269), (178, 38299), (183, 38311),

Gene: Stap\_52 Start: 36952, Stop: 37641, Start Num: 38

Candidate Starts for Stap\_52:

(23, 36922), (Start: 38 @36952 has 96 MA's), (40, 36970), (Start: 42 @36991 has 2 MA's), (46, 37006), (51, 37024), (54, 37027), (56, 37039), (61, 37063), (62, 37075), (103, 37195), (128, 37267), (134, 37294), (152, 37453), (153, 37459), (157, 37504), (163, 37534), (173, 37564), (180, 37582),

Gene: Starcevich\_53 Start: 37660, Stop: 38220, Start Num: 37

Candidate Starts for Starcevich\_53:

(15, 37606), (Start: 37 @37660 has 8 MA's), (40, 37678), (Start: 42 @37699 has 2 MA's), (54, 37735), (56, 37747), (61, 37771), (62, 37783), (72, 37828), (128, 37900), (134, 37927), (152, 38020), (153, 38026), (157, 38071), (160, 38089), (163, 38104), (166, 38110),

Gene: SuperGrey\_57 Start: 39146, Stop: 39556, Start Num: 39

Candidate Starts for SuperGrey\_57:

(Start: 39 @39146 has 93 MA's), (40, 39164), (Start: 42 @39185 has 2 MA's), (47, 39206), (49, 39209), (51, 39218), (54, 39221), (61, 39257), (62, 39269), (152, 39368), (153, 39374), (157, 39419), (160, 39437), (166, 39458), (178, 39488), (183, 39500),

Gene: SwagPigglett\_59 Start: 39987, Stop: 40571, Start Num: 39

Candidate Starts for SwagPigglett\_59:

(Start: 39 @39987 has 93 MA's), (40, 40005), (Start: 42 @40026 has 2 MA's), (47, 40047), (49, 40050), (51, 40059), (54, 40062), (61, 40098), (62, 40110), (128, 40233), (134, 40260), (143, 40314), (152, 40383), (153, 40389), (157, 40434), (163, 40464), (180, 40512),

Gene: TChen\_53 Start: 37875, Stop: 38666, Start Num: 5

Candidate Starts for TChen\_53:

(1, 37824), (2, 37833), (3, 37863), (4, 37872), (Start: 5 @37875 has 3 MA's), (6, 37893), (Start: 7 @37914 has 1 MA's), (8, 37935), (9, 37938), (10, 37947), (11, 37950), (13, 37962), (14, 37986), (Start: 19 @37998 has 1 MA's), (25, 38016), (30, 38037), (32, 38043), (41, 38088), (57, 38142), (Start: 78

@38202 has 2 MA's), (84, 38241), (85, 38247), (127, 38328), (129, 38334), (131, 38343), (152, 38478), (157, 38529), (160, 38547), (163, 38559), (181, 38607),

Gene: TDanisky\_61 Start: 39036, Stop: 39497, Start Num: 39

Candidate Starts for TDanisky\_61:

(Start: 39 @39036 has 93 MA's), (40, 39054), (Start: 42 @39075 has 2 MA's), (47, 39096), (49, 39099), (51, 39108), (54, 39111), (61, 39147), (62, 39159), (152, 39309), (153, 39315), (157, 39360), (163, 39390), (180, 39438),

Gene: Taj\_57 Start: 38366, Stop: 39082, Start Num: 39

Candidate Starts for Taj\_57:

(Start: 39 @38366 has 93 MA's), (40, 38384), (46, 38420), (47, 38426), (50, 38441), (51, 38447), (54, 38462), (56, 38474), (59, 38483), (61, 38498), (65, 38522), (117, 38660), (122, 38672), (128, 38720), (134, 38747), (152, 38894), (153, 38900), (157, 38945), (160, 38963), (167, 38984), (173, 39014), (177, 39026),

Gene: Tchotchke\_54 Start: 36839, Stop: 37462, Start Num: 39

Candidate Starts for Tchotchke\_54:

(Start: 39 @36839 has 93 MA's), (40, 36857), (Start: 42 @36878 has 2 MA's), (47, 36899), (49, 36902), (51, 36911), (54, 36914), (56, 36926), (61, 36950), (62, 36962), (103, 37082), (128, 37154), (134, 37181), (152, 37274), (153, 37280), (157, 37325), (163, 37355), (180, 37403),

Gene: Techage\_37 Start: 29366, Stop: 29767, Start Num: 114

Candidate Starts for Techage\_37:

(72, 29222), (79, 29255), (Start: 114 @29366 has 12 MA's), (Start: 115 @29369 has 8 MA's), (126, 29399), (130, 29420), (136, 29441), (141, 29480), (148, 29528), (151, 29576), (158, 29624), (170, 29675),

Gene: ThetaBob\_57 Start: 37869, Stop: 38615, Start Num: 36

Candidate Starts for ThetaBob\_57:

(Start: 36 @37869 has 2 MA's), (40, 37887), (46, 37923), (47, 37929), (54, 37944), (56, 37956), (58, 37959), (59, 37965), (61, 37980), (62, 37992), (65, 38004), (82, 38067), (92, 38121), (100, 38157), (119, 38181), (128, 38232), (134, 38259), (142, 38313), (152, 38382), (153, 38388), (157, 38433), (164, 38469), (171, 38508),

Gene: Tootsieroll\_55 Start: 36978, Stop: 37592, Start Num: 38

Candidate Starts for Tootsieroll\_55:

(23, 36948), (Start: 38 @36978 has 96 MA's), (40, 36996), (Start: 42 @37017 has 2 MA's), (47, 37038), (49, 37041), (51, 37050), (54, 37053), (56, 37065), (59, 37074), (61, 37089), (66, 37119), (71, 37140), (72, 37146), (128, 37218), (134, 37245), (152, 37404), (153, 37410), (157, 37455), (163, 37485), (180, 37533),

Gene: Topiatin\_59 Start: 39055, Stop: 39666, Start Num: 38

Candidate Starts for Topiatin\_59:

(Start: 38 @39055 has 96 MA's), (40, 39073), (Start: 42 @39094 has 2 MA's), (49, 39118), (51, 39127), (54, 39130), (61, 39166), (62, 39178), (71, 39217), (72, 39223), (128, 39295), (134, 39322), (152, 39445), (153, 39451), (160, 39514),

Gene: Toron\_57 Start: 39017, Stop: 39823, Start Num: 17

Candidate Starts for Toron\_57:

(Start: 17 @39017 has 3 MA's), (24, 39035), (31, 39059), (35, 39068), (44, 39116), (52, 39155), (53, 39158), (54, 39164), (80, 39272), (107, 39320), (111, 39359), (124, 39413), (137, 39482), (138, 39500), (152, 39617), (153, 39623), (154, 39635), (157, 39668), (160, 39686),

Gene: Tweety\_53 Start: 38001, Stop: 38609, Start Num: 39

Candidate Starts for Tweety\_53:

(Start: 39 @38001 has 93 MA's), (40, 38019), (Start: 42 @38040 has 2 MA's), (47, 38061), (49, 38064), (51, 38073), (54, 38076), (56, 38088), (61, 38112), (62, 38124), (Start: 78 @38142 has 2 MA's), (84, 38181), (85, 38187), (127, 38268), (129, 38274), (131, 38283), (152, 38421), (157, 38472), (160, 38490), (166, 38511), (175, 38541), (182, 38553),

Gene: UncleRicky\_53 Start: 37888, Stop: 38472, Start Num: 39

Candidate Starts for UncleRicky\_53:

(Start: 39 @37888 has 93 MA's), (40, 37906), (Start: 42 @37927 has 2 MA's), (47, 37948), (49, 37951), (51, 37960), (54, 37963), (61, 37999), (62, 38011), (128, 38134), (134, 38161), (143, 38215), (152, 38284), (153, 38290), (157, 38335), (163, 38365), (180, 38413),

Gene: VRedHorse\_53 Start: 36755, Stop: 37381, Start Num: 38

Candidate Starts for VRedHorse\_53:

(Start: 38 @36755 has 96 MA's), (40, 36773), (Start: 42 @36794 has 2 MA's), (47, 36815), (49, 36818), (51, 36827), (54, 36830), (61, 36866), (66, 36896), (71, 36917), (72, 36923), (77, 36935), (128, 36995), (134, 37022), (152, 37181), (153, 37187), (157, 37232), (160, 37250), (163, 37265), (166, 37271),

Gene: Velveteen\_48 Start: 33538, Stop: 34161, Start Num: 38

Candidate Starts for Velveteen\_48:

(Start: 38 @33538 has 96 MA's), (40, 33556), (Start: 42 @33577 has 2 MA's), (47, 33598), (49, 33601), (51, 33610), (54, 33613), (56, 33625), (59, 33634), (61, 33649), (62, 33661), (71, 33700), (72, 33706), (77, 33718), (128, 33784), (134, 33811), (152, 33970), (153, 33976), (167, 34060), (187, 34114),

Gene: Venti\_37 Start: 29346, Stop: 29744, Start Num: 115

Candidate Starts for Venti\_37:

(72, 29199), (79, 29232), (Start: 114 @29343 has 12 MA's), (Start: 115 @29346 has 8 MA's), (126, 29376), (130, 29397), (136, 29418), (141, 29457), (148, 29505), (151, 29553), (158, 29601), (170, 29652),

Gene: Vidya\_37 Start: 29376, Stop: 29777, Start Num: 114

Candidate Starts for Vidya\_37:

(72, 29232), (79, 29265), (Start: 114 @29376 has 12 MA's), (Start: 115 @29379 has 8 MA's), (126, 29409), (130, 29430), (136, 29451), (141, 29490), (148, 29538), (151, 29586), (158, 29634), (170, 29685),

Gene: Violac\_56 Start: 39000, Stop: 39644, Start Num: 38

Candidate Starts for Violac\_56:

(Start: 38 @39000 has 96 MA's), (40, 39018), (Start: 42 @39039 has 2 MA's), (47, 39060), (49, 39063), (51, 39072), (54, 39075), (56, 39087), (61, 39111), (62, 39123), (71, 39162), (72, 39168), (128, 39240), (134, 39267), (152, 39423), (153, 39429), (160, 39492),

Gene: Vivum\_55 Start: 37973, Stop: 38578, Start Num: 39

Candidate Starts for Vivum\_55:

(28, 37943), (Start: 39 @37973 has 93 MA's), (40, 37991), (Start: 42 @38012 has 2 MA's), (46, 38027), (51, 38045), (54, 38048), (56, 38060), (61, 38084), (62, 38096), (Start: 78 @38114 has 2 MA's), (84, 38153), (85, 38159), (127, 38240), (129, 38246), (131, 38255), (152, 38390), (153, 38396), (157, 38441), (163, 38471), (181, 38519),

Gene: Wachhund\_55 Start: 37144, Stop: 37749, Start Num: 39

Candidate Starts for Wachhund\_55:

(Start: 39 @37144 has 93 MA's), (40, 37162), (Start: 42 @37183 has 2 MA's), (47, 37204), (49, 37207), (51, 37216), (54, 37219), (56, 37231), (61, 37255), (62, 37267), (Start: 78 @37285 has 2 MA's), (84, 37324), (85, 37330), (127, 37411), (129, 37417), (131, 37426), (152, 37561), (153, 37567), (157, 37612), (160, 37630), (166, 37651), (175, 37681), (182, 37693),

Gene: Wee\_56 Start: 38638, Stop: 39354, Start Num: 39

Candidate Starts for Wee\_56:

(Start: 39 @38638 has 93 MA's), (40, 38656), (46, 38692), (47, 38698), (50, 38713), (51, 38719), (54, 38734), (56, 38746), (59, 38755), (61, 38770), (65, 38794), (117, 38932), (122, 38944), (128, 38992), (134, 39019), (152, 39166), (153, 39172), (157, 39217), (162, 39247), (174, 39295),

Gene: Whatsapiecost\_54 Start: 36928, Stop: 37551, Start Num: 38

Candidate Starts for Whatsapiecost\_54:

(Start: 38 @36928 has 96 MA's), (40, 36946), (Start: 42 @36967 has 2 MA's), (47, 36988), (49, 36991), (51, 37000), (54, 37003), (56, 37015), (59, 37024), (61, 37039), (62, 37051), (71, 37090), (72, 37096), (77, 37108), (128, 37174), (134, 37201), (152, 37360), (153, 37366), (167, 37450), (187, 37504),

Gene: Whouxphf\_51 Start: 37452, Stop: 38171, Start Num: 38

Candidate Starts for Whouxphf\_51:

(26, 37422), (Start: 38 @37452 has 96 MA's), (40, 37470), (Start: 42 @37491 has 2 MA's), (47, 37512), (49, 37515), (51, 37524), (54, 37527), (56, 37539), (61, 37563), (62, 37575), (77, 37632), (118, 37740), (128, 37794), (134, 37821), (152, 37980), (153, 37986), (166, 38070),

Gene: WillSterrel\_54 Start: 38739, Stop: 39149, Start Num: 39

Candidate Starts for WillSterrel\_54:

(Start: 39 @38739 has 93 MA's), (40, 38757), (Start: 42 @38778 has 2 MA's), (47, 38799), (49, 38802), (51, 38811), (54, 38814), (61, 38850), (62, 38862), (152, 38961), (153, 38967), (157, 39012), (160, 39030), (166, 39051), (178, 39081), (183, 39093),

Gene: XFactor\_51 Start: 36239, Stop: 36700, Start Num: 39

Candidate Starts for XFactor\_51:

(Start: 39 @36239 has 93 MA's), (40, 36257), (Start: 42 @36278 has 2 MA's), (47, 36299), (49, 36302), (51, 36311), (54, 36314), (61, 36350), (62, 36362), (152, 36512), (153, 36518), (157, 36563), (163, 36593), (180, 36641),

Gene: Yorick\_53 Start: 37988, Stop: 38635, Start Num: 38

Candidate Starts for Yorick\_53:

(26, 37958), (Start: 38 @37988 has 96 MA's), (40, 38006), (Start: 42 @38027 has 2 MA's), (49, 38051), (51, 38060), (54, 38063), (61, 38099), (62, 38111), (71, 38150), (128, 38228), (134, 38255), (152, 38414), (153, 38420), (160, 38483),

Gene: Yoshi\_65 Start: 38992, Stop: 39624, Start Num: 38

Candidate Starts for Yoshi\_65:

(21, 38950), (Start: 38 @38992 has 96 MA's), (40, 39010), (Start: 42 @39031 has 2 MA's), (54, 39067), (61, 39103), (62, 39115), (71, 39154), (72, 39160), (128, 39238), (134, 39265), (152, 39424), (153, 39430), (157, 39475), (160, 39493), (163, 39508), (166, 39514),

Gene: Zapner\_66 Start: 38460, Stop: 39290, Start Num: 38

Candidate Starts for Zapner\_66:

(Start: 38 @38460 has 96 MA's), (40, 38478), (Start: 42 @38499 has 2 MA's), (47, 38520), (49, 38523), (51, 38532), (54, 38535), (61, 38571), (62, 38583), (71, 38622), (87, 38703), (95, 38730), (128, 38922), (134, 38949), (152, 39108), (153, 39114), (155, 39135), (167, 39198), (187, 39243),

Gene: Zerg\_53 Start: 37405, Stop: 37866, Start Num: 39

Candidate Starts for Zerg\_53:

(Start: 39 @37405 has 93 MA's), (40, 37423), (Start: 42 @37444 has 2 MA's), (47, 37465), (49, 37468), (51, 37477), (54, 37480), (61, 37516), (62, 37528), (152, 37678), (153, 37684), (157, 37729), (163, 37759), (180, 37807),

Gene: Zilizebeth\_37 Start: 29375, Stop: 29776, Start Num: 114

Candidate Starts for Zilizebeth\_37:

(72, 29231), (79, 29264), (Start: 114 @29375 has 12 MA's), (Start: 115 @29378 has 8 MA's), (126, 29408), (130, 29429), (136, 29450), (141, 29489), (148, 29537), (151, 29585), (158, 29633), (170, 29684),

Gene: Zizzle\_58 Start: 39306, Stop: 39890, Start Num: 39

Candidate Starts for Zizzle\_58:

(28, 39276), (Start: 39 @39306 has 93 MA's), (40, 39324), (Start: 42 @39345 has 2 MA's), (49, 39369), (51, 39378), (54, 39381), (61, 39417), (62, 39429), (128, 39552), (134, 39579), (143, 39633), (152, 39702), (153, 39708), (157, 39753), (163, 39783), (180, 39831),