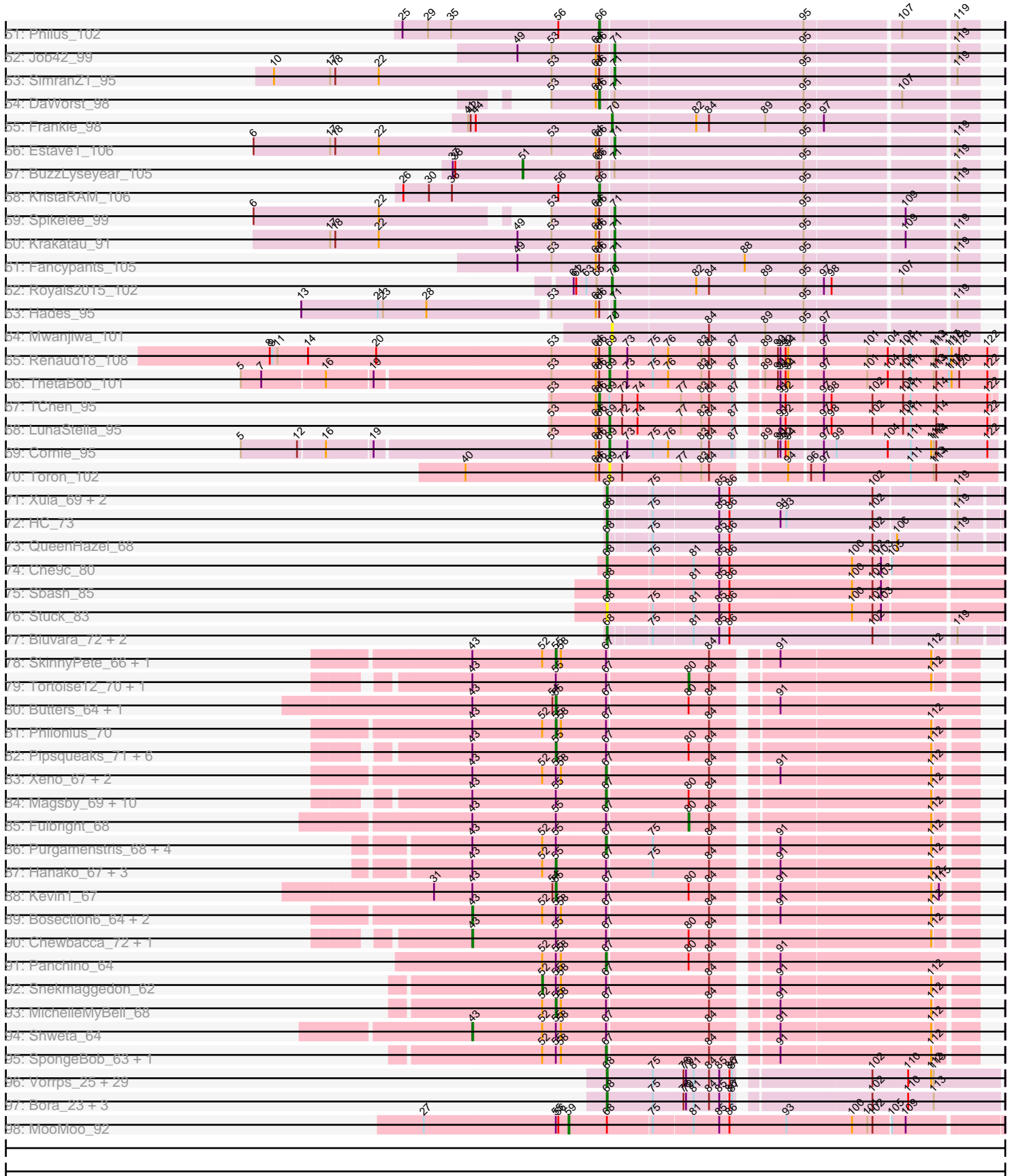




Pham 304632



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 304632 Report

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

Pham number 304632 has 357 members, 37 are drafts.

Phages represented in each track:

- Track 1 : LordVader\_94
- Track 2 : DeadP\_98, Chuckly\_95, Corium\_97, Cerasum\_97, Wee\_101, Topiatin\_100, Phanphagia\_103, Emma\_103, Brookers\_97, KingJulian\_106, LittleShirley\_106, Taj\_104, Sarma624\_100, Shauna1\_100, Coco12\_99, Brushbloom\_98, Mozy\_102, SassyB\_89, PopTart\_89, Fruitloop\_96, Doomslug\_116, Beanstalk\_94, PatoPoderoso\_99, Kingsley\_107, Hegedechwinu\_106, Velveteen\_95, XFactor\_89, BigPhil\_95, Bipolar\_100, Batiatus\_98
- Track 3 : Brocalys\_90, Jennelsea\_95, BobaPhett\_100, Burwell21\_92, Lizziana\_99, NormanBulbieJr\_96, Violac\_99, Koella\_91, Zizzle\_101, FreddyB\_108, Maravista\_95, SwagPiggett\_100, Eish\_103, LastJedi\_89, Pippy\_96, Cabrinians\_95, James\_102, Blexus\_95, Priscilla\_99, ShowerHandel\_99, Clifton\_90, Bubbles123\_92
- Track 4 : Rockne\_101, Lorde\_101, UncleRicky\_98, Drago\_97, Enby\_102, DirtMcgirt\_99, Lucia\_98, PMC\_97
- Track 5 : Marker\_104
- Track 6 : CaptainTrips\_100, Seagreen\_99, DLane\_98, Melissauren88\_88, Flathead\_100, JalFarm20\_107, Medindi\_103, Zerg\_96, Sabbb\_101, Ardmore\_82, Whatsapiecost\_92, Dante\_96, Ms6\_100, Filuzino\_98, Tootsieroll\_92, Hamulus\_98, Phalconet\_99, Squirty\_97, Okabe\_90, Firehouse51\_92, SuperGrey\_98, Beakin\_90
- Track 7 : DotProduct\_92, Fastidio\_102, IMpilo\_96, Tweety\_99
- Track 8 : Ruby\_95, Radiance\_96, Nimbo\_90, JoeyJr\_101, Leperchaun\_100, Polka14\_102, Geralt\_91, RitaG\_97, Veteran\_89, Sassafras\_100, KingMidas\_98, Girr\_97, SiSi\_94, Pollywog\_100, Doomphist\_103, BodEinwohner17\_108, MulchExplorer\_98, Juice456\_97, MadMen\_103, Leozinho\_95, Poenanya\_102, Scottish\_98, PHappiness\_98, MisterCuddles\_98, Kimberlium\_100, Inventum\_96, Clank\_96, Empress\_98, Dorothy\_99, RedBird\_99, OldBen\_95, Deb65\_91, Daenerys\_96, DaddyRickover\_100, QuickMath\_99
- Track 9 : Spartacus\_105
- Track 10 : Saal\_96, Nivrat\_98, ShiLan\_101, Spoonbill\_98, LilMoolah\_101, Minnie\_93, Gorge\_97, Jarcob\_101, Sandalphon\_98, Mattes\_99
- Track 11 : LunaBlu\_105, Polo2Bam\_110, NewHope4\_106, Galactic\_102, Enzomatic\_111, SeaLumen\_107
- Track 12 : Donkeykong\_104, StAnnes\_102, Guppsters\_93, Alexphander\_99, Tchotchke\_91, EleanorGeorge\_102, MinionDave\_96
- Track 13 : Ogopogo\_102
- Track 14 : Starcevich\_100, Peridot\_101, Totinger\_101, Rialto\_103, Moonbeam\_101, Oksu\_102
- Track 15 : WillSterrel\_96, IrishSherpFalk\_98

- Track 16 : DocMcStuffins\_86, Piper2020\_93, Misha28\_88, Aloeri\_90, TootsiePop\_88, Awesomesauce\_89, ChickenDinner\_89
- Track 17 : Latretium\_101, Grimmer\_106, Chevrolet\_102, EmiMonkey\_87, Kersh\_101, AlpineSix\_96, Llama\_105, Ochi17\_104, Seabastian\_105, Ovechkin\_101, PhilipPhlop\_88, Nichirin\_98, Yorick\_94, Eradicator\_90, Modragons\_102, Vivum\_98, Harley\_100, Byougenkin\_95, Wachhund\_95, ArcusAngelus\_98, ByChance\_89, OfUltron\_105, Ibhubesi\_95
- Track 18 : Che8\_105
- Track 19 : Girafales\_107, Florinda\_110, Quico\_107
- Track 20 : Bobi\_100
- Track 21 : Slim\_101, Emmaloid\_101
- Track 22 : OlympiaSaint\_102, Crumble\_93
- Track 23 : Kenuha5\_90
- Track 24 : Mantra\_96, GigiOuiOui\_93
- Track 25 : ShroomBoi\_96, Phasih\_95, Gandalph\_98
- Track 26 : PhesterPhotato\_102
- Track 27 : Aubs\_98
- Track 28 : Hlubikazi\_96, DosHalletts\_95, Mandlovu\_96, Strokeseat\_96
- Track 29 : Stap\_93
- Track 30 : Madiba\_97, MulchSalad\_100
- Track 31 : IbOuu\_89
- Track 32 : RockyHorror\_102, GUmbie\_97
- Track 33 : Pacc40\_96, BlueCrab\_101
- Track 34 : Doug\_95
- Track 35 : Plumbus\_97, TDanisky\_106, DRBy19\_98, Sparkdehlily\_105
- Track 36 : SG4\_99
- Track 37 : VRedHorse\_99, Ramsey\_103, Cornucopia\_98
- Track 38 : MilleniumForce\_98
- Track 39 : DillTech15\_104
- Track 40 : Jinglebell\_105
- Track 41 : Phatniss\_96
- Track 42 : Llij\_93
- Track 43 : Mova\_100
- Track 44 : Martik\_97
- Track 45 : Juniper1\_90, Mahavrat\_92
- Track 46 : Boomer\_100
- Track 47 : OwlsT2W\_96, Jant\_105, Akhila\_92, MilanaBonita\_91
- Track 48 : Cheesepuff\_103
- Track 49 : Nitzel\_92
- Track 50 : Karhdo\_93
- Track 51 : Philus\_102
- Track 52 : Job42\_99
- Track 53 : SimranZ1\_95
- Track 54 : DaWorst\_98
- Track 55 : Frankie\_98
- Track 56 : Estave1\_106
- Track 57 : BuzzLyseyear\_105
- Track 58 : KristaRAM\_106
- Track 59 : Spikelee\_99
- Track 60 : Krakatau\_91
- Track 61 : Fancypants\_105
- Track 62 : Royals2015\_102
- Track 63 : Hades\_95

- Track 64 : Mwanjiwa\_101
- Track 65 : Renaud18\_108
- Track 66 : ThetaBob\_101
- Track 67 : TChen\_95
- Track 68 : LunaStella\_95
- Track 69 : Cornie\_95
- Track 70 : Toron\_102
- Track 71 : Xula\_69, PaintedDog\_71, Babsiella\_73
- Track 72 : HC\_73
- Track 73 : QueenHazel\_68
- Track 74 : Che9c\_80
- Track 75 : Sbash\_85
- Track 76 : Stuck\_83
- Track 77 : Bluvara\_72, Brujita\_69, Island3\_71
- Track 78 : SkinnyPete\_66, Charlie\_66
- Track 79 : Tortoise12\_70, Cubone\_75
- Track 80 : Butters\_64, Rubeelu\_64
- Track 81 : Philonius\_70
- Track 82 : Pipsqueaks\_71, Silvy\_66, Gex\_70, Aggie\_65, Carcharodon\_69, Xerxes\_70, Tessdabest\_70
- Track 83 : Xen0\_67, PhancyPhin\_67, Impisi\_68
- Track 84 : Magsby\_69, Silvafighter\_72, Parmesanjohn\_70, Duplicity\_68, Andies\_63, Smurph\_70, Phloss\_68, Tapioca\_68, Schnauzer\_72, Scitech\_65, Melville\_75
- Track 85 : Fulbright\_68
- Track 86 : Purgamenstris\_68, Rebel\_64, Spinach\_67, Raymond7\_61, ShrimpFriedEgg\_68
- Track 87 : Hanako\_67, Redi\_67, Nenae\_68, BabeRuth\_68
- Track 88 : Kevin1\_67
- Track 89 : Bosection6\_64, Phrann\_65, Journey\_62
- Track 90 : Chewbacca\_72, EGUunicorn\_64
- Track 91 : Panchino\_64
- Track 92 : Snekmaggedon\_62
- Track 93 : MichelleMyBell\_68
- Track 94 : Shweta\_64
- Track 95 : SpongeBob\_63, Jamie19\_63
- Track 96 : Vorrps\_25, KingPhillip3\_22, JangDynasty\_24, YoyoKar\_23, Wildflower\_25, MadKillah\_26, Imara\_23, Firecracker\_25, Alkhayr\_25, Catdawg\_24, Ryadel\_27, Murai\_25, Familton\_25, Idergollasper\_24, FoulBall\_24, Winget\_25, Schuy\_26, Smooch\_28, Wogge42\_24, Krili\_25, Vagabond\_25, Ashwin\_26, Zebo\_24, TelAviv\_22, Mori\_25, NiebruSaylor\_25, SchoolBus\_24, Shida\_25, YungJamal\_27, Blessica\_25
- Track 97 : Bora\_23, Dylan\_24, Corndog\_27, Zakhe101\_25
- Track 98 : MooMoo\_92

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

The start number called the most often in the published annotations is 66, it was called in 132 of the 320 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_92, Alexphander\_99, AlpineSix\_96, ArcusAngelus\_98, Ardmore\_82, Batiatus\_98, Beakin\_90, Beanstalk\_94, BigPhil\_95, Bipolar\_100, Blexus\_95, BobaPhett\_100, Bobi\_100, Brocalys\_90, Brookers\_97, Brushbloom\_98, Bubbles123\_92, Burwell21\_92, ByChance\_89, Byougenkin\_95, Cabrinians\_95, CaptainTrips\_100, Cerasum\_97, Chevrolet\_102, Chuckly\_95, Clifton\_90, Coco12\_99, Corium\_97, Crumble\_93, DLane\_98, DRBy19\_98, DaWorst\_98, Dante\_96, DeadP\_98, DillTech15\_104, Donkeykong\_104, Doomslug\_116, DosHalletts\_95, Eish\_103, EleanorGeorge\_102, EmiMonkey\_87, Emma\_103, Emmaloid\_101, Eradicator\_90, Filuzino\_98, Firehouse51\_92, Flathead\_100, FreddyB\_108, Fruitloop\_96, Gorge\_97, Grimmer\_106, Guppsters\_93, Hamulus\_98, Harley\_100, Hegedechwinu\_106, Hlubikazi\_96, Ibhubesi\_95, JalFarm20\_107, James\_102, Jant\_105, Jarcob\_101, Jennelsea\_95, Jinglebell\_105, Kenuha5\_90, Kersh\_101, KingJulian\_106, Kingsley\_107, Koella\_91, KristaRAM\_106, LastJedi\_89, Latretium\_101, LilMoolah\_101, LittleShirley\_106, Lizziana\_99, Llama\_105, Llij\_93, Mandlovu\_96, Maravista\_95, Martik\_97, Mattes\_99, Medindi\_103, Melissauren88\_88, MilanaBonita\_91, MilleniumForce\_98, MinionDave\_96, Minnie\_93, Modragons\_102, Moonbeam\_101, Mozy\_102, Ms6\_100, Nichirin\_98, Nivrat\_98, NormanBulbieJr\_96, Ochi17\_104, OfUltron\_105, Okabe\_90, Oksu\_102, OlympiaSaint\_102, Ovechkin\_101, OwlsT2W\_96, PatoPoderoso\_99, Peridot\_101, Phalconet\_99, Phanphagia\_103, Phatniss\_96, PhesterPotato\_102, Philus\_102, PhlipPhlop\_88, Pippy\_96, Plumbus\_97, PopTart\_89, Priscilla\_99, Rialto\_103, Saal\_96, Sabbb\_101, Sandalphon\_98, Sarma624\_100, SassyB\_89, Seabastian\_105, Seagreen\_99, Shauna1\_100, ShiLan\_101, ShowerHandel\_99, Slim\_101, Sparkdehlily\_105, Spoonbill\_98, Squirty\_97, StAnnes\_102, Starcevich\_100, Strokeseat\_96, SuperGrey\_98, SwagPigglett\_100, TChen\_95, TDanisky\_106, Taj\_104, Tchotchke\_91, Tootsieroll\_92, Topiatin\_100, Totinger\_101, Velveteen\_95, Violac\_99, Vivum\_98, Wachhund\_95, Wee\_101, Whatsapiecost\_92, XFactor\_89, Yorick\_94, Zerg\_96, Zizzle\_101,

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

- Aubs\_98, BlueCrab\_101, BodEinwohner17\_108, Boomer\_100, BuzzLyseyear\_105, Che8\_105, Cheesepuff\_103, Clank\_96, Cornie\_95, Cornucopia\_98, DaddyRickover\_100, Daenerys\_96, Deb65\_91, DirtMcgirt\_99, Doomphist\_103, Dorothy\_99, DotProduct\_92, Doug\_95, Drago\_97, Empress\_98, Enby\_102, Enzomatic\_111, Estave1\_106, Fancypants\_105, Fastidio\_102, GUmbie\_97, Galactic\_102, Gandolph\_98, Geralt\_91, GigiOuiOui\_93, Girr\_97, Hades\_95, IMpilo\_96, IbOuu\_89, Inventum\_96, IrishSherpFalk\_98, Job42\_99, JoeyJr\_101, Juice456\_97, Karhdo\_93, Kimberlium\_100, KingMidas\_98, Krakatau\_91, Leozinho\_95, Leperchaun\_100, Lorde\_101, Lucia\_98, LunaBlu\_105, LunaStella\_95, MadMen\_103, Madiba\_97, Mantra\_96, Marker\_104, MisterCuddles\_98, Mova\_100, MulchExplorer\_98, MulchSalad\_100, NewHope4\_106, Nimbo\_90, Nitzel\_92, OldBen\_95, PHappiness\_98, PMC\_97, Pacc40\_96, Phasih\_95, Poenanya\_102, Polka14\_102, Pollywog\_100, Polo2Bam\_110, QuickMath\_99, Radiance\_96, Ramsey\_103, RedBird\_99, Renaud18\_108, RitaG\_97, Rockne\_101, RockyHorror\_102, Ruby\_95, SG4\_99, Sassafras\_100, Scottish\_98, SeaLumen\_107, ShroomBoi\_96, SiSi\_94, SimranZ1\_95, Spartacus\_105, Spikelee\_99, Stap\_93, ThetaBob\_101, Toron\_102, Tweety\_99, UncleRicky\_98, VRedHorse\_99, Veteran\_89, WillSterrel\_96,

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

- Aggie\_65, Alkhayr\_25, Aloeri\_90, Andies\_63, Ashwin\_26, Awesomesauce\_89, BabeRuth\_68, Babsiella\_73, Blessica\_25, Bluvara\_72, Bora\_23, Bosection6\_64, Brujita\_69, Butters\_64, Carcharodon\_69, Catdawg\_24, Charlie\_66, Che9c\_80,

Chewbacca\_72, ChickenDinner\_89, Corndog\_27, Cubone\_75, DocMcStuffins\_86, Duplicity\_68, Dylan\_24, EGUnicorn\_64, Familton\_25, Firecracker\_25, Florinda\_110, FoulBall\_24, Frankie\_98, Fulbright\_68, Gex\_70, Girafales\_107, HC\_73, Hanako\_67, Idergollasper\_24, Imara\_23, Impisi\_68, Island3\_71, Jamie19\_63, JangDynasty\_24, Journey\_62, Juniper1\_90, Kevin1\_67, KingPhillip3\_22, Krili\_25, LordVader\_94, MadKillah\_26, Magsby\_69, Mahavrat\_92, Melville\_75, MichelleMyBell\_68, Misha28\_88, MooMoo\_92, Mori\_25, Murai\_25, Mwanjiwa\_101, Nenae\_68, NiebruSaylor\_25, Ogopogo\_102, PaintedDog\_71, Panchino\_64, ParmesanJohn\_70, PhancyPhin\_67, Philonius\_70, Phloss\_68, Phrann\_65, Piper2020\_93, Pipsqueaks\_71, Purgamenstris\_68, QueenHazel\_68, Quico\_107, Raymond7\_61, Rebel\_64, Redi\_67, Royals2015\_102, Rubeelu\_64, Ryadel\_27, Sbash\_85, Schnauzer\_72, SchoolBus\_24, Schuy\_26, Scitech\_65, Shida\_25, ShrimpFriedEgg\_68, Shweta\_64, Silvafighter\_72, Silvy\_66, SkinnyPete\_66, Smooch\_28, Smurph\_70, Snekmaggedon\_62, Spinach\_67, SpongeBob\_63, Stuck\_83, Tapioca\_68, TelAviv\_22, Tessdabest\_70, TootsiePop\_88, Tortoise12\_70, Vagabond\_25, Vorrps\_25, Wildflower\_25, Winget\_25, Wogge42\_24, Xeno\_67, Xerxes\_70, Xula\_69, YoyoKar\_23, YungJamal\_27, Zakhe101\_25, Zebo\_24,

### Summary by start number:

#### Start 43:

- Found in 45 of 357 ( 12.6% ) of genes in pham
- Manual Annotations of this start: 6 of 320
- Called 13.3% of time when present
- Phage (with cluster) where this start called: Bosection6\_64 (N), Chewbacca\_72 (N), EGUnicorn\_64 (N), Journey\_62 (N), Phrann\_65 (N), Shweta\_64 (N),

#### Start 51:

- Found in 1 of 357 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 320
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BuzzLyseyear\_105 (F1),

#### Start 52:

- Found in 24 of 357 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 1 of 320
- Called 4.2% of time when present
- Phage (with cluster) where this start called: Snekmaggedon\_62 (N),

#### Start 55:

- Found in 51 of 357 ( 14.3% ) of genes in pham
- Manual Annotations of this start: 17 of 320
- Called 35.3% of time when present
- Phage (with cluster) where this start called: Aggie\_65 (N), BabeRuth\_68 (N), Butters\_64 (N), Carcharodon\_69 (N), Charlie\_66 (N), Gex\_70 (N), Hanako\_67 (N), Kevin1\_67 (N), MichelleMyBell\_68 (N), Nenae\_68 (N), Philonius\_70 (N), Pipsqueaks\_71 (N), Redi\_67 (N), Rubeelu\_64 (N), Silvy\_66 (N), SkinnyPete\_66 (N), Tessdabest\_70 (N), Xerxes\_70 (N),

#### Start 59:

- Found in 1 of 357 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 320
- Called 100.0% of time when present

- Phage (with cluster) where this start called: MooMoo\_92 (singleton),

#### Start 64:

- Found in 96 of 357 ( 26.9% ) of genes in pham
- Manual Annotations of this start: 2 of 320
- Called 2.1% of time when present
- Phage (with cluster) where this start called: Boomer\_100 (F1), Mova\_100 (F1),

#### Start 66:

- Found in 244 of 357 ( 68.3% ) of genes in pham
- Manual Annotations of this start: 132 of 320
- Called 61.1% of time when present
- Phage (with cluster) where this start called: Akhila\_92 (F1), Alexphander\_99 (F1), AlpineSix\_96 (F1), ArcusAngelus\_98 (F1), Ardmore\_82 (F1), Batiatus\_98 (F1), Beakin\_90 (F1), Beanstalk\_94 (F1), BigPhil\_95 (F1), Bipolar\_100 (F1), Blexus\_95 (F1), BobaPhett\_100 (F1), Bobi\_100 (F1), Brocalys\_90 (F1), Brookers\_97 (F1), Brushbloom\_98 (F1), Bubbles123\_92 (F1), Burwell21\_92 (F1), ByChance\_89 (F1), Byougenkin\_95 (F1), Cabrinians\_95 (F1), CaptainTrips\_100 (F1), Cerasum\_97 (F1), Chevrolet\_102 (F1), Chuckly\_95 (F1), Clifton\_90 (F1), Coco12\_99 (F1), Corium\_97 (F1), Crumble\_93 (F1), DLane\_98 (F1), DRBy19\_98 (F1), DaWorst\_98 (F1), Dante\_96 (F1), DeadP\_98 (F1), DillTech15\_104 (F1), Donkeykong\_104 (F1), Doomslug\_116 (F1), DosHalletts\_95 (F1), Eish\_103 (F1), EleanorGeorge\_102 (F1), EmiMonkey\_87 (F1), Emma\_103 (F1), Emmaloid\_101 (F1), Eradicator\_90 (F1), Filuzino\_98 (F1), Firehouse51\_92 (F1), Flathead\_100 (F1), FreddyB\_108 (F1), Fruitloop\_96 (F1), Gorge\_97 (F1), Grimmer\_106 (F1), Guppsters\_93 (F1), Hamulus\_98 (F1), Harley\_100 (F1), Hegedechwinu\_106 (F1), Hlubikazi\_96 (F1), Ibhubesi\_95 (F1), JalFarm20\_107 (F1), James\_102 (F1), Jant\_105 (F1), Jarcob\_101 (F1), Jennelsea\_95 (F1), Jinglebell\_105 (F1), Kenuha5\_90 (F1), Kersh\_101 (F1), KingJulian\_106 (F1), Kingsley\_107 (F1), Koella\_91 (F1), KristaRAM\_106 (F1), LastJedi\_89 (F1), Latretium\_101 (F1), LilMoolah\_101 (F1), LittleShirley\_106 (F1), Lizziana\_99 (F1), Llama\_105 (F1), Llij\_93 (F1), Mandlovu\_96 (F1), Maravista\_95 (F1), Martik\_97 (F1), Mattes\_99 (F1), Medindi\_103 (F1), Melissauren88\_88 (F1), MilanaBonita\_91 (F1), MilleniumForce\_98 (F1), MinionDave\_96 (F1), Minnie\_93 (F1), Modragons\_102 (F1), Moonbeam\_101 (F1), Mozy\_102 (F1), Ms6\_100 (F1), Nichirin\_98 (F1), Nivrat\_98 (F1), NormanBulbieJr\_96 (F1), Ochi17\_104 (F1), OfUltron\_105 (F1), Okabe\_90 (F8), Oksu\_102 (F1), OlympiaSaint\_102 (F1), Ovechkin\_101 (F1), OwlsT2W\_96 (F1), PatoPoderoso\_99 (F1), Peridot\_101 (F1), Phalconet\_99 (F1), Phanphagia\_103 (F1), Phatniss\_96 (F1), PhesterPotato\_102 (F1), Philus\_102 (F1), PhilipPhlop\_88 (F1), Pippy\_96 (F1), Plumbus\_97 (F1), PopTart\_89 (F1), Priscilla\_99 (F1), Rialto\_103 (F1), Saal\_96 (F1), Sabbb\_101 (F1), Sandalphon\_98 (F1), Sarma624\_100 (F1), SassyB\_89 (F1), Seabastian\_105 (F1), Seagreen\_99 (F1), Shauna1\_100 (F1), ShiLan\_101 (F1), ShowerHandel\_99 (F1), Slim\_101 (F1), Sparkdehlily\_105 (F1), Spoonbill\_98 (F1), Squirty\_97 (F3), StAnnes\_102 (F1), Starceovich\_100 (F1), Strokeseat\_96 (F1), SuperGrey\_98 (F1), SwagPiggett\_100 (F1), TChen\_95 (F4), TDanisky\_106 (F1), Taj\_104 (F1), Tchochke\_91 (F1), Tootsieroll\_92 (F1), Topiatin\_100 (F1), Totinger\_101 (F1), Velveteen\_95 (F1), Violac\_99 (F1), Vivum\_98 (F1), Wachhund\_95 (F1), Wee\_101 (F1), Whatsapiecost\_92 (F1), XFactor\_89 (F1), Yorick\_94 (F1), Zerg\_96 (F1), Zizzle\_101 (F1),

#### Start 67:

- Found in 50 of 357 ( 14.0% ) of genes in pham
- Manual Annotations of this start: 20 of 320

- Called 44.0% of time when present
- Phage (with cluster) where this start called: Andies\_63 (N), Duplicity\_68 (N), Impisi\_68 (N), Jamie19\_63 (N), Magsby\_69 (N), Melville\_75 (N), Panchino\_64 (N), Parmesanjohn\_70 (N), PhancyPhin\_67 (N), Phloss\_68 (N), Purgamenstris\_68 (N), Raymond7\_61 (N), Rebel\_64 (N), Schnauzer\_72 (N), Scitech\_65 (N), ShrimpFriedEgg\_68 (N), Silvafighter\_72 (N), Smurph\_70 (N), Spinach\_67 (N), SpongeBob\_63 (N), Tapioca\_68 (N), Xeno\_67 (N),

#### Start 68:

- Found in 46 of 357 ( 12.9% ) of genes in pham
- Manual Annotations of this start: 38 of 320
- Called 97.8% of time when present
- Phage (with cluster) where this start called: Alkhayr\_25 (O), Ashwin\_26 (O), Babsiella\_73 (I1), Blessica\_25 (O), Bluvara\_72 (I3), Bora\_23 (O), Brujita\_69 (I1), Catdawg\_24 (O), Che9c\_80 (I2), Corndog\_27 (O), Dylan\_24 (O), Familton\_25 (O), Firecracker\_25 (O), FoulBall\_24 (O), HC\_73 (I1), Idergollasper\_24 (O), Imara\_23 (O), Island3\_71 (I1), JangDynasty\_24 (O), KingPhillip3\_22 (O), Krili\_25 (O), MadKillah\_26 (O), Mori\_25 (O), Murai\_25 (O), NiebruSaylor\_25 (O), PaintedDog\_71 (I1), QueenHazel\_68 (I1), Ryadel\_27 (O), Sbash\_85 (I2), SchoolBus\_24 (O), Schuy\_26 (O), Shida\_25 (O), Smooch\_28 (O), Stuck\_83 (I2), TelAviv\_22 (O), Vagabond\_25 (O), Vorrrps\_25 (O), Wildflower\_25 (O), Winget\_25 (O), Wogge42\_24 (O), Xula\_69 (I1), YoyoKar\_23 (O), YungJamal\_27 (O), Zakhe101\_25 (O), Zebo\_24 (O),

#### Start 69:

- Found in 6 of 357 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 4 of 320
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Cornie\_95 (F5), LunaStella\_95 (F4), Renaud18\_108 (F4), ThetaBob\_101 (F4), Toron\_102 (F6),

#### Start 70:

- Found in 17 of 357 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 15 of 320
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aloeri\_90 (F1), Awesomesauce\_89 (F1), ChickenDinner\_89 (F1), DocMcStuffins\_86 (F1), Florinda\_110 (F1), Frankie\_98 (F1), Girafales\_107 (F1), Juniper1\_90 (F1), LordVader\_94 (F), Mahavrat\_92 (F1), Misha28\_88 (F1), Mwanjiwa\_101 (F1), Ogopogo\_102 (F1), Piper2020\_93 (F1), Quico\_107 (F1), Royals2015\_102 (F1), TootsiePop\_88 (F1),

#### Start 71:

- Found in 91 of 357 ( 25.5% ) of genes in pham
- Manual Annotations of this start: 81 of 320
- Called 95.6% of time when present
- Phage (with cluster) where this start called: Aubs\_98 (F1), BlueCrab\_101 (F1), BodEinwohner17\_108 (F1), Che8\_105 (F1), CheesePuff\_103 (F1), Clank\_96 (F), Cornucopia\_98 (F1), DaddyRickover\_100 (F1), Daenerys\_96 (F1), Deb65\_91 (F1), DirtMcGirt\_99 (F1), Doomphist\_103 (F1), Dorothy\_99 (F1), DotProduct\_92 (F1), Doug\_95 (F1), Drago\_97 (F1), Empress\_98 (F1), Enby\_102 (F1), Enzomatic\_111 (F1), Estave1\_106 (F1), Fancypants\_105 (F1), Fastidio\_102 (F1), GUmbie\_97 (F1), Galactic\_102 (F1), Gandolph\_98 (F1), Geralt\_91 (F1), GigiOuiOui\_93 (F1), Girr\_97 (F1), Hades\_95 (F1), IMpilo\_96 (F1), IbOuu\_89 (F1), Inventum\_96 (F1), IrishSherpFalk\_98 (F1), Job42\_99 (F1), JoeyJr\_101 (F1), Juice456\_97 (F1),

Karhdo\_93 (F1), Kimberlium\_100 (F1), KingMidas\_98 (F1), Krakatau\_91 (F1), Leozinho\_95 (F1), Leperchaun\_100 (F1), Lorde\_101 (F1), Lucia\_98 (F1), LunaBlu\_105 (F1), MadMen\_103 (F1), Madiba\_97 (F1), Mantra\_96 (F1), Marker\_104 (F1), MisterCuddles\_98 (F1), MulchExplorer\_98 (F1), MulchSalad\_100 (F7), NewHope4\_106 (F1), Nimbo\_90 (F1), Nitzel\_92 (F1), OldBen\_95 (F1), PHappiness\_98 (F1), PMC\_97 (F1), Pacc40\_96 (F1), Phasih\_95 (F1), Poenanya\_102 (F1), Polka14\_102 (F1), Pollywog\_100 (F1), Polo2Bam\_110 (F1), QuickMath\_99 (F1), Radiance\_96 (F1), Ramsey\_103 (F1), RedBird\_99 (F1), RitaG\_97 (F1), Rockne\_101 (F1), RockyHorror\_102 (F1), Ruby\_95 (F1), SG4\_99 (F1), Sassafras\_100 (F1), Scottish\_98 (F1), SeaLumen\_107 (F1), ShroomBoi\_96 (F1), SiSi\_94 (F1), SimranZ1\_95 (F1), Spartacus\_105 (F1), Spikelee\_99 (F1), Stap\_93 (F1), Tweety\_99 (F1), UncleRicky\_98 (F1), VRedHorse\_99 (F1), Veteran\_89 (F1), WillSterrel\_96 (F1),

Start 80:

- Found in 27 of 357 ( 7.6% ) of genes in pham
- Manual Annotations of this start: 2 of 320
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Cubone\_75 (N), Fulbright\_68 (N), Tortoise12\_70 (N),

### **Summary by clusters:**

There are 14 clusters represented in this pham: F1, F, F3, F4, F5, F6, F7, I1, I3, I2, singleton, O, N, F8,

Info for manual annotations of cluster F1:

- Start number 51 was manually annotated 1 time for cluster F1.
- Start number 64 was manually annotated 2 times for cluster F1.
- Start number 66 was manually annotated 130 times for cluster F1.
- Start number 70 was manually annotated 15 times for cluster F1.
- Start number 71 was manually annotated 81 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 66 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 66 was manually annotated 1 time for cluster F4.
- Start number 69 was manually annotated 3 times for cluster F4.

Info for manual annotations of cluster F5:

- Start number 69 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster I1:

- Start number 68 was manually annotated 6 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 68 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster N:

- Start number 43 was manually annotated 6 times for cluster N.
- Start number 52 was manually annotated 1 time for cluster N.
- Start number 55 was manually annotated 17 times for cluster N.
- Start number 67 was manually annotated 20 times for cluster N.
- Start number 80 was manually annotated 2 times for cluster N.

Info for manual annotations of cluster O:

- Start number 68 was manually annotated 30 times for cluster O.

### **Gene Information:**

Gene: Aggie\_65 Start: 43172, Stop: 43627, Start Num: 55

Candidate Starts for Aggie\_65:

(Start: 43 @43076 has 6 MA's), (Start: 55 @43172 has 17 MA's), (Start: 67 @43229 has 20 MA's),  
(Start: 80 @43322 has 2 MA's), (84, 43346), (112, 43583),

Gene: Akhila\_92 Start: 52219, Stop: 52632, Start Num: 66

Candidate Starts for Akhila\_92:

(46, 52126), (56, 52174), (Start: 66 @52219 has 132 MA's), (95, 52447), (107, 52552), (119, 52609),

Gene: Alexphander\_99 Start: 54553, Stop: 54966, Start Num: 66

Candidate Starts for Alexphander\_99:

(48, 54460), (56, 54508), (Start: 66 @54553 has 132 MA's), (95, 54781), (119, 54943),

Gene: Alkhayr\_25 Start: 11416, Stop: 11850, Start Num: 68

Candidate Starts for Alkhayr\_25:

(Start: 68 @11416 has 38 MA's), (75, 11470), (78, 11506), (79, 11509), (81, 11518), (84, 11536), (85, 11548), (86, 11557), (87, 11560), (102, 11701), (110, 11743), (112, 11770), (113, 11773),

Gene: Aloeri\_90 Start: 53366, Stop: 53770, Start Num: 70

Candidate Starts for Aloeri\_90:

(32, 53168), (34, 53183), (Start: 70 @53366 has 15 MA's),

Gene: AlpineSix\_96 Start: 52937, Stop: 53350, Start Num: 66

Candidate Starts for AlpineSix\_96:

(Start: 66 @52937 has 132 MA's), (95, 53165), (119, 53327),

Gene: Andies\_63 Start: 42675, Stop: 43073, Start Num: 67

Candidate Starts for Andies\_63:

(Start: 43 @42522 has 6 MA's), (Start: 55 @42618 has 17 MA's), (Start: 67 @42675 has 20 MA's),  
(Start: 80 @42768 has 2 MA's), (84, 42792), (112, 43029),

Gene: ArcusAngelus\_98 Start: 54470, Stop: 54883, Start Num: 66

Candidate Starts for ArcusAngelus\_98:

(Start: 66 @54470 has 132 MA's), (95, 54698), (119, 54860),

Gene: Ardmore\_82 Start: 48108, Stop: 48521, Start Num: 66

Candidate Starts for Ardmore\_82:

(47, 48015), (56, 48063), (Start: 66 @48108 has 132 MA's), (95, 48336), (107, 48441), (119, 48498),

Gene: Ashwin\_26 Start: 11636, Stop: 12070, Start Num: 68

Candidate Starts for Ashwin\_26:

(Start: 68 @11636 has 38 MA's), (75, 11690), (78, 11726), (79, 11729), (81, 11738), (84, 11756), (85, 11768), (86, 11777), (87, 11780), (102, 11921), (110, 11963), (112, 11990), (113, 11993),

Gene: Aubs\_98 Start: 55122, Stop: 55523, Start Num: 71

Candidate Starts for Aubs\_98:

(6, 54711), (22, 54858), (49, 55020), (53, 55056), (Start: 64 @55107 has 2 MA's), (Start: 66 @55110 has 132 MA's), (Start: 71 @55122 has 81 MA's), (95, 55338), (109, 55446), (119, 55500),

Gene: Awesomesauce\_89 Start: 53602, Stop: 54006, Start Num: 70

Candidate Starts for Awesomesauce\_89:

(32, 53404), (34, 53419), (Start: 70 @53602 has 15 MA's),

Gene: BabeRuth\_68 Start: 41426, Stop: 41881, Start Num: 55

Candidate Starts for BabeRuth\_68:

(Start: 43 @41330 has 6 MA's), (Start: 52 @41411 has 1 MA's), (Start: 55 @41426 has 17 MA's), (Start: 67 @41483 has 20 MA's), (75, 41534), (84, 41600), (91, 41663), (112, 41837),

Gene: Babsiella\_73 Start: 45112, Stop: 45540, Start Num: 68

Candidate Starts for Babsiella\_73:

(Start: 68 @45112 has 38 MA's), (75, 45157), (85, 45232), (86, 45244), (102, 45409), (119, 45496),

Gene: Batiatus\_98 Start: 53658, Stop: 54071, Start Num: 66

Candidate Starts for Batiatus\_98:

(Start: 66 @53658 has 132 MA's), (95, 53886), (107, 53991), (119, 54048),

Gene: Beakin\_90 Start: 50631, Stop: 51044, Start Num: 66

Candidate Starts for Beakin\_90:

(47, 50538), (56, 50586), (Start: 66 @50631 has 132 MA's), (95, 50859), (107, 50964), (119, 51021),

Gene: Beanstalk\_94 Start: 52808, Stop: 53221, Start Num: 66

Candidate Starts for Beanstalk\_94:

(Start: 66 @52808 has 132 MA's), (95, 53036), (107, 53141), (119, 53198),

Gene: BigPhil\_95 Start: 50450, Stop: 50863, Start Num: 66

Candidate Starts for BigPhil\_95:

(Start: 66 @50450 has 132 MA's), (95, 50678), (107, 50783), (119, 50840),

Gene: Bipolar\_100 Start: 55427, Stop: 55840, Start Num: 66

Candidate Starts for Bipolar\_100:

(Start: 66 @55427 has 132 MA's), (95, 55655), (107, 55760), (119, 55817),

Gene: Blessica\_25 Start: 11439, Stop: 11873, Start Num: 68

Candidate Starts for Blessica\_25:

(Start: 68 @11439 has 38 MA's), (75, 11493), (78, 11529), (79, 11532), (81, 11541), (84, 11559), (85, 11571), (86, 11580), (87, 11583), (102, 11724), (110, 11766), (112, 11793), (113, 11796),

Gene: Blexus\_95 Start: 54034, Stop: 54447, Start Num: 66

Candidate Starts for Blexus\_95:

(Start: 66 @54034 has 132 MA's), (95, 54262), (107, 54367), (119, 54424),

Gene: BlueCrab\_101 Start: 55042, Stop: 55443, Start Num: 71  
Candidate Starts for BlueCrab\_101:  
(49, 54937), (53, 54976), (Start: 64 @55027 has 2 MA's), (Start: 66 @55030 has 132 MA's), (Start: 71 @55042 has 81 MA's), (95, 55258), (119, 55420),

Gene: Bluvara\_72 Start: 46741, Stop: 47169, Start Num: 68  
Candidate Starts for Bluvara\_72:  
(Start: 68 @46741 has 38 MA's), (75, 46786), (81, 46831), (85, 46861), (86, 46873), (102, 47038), (119, 47125),

Gene: BobaPhett\_100 Start: 55716, Stop: 56129, Start Num: 66  
Candidate Starts for BobaPhett\_100:  
(Start: 66 @55716 has 132 MA's), (95, 55944), (107, 56049), (119, 56106),

Gene: Bobi\_100 Start: 55132, Stop: 55545, Start Num: 66  
Candidate Starts for Bobi\_100:  
(29, 54937), (56, 55087), (Start: 66 @55132 has 132 MA's), (95, 55360), (107, 55465), (119, 55522),

Gene: BodEinwohner17\_108 Start: 56098, Stop: 56499, Start Num: 71  
Candidate Starts for BodEinwohner17\_108:  
(53, 56032), (Start: 64 @56083 has 2 MA's), (Start: 66 @56086 has 132 MA's), (Start: 71 @56098 has 81 MA's), (95, 56314), (119, 56476),

Gene: Boomer\_100 Start: 54380, Stop: 54796, Start Num: 64  
Candidate Starts for Boomer\_100:  
(6, 53981), (22, 54128), (49, 54290), (53, 54329), (Start: 64 @54380 has 2 MA's), (Start: 66 @54383 has 132 MA's), (Start: 71 @54395 has 81 MA's), (95, 54611), (109, 54719),

Gene: Bora\_23 Start: 11089, Stop: 11523, Start Num: 68  
Candidate Starts for Bora\_23:  
(Start: 68 @11089 has 38 MA's), (75, 11143), (78, 11179), (79, 11182), (81, 11191), (84, 11209), (85, 11221), (86, 11230), (87, 11233), (102, 11374), (110, 11416), (113, 11446),

Gene: Bosection6\_64 Start: 42146, Stop: 42697, Start Num: 43  
Candidate Starts for Bosection6\_64:  
(Start: 43 @42146 has 6 MA's), (Start: 52 @42227 has 1 MA's), (Start: 55 @42242 has 17 MA's), (58, 42248), (Start: 67 @42299 has 20 MA's), (84, 42416), (91, 42479), (112, 42653),

Gene: Brocalys\_90 Start: 51195, Stop: 51608, Start Num: 66  
Candidate Starts for Brocalys\_90:  
(Start: 66 @51195 has 132 MA's), (95, 51423), (107, 51528), (119, 51585),

Gene: Brookers\_97 Start: 53401, Stop: 53814, Start Num: 66  
Candidate Starts for Brookers\_97:  
(Start: 66 @53401 has 132 MA's), (95, 53629), (107, 53734), (119, 53791),

Gene: Brujita\_69 Start: 44086, Stop: 44514, Start Num: 68  
Candidate Starts for Brujita\_69:  
(Start: 68 @44086 has 38 MA's), (75, 44131), (81, 44176), (85, 44206), (86, 44218), (102, 44383), (119, 44470),

Gene: Brushbloom\_98 Start: 54702, Stop: 55115, Start Num: 66  
Candidate Starts for Brushbloom\_98:

(Start: 66 @54702 has 132 MA's), (95, 54930), (107, 55035), (119, 55092),

Gene: Bubbles123\_92 Start: 53470, Stop: 53883, Start Num: 66

Candidate Starts for Bubbles123\_92:

(Start: 66 @53470 has 132 MA's), (95, 53698), (107, 53803), (119, 53860),

Gene: Burwell21\_92 Start: 53481, Stop: 53894, Start Num: 66

Candidate Starts for Burwell21\_92:

(Start: 66 @53481 has 132 MA's), (95, 53709), (107, 53814), (119, 53871),

Gene: Butters\_64 Start: 40322, Stop: 40789, Start Num: 55

Candidate Starts for Butters\_64:

(Start: 43 @40226 has 6 MA's), (54, 40319), (Start: 55 @40322 has 17 MA's), (Start: 67 @40379 has 20 MA's), (Start: 80 @40472 has 2 MA's), (84, 40496), (91, 40559),

Gene: BuzzLyseyear\_105 Start: 56154, Stop: 56654, Start Num: 51

Candidate Starts for BuzzLyseyear\_105:

(37, 56073), (38, 56076), (Start: 51 @56154 has 1 MA's), (65, 56238), (Start: 66 @56241 has 132 MA's), (Start: 71 @56253 has 81 MA's), (95, 56469), (119, 56631),

Gene: ByChance\_89 Start: 49553, Stop: 49966, Start Num: 66

Candidate Starts for ByChance\_89:

(Start: 66 @49553 has 132 MA's), (95, 49781), (119, 49943),

Gene: Byougenkin\_95 Start: 50517, Stop: 50930, Start Num: 66

Candidate Starts for Byougenkin\_95:

(Start: 66 @50517 has 132 MA's), (95, 50745), (119, 50907),

Gene: Cabrinians\_95 Start: 53116, Stop: 53529, Start Num: 66

Candidate Starts for Cabrinians\_95:

(Start: 66 @53116 has 132 MA's), (95, 53344), (107, 53449), (119, 53506),

Gene: CaptainTrips\_100 Start: 53296, Stop: 53709, Start Num: 66

Candidate Starts for CaptainTrips\_100:

(47, 53203), (56, 53251), (Start: 66 @53296 has 132 MA's), (95, 53524), (107, 53629), (119, 53686),

Gene: Carcharodon\_69 Start: 42519, Stop: 42974, Start Num: 55

Candidate Starts for Carcharodon\_69:

(Start: 43 @42423 has 6 MA's), (Start: 55 @42519 has 17 MA's), (Start: 67 @42576 has 20 MA's), (Start: 80 @42669 has 2 MA's), (84, 42693), (112, 42930),

Gene: Catdawg\_24 Start: 11045, Stop: 11479, Start Num: 68

Candidate Starts for Catdawg\_24:

(Start: 68 @11045 has 38 MA's), (75, 11099), (78, 11135), (79, 11138), (81, 11147), (84, 11165), (85, 11177), (86, 11186), (87, 11189), (102, 11330), (110, 11372), (112, 11399), (113, 11402),

Gene: Cerasum\_97 Start: 50468, Stop: 50881, Start Num: 66

Candidate Starts for Cerasum\_97:

(Start: 66 @50468 has 132 MA's), (95, 50696), (107, 50801), (119, 50858),

Gene: Charlie\_66 Start: 41866, Stop: 42321, Start Num: 55

Candidate Starts for Charlie\_66:

(Start: 43 @41770 has 6 MA's), (Start: 52 @41851 has 1 MA's), (Start: 55 @41866 has 17 MA's), (58, 41872), (Start: 67 @41923 has 20 MA's), (84, 42040), (91, 42103), (112, 42277),

Gene: Che8\_105 Start: 55307, Stop: 55708, Start Num: 71

Candidate Starts for Che8\_105:

(Start: 64 @55292 has 2 MA's), (Start: 66 @55295 has 132 MA's), (Start: 71 @55307 has 81 MA's), (95, 55523), (119, 55685),

Gene: Che9c\_80 Start: 53858, Stop: 54301, Start Num: 68

Candidate Starts for Che9c\_80:

(Start: 68 @53858 has 38 MA's), (75, 53909), (81, 53954), (85, 53984), (86, 53996), (100, 54137), (102, 54161), (103, 54170), (105, 54179),

Gene: Cheesepuff\_103 Start: 53489, Stop: 53890, Start Num: 71

Candidate Starts for Cheesepuff\_103:

(53, 53423), (Start: 64 @53474 has 2 MA's), (Start: 66 @53477 has 132 MA's), (Start: 71 @53489 has 81 MA's), (95, 53705), (119, 53867),

Gene: Chevrolet\_102 Start: 54471, Stop: 54884, Start Num: 66

Candidate Starts for Chevrolet\_102:

(Start: 66 @54471 has 132 MA's), (95, 54699), (119, 54861),

Gene: Chewbacca\_72 Start: 42318, Stop: 42869, Start Num: 43

Candidate Starts for Chewbacca\_72:

(Start: 43 @42318 has 6 MA's), (Start: 55 @42414 has 17 MA's), (Start: 67 @42471 has 20 MA's), (Start: 80 @42564 has 2 MA's), (84, 42588), (112, 42825),

Gene: ChickenDinner\_89 Start: 53366, Stop: 53770, Start Num: 70

Candidate Starts for ChickenDinner\_89:

(32, 53168), (34, 53183), (Start: 70 @53366 has 15 MA's),

Gene: Chuckly\_95 Start: 50338, Stop: 50751, Start Num: 66

Candidate Starts for Chuckly\_95:

(Start: 66 @50338 has 132 MA's), (95, 50566), (107, 50671), (119, 50728),

Gene: Clank\_96 Start: 51258, Stop: 51659, Start Num: 71

Candidate Starts for Clank\_96:

(53, 51192), (Start: 64 @51243 has 2 MA's), (Start: 66 @51246 has 132 MA's), (Start: 71 @51258 has 81 MA's), (95, 51474), (119, 51636),

Gene: Clifton\_90 Start: 52170, Stop: 52583, Start Num: 66

Candidate Starts for Clifton\_90:

(Start: 66 @52170 has 132 MA's), (95, 52398), (107, 52503), (119, 52560),

Gene: Coco12\_99 Start: 54525, Stop: 54938, Start Num: 66

Candidate Starts for Coco12\_99:

(Start: 66 @54525 has 132 MA's), (95, 54753), (107, 54858), (119, 54915),

Gene: Corium\_97 Start: 55325, Stop: 55738, Start Num: 66

Candidate Starts for Corium\_97:

(Start: 66 @55325 has 132 MA's), (95, 55553), (107, 55658), (119, 55715),

Gene: Corndog\_27 Start: 11715, Stop: 12149, Start Num: 68

Candidate Starts for Corndog\_27:

(Start: 68 @11715 has 38 MA's), (75, 11769), (78, 11805), (79, 11808), (81, 11817), (84, 11835), (85, 11847), (86, 11856), (87, 11859), (102, 12000), (110, 12042), (113, 12072),

Gene: Cornie\_95 Start: 52934, Stop: 53362, Start Num: 69

Candidate Starts for Cornie\_95:

(5, 52520), (12, 52586), (16, 52616), (19, 52667), (53, 52868), (Start: 64 @52919 has 2 MA's), (Start: 66 @52922 has 132 MA's), (Start: 69 @52934 has 4 MA's), (73, 52955), (75, 52985), (76, 53003), (83, 53042), (84, 53051), (87, 53078), (89, 53096), (90, 53111), (91, 53114), (92, 53120), (94, 53123), (97, 53159), (99, 53174), (104, 53234), (111, 53261), (112, 53285), (113, 53288), (114, 53291), (122, 53351),

Gene: Cornucopia\_98 Start: 51608, Stop: 52009, Start Num: 71

Candidate Starts for Cornucopia\_98:

(13, 51260), (28, 51407), (53, 51542), (Start: 64 @51593 has 2 MA's), (Start: 66 @51596 has 132 MA's), (Start: 71 @51608 has 81 MA's), (95, 51824), (119, 51986),

Gene: Crumble\_93 Start: 49840, Stop: 50277, Start Num: 66

Candidate Starts for Crumble\_93:

(Start: 66 @49840 has 132 MA's), (95, 50068), (107, 50173), (119, 50230), (121, 50254),

Gene: Cubone\_75 Start: 43291, Stop: 43596, Start Num: 80

Candidate Starts for Cubone\_75:

(Start: 43 @43045 has 6 MA's), (Start: 55 @43141 has 17 MA's), (Start: 67 @43198 has 20 MA's), (Start: 80 @43291 has 2 MA's), (84, 43315), (112, 43552),

Gene: DLane\_98 Start: 54578, Stop: 54988, Start Num: 66

Candidate Starts for DLane\_98:

(47, 54485), (56, 54533), (Start: 66 @54578 has 132 MA's), (95, 54806), (107, 54911), (119, 54968),

Gene: DRBy19\_98 Start: 54797, Stop: 55210, Start Num: 66

Candidate Starts for DRBy19\_98:

(Start: 66 @54797 has 132 MA's), (95, 55025),

Gene: DaWorst\_98 Start: 53412, Stop: 53825, Start Num: 66

Candidate Starts for DaWorst\_98:

(53, 53358), (Start: 64 @53409 has 2 MA's), (Start: 66 @53412 has 132 MA's), (Start: 71 @53424 has 81 MA's), (95, 53640), (107, 53745),

Gene: DaddyRickover\_100 Start: 54292, Stop: 54693, Start Num: 71

Candidate Starts for DaddyRickover\_100:

(53, 54226), (Start: 64 @54277 has 2 MA's), (Start: 66 @54280 has 132 MA's), (Start: 71 @54292 has 81 MA's), (95, 54508), (119, 54670),

Gene: Daenerys\_96 Start: 54459, Stop: 54860, Start Num: 71

Candidate Starts for Daenerys\_96:

(53, 54393), (Start: 64 @54444 has 2 MA's), (Start: 66 @54447 has 132 MA's), (Start: 71 @54459 has 81 MA's), (95, 54675), (119, 54837),

Gene: Dante\_96 Start: 54928, Stop: 55341, Start Num: 66

Candidate Starts for Dante\_96:

(47, 54835), (56, 54883), (Start: 66 @54928 has 132 MA's), (95, 55156), (107, 55261), (119, 55318),

Gene: DeadP\_98 Start: 52156, Stop: 52569, Start Num: 66  
Candidate Starts for DeadP\_98:  
(Start: 66 @52156 has 132 MA's), (95, 52384), (107, 52489), (119, 52546),

Gene: Deb65\_91 Start: 52183, Stop: 52584, Start Num: 71  
Candidate Starts for Deb65\_91:  
(53, 52117), (Start: 64 @52168 has 2 MA's), (Start: 66 @52171 has 132 MA's), (Start: 71 @52183 has 81 MA's), (95, 52399), (119, 52561),

Gene: DillTech15\_104 Start: 53753, Stop: 54166, Start Num: 66  
Candidate Starts for DillTech15\_104:  
(Start: 66 @53753 has 132 MA's), (95, 53981),

Gene: DirtMcgirt\_99 Start: 51005, Stop: 51406, Start Num: 71  
Candidate Starts for DirtMcgirt\_99:  
(6, 50591), (22, 50738), (49, 50900), (53, 50939), (Start: 64 @50990 has 2 MA's), (Start: 66 @50993 has 132 MA's), (Start: 71 @51005 has 81 MA's), (95, 51221), (109, 51329),

Gene: DocMcStuffins\_86 Start: 54996, Stop: 55400, Start Num: 70  
Candidate Starts for DocMcStuffins\_86:  
(32, 54798), (34, 54813), (Start: 70 @54996 has 15 MA's),

Gene: Donkeykong\_104 Start: 55913, Stop: 56326, Start Num: 66  
Candidate Starts for Donkeykong\_104:  
(48, 55820), (56, 55868), (Start: 66 @55913 has 132 MA's), (95, 56141), (119, 56303),

Gene: Doomphist\_103 Start: 55112, Stop: 55513, Start Num: 71  
Candidate Starts for Doomphist\_103:  
(53, 55046), (Start: 64 @55097 has 2 MA's), (Start: 66 @55100 has 132 MA's), (Start: 71 @55112 has 81 MA's), (95, 55328), (119, 55490),

Gene: Doomslug\_116 Start: 56627, Stop: 57040, Start Num: 66  
Candidate Starts for Doomslug\_116:  
(Start: 66 @56627 has 132 MA's), (95, 56855), (107, 56960), (119, 57017),

Gene: Dorothy\_99 Start: 55281, Stop: 55682, Start Num: 71  
Candidate Starts for Dorothy\_99:  
(53, 55215), (Start: 64 @55266 has 2 MA's), (Start: 66 @55269 has 132 MA's), (Start: 71 @55281 has 81 MA's), (95, 55497), (119, 55659),

Gene: DosHalletts\_95 Start: 53918, Stop: 54331, Start Num: 66  
Candidate Starts for DosHalletts\_95:  
(48, 53825), (56, 53873), (Start: 66 @53918 has 132 MA's), (95, 54146), (107, 54251), (119, 54308),

Gene: DotProduct\_92 Start: 51297, Stop: 51698, Start Num: 71  
Candidate Starts for DotProduct\_92:  
(53, 51231), (Start: 64 @51282 has 2 MA's), (Start: 66 @51285 has 132 MA's), (Start: 71 @51297 has 81 MA's), (95, 51513), (107, 51618), (119, 51675),

Gene: Doug\_95 Start: 54844, Stop: 55245, Start Num: 71  
Candidate Starts for Doug\_95:  
(49, 54739), (Start: 64 @54829 has 2 MA's), (Start: 66 @54832 has 132 MA's), (Start: 71 @54844 has 81 MA's), (88, 54994), (95, 55060), (119, 55222),

Gene: Drago\_97 Start: 51008, Stop: 51409, Start Num: 71

Candidate Starts for Drago\_97:

(6, 50594), (22, 50741), (49, 50903), (53, 50942), (Start: 64 @50993 has 2 MA's), (Start: 66 @50996 has 132 MA's), (Start: 71 @51008 has 81 MA's), (95, 51224), (109, 51332),

Gene: Duplicity\_68 Start: 41833, Stop: 42231, Start Num: 67

Candidate Starts for Duplicity\_68:

(Start: 43 @41680 has 6 MA's), (Start: 55 @41776 has 17 MA's), (Start: 67 @41833 has 20 MA's), (Start: 80 @41926 has 2 MA's), (84, 41950), (112, 42187),

Gene: Dylan\_24 Start: 11441, Stop: 11875, Start Num: 68

Candidate Starts for Dylan\_24:

(Start: 68 @11441 has 38 MA's), (75, 11495), (78, 11531), (79, 11534), (81, 11543), (84, 11561), (85, 11573), (86, 11582), (87, 11585), (102, 11726), (110, 11768), (113, 11798),

Gene: EGUunicorn\_64 Start: 40746, Stop: 41297, Start Num: 43

Candidate Starts for EGUunicorn\_64:

(Start: 43 @40746 has 6 MA's), (Start: 55 @40842 has 17 MA's), (Start: 67 @40899 has 20 MA's), (Start: 80 @40992 has 2 MA's), (84, 41016), (112, 41253),

Gene: Eish\_103 Start: 54594, Stop: 55007, Start Num: 66

Candidate Starts for Eish\_103:

(Start: 66 @54594 has 132 MA's), (95, 54822), (107, 54927), (119, 54984),

Gene: EleanorGeorge\_102 Start: 55861, Stop: 56274, Start Num: 66

Candidate Starts for EleanorGeorge\_102:

(48, 55768), (56, 55816), (Start: 66 @55861 has 132 MA's), (95, 56089), (119, 56251),

Gene: EmiMonkey\_87 Start: 55028, Stop: 55441, Start Num: 66

Candidate Starts for EmiMonkey\_87:

(Start: 66 @55028 has 132 MA's), (95, 55256), (119, 55418),

Gene: Emma\_103 Start: 52862, Stop: 53275, Start Num: 66

Candidate Starts for Emma\_103:

(Start: 66 @52862 has 132 MA's), (95, 53090), (107, 53195), (119, 53252),

Gene: Emmaloid\_101 Start: 53782, Stop: 54195, Start Num: 66

Candidate Starts for Emmaloid\_101:

(Start: 66 @53782 has 132 MA's), (95, 54010), (109, 54118),

Gene: Empress\_98 Start: 53375, Stop: 53776, Start Num: 71

Candidate Starts for Empress\_98:

(53, 53309), (Start: 64 @53360 has 2 MA's), (Start: 66 @53363 has 132 MA's), (Start: 71 @53375 has 81 MA's), (95, 53591), (119, 53753),

Gene: Enby\_102 Start: 51284, Stop: 51685, Start Num: 71

Candidate Starts for Enby\_102:

(6, 50870), (22, 51017), (49, 51179), (53, 51218), (Start: 64 @51269 has 2 MA's), (Start: 66 @51272 has 132 MA's), (Start: 71 @51284 has 81 MA's), (95, 51500), (109, 51608),

Gene: Enzomatic\_111 Start: 53200, Stop: 53601, Start Num: 71

Candidate Starts for Enzomatic\_111:

(49, 53098), (53, 53134), (Start: 64 @53185 has 2 MA's), (Start: 66 @53188 has 132 MA's), (Start: 71 @53200 has 81 MA's), (95, 53416), (119, 53578),

Gene: Eradicator\_90 Start: 52133, Stop: 52546, Start Num: 66  
Candidate Starts for Eradicator\_90:  
(Start: 66 @52133 has 132 MA's), (95, 52361), (119, 52523),

Gene: Estave1\_106 Start: 57168, Stop: 57569, Start Num: 71  
Candidate Starts for Estave1\_106:  
(6, 56754), (17, 56844), (18, 56850), (22, 56901), (53, 57102), (Start: 64 @57153 has 2 MA's), (Start: 66 @57156 has 132 MA's), (Start: 71 @57168 has 81 MA's), (95, 57384), (119, 57546),

Gene: Familton\_25 Start: 11046, Stop: 11480, Start Num: 68  
Candidate Starts for Familton\_25:  
(Start: 68 @11046 has 38 MA's), (75, 11100), (78, 11136), (79, 11139), (81, 11148), (84, 11166), (85, 11178), (86, 11187), (87, 11190), (102, 11331), (110, 11373), (112, 11400), (113, 11403),

Gene: Fancypants\_105 Start: 56674, Stop: 57075, Start Num: 71  
Candidate Starts for Fancypants\_105:  
(49, 56569), (53, 56608), (Start: 64 @56659 has 2 MA's), (Start: 66 @56662 has 132 MA's), (Start: 71 @56674 has 81 MA's), (88, 56824), (95, 56890), (119, 57052),

Gene: Fastidio\_102 Start: 51689, Stop: 52090, Start Num: 71  
Candidate Starts for Fastidio\_102:  
(53, 51623), (Start: 64 @51674 has 2 MA's), (Start: 66 @51677 has 132 MA's), (Start: 71 @51689 has 81 MA's), (95, 51905), (107, 52010), (119, 52067),

Gene: Filuzino\_98 Start: 55273, Stop: 55686, Start Num: 66  
Candidate Starts for Filuzino\_98:  
(47, 55180), (56, 55228), (Start: 66 @55273 has 132 MA's), (95, 55501), (107, 55606), (119, 55663),

Gene: Firecracker\_25 Start: 11339, Stop: 11773, Start Num: 68  
Candidate Starts for Firecracker\_25:  
(Start: 68 @11339 has 38 MA's), (75, 11393), (78, 11429), (79, 11432), (81, 11441), (84, 11459), (85, 11471), (86, 11480), (87, 11483), (102, 11624), (110, 11666), (112, 11693), (113, 11696),

Gene: Firehouse51\_92 Start: 54090, Stop: 54503, Start Num: 66  
Candidate Starts for Firehouse51\_92:  
(47, 53997), (56, 54045), (Start: 66 @54090 has 132 MA's), (95, 54318), (107, 54423), (119, 54480),

Gene: Flathead\_100 Start: 53594, Stop: 54007, Start Num: 66  
Candidate Starts for Flathead\_100:  
(47, 53501), (56, 53549), (Start: 66 @53594 has 132 MA's), (95, 53822), (107, 53927), (119, 53984),

Gene: Florinda\_110 Start: 55688, Stop: 56092, Start Num: 70  
Candidate Starts for Florinda\_110:  
(Start: 70 @55688 has 15 MA's), (82, 55784), (84, 55799), (89, 55865), (95, 55907), (97, 55928), (107, 56012),

Gene: FoulBall\_24 Start: 11046, Stop: 11480, Start Num: 68  
Candidate Starts for FoulBall\_24:  
(Start: 68 @11046 has 38 MA's), (75, 11100), (78, 11136), (79, 11139), (81, 11148), (84, 11166), (85, 11178), (86, 11187), (87, 11190), (102, 11331), (110, 11373), (112, 11400), (113, 11403),

Gene: Frankie\_98 Start: 53511, Stop: 53915, Start Num: 70

Candidate Starts for Frankie\_98:

(41, 53346), (42, 53349), (44, 53355), (Start: 70 @53511 has 15 MA's), (82, 53607), (84, 53622), (89, 53688), (95, 53730), (97, 53751),

Gene: FreddyB\_108 Start: 54762, Stop: 55175, Start Num: 66

Candidate Starts for FreddyB\_108:

(Start: 66 @54762 has 132 MA's), (95, 54990), (107, 55095), (119, 55152),

Gene: Fruitloop\_96 Start: 54438, Stop: 54851, Start Num: 66

Candidate Starts for Fruitloop\_96:

(Start: 66 @54438 has 132 MA's), (95, 54666), (107, 54771), (119, 54828),

Gene: Fulbright\_68 Start: 41385, Stop: 41690, Start Num: 80

Candidate Starts for Fulbright\_68:

(Start: 43 @41139 has 6 MA's), (Start: 55 @41235 has 17 MA's), (Start: 67 @41292 has 20 MA's), (Start: 80 @41385 has 2 MA's), (84, 41409), (112, 41646),

Gene: GUmbie\_97 Start: 53311, Stop: 53712, Start Num: 71

Candidate Starts for GUmbie\_97:

(53, 53245), (Start: 64 @53296 has 2 MA's), (Start: 66 @53299 has 132 MA's), (Start: 71 @53311 has 81 MA's), (95, 53527), (107, 53632),

Gene: Galactic\_102 Start: 53734, Stop: 54135, Start Num: 71

Candidate Starts for Galactic\_102:

(49, 53632), (53, 53668), (Start: 64 @53719 has 2 MA's), (Start: 66 @53722 has 132 MA's), (Start: 71 @53734 has 81 MA's), (95, 53950), (119, 54112),

Gene: Gandolph\_98 Start: 51417, Stop: 51818, Start Num: 71

Candidate Starts for Gandolph\_98:

(6, 51003), (15, 51069), (18, 51099), (22, 51150), (53, 51351), (Start: 64 @51402 has 2 MA's), (Start: 66 @51405 has 132 MA's), (Start: 71 @51417 has 81 MA's), (95, 51633), (119, 51795),

Gene: Geralt\_91 Start: 52181, Stop: 52582, Start Num: 71

Candidate Starts for Geralt\_91:

(53, 52115), (Start: 64 @52166 has 2 MA's), (Start: 66 @52169 has 132 MA's), (Start: 71 @52181 has 81 MA's), (95, 52397), (119, 52559),

Gene: Gex\_70 Start: 42535, Stop: 42990, Start Num: 55

Candidate Starts for Gex\_70:

(Start: 43 @42439 has 6 MA's), (Start: 55 @42535 has 17 MA's), (Start: 67 @42592 has 20 MA's), (Start: 80 @42685 has 2 MA's), (84, 42709), (112, 42946),

Gene: GigiOuiOui\_93 Start: 52314, Stop: 52715, Start Num: 71

Candidate Starts for GigiOuiOui\_93:

(53, 52248), (Start: 64 @52299 has 2 MA's), (Start: 66 @52302 has 132 MA's), (Start: 71 @52314 has 81 MA's), (95, 52530),

Gene: Girafales\_107 Start: 55293, Stop: 55697, Start Num: 70

Candidate Starts for Girafales\_107:

(Start: 70 @55293 has 15 MA's), (82, 55389), (84, 55404), (89, 55470), (95, 55512), (97, 55533), (107, 55617),

Gene: Girr\_97 Start: 54180, Stop: 54581, Start Num: 71

Candidate Starts for Girr\_97:

(53, 54114), (Start: 64 @54165 has 2 MA's), (Start: 66 @54168 has 132 MA's), (Start: 71 @54180 has 81 MA's), (95, 54396), (119, 54558),

Gene: Gorge\_97 Start: 54389, Stop: 54802, Start Num: 66

Candidate Starts for Gorge\_97:

(Start: 66 @54389 has 132 MA's), (95, 54617), (109, 54725),

Gene: Grimmer\_106 Start: 53746, Stop: 54159, Start Num: 66

Candidate Starts for Grimmer\_106:

(Start: 66 @53746 has 132 MA's), (95, 53974), (119, 54136),

Gene: Guppsters\_93 Start: 51279, Stop: 51692, Start Num: 66

Candidate Starts for Guppsters\_93:

(48, 51186), (56, 51234), (Start: 66 @51279 has 132 MA's), (95, 51507), (119, 51669),

Gene: HC\_73 Start: 43335, Stop: 43763, Start Num: 68

Candidate Starts for HC\_73:

(Start: 68 @43335 has 38 MA's), (75, 43380), (85, 43455), (86, 43467), (91, 43527), (93, 43533), (102, 43632), (119, 43719),

Gene: Hades\_95 Start: 50900, Stop: 51301, Start Num: 71

Candidate Starts for Hades\_95:

(13, 50552), (21, 50642), (23, 50648), (28, 50699), (53, 50834), (Start: 64 @50885 has 2 MA's), (Start: 66 @50888 has 132 MA's), (Start: 71 @50900 has 81 MA's), (95, 51116), (119, 51278),

Gene: Hamulus\_98 Start: 53123, Stop: 53536, Start Num: 66

Candidate Starts for Hamulus\_98:

(47, 53030), (56, 53078), (Start: 66 @53123 has 132 MA's), (95, 53351), (107, 53456), (119, 53513),

Gene: Hanako\_67 Start: 41426, Stop: 41881, Start Num: 55

Candidate Starts for Hanako\_67:

(Start: 43 @41330 has 6 MA's), (Start: 52 @41411 has 1 MA's), (Start: 55 @41426 has 17 MA's), (Start: 67 @41483 has 20 MA's), (75, 41534), (84, 41600), (91, 41663), (112, 41837),

Gene: Harley\_100 Start: 54295, Stop: 54708, Start Num: 66

Candidate Starts for Harley\_100:

(Start: 66 @54295 has 132 MA's), (95, 54523), (119, 54685),

Gene: Hegedechwinu\_106 Start: 53659, Stop: 54072, Start Num: 66

Candidate Starts for Hegedechwinu\_106:

(Start: 66 @53659 has 132 MA's), (95, 53887), (107, 53992), (119, 54049),

Gene: Hlubikazi\_96 Start: 51902, Stop: 52315, Start Num: 66

Candidate Starts for Hlubikazi\_96:

(48, 51809), (56, 51857), (Start: 66 @51902 has 132 MA's), (95, 52130), (107, 52235), (119, 52292),

Gene: IMpilo\_96 Start: 51913, Stop: 52314, Start Num: 71

Candidate Starts for IMpilo\_96:

(53, 51847), (Start: 64 @51898 has 2 MA's), (Start: 66 @51901 has 132 MA's), (Start: 71 @51913 has 81 MA's), (95, 52129), (107, 52234), (119, 52291),

Gene: lbOuu\_89 Start: 51277, Stop: 51678, Start Num: 71

Candidate Starts for lbOuu\_89:

(6, 50863), (22, 51010), (53, 51211), (Start: 64 @51262 has 2 MA's), (Start: 66 @51265 has 132 MA's), (Start: 71 @51277 has 81 MA's), (95, 51493),

Gene: lbhubesi\_95 Start: 51164, Stop: 51577, Start Num: 66

Candidate Starts for lbhubesi\_95:

(Start: 66 @51164 has 132 MA's), (95, 51392), (119, 51554),

Gene: ldergollasper\_24 Start: 11046, Stop: 11480, Start Num: 68

Candidate Starts for ldergollasper\_24:

(Start: 68 @11046 has 38 MA's), (75, 11100), (78, 11136), (79, 11139), (81, 11148), (84, 11166), (85, 11178), (86, 11187), (87, 11190), (102, 11331), (110, 11373), (112, 11400), (113, 11403),

Gene: Imara\_23 Start: 11299, Stop: 11733, Start Num: 68

Candidate Starts for Imara\_23:

(Start: 68 @11299 has 38 MA's), (75, 11353), (78, 11389), (79, 11392), (81, 11401), (84, 11419), (85, 11431), (86, 11440), (87, 11443), (102, 11584), (110, 11626), (112, 11653), (113, 11656),

Gene: Impisi\_68 Start: 40939, Stop: 41337, Start Num: 67

Candidate Starts for Impisi\_68:

(Start: 43 @40786 has 6 MA's), (Start: 52 @40867 has 1 MA's), (Start: 55 @40882 has 17 MA's), (58, 40888), (Start: 67 @40939 has 20 MA's), (84, 41056), (91, 41119), (112, 41293),

Gene: Inventum\_96 Start: 53469, Stop: 53870, Start Num: 71

Candidate Starts for Inventum\_96:

(53, 53403), (Start: 64 @53454 has 2 MA's), (Start: 66 @53457 has 132 MA's), (Start: 71 @53469 has 81 MA's), (95, 53685), (119, 53847),

Gene: IrishSherpFalk\_98 Start: 53804, Stop: 54205, Start Num: 71

Candidate Starts for IrishSherpFalk\_98:

(6, 53390), (22, 53537), (49, 53699), (53, 53738), (Start: 64 @53789 has 2 MA's), (Start: 66 @53792 has 132 MA's), (Start: 71 @53804 has 81 MA's), (95, 54020), (119, 54182),

Gene: Island3\_71 Start: 44316, Stop: 44744, Start Num: 68

Candidate Starts for Island3\_71:

(Start: 68 @44316 has 38 MA's), (75, 44361), (81, 44406), (85, 44436), (86, 44448), (102, 44613), (119, 44700),

Gene: JalFarm20\_107 Start: 55600, Stop: 56013, Start Num: 66

Candidate Starts for JalFarm20\_107:

(47, 55507), (56, 55555), (Start: 66 @55600 has 132 MA's), (95, 55828), (107, 55933), (119, 55990),

Gene: James\_102 Start: 55771, Stop: 56184, Start Num: 66

Candidate Starts for James\_102:

(Start: 66 @55771 has 132 MA's), (95, 55999), (107, 56104), (119, 56161),

Gene: Jamie19\_63 Start: 40165, Stop: 40563, Start Num: 67

Candidate Starts for Jamie19\_63:

(Start: 52 @40093 has 1 MA's), (Start: 55 @40108 has 17 MA's), (58, 40114), (Start: 67 @40165 has 20 MA's), (84, 40282), (91, 40345), (112, 40519),

Gene: JangDynasty\_24 Start: 11135, Stop: 11569, Start Num: 68  
Candidate Starts for JangDynasty\_24:  
(Start: 68 @11135 has 38 MA's), (75, 11189), (78, 11225), (79, 11228), (81, 11237), (84, 11255), (85, 11267), (86, 11276), (87, 11279), (102, 11420), (110, 11462), (112, 11489), (113, 11492),

Gene: Jant\_105 Start: 53086, Stop: 53499, Start Num: 66  
Candidate Starts for Jant\_105:  
(46, 52993), (56, 53041), (Start: 66 @53086 has 132 MA's), (95, 53314), (107, 53419), (119, 53476),

Gene: Jarcob\_101 Start: 55370, Stop: 55783, Start Num: 66  
Candidate Starts for Jarcob\_101:  
(Start: 66 @55370 has 132 MA's), (95, 55598), (109, 55706),

Gene: Jennelsea\_95 Start: 52671, Stop: 53084, Start Num: 66  
Candidate Starts for Jennelsea\_95:  
(Start: 66 @52671 has 132 MA's), (95, 52899), (107, 53004), (119, 53061),

Gene: Jinglebell\_105 Start: 55047, Stop: 55460, Start Num: 66  
Candidate Starts for Jinglebell\_105:  
(47, 54954), (56, 55002), (Start: 66 @55047 has 132 MA's), (95, 55275), (107, 55380), (109, 55383), (119, 55437),

Gene: Job42\_99 Start: 55957, Stop: 56358, Start Num: 71  
Candidate Starts for Job42\_99:  
(49, 55852), (53, 55891), (Start: 64 @55942 has 2 MA's), (Start: 66 @55945 has 132 MA's), (Start: 71 @55957 has 81 MA's), (95, 56173), (119, 56335),

Gene: JoeyJr\_101 Start: 55377, Stop: 55778, Start Num: 71  
Candidate Starts for JoeyJr\_101:  
(53, 55311), (Start: 64 @55362 has 2 MA's), (Start: 66 @55365 has 132 MA's), (Start: 71 @55377 has 81 MA's), (95, 55593), (119, 55755),

Gene: Journey\_62 Start: 40729, Stop: 41280, Start Num: 43  
Candidate Starts for Journey\_62:  
(Start: 43 @40729 has 6 MA's), (Start: 52 @40810 has 1 MA's), (Start: 55 @40825 has 17 MA's), (58, 40831), (Start: 67 @40882 has 20 MA's), (84, 40999), (91, 41062), (112, 41236),

Gene: Juice456\_97 Start: 53087, Stop: 53488, Start Num: 71  
Candidate Starts for Juice456\_97:  
(53, 53021), (Start: 64 @53072 has 2 MA's), (Start: 66 @53075 has 132 MA's), (Start: 71 @53087 has 81 MA's), (95, 53303), (119, 53465),

Gene: Juniper1\_90 Start: 52071, Stop: 52475, Start Num: 70  
Candidate Starts for Juniper1\_90:  
(Start: 70 @52071 has 15 MA's), (95, 52290), (119, 52452),

Gene: Karhdo\_93 Start: 51546, Stop: 51947, Start Num: 71  
Candidate Starts for Karhdo\_93:  
(49, 51441), (Start: 64 @51531 has 2 MA's), (Start: 66 @51534 has 132 MA's), (Start: 71 @51546 has 81 MA's), (88, 51696), (95, 51762), (107, 51867), (119, 51924),

Gene: Kenuha5\_90 Start: 52947, Stop: 53360, Start Num: 66  
Candidate Starts for Kenuha5\_90:

(24, 52710), (33, 52773), (39, 52785), (45, 52821), (48, 52854), (56, 52902), (Start: 66 @52947 has 132 MA's), (95, 53175), (107, 53280), (119, 53337),

Gene: Kersh\_101 Start: 56116, Stop: 56529, Start Num: 66  
Candidate Starts for Kersh\_101:  
(Start: 66 @56116 has 132 MA's), (95, 56344), (119, 56506),

Gene: Kevin1\_67 Start: 40831, Stop: 41286, Start Num: 55  
Candidate Starts for Kevin1\_67:  
(31, 40690), (Start: 43 @40735 has 6 MA's), (54, 40828), (Start: 55 @40831 has 17 MA's), (Start: 67 @40888 has 20 MA's), (Start: 80 @40981 has 2 MA's), (84, 41005), (91, 41068), (112, 41242), (115, 41248),

Gene: Kimberlium\_100 Start: 53187, Stop: 53588, Start Num: 71  
Candidate Starts for Kimberlium\_100:  
(53, 53121), (Start: 64 @53172 has 2 MA's), (Start: 66 @53175 has 132 MA's), (Start: 71 @53187 has 81 MA's), (95, 53403), (119, 53565),

Gene: KingJulian\_106 Start: 56189, Stop: 56602, Start Num: 66  
Candidate Starts for KingJulian\_106:  
(Start: 66 @56189 has 132 MA's), (95, 56417), (107, 56522), (119, 56579),

Gene: KingMidas\_98 Start: 53606, Stop: 54007, Start Num: 71  
Candidate Starts for KingMidas\_98:  
(53, 53540), (Start: 64 @53591 has 2 MA's), (Start: 66 @53594 has 132 MA's), (Start: 71 @53606 has 81 MA's), (95, 53822), (119, 53984),

Gene: KingPhillip3\_22 Start: 11046, Stop: 11480, Start Num: 68  
Candidate Starts for KingPhillip3\_22:  
(Start: 68 @11046 has 38 MA's), (75, 11100), (78, 11136), (79, 11139), (81, 11148), (84, 11166), (85, 11178), (86, 11187), (87, 11190), (102, 11331), (110, 11373), (112, 11400), (113, 11403),

Gene: Kingsley\_107 Start: 57132, Stop: 57545, Start Num: 66  
Candidate Starts for Kingsley\_107:  
(Start: 66 @57132 has 132 MA's), (95, 57360), (107, 57465), (119, 57522),

Gene: Koella\_91 Start: 50533, Stop: 50946, Start Num: 66  
Candidate Starts for Koella\_91:  
(Start: 66 @50533 has 132 MA's), (95, 50761), (107, 50866), (119, 50923),

Gene: Krakatau\_91 Start: 49504, Stop: 49905, Start Num: 71  
Candidate Starts for Krakatau\_91:  
(17, 49180), (18, 49186), (22, 49237), (49, 49399), (53, 49438), (Start: 64 @49489 has 2 MA's), (Start: 66 @49492 has 132 MA's), (Start: 71 @49504 has 81 MA's), (95, 49720), (109, 49828), (119, 49882),

Gene: Krili\_25 Start: 11405, Stop: 11839, Start Num: 68  
Candidate Starts for Krili\_25:  
(Start: 68 @11405 has 38 MA's), (75, 11459), (78, 11495), (79, 11498), (81, 11507), (84, 11525), (85, 11537), (86, 11546), (87, 11549), (102, 11690), (110, 11732), (112, 11759), (113, 11762),

Gene: KristaRAM\_106 Start: 54855, Stop: 55268, Start Num: 66  
Candidate Starts for KristaRAM\_106:

(26, 54630), (30, 54660), (36, 54687), (56, 54810), (Start: 66 @54855 has 132 MA's), (95, 55083), (119, 55245),

Gene: LastJedi\_89 Start: 51590, Stop: 52003, Start Num: 66  
Candidate Starts for LastJedi\_89:  
(Start: 66 @51590 has 132 MA's), (95, 51818), (107, 51923), (119, 51980),

Gene: Latretium\_101 Start: 54636, Stop: 55049, Start Num: 66  
Candidate Starts for Latretium\_101:  
(Start: 66 @54636 has 132 MA's), (95, 54864), (119, 55026),

Gene: Leozinho\_95 Start: 51125, Stop: 51526, Start Num: 71  
Candidate Starts for Leozinho\_95:  
(53, 51059), (Start: 64 @51110 has 2 MA's), (Start: 66 @51113 has 132 MA's), (Start: 71 @51125 has 81 MA's), (95, 51341), (119, 51503),

Gene: Leperchaun\_100 Start: 54611, Stop: 55012, Start Num: 71  
Candidate Starts for Leperchaun\_100:  
(53, 54545), (Start: 64 @54596 has 2 MA's), (Start: 66 @54599 has 132 MA's), (Start: 71 @54611 has 81 MA's), (95, 54827), (119, 54989),

Gene: LilMoolah\_101 Start: 54570, Stop: 54983, Start Num: 66  
Candidate Starts for LilMoolah\_101:  
(Start: 66 @54570 has 132 MA's), (95, 54798), (109, 54906),

Gene: LittleShirley\_106 Start: 54967, Stop: 55380, Start Num: 66  
Candidate Starts for LittleShirley\_106:  
(Start: 66 @54967 has 132 MA's), (95, 55195), (107, 55300), (119, 55357),

Gene: Lizziana\_99 Start: 54838, Stop: 55251, Start Num: 66  
Candidate Starts for Lizziana\_99:  
(Start: 66 @54838 has 132 MA's), (95, 55066), (107, 55171), (119, 55228),

Gene: Llama\_105 Start: 54690, Stop: 55103, Start Num: 66  
Candidate Starts for Llama\_105:  
(Start: 66 @54690 has 132 MA's), (95, 54918), (119, 55080),

Gene: Llij\_93 Start: 52521, Stop: 52934, Start Num: 66  
Candidate Starts for Llij\_93:  
(48, 52428), (56, 52476), (Start: 66 @52521 has 132 MA's), (95, 52749),

Gene: LordVader\_94 Start: 50446, Stop: 50850, Start Num: 70  
Candidate Starts for LordVader\_94:  
(50, 50353), (60, 50401), (Start: 70 @50446 has 15 MA's), (95, 50665),

Gene: Lorde\_101 Start: 50449, Stop: 50850, Start Num: 71  
Candidate Starts for Lorde\_101:  
(6, 50035), (22, 50182), (49, 50344), (53, 50383), (Start: 64 @50434 has 2 MA's), (Start: 66 @50437 has 132 MA's), (Start: 71 @50449 has 81 MA's), (95, 50665), (109, 50773),

Gene: Lucia\_98 Start: 51297, Stop: 51698, Start Num: 71  
Candidate Starts for Lucia\_98:

(6, 50883), (22, 51030), (49, 51192), (53, 51231), (Start: 64 @51282 has 2 MA's), (Start: 66 @51285 has 132 MA's), (Start: 71 @51297 has 81 MA's), (95, 51513), (109, 51621),

Gene: LunaBlu\_105 Start: 55220, Stop: 55621, Start Num: 71

Candidate Starts for LunaBlu\_105:

(49, 55118), (53, 55154), (Start: 64 @55205 has 2 MA's), (Start: 66 @55208 has 132 MA's), (Start: 71 @55220 has 81 MA's), (95, 55436), (119, 55598),

Gene: LunaStella\_95 Start: 51843, Stop: 52268, Start Num: 69

Candidate Starts for LunaStella\_95:

(53, 51777), (Start: 64 @51828 has 2 MA's), (Start: 66 @51831 has 132 MA's), (Start: 69 @51843 has 4 MA's), (72, 51858), (74, 51876), (77, 51927), (83, 51951), (84, 51960), (87, 51987), (91, 52023), (92, 52029), (97, 52068), (98, 52077), (102, 52125), (108, 52161), (111, 52170), (114, 52200), (122, 52260),

Gene: MadKillah\_26 Start: 11438, Stop: 11872, Start Num: 68

Candidate Starts for MadKillah\_26:

(Start: 68 @11438 has 38 MA's), (75, 11492), (78, 11528), (79, 11531), (81, 11540), (84, 11558), (85, 11570), (86, 11579), (87, 11582), (102, 11723), (110, 11765), (112, 11792), (113, 11795),

Gene: MadMen\_103 Start: 54148, Stop: 54549, Start Num: 71

Candidate Starts for MadMen\_103:

(53, 54082), (Start: 64 @54133 has 2 MA's), (Start: 66 @54136 has 132 MA's), (Start: 71 @54148 has 81 MA's), (95, 54364), (119, 54526),

Gene: Madiba\_97 Start: 52890, Stop: 53291, Start Num: 71

Candidate Starts for Madiba\_97:

(6, 52476), (22, 52623), (53, 52824), (Start: 64 @52875 has 2 MA's), (Start: 66 @52878 has 132 MA's), (Start: 71 @52890 has 81 MA's), (95, 53106), (119, 53268),

Gene: Magsby\_69 Start: 42538, Stop: 42936, Start Num: 67

Candidate Starts for Magsby\_69:

(Start: 43 @42385 has 6 MA's), (Start: 55 @42481 has 17 MA's), (Start: 67 @42538 has 20 MA's), (Start: 80 @42631 has 2 MA's), (84, 42655), (112, 42892),

Gene: Mahavrat\_92 Start: 51100, Stop: 51504, Start Num: 70

Candidate Starts for Mahavrat\_92:

(Start: 70 @51100 has 15 MA's), (95, 51319), (119, 51481),

Gene: Mandlovu\_96 Start: 51844, Stop: 52257, Start Num: 66

Candidate Starts for Mandlovu\_96:

(48, 51751), (56, 51799), (Start: 66 @51844 has 132 MA's), (95, 52072), (107, 52177), (119, 52234),

Gene: Mantra\_96 Start: 53210, Stop: 53611, Start Num: 71

Candidate Starts for Mantra\_96:

(53, 53144), (Start: 64 @53195 has 2 MA's), (Start: 66 @53198 has 132 MA's), (Start: 71 @53210 has 81 MA's), (95, 53426),

Gene: Maravista\_95 Start: 55498, Stop: 55911, Start Num: 66

Candidate Starts for Maravista\_95:

(Start: 66 @55498 has 132 MA's), (95, 55726), (107, 55831), (119, 55888),

Gene: Marker\_104 Start: 54993, Stop: 55394, Start Num: 71

Candidate Starts for Marker\_104:

(1, 54321), (2, 54423), (3, 54426), (4, 54489), (6, 54582), (18, 54678), (22, 54729), (49, 54891), (53, 54927), (Start: 64 @54978 has 2 MA's), (Start: 66 @54981 has 132 MA's), (Start: 71 @54993 has 81 MA's), (95, 55209), (119, 55371),

Gene: Martik\_97 Start: 55301, Stop: 55714, Start Num: 66

Candidate Starts for Martik\_97:

(Start: 66 @55301 has 132 MA's), (95, 55529), (116, 55682), (119, 55691),

Gene: Mattes\_99 Start: 54507, Stop: 54920, Start Num: 66

Candidate Starts for Mattes\_99:

(Start: 66 @54507 has 132 MA's), (95, 54735), (109, 54843),

Gene: Medindi\_103 Start: 54649, Stop: 55062, Start Num: 66

Candidate Starts for Medindi\_103:

(47, 54556), (56, 54604), (Start: 66 @54649 has 132 MA's), (95, 54877), (107, 54982), (119, 55039),

Gene: Melissauren88\_88 Start: 50323, Stop: 50736, Start Num: 66

Candidate Starts for Melissauren88\_88:

(47, 50230), (56, 50278), (Start: 66 @50323 has 132 MA's), (95, 50551), (107, 50656), (119, 50713),

Gene: Melville\_75 Start: 42147, Stop: 42545, Start Num: 67

Candidate Starts for Melville\_75:

(Start: 43 @41994 has 6 MA's), (Start: 55 @42090 has 17 MA's), (Start: 67 @42147 has 20 MA's), (Start: 80 @42240 has 2 MA's), (84, 42264), (112, 42501),

Gene: MichelleMyBell\_68 Start: 41071, Stop: 41526, Start Num: 55

Candidate Starts for MichelleMyBell\_68:

(Start: 52 @41056 has 1 MA's), (Start: 55 @41071 has 17 MA's), (58, 41077), (Start: 67 @41128 has 20 MA's), (84, 41245), (91, 41308), (112, 41482),

Gene: MilanaBonita\_91 Start: 52219, Stop: 52632, Start Num: 66

Candidate Starts for MilanaBonita\_91:

(46, 52126), (56, 52174), (Start: 66 @52219 has 132 MA's), (95, 52447), (107, 52552), (119, 52609),

Gene: MilleniumForce\_98 Start: 54026, Stop: 54439, Start Num: 66

Candidate Starts for MilleniumForce\_98:

(47, 53957), (56, 54005), (Start: 66 @54026 has 132 MA's), (95, 54254), (107, 54359), (119, 54416),

Gene: MinionDave\_96 Start: 53928, Stop: 54341, Start Num: 66

Candidate Starts for MinionDave\_96:

(48, 53835), (56, 53883), (Start: 66 @53928 has 132 MA's), (95, 54156), (119, 54318),

Gene: Minnie\_93 Start: 54919, Stop: 55332, Start Num: 66

Candidate Starts for Minnie\_93:

(Start: 66 @54919 has 132 MA's), (95, 55147), (109, 55255),

Gene: Misha28\_88 Start: 54301, Stop: 54705, Start Num: 70

Candidate Starts for Misha28\_88:

(32, 54103), (34, 54118), (Start: 70 @54301 has 15 MA's),

Gene: MisterCuddles\_98 Start: 54180, Stop: 54581, Start Num: 71

Candidate Starts for MisterCuddles\_98:

(53, 54114), (Start: 64 @54165 has 2 MA's), (Start: 66 @54168 has 132 MA's), (Start: 71 @54180 has 81 MA's), (95, 54396), (119, 54558),

Gene: Modragons\_102 Start: 54678, Stop: 55091, Start Num: 66  
Candidate Starts for Modragons\_102:  
(Start: 66 @54678 has 132 MA's), (95, 54906), (119, 55068),

Gene: MooMoo\_92 Start: 51379, Stop: 51864, Start Num: 59  
Candidate Starts for MooMoo\_92:  
(27, 51211), (Start: 55 @51364 has 17 MA's), (56, 51367), (Start: 59 @51379 has 1 MA's), (Start: 68 @51424 has 38 MA's), (75, 51475), (81, 51520), (85, 51550), (86, 51562), (93, 51628), (100, 51703), (101, 51721), (102, 51727), (105, 51745), (109, 51760),

Gene: Moonbeam\_101 Start: 54414, Stop: 54827, Start Num: 66  
Candidate Starts for Moonbeam\_101:  
(Start: 66 @54414 has 132 MA's), (95, 54642), (119, 54804),

Gene: Mori\_25 Start: 11276, Stop: 11710, Start Num: 68  
Candidate Starts for Mori\_25:  
(Start: 68 @11276 has 38 MA's), (75, 11330), (78, 11366), (79, 11369), (81, 11378), (84, 11396), (85, 11408), (86, 11417), (87, 11420), (102, 11561), (110, 11603), (112, 11630), (113, 11633),

Gene: Mova\_100 Start: 53953, Stop: 54369, Start Num: 64  
Candidate Starts for Mova\_100:  
(53, 53902), (Start: 64 @53953 has 2 MA's), (Start: 66 @53956 has 132 MA's), (Start: 71 @53968 has 81 MA's), (95, 54184), (107, 54289), (119, 54346),

Gene: Mozy\_102 Start: 53591, Stop: 54004, Start Num: 66  
Candidate Starts for Mozy\_102:  
(Start: 66 @53591 has 132 MA's), (95, 53819), (107, 53924), (119, 53981),

Gene: Ms6\_100 Start: 50214, Stop: 50627, Start Num: 66  
Candidate Starts for Ms6\_100:  
(47, 50121), (56, 50169), (Start: 66 @50214 has 132 MA's), (95, 50442), (107, 50547), (119, 50604),

Gene: MulchExplorer\_98 Start: 52858, Stop: 53259, Start Num: 71  
Candidate Starts for MulchExplorer\_98:  
(53, 52792), (Start: 64 @52843 has 2 MA's), (Start: 66 @52846 has 132 MA's), (Start: 71 @52858 has 81 MA's), (95, 53074), (119, 53236),

Gene: MulchSalad\_100 Start: 54859, Stop: 55260, Start Num: 71  
Candidate Starts for MulchSalad\_100:  
(6, 54445), (22, 54592), (53, 54793), (Start: 64 @54844 has 2 MA's), (Start: 66 @54847 has 132 MA's), (Start: 71 @54859 has 81 MA's), (95, 55075), (119, 55237),

Gene: Murai\_25 Start: 11277, Stop: 11711, Start Num: 68  
Candidate Starts for Murai\_25:  
(Start: 68 @11277 has 38 MA's), (75, 11331), (78, 11367), (79, 11370), (81, 11379), (84, 11397), (85, 11409), (86, 11418), (87, 11421), (102, 11562), (110, 11604), (112, 11631), (113, 11634),

Gene: Mwanjiwa\_101 Start: 55037, Stop: 55441, Start Num: 70  
Candidate Starts for Mwanjiwa\_101:  
(Start: 70 @55037 has 15 MA's), (84, 55148), (89, 55214), (95, 55256), (97, 55277),

Gene: Nенаe\_68 Start: 41428, Stop: 41883, Start Num: 55

Candidate Starts for Nенаe\_68:

(Start: 43 @41332 has 6 MA's), (Start: 52 @41413 has 1 MA's), (Start: 55 @41428 has 17 MA's),  
(Start: 67 @41485 has 20 MA's), (75, 41536), (84, 41602), (91, 41665), (112, 41839),

Gene: NewHope4\_106 Start: 53346, Stop: 53747, Start Num: 71

Candidate Starts for NewHope4\_106:

(49, 53244), (53, 53280), (Start: 64 @53331 has 2 MA's), (Start: 66 @53334 has 132 MA's), (Start: 71  
@53346 has 81 MA's), (95, 53562), (119, 53724),

Gene: Nichirin\_98 Start: 54533, Stop: 54946, Start Num: 66

Candidate Starts for Nichirin\_98:

(Start: 66 @54533 has 132 MA's), (95, 54761), (119, 54923),

Gene: NiebruSaylor\_25 Start: 11277, Stop: 11711, Start Num: 68

Candidate Starts for NiebruSaylor\_25:

(Start: 68 @11277 has 38 MA's), (75, 11331), (78, 11367), (79, 11370), (81, 11379), (84, 11397), (85,  
11409), (86, 11418), (87, 11421), (102, 11562), (110, 11604), (112, 11631), (113, 11634),

Gene: Nimbo\_90 Start: 52183, Stop: 52584, Start Num: 71

Candidate Starts for Nimbo\_90:

(53, 52117), (Start: 64 @52168 has 2 MA's), (Start: 66 @52171 has 132 MA's), (Start: 71 @52183 has  
81 MA's), (95, 52399), (119, 52561),

Gene: Nitzel\_92 Start: 50796, Stop: 51197, Start Num: 71

Candidate Starts for Nitzel\_92:

(6, 50382), (15, 50448), (18, 50478), (22, 50529), (53, 50730), (Start: 64 @50781 has 2 MA's), (Start:  
66 @50784 has 132 MA's), (Start: 71 @50796 has 81 MA's), (95, 51012), (109, 51120), (119, 51174),

Gene: Nivrat\_98 Start: 54443, Stop: 54856, Start Num: 66

Candidate Starts for Nivrat\_98:

(Start: 66 @54443 has 132 MA's), (95, 54671), (109, 54779),

Gene: NormanBulbieJr\_96 Start: 54547, Stop: 54960, Start Num: 66

Candidate Starts for NormanBulbieJr\_96:

(Start: 66 @54547 has 132 MA's), (95, 54775), (107, 54880), (119, 54937),

Gene: Ochi17\_104 Start: 54285, Stop: 54698, Start Num: 66

Candidate Starts for Ochi17\_104:

(Start: 66 @54285 has 132 MA's), (95, 54513), (119, 54675),

Gene: OfUltron\_105 Start: 54834, Stop: 55247, Start Num: 66

Candidate Starts for OfUltron\_105:

(Start: 66 @54834 has 132 MA's), (95, 55062), (119, 55224),

Gene: Ogopogo\_102 Start: 52785, Stop: 53189, Start Num: 70

Candidate Starts for Ogopogo\_102:

(Start: 70 @52785 has 15 MA's), (95, 53004), (119, 53166),

Gene: Okabe\_90 Start: 50001, Stop: 50414, Start Num: 66

Candidate Starts for Okabe\_90:

(47, 49908), (56, 49956), (Start: 66 @50001 has 132 MA's), (95, 50229), (107, 50334), (119, 50391),

Gene: Oksu\_102 Start: 55924, Stop: 56337, Start Num: 66  
Candidate Starts for Oksu\_102:  
(Start: 66 @55924 has 132 MA's), (95, 56152), (119, 56314),

Gene: OldBen\_95 Start: 53575, Stop: 53976, Start Num: 71  
Candidate Starts for OldBen\_95:  
(53, 53509), (Start: 64 @53560 has 2 MA's), (Start: 66 @53563 has 132 MA's), (Start: 71 @53575 has 81 MA's), (95, 53791), (119, 53953),

Gene: OlympiaSaint\_102 Start: 54713, Stop: 55150, Start Num: 66  
Candidate Starts for OlympiaSaint\_102:  
(Start: 66 @54713 has 132 MA's), (95, 54941), (107, 55046), (119, 55103), (121, 55127),

Gene: Ovechkin\_101 Start: 54263, Stop: 54676, Start Num: 66  
Candidate Starts for Ovechkin\_101:  
(Start: 66 @54263 has 132 MA's), (95, 54491), (119, 54653),

Gene: OwlsT2W\_96 Start: 52467, Stop: 52880, Start Num: 66  
Candidate Starts for OwlsT2W\_96:  
(46, 52374), (56, 52422), (Start: 66 @52467 has 132 MA's), (95, 52695), (107, 52800), (119, 52857),

Gene: PHappiness\_98 Start: 54404, Stop: 54805, Start Num: 71  
Candidate Starts for PHappiness\_98:  
(53, 54338), (Start: 64 @54389 has 2 MA's), (Start: 66 @54392 has 132 MA's), (Start: 71 @54404 has 81 MA's), (95, 54620), (119, 54782),

Gene: PMC\_97 Start: 52619, Stop: 53020, Start Num: 71  
Candidate Starts for PMC\_97:  
(6, 52205), (22, 52352), (49, 52514), (53, 52553), (Start: 64 @52604 has 2 MA's), (Start: 66 @52607 has 132 MA's), (Start: 71 @52619 has 81 MA's), (95, 52835), (109, 52943),

Gene: Pacc40\_96 Start: 54998, Stop: 55399, Start Num: 71  
Candidate Starts for Pacc40\_96:  
(49, 54893), (53, 54932), (Start: 64 @54983 has 2 MA's), (Start: 66 @54986 has 132 MA's), (Start: 71 @54998 has 81 MA's), (95, 55214), (119, 55376),

Gene: PaintedDog\_71 Start: 45517, Stop: 45945, Start Num: 68  
Candidate Starts for PaintedDog\_71:  
(Start: 68 @45517 has 38 MA's), (75, 45562), (85, 45637), (86, 45649), (102, 45814), (119, 45901),

Gene: Panchino\_64 Start: 42391, Stop: 42801, Start Num: 67  
Candidate Starts for Panchino\_64:  
(Start: 52 @42319 has 1 MA's), (Start: 55 @42334 has 17 MA's), (58, 42340), (Start: 67 @42391 has 20 MA's), (Start: 80 @42484 has 2 MA's), (84, 42508), (91, 42571),

Gene: Parmesanjohn\_70 Start: 42596, Stop: 42994, Start Num: 67  
Candidate Starts for Parmesanjohn\_70:  
(Start: 43 @42443 has 6 MA's), (Start: 55 @42539 has 17 MA's), (Start: 67 @42596 has 20 MA's), (Start: 80 @42689 has 2 MA's), (84, 42713), (112, 42950),

Gene: PatoPoderoso\_99 Start: 56189, Stop: 56602, Start Num: 66  
Candidate Starts for PatoPoderoso\_99:

(Start: 66 @56189 has 132 MA's), (95, 56417), (107, 56522), (119, 56579),

Gene: Peridot\_101 Start: 53976, Stop: 54389, Start Num: 66

Candidate Starts for Peridot\_101:

(Start: 66 @53976 has 132 MA's), (95, 54204), (119, 54366),

Gene: Phalconet\_99 Start: 53616, Stop: 54029, Start Num: 66

Candidate Starts for Phalconet\_99:

(47, 53523), (56, 53571), (Start: 66 @53616 has 132 MA's), (95, 53844), (107, 53949), (119, 54006),

Gene: PhancyPhin\_67 Start: 41342, Stop: 41740, Start Num: 67

Candidate Starts for PhancyPhin\_67:

(Start: 43 @41189 has 6 MA's), (Start: 52 @41270 has 1 MA's), (Start: 55 @41285 has 17 MA's), (58, 41291), (Start: 67 @41342 has 20 MA's), (84, 41459), (91, 41522), (112, 41696),

Gene: Phanphagia\_103 Start: 55371, Stop: 55784, Start Num: 66

Candidate Starts for Phanphagia\_103:

(Start: 66 @55371 has 132 MA's), (95, 55599), (107, 55704), (119, 55761),

Gene: Phasih\_95 Start: 52516, Stop: 52917, Start Num: 71

Candidate Starts for Phasih\_95:

(6, 52102), (15, 52168), (18, 52198), (22, 52249), (53, 52450), (Start: 64 @52501 has 2 MA's), (Start: 66 @52504 has 132 MA's), (Start: 71 @52516 has 81 MA's), (95, 52732), (119, 52894),

Gene: Phatniss\_96 Start: 52948, Stop: 53361, Start Num: 66

Candidate Starts for Phatniss\_96:

(49, 52855), (57, 52903), (Start: 66 @52948 has 132 MA's), (95, 53176), (107, 53281), (119, 53338),

Gene: PhesterPhotato\_102 Start: 53590, Stop: 54003, Start Num: 66

Candidate Starts for PhesterPhotato\_102:

(47, 53497), (56, 53545), (Start: 66 @53590 has 132 MA's), (95, 53818), (119, 53980),

Gene: Philonius\_70 Start: 42725, Stop: 43180, Start Num: 55

Candidate Starts for Philonius\_70:

(Start: 43 @42629 has 6 MA's), (Start: 52 @42710 has 1 MA's), (Start: 55 @42725 has 17 MA's), (58, 42731), (Start: 67 @42782 has 20 MA's), (84, 42899), (112, 43136),

Gene: Philus\_102 Start: 55678, Stop: 56091, Start Num: 66

Candidate Starts for Philus\_102:

(25, 55453), (29, 55483), (35, 55510), (56, 55633), (Start: 66 @55678 has 132 MA's), (95, 55906), (107, 56011), (119, 56068),

Gene: PhlipPhlop\_88 Start: 55028, Stop: 55441, Start Num: 66

Candidate Starts for PhlipPhlop\_88:

(Start: 66 @55028 has 132 MA's), (95, 55256), (119, 55418),

Gene: Phloss\_68 Start: 42003, Stop: 42401, Start Num: 67

Candidate Starts for Phloss\_68:

(Start: 43 @41850 has 6 MA's), (Start: 55 @41946 has 17 MA's), (Start: 67 @42003 has 20 MA's), (Start: 80 @42096 has 2 MA's), (84, 42120), (112, 42357),

Gene: Phrann\_65 Start: 43606, Stop: 44157, Start Num: 43

Candidate Starts for Phrann\_65:

(Start: 43 @43606 has 6 MA's), (Start: 52 @43687 has 1 MA's), (Start: 55 @43702 has 17 MA's), (58, 43708), (Start: 67 @43759 has 20 MA's), (84, 43876), (91, 43939), (112, 44113),

Gene: Piper2020\_93 Start: 54549, Stop: 54953, Start Num: 70

Candidate Starts for Piper2020\_93:

(32, 54351), (34, 54366), (Start: 70 @54549 has 15 MA's),

Gene: Pippy\_96 Start: 52818, Stop: 53231, Start Num: 66

Candidate Starts for Pippy\_96:

(Start: 66 @52818 has 132 MA's), (95, 53046), (107, 53151), (119, 53208),

Gene: Pipsqueaks\_71 Start: 42517, Stop: 42972, Start Num: 55

Candidate Starts for Pipsqueaks\_71:

(Start: 43 @42421 has 6 MA's), (Start: 55 @42517 has 17 MA's), (Start: 67 @42574 has 20 MA's), (Start: 80 @42667 has 2 MA's), (84, 42691), (112, 42928),

Gene: Plumbus\_97 Start: 51288, Stop: 51701, Start Num: 66

Candidate Starts for Plumbus\_97:

(Start: 66 @51288 has 132 MA's), (95, 51516),

Gene: Poenanya\_102 Start: 55112, Stop: 55513, Start Num: 71

Candidate Starts for Poenanya\_102:

(53, 55046), (Start: 64 @55097 has 2 MA's), (Start: 66 @55100 has 132 MA's), (Start: 71 @55112 has 81 MA's), (95, 55328), (119, 55490),

Gene: Polka14\_102 Start: 55173, Stop: 55574, Start Num: 71

Candidate Starts for Polka14\_102:

(53, 55107), (Start: 64 @55158 has 2 MA's), (Start: 66 @55161 has 132 MA's), (Start: 71 @55173 has 81 MA's), (95, 55389), (119, 55551),

Gene: Pollywog\_100 Start: 55231, Stop: 55632, Start Num: 71

Candidate Starts for Pollywog\_100:

(53, 55165), (Start: 64 @55216 has 2 MA's), (Start: 66 @55219 has 132 MA's), (Start: 71 @55231 has 81 MA's), (95, 55447), (119, 55609),

Gene: Polo2Bam\_110 Start: 53200, Stop: 53601, Start Num: 71

Candidate Starts for Polo2Bam\_110:

(49, 53098), (53, 53134), (Start: 64 @53185 has 2 MA's), (Start: 66 @53188 has 132 MA's), (Start: 71 @53200 has 81 MA's), (95, 53416), (119, 53578),

Gene: PopTart\_89 Start: 51020, Stop: 51433, Start Num: 66

Candidate Starts for PopTart\_89:

(Start: 66 @51020 has 132 MA's), (95, 51248), (107, 51353), (119, 51410),

Gene: Priscilla\_99 Start: 54645, Stop: 55058, Start Num: 66

Candidate Starts for Priscilla\_99:

(Start: 66 @54645 has 132 MA's), (95, 54873), (107, 54978), (119, 55035),

Gene: Purgamenstris\_68 Start: 41483, Stop: 41881, Start Num: 67

Candidate Starts for Purgamenstris\_68:

(Start: 43 @41330 has 6 MA's), (Start: 52 @41411 has 1 MA's), (Start: 55 @41426 has 17 MA's), (Start: 67 @41483 has 20 MA's), (75, 41534), (84, 41600), (91, 41663), (112, 41837),

Gene: QueenHazel\_68 Start: 44336, Stop: 44764, Start Num: 68  
Candidate Starts for QueenHazel\_68:  
(Start: 68 @44336 has 38 MA's), (75, 44381), (85, 44456), (86, 44468), (102, 44633), (106, 44657),  
(119, 44720),

Gene: QuickMath\_99 Start: 53439, Stop: 53840, Start Num: 71  
Candidate Starts for QuickMath\_99:  
(53, 53373), (Start: 64 @53424 has 2 MA's), (Start: 66 @53427 has 132 MA's), (Start: 71 @53439 has  
81 MA's), (95, 53655), (119, 53817),

Gene: Quico\_107 Start: 55508, Stop: 55912, Start Num: 70  
Candidate Starts for Quico\_107:  
(Start: 70 @55508 has 15 MA's), (82, 55604), (84, 55619), (89, 55685), (95, 55727), (97, 55748), (107,  
55832),

Gene: Radiance\_96 Start: 53516, Stop: 53917, Start Num: 71  
Candidate Starts for Radiance\_96:  
(53, 53450), (Start: 64 @53501 has 2 MA's), (Start: 66 @53504 has 132 MA's), (Start: 71 @53516 has  
81 MA's), (95, 53732), (119, 53894),

Gene: Ramsey\_103 Start: 55412, Stop: 55813, Start Num: 71  
Candidate Starts for Ramsey\_103:  
(13, 55064), (28, 55211), (53, 55346), (Start: 64 @55397 has 2 MA's), (Start: 66 @55400 has 132  
MA's), (Start: 71 @55412 has 81 MA's), (95, 55628), (119, 55790),

Gene: Raymond7\_61 Start: 41271, Stop: 41669, Start Num: 67  
Candidate Starts for Raymond7\_61:  
(Start: 43 @41118 has 6 MA's), (Start: 52 @41199 has 1 MA's), (Start: 55 @41214 has 17 MA's),  
(Start: 67 @41271 has 20 MA's), (75, 41322), (84, 41388), (91, 41451), (112, 41625),

Gene: Rebel\_64 Start: 39467, Stop: 39865, Start Num: 67  
Candidate Starts for Rebel\_64:  
(Start: 43 @39314 has 6 MA's), (Start: 52 @39395 has 1 MA's), (Start: 55 @39410 has 17 MA's),  
(Start: 67 @39467 has 20 MA's), (75, 39518), (84, 39584), (91, 39647), (112, 39821),

Gene: RedBird\_99 Start: 55151, Stop: 55552, Start Num: 71  
Candidate Starts for RedBird\_99:  
(53, 55085), (Start: 64 @55136 has 2 MA's), (Start: 66 @55139 has 132 MA's), (Start: 71 @55151 has  
81 MA's), (95, 55367), (119, 55529),

Gene: Redi\_67 Start: 41425, Stop: 41880, Start Num: 55  
Candidate Starts for Redi\_67:  
(Start: 43 @41329 has 6 MA's), (Start: 52 @41410 has 1 MA's), (Start: 55 @41425 has 17 MA's),  
(Start: 67 @41482 has 20 MA's), (75, 41533), (84, 41599), (91, 41662), (112, 41836),

Gene: Renaud18\_108 Start: 54756, Stop: 55184, Start Num: 69  
Candidate Starts for Renaud18\_108:  
(8, 54363), (9, 54366), (11, 54372), (14, 54408), (20, 54486), (53, 54690), (Start: 64 @54741 has 2  
MA's), (Start: 66 @54744 has 132 MA's), (Start: 69 @54756 has 4 MA's), (73, 54777), (75, 54807), (76,  
54825), (83, 54864), (84, 54873), (87, 54900), (89, 54918), (90, 54933), (91, 54936), (92, 54942), (94,  
54945), (97, 54981), (101, 55032), (104, 55056), (108, 55074), (111, 55083), (113, 55110), (114,  
55113), (117, 55128), (118, 55131), (120, 55140), (122, 55173),

Gene: Rialto\_103 Start: 54755, Stop: 55168, Start Num: 66  
Candidate Starts for Rialto\_103:  
(Start: 66 @54755 has 132 MA's), (95, 54983), (119, 55145),

Gene: RitaG\_97 Start: 54206, Stop: 54607, Start Num: 71  
Candidate Starts for RitaG\_97:  
(53, 54140), (Start: 64 @54191 has 2 MA's), (Start: 66 @54194 has 132 MA's), (Start: 71 @54206 has 81 MA's), (95, 54422), (119, 54584),

Gene: Rockne\_101 Start: 52631, Stop: 53032, Start Num: 71  
Candidate Starts for Rockne\_101:  
(6, 52217), (22, 52364), (49, 52526), (53, 52565), (Start: 64 @52616 has 2 MA's), (Start: 66 @52619 has 132 MA's), (Start: 71 @52631 has 81 MA's), (95, 52847), (109, 52955),

Gene: RockyHorror\_102 Start: 53316, Stop: 53717, Start Num: 71  
Candidate Starts for RockyHorror\_102:  
(53, 53250), (Start: 64 @53301 has 2 MA's), (Start: 66 @53304 has 132 MA's), (Start: 71 @53316 has 81 MA's), (95, 53532), (107, 53637),

Gene: Royals2015\_102 Start: 52759, Stop: 53163, Start Num: 70  
Candidate Starts for Royals2015\_102:  
(61, 52714), (62, 52717), (63, 52729), (65, 52741), (Start: 70 @52759 has 15 MA's), (82, 52855), (84, 52870), (89, 52936), (95, 52978), (97, 52999), (98, 53008), (107, 53083),

Gene: Rubeelu\_64 Start: 40322, Stop: 40789, Start Num: 55  
Candidate Starts for Rubeelu\_64:  
(Start: 43 @40226 has 6 MA's), (54, 40319), (Start: 55 @40322 has 17 MA's), (Start: 67 @40379 has 20 MA's), (Start: 80 @40472 has 2 MA's), (84, 40496), (91, 40559),

Gene: Ruby\_95 Start: 54182, Stop: 54583, Start Num: 71  
Candidate Starts for Ruby\_95:  
(53, 54116), (Start: 64 @54167 has 2 MA's), (Start: 66 @54170 has 132 MA's), (Start: 71 @54182 has 81 MA's), (95, 54398), (119, 54560),

Gene: Ryadel\_27 Start: 11859, Stop: 12293, Start Num: 68  
Candidate Starts for Ryadel\_27:  
(Start: 68 @11859 has 38 MA's), (75, 11913), (78, 11949), (79, 11952), (81, 11961), (84, 11979), (85, 11991), (86, 12000), (87, 12003), (102, 12144), (110, 12186), (112, 12213), (113, 12216),

Gene: SG4\_99 Start: 54996, Stop: 55397, Start Num: 71  
Candidate Starts for SG4\_99:  
(6, 54582), (15, 54648), (18, 54678), (22, 54729), (53, 54930), (Start: 64 @54981 has 2 MA's), (Start: 66 @54984 has 132 MA's), (Start: 71 @54996 has 81 MA's), (95, 55212), (107, 55317), (119, 55374),

Gene: Saal\_96 Start: 54209, Stop: 54622, Start Num: 66  
Candidate Starts for Saal\_96:  
(Start: 66 @54209 has 132 MA's), (95, 54437), (109, 54545),

Gene: Sabbb\_101 Start: 52175, Stop: 52588, Start Num: 66  
Candidate Starts for Sabbb\_101:  
(47, 52082), (56, 52130), (Start: 66 @52175 has 132 MA's), (95, 52403), (107, 52508), (119, 52565),

Gene: Sandalphon\_98 Start: 55202, Stop: 55615, Start Num: 66

Candidate Starts for Sandalphon\_98:  
(Start: 66 @55202 has 132 MA's), (95, 55430), (109, 55538),

Gene: Sarma624\_100 Start: 51144, Stop: 51557, Start Num: 66  
Candidate Starts for Sarma624\_100:  
(Start: 66 @51144 has 132 MA's), (95, 51372), (107, 51477), (119, 51534),

Gene: Sassafras\_100 Start: 53468, Stop: 53869, Start Num: 71  
Candidate Starts for Sassafras\_100:  
(53, 53402), (Start: 64 @53453 has 2 MA's), (Start: 66 @53456 has 132 MA's), (Start: 71 @53468 has 81 MA's), (95, 53684), (119, 53846),

Gene: SassyB\_89 Start: 51020, Stop: 51433, Start Num: 66  
Candidate Starts for SassyB\_89:  
(Start: 66 @51020 has 132 MA's), (95, 51248), (107, 51353), (119, 51410),

Gene: Sbash\_85 Start: 52628, Stop: 53071, Start Num: 68  
Candidate Starts for Sbash\_85:  
(Start: 68 @52628 has 38 MA's), (81, 52724), (85, 52754), (86, 52766), (100, 52907), (102, 52931), (103, 52940),

Gene: Schnauzer\_72 Start: 42596, Stop: 42994, Start Num: 67  
Candidate Starts for Schnauzer\_72:  
(Start: 43 @42443 has 6 MA's), (Start: 55 @42539 has 17 MA's), (Start: 67 @42596 has 20 MA's), (Start: 80 @42689 has 2 MA's), (84, 42713), (112, 42950),

Gene: SchoolBus\_24 Start: 11046, Stop: 11480, Start Num: 68  
Candidate Starts for SchoolBus\_24:  
(Start: 68 @11046 has 38 MA's), (75, 11100), (78, 11136), (79, 11139), (81, 11148), (84, 11166), (85, 11178), (86, 11187), (87, 11190), (102, 11331), (110, 11373), (112, 11400), (113, 11403),

Gene: Schuy\_26 Start: 11438, Stop: 11872, Start Num: 68  
Candidate Starts for Schuy\_26:  
(Start: 68 @11438 has 38 MA's), (75, 11492), (78, 11528), (79, 11531), (81, 11540), (84, 11558), (85, 11570), (86, 11579), (87, 11582), (102, 11723), (110, 11765), (112, 11792), (113, 11795),

Gene: Scitech\_65 Start: 41999, Stop: 42397, Start Num: 67  
Candidate Starts for Scitech\_65:  
(Start: 43 @41846 has 6 MA's), (Start: 55 @41942 has 17 MA's), (Start: 67 @41999 has 20 MA's), (Start: 80 @42092 has 2 MA's), (84, 42116), (112, 42353),

Gene: Scottish\_98 Start: 53045, Stop: 53446, Start Num: 71  
Candidate Starts for Scottish\_98:  
(53, 52979), (Start: 64 @53030 has 2 MA's), (Start: 66 @53033 has 132 MA's), (Start: 71 @53045 has 81 MA's), (95, 53261), (119, 53423),

Gene: SeaLumen\_107 Start: 53200, Stop: 53601, Start Num: 71  
Candidate Starts for SeaLumen\_107:  
(49, 53098), (53, 53134), (Start: 64 @53185 has 2 MA's), (Start: 66 @53188 has 132 MA's), (Start: 71 @53200 has 81 MA's), (95, 53416), (119, 53578),

Gene: Seabastian\_105 Start: 54835, Stop: 55248, Start Num: 66  
Candidate Starts for Seabastian\_105:

(Start: 66 @54835 has 132 MA's), (95, 55063), (119, 55225),

Gene: Seagreen\_99 Start: 54122, Stop: 54535, Start Num: 66

Candidate Starts for Seagreen\_99:

(47, 54029), (56, 54077), (Start: 66 @54122 has 132 MA's), (95, 54350), (107, 54455), (119, 54512),

Gene: Shauna1\_100 Start: 54987, Stop: 55400, Start Num: 66

Candidate Starts for Shauna1\_100:

(Start: 66 @54987 has 132 MA's), (95, 55215), (107, 55320), (119, 55377),

Gene: ShiLan\_101 Start: 56226, Stop: 56639, Start Num: 66

Candidate Starts for ShiLan\_101:

(Start: 66 @56226 has 132 MA's), (95, 56454), (109, 56562),

Gene: Shida\_25 Start: 11343, Stop: 11777, Start Num: 68

Candidate Starts for Shida\_25:

(Start: 68 @11343 has 38 MA's), (75, 11397), (78, 11433), (79, 11436), (81, 11445), (84, 11463), (85, 11475), (86, 11484), (87, 11487), (102, 11628), (110, 11670), (112, 11697), (113, 11700),

Gene: ShowerHandel\_99 Start: 53491, Stop: 53904, Start Num: 66

Candidate Starts for ShowerHandel\_99:

(Start: 66 @53491 has 132 MA's), (95, 53719), (107, 53824), (119, 53881),

Gene: ShrimpFriedEgg\_68 Start: 41482, Stop: 41880, Start Num: 67

Candidate Starts for ShrimpFriedEgg\_68:

(Start: 43 @41329 has 6 MA's), (Start: 52 @41410 has 1 MA's), (Start: 55 @41425 has 17 MA's), (Start: 67 @41482 has 20 MA's), (75, 41533), (84, 41599), (91, 41662), (112, 41836),

Gene: ShroomBoi\_96 Start: 53551, Stop: 53952, Start Num: 71

Candidate Starts for ShroomBoi\_96:

(6, 53137), (15, 53203), (18, 53233), (22, 53284), (53, 53485), (Start: 64 @53536 has 2 MA's), (Start: 66 @53539 has 132 MA's), (Start: 71 @53551 has 81 MA's), (95, 53767), (119, 53929),

Gene: Shweta\_64 Start: 41425, Stop: 41976, Start Num: 43

Candidate Starts for Shweta\_64:

(Start: 43 @41425 has 6 MA's), (Start: 52 @41506 has 1 MA's), (Start: 55 @41521 has 17 MA's), (58, 41527), (Start: 67 @41578 has 20 MA's), (84, 41695), (91, 41758), (112, 41932),

Gene: SiSi\_94 Start: 52735, Stop: 53136, Start Num: 71

Candidate Starts for SiSi\_94:

(53, 52669), (Start: 64 @52720 has 2 MA's), (Start: 66 @52723 has 132 MA's), (Start: 71 @52735 has 81 MA's), (95, 52951), (119, 53113),

Gene: Silvafighter\_72 Start: 42139, Stop: 42537, Start Num: 67

Candidate Starts for Silvafighter\_72:

(Start: 43 @41986 has 6 MA's), (Start: 55 @42082 has 17 MA's), (Start: 67 @42139 has 20 MA's), (Start: 80 @42232 has 2 MA's), (84, 42256), (112, 42493),

Gene: Silvy\_66 Start: 43172, Stop: 43627, Start Num: 55

Candidate Starts for Silvy\_66:

(Start: 43 @43076 has 6 MA's), (Start: 55 @43172 has 17 MA's), (Start: 67 @43229 has 20 MA's), (Start: 80 @43322 has 2 MA's), (84, 43346), (112, 43583),

Gene: SimranZ1\_95 Start: 52098, Stop: 52499, Start Num: 71

Candidate Starts for SimranZ1\_95:

(10, 51708), (17, 51774), (18, 51780), (22, 51831), (53, 52032), (Start: 64 @52083 has 2 MA's), (Start: 66 @52086 has 132 MA's), (Start: 71 @52098 has 81 MA's), (95, 52314), (119, 52476),

Gene: SkinnyPete\_66 Start: 42308, Stop: 42763, Start Num: 55

Candidate Starts for SkinnyPete\_66:

(Start: 43 @42212 has 6 MA's), (Start: 52 @42293 has 1 MA's), (Start: 55 @42308 has 17 MA's), (58, 42314), (Start: 67 @42365 has 20 MA's), (84, 42482), (91, 42545), (112, 42719),

Gene: Slim\_101 Start: 53773, Stop: 54186, Start Num: 66

Candidate Starts for Slim\_101:

(Start: 66 @53773 has 132 MA's), (95, 54001), (109, 54109),

Gene: Smooch\_28 Start: 12792, Stop: 13226, Start Num: 68

Candidate Starts for Smooch\_28:

(Start: 68 @12792 has 38 MA's), (75, 12846), (78, 12882), (79, 12885), (81, 12894), (84, 12912), (85, 12924), (86, 12933), (87, 12936), (102, 13077), (110, 13119), (112, 13146), (113, 13149),

Gene: Smurph\_70 Start: 42596, Stop: 42994, Start Num: 67

Candidate Starts for Smurph\_70:

(Start: 43 @42443 has 6 MA's), (Start: 55 @42539 has 17 MA's), (Start: 67 @42596 has 20 MA's), (Start: 80 @42689 has 2 MA's), (84, 42713), (112, 42950),

Gene: Snekmaggedon\_62 Start: 40093, Stop: 40563, Start Num: 52

Candidate Starts for Snekmaggedon\_62:

(Start: 52 @40093 has 1 MA's), (Start: 55 @40108 has 17 MA's), (58, 40114), (Start: 67 @40165 has 20 MA's), (84, 40282), (91, 40345), (112, 40519),

Gene: Sparkdehlily\_105 Start: 52704, Stop: 53117, Start Num: 66

Candidate Starts for Sparkdehlily\_105:

(Start: 66 @52704 has 132 MA's), (95, 52932),

Gene: Spartacus\_105 Start: 56830, Stop: 57231, Start Num: 71

Candidate Starts for Spartacus\_105:

(6, 56419), (22, 56566), (49, 56728), (53, 56764), (Start: 64 @56815 has 2 MA's), (Start: 66 @56818 has 132 MA's), (Start: 71 @56830 has 81 MA's), (95, 57046), (119, 57208),

Gene: Spikelee\_99 Start: 55210, Stop: 55611, Start Num: 71

Candidate Starts for Spikelee\_99:

(6, 54862), (22, 55009), (53, 55144), (Start: 64 @55195 has 2 MA's), (Start: 66 @55198 has 132 MA's), (Start: 71 @55210 has 81 MA's), (95, 55426), (109, 55534),

Gene: Spinach\_67 Start: 41482, Stop: 41880, Start Num: 67

Candidate Starts for Spinach\_67:

(Start: 43 @41329 has 6 MA's), (Start: 52 @41410 has 1 MA's), (Start: 55 @41425 has 17 MA's), (Start: 67 @41482 has 20 MA's), (75, 41533), (84, 41599), (91, 41662), (112, 41836),

Gene: SpongeBob\_63 Start: 40165, Stop: 40563, Start Num: 67

Candidate Starts for SpongeBob\_63:

(Start: 52 @40093 has 1 MA's), (Start: 55 @40108 has 17 MA's), (58, 40114), (Start: 67 @40165 has 20 MA's), (84, 40282), (91, 40345), (112, 40519),

Gene: Spoonbill\_98 Start: 52139, Stop: 52552, Start Num: 66

Candidate Starts for Spoonbill\_98:

(Start: 66 @52139 has 132 MA's), (95, 52367), (109, 52475),

Gene: Squirty\_97 Start: 57108, Stop: 57521, Start Num: 66

Candidate Starts for Squirty\_97:

(47, 57015), (56, 57063), (Start: 66 @57108 has 132 MA's), (95, 57336), (107, 57441), (119, 57498),

Gene: StAnnes\_102 Start: 55035, Stop: 55448, Start Num: 66

Candidate Starts for StAnnes\_102:

(48, 54942), (56, 54990), (Start: 66 @55035 has 132 MA's), (95, 55263), (119, 55425),

Gene: Stap\_93 Start: 50763, Stop: 51164, Start Num: 71

Candidate Starts for Stap\_93:

(6, 50349), (22, 50496), (49, 50658), (53, 50697), (Start: 64 @50748 has 2 MA's), (Start: 66 @50751 has 132 MA's), (Start: 71 @50763 has 81 MA's), (95, 50979), (107, 51084), (119, 51141),

Gene: Starcevich\_100 Start: 54868, Stop: 55281, Start Num: 66

Candidate Starts for Starcevich\_100:

(Start: 66 @54868 has 132 MA's), (95, 55096), (119, 55258),

Gene: Strokeseat\_96 Start: 51901, Stop: 52314, Start Num: 66

Candidate Starts for Strokeseat\_96:

(48, 51808), (56, 51856), (Start: 66 @51901 has 132 MA's), (95, 52129), (107, 52234), (119, 52291),

Gene: Stuck\_83 Start: 51938, Stop: 52381, Start Num: 68

Candidate Starts for Stuck\_83:

(Start: 68 @51938 has 38 MA's), (75, 51989), (81, 52034), (85, 52064), (86, 52076), (100, 52217), (102, 52241), (103, 52250),

Gene: SuperGrey\_98 Start: 55787, Stop: 56200, Start Num: 66

Candidate Starts for SuperGrey\_98:

(47, 55694), (56, 55742), (Start: 66 @55787 has 132 MA's), (95, 56015), (107, 56120), (119, 56177),

Gene: SwagPiggett\_100 Start: 55345, Stop: 55758, Start Num: 66

Candidate Starts for SwagPiggett\_100:

(Start: 66 @55345 has 132 MA's), (95, 55573), (107, 55678), (119, 55735),

Gene: TChen\_95 Start: 53782, Stop: 54219, Start Num: 66

Candidate Starts for TChen\_95:

(53, 53728), (Start: 64 @53779 has 2 MA's), (Start: 66 @53782 has 132 MA's), (Start: 69 @53794 has 4 MA's), (72, 53809), (74, 53827), (77, 53878), (83, 53902), (84, 53911), (87, 53938), (91, 53974), (92, 53980), (97, 54019), (98, 54028), (102, 54076), (108, 54112), (111, 54121), (114, 54151), (122, 54211),

Gene: TDanisky\_106 Start: 52704, Stop: 53117, Start Num: 66

Candidate Starts for TDanisky\_106:

(Start: 66 @52704 has 132 MA's), (95, 52932),

Gene: Taj\_104 Start: 54993, Stop: 55406, Start Num: 66

Candidate Starts for Taj\_104:

(Start: 66 @54993 has 132 MA's), (95, 55221), (107, 55326), (119, 55383),

Gene: Tapioca\_68 Start: 43101, Stop: 43499, Start Num: 67

Candidate Starts for Tapioca\_68:

(Start: 43 @42948 has 6 MA's), (Start: 55 @43044 has 17 MA's), (Start: 67 @43101 has 20 MA's),  
(Start: 80 @43194 has 2 MA's), (84, 43218), (112, 43455),

Gene: Tchotchke\_91 Start: 52267, Stop: 52680, Start Num: 66

Candidate Starts for Tchotchke\_91:

(48, 52174), (56, 52222), (Start: 66 @52267 has 132 MA's), (95, 52495), (119, 52657),

Gene: TelAviv\_22 Start: 11043, Stop: 11477, Start Num: 68

Candidate Starts for TelAviv\_22:

(Start: 68 @11043 has 38 MA's), (75, 11097), (78, 11133), (79, 11136), (81, 11145), (84, 11163), (85, 11175), (86, 11184), (87, 11187), (102, 11328), (110, 11370), (112, 11397), (113, 11400),

Gene: Tessdabest\_70 Start: 42673, Stop: 43128, Start Num: 55

Candidate Starts for Tessdabest\_70:

(Start: 43 @42577 has 6 MA's), (Start: 55 @42673 has 17 MA's), (Start: 67 @42730 has 20 MA's),  
(Start: 80 @42823 has 2 MA's), (84, 42847), (112, 43084),

Gene: ThetaBob\_101 Start: 52977, Stop: 53405, Start Num: 69

Candidate Starts for ThetaBob\_101:

(5, 52563), (7, 52587), (16, 52659), (19, 52710), (53, 52911), (Start: 64 @52962 has 2 MA's), (Start: 66 @52965 has 132 MA's), (Start: 69 @52977 has 4 MA's), (73, 52998), (75, 53028), (76, 53046), (83, 53085), (84, 53094), (87, 53121), (89, 53139), (90, 53154), (91, 53157), (92, 53163), (94, 53166), (97, 53202), (101, 53253), (104, 53277), (108, 53295), (111, 53304), (113, 53331), (114, 53334), (117, 53349), (118, 53352), (120, 53361), (122, 53394),

Gene: TootsiePop\_88 Start: 54301, Stop: 54705, Start Num: 70

Candidate Starts for TootsiePop\_88:

(32, 54103), (34, 54118), (Start: 70 @54301 has 15 MA's),

Gene: Tootsieroll\_92 Start: 54137, Stop: 54550, Start Num: 66

Candidate Starts for Tootsieroll\_92:

(47, 54044), (56, 54092), (Start: 66 @54137 has 132 MA's), (95, 54365), (107, 54470), (119, 54527),

Gene: Topiatin\_100 Start: 54734, Stop: 55147, Start Num: 66

Candidate Starts for Topiatin\_100:

(Start: 66 @54734 has 132 MA's), (95, 54962), (107, 55067), (119, 55124),

Gene: Toron\_102 Start: 55585, Stop: 56013, Start Num: 69

Candidate Starts for Toron\_102:

(40, 55417), (Start: 64 @55570 has 2 MA's), (Start: 66 @55573 has 132 MA's), (Start: 69 @55585 has 4 MA's), (72, 55600), (77, 55669), (83, 55693), (84, 55702), (94, 55774), (96, 55795), (97, 55810), (111, 55912), (113, 55939), (114, 55942),

Gene: Tortoise12\_70 Start: 41678, Stop: 41983, Start Num: 80

Candidate Starts for Tortoise12\_70:

(Start: 43 @41432 has 6 MA's), (Start: 55 @41528 has 17 MA's), (Start: 67 @41585 has 20 MA's),  
(Start: 80 @41678 has 2 MA's), (84, 41702), (112, 41939),

Gene: Totinger\_101 Start: 54268, Stop: 54681, Start Num: 66

Candidate Starts for Totinger\_101:

(Start: 66 @54268 has 132 MA's), (95, 54496), (119, 54658),

Gene: Tweety\_99 Start: 54399, Stop: 54800, Start Num: 71

Candidate Starts for Tweety\_99:

(53, 54333), (Start: 64 @54384 has 2 MA's), (Start: 66 @54387 has 132 MA's), (Start: 71 @54399 has 81 MA's), (95, 54615), (107, 54720), (119, 54777),

Gene: UncleRicky\_98 Start: 52505, Stop: 52906, Start Num: 71

Candidate Starts for UncleRicky\_98:

(6, 52091), (22, 52238), (49, 52400), (53, 52439), (Start: 64 @52490 has 2 MA's), (Start: 66 @52493 has 132 MA's), (Start: 71 @52505 has 81 MA's), (95, 52721), (109, 52829),

Gene: VRedHorse\_99 Start: 51255, Stop: 51656, Start Num: 71

Candidate Starts for VRedHorse\_99:

(13, 50907), (28, 51054), (53, 51189), (Start: 64 @51240 has 2 MA's), (Start: 66 @51243 has 132 MA's), (Start: 71 @51255 has 81 MA's), (95, 51471), (119, 51633),

Gene: Vagabond\_25 Start: 11320, Stop: 11754, Start Num: 68

Candidate Starts for Vagabond\_25:

(Start: 68 @11320 has 38 MA's), (75, 11374), (78, 11410), (79, 11413), (81, 11422), (84, 11440), (85, 11452), (86, 11461), (87, 11464), (102, 11605), (110, 11647), (112, 11674), (113, 11677),

Gene: Velveteen\_95 Start: 51144, Stop: 51557, Start Num: 66

Candidate Starts for Velveteen\_95:

(Start: 66 @51144 has 132 MA's), (95, 51372), (107, 51477), (119, 51534),

Gene: Veteran\_89 Start: 52603, Stop: 53004, Start Num: 71

Candidate Starts for Veteran\_89:

(53, 52537), (Start: 64 @52588 has 2 MA's), (Start: 66 @52591 has 132 MA's), (Start: 71 @52603 has 81 MA's), (95, 52819), (119, 52981),

Gene: Violac\_99 Start: 54639, Stop: 55052, Start Num: 66

Candidate Starts for Violac\_99:

(Start: 66 @54639 has 132 MA's), (95, 54867), (107, 54972), (119, 55029),

Gene: Vivum\_98 Start: 55580, Stop: 55993, Start Num: 66

Candidate Starts for Vivum\_98:

(Start: 66 @55580 has 132 MA's), (95, 55808), (119, 55970),

Gene: Vorrps\_25 Start: 11277, Stop: 11711, Start Num: 68

Candidate Starts for Vorrps\_25:

(Start: 68 @11277 has 38 MA's), (75, 11331), (78, 11367), (79, 11370), (81, 11379), (84, 11397), (85, 11409), (86, 11418), (87, 11421), (102, 11562), (110, 11604), (112, 11631), (113, 11634),

Gene: Wachhund\_95 Start: 50439, Stop: 50852, Start Num: 66

Candidate Starts for Wachhund\_95:

(Start: 66 @50439 has 132 MA's), (95, 50667), (119, 50829),

Gene: Wee\_101 Start: 55069, Stop: 55482, Start Num: 66

Candidate Starts for Wee\_101:

(Start: 66 @55069 has 132 MA's), (95, 55297), (107, 55402), (119, 55459),

Gene: Whatsapiecost\_92 Start: 48794, Stop: 49207, Start Num: 66

Candidate Starts for Whatsapiecost\_92:

(47, 48701), (56, 48749), (Start: 66 @48794 has 132 MA's), (95, 49022), (107, 49127), (119, 49184),

Gene: Wildflower\_25 Start: 11300, Stop: 11734, Start Num: 68

Candidate Starts for Wildflower\_25:

(Start: 68 @11300 has 38 MA's), (75, 11354), (78, 11390), (79, 11393), (81, 11402), (84, 11420), (85, 11432), (86, 11441), (87, 11444), (102, 11585), (110, 11627), (112, 11654), (113, 11657),

Gene: WillSterrel\_96 Start: 53837, Stop: 54238, Start Num: 71

Candidate Starts for WillSterrel\_96:

(6, 53423), (22, 53570), (49, 53732), (53, 53771), (Start: 64 @53822 has 2 MA's), (Start: 66 @53825 has 132 MA's), (Start: 71 @53837 has 81 MA's), (95, 54053), (119, 54215),

Gene: Winget\_25 Start: 11319, Stop: 11753, Start Num: 68

Candidate Starts for Winget\_25:

(Start: 68 @11319 has 38 MA's), (75, 11373), (78, 11409), (79, 11412), (81, 11421), (84, 11439), (85, 11451), (86, 11460), (87, 11463), (102, 11604), (110, 11646), (112, 11673), (113, 11676),

Gene: Wogge42\_24 Start: 11408, Stop: 11842, Start Num: 68

Candidate Starts for Wogge42\_24:

(Start: 68 @11408 has 38 MA's), (75, 11462), (78, 11498), (79, 11501), (81, 11510), (84, 11528), (85, 11540), (86, 11549), (87, 11552), (102, 11693), (110, 11735), (112, 11762), (113, 11765),

Gene: XFactor\_89 Start: 51585, Stop: 51998, Start Num: 66

Candidate Starts for XFactor\_89:

(Start: 66 @51585 has 132 MA's), (95, 51813), (107, 51918), (119, 51975),

Gene: Xeno\_67 Start: 41282, Stop: 41680, Start Num: 67

Candidate Starts for Xeno\_67:

(Start: 43 @41129 has 6 MA's), (Start: 52 @41210 has 1 MA's), (Start: 55 @41225 has 17 MA's), (58, 41231), (Start: 67 @41282 has 20 MA's), (84, 41399), (91, 41462), (112, 41636),

Gene: Xerxes\_70 Start: 42536, Stop: 42991, Start Num: 55

Candidate Starts for Xerxes\_70:

(Start: 43 @42440 has 6 MA's), (Start: 55 @42536 has 17 MA's), (Start: 67 @42593 has 20 MA's), (Start: 80 @42686 has 2 MA's), (84, 42710), (112, 42947),

Gene: Xula\_69 Start: 44823, Stop: 45251, Start Num: 68

Candidate Starts for Xula\_69:

(Start: 68 @44823 has 38 MA's), (75, 44868), (85, 44943), (86, 44955), (102, 45120), (119, 45207),

Gene: Yorick\_94 Start: 54886, Stop: 55299, Start Num: 66

Candidate Starts for Yorick\_94:

(Start: 66 @54886 has 132 MA's), (95, 55114), (119, 55276),

Gene: YoyoKar\_23 Start: 11047, Stop: 11481, Start Num: 68

Candidate Starts for YoyoKar\_23:

(Start: 68 @11047 has 38 MA's), (75, 11101), (78, 11137), (79, 11140), (81, 11149), (84, 11167), (85, 11179), (86, 11188), (87, 11191), (102, 11332), (110, 11374), (112, 11401), (113, 11404),

Gene: YungJamal\_27 Start: 11595, Stop: 12029, Start Num: 68

Candidate Starts for YungJamal\_27:

(Start: 68 @11595 has 38 MA's), (75, 11649), (78, 11685), (79, 11688), (81, 11697), (84, 11715), (85, 11727), (86, 11736), (87, 11739), (102, 11880), (110, 11922), (112, 11949), (113, 11952),

Gene: Zakhe101\_25 Start: 11445, Stop: 11879, Start Num: 68

Candidate Starts for Zakhe101\_25:

(Start: 68 @11445 has 38 MA's), (75, 11499), (78, 11535), (79, 11538), (81, 11547), (84, 11565), (85, 11577), (86, 11586), (87, 11589), (102, 11730), (110, 11772), (113, 11802),

Gene: Zebo\_24 Start: 11046, Stop: 11480, Start Num: 68

Candidate Starts for Zebo\_24:

(Start: 68 @11046 has 38 MA's), (75, 11100), (78, 11136), (79, 11139), (81, 11148), (84, 11166), (85, 11178), (86, 11187), (87, 11190), (102, 11331), (110, 11373), (112, 11400), (113, 11403),

Gene: Zerg\_96 Start: 53460, Stop: 53873, Start Num: 66

Candidate Starts for Zerg\_96:

(47, 53367), (56, 53415), (Start: 66 @53460 has 132 MA's), (95, 53688), (107, 53793), (119, 53850),

Gene: Zizzle\_101 Start: 55536, Stop: 55949, Start Num: 66

Candidate Starts for Zizzle\_101:

(Start: 66 @55536 has 132 MA's), (95, 55764), (107, 55869), (119, 55926),