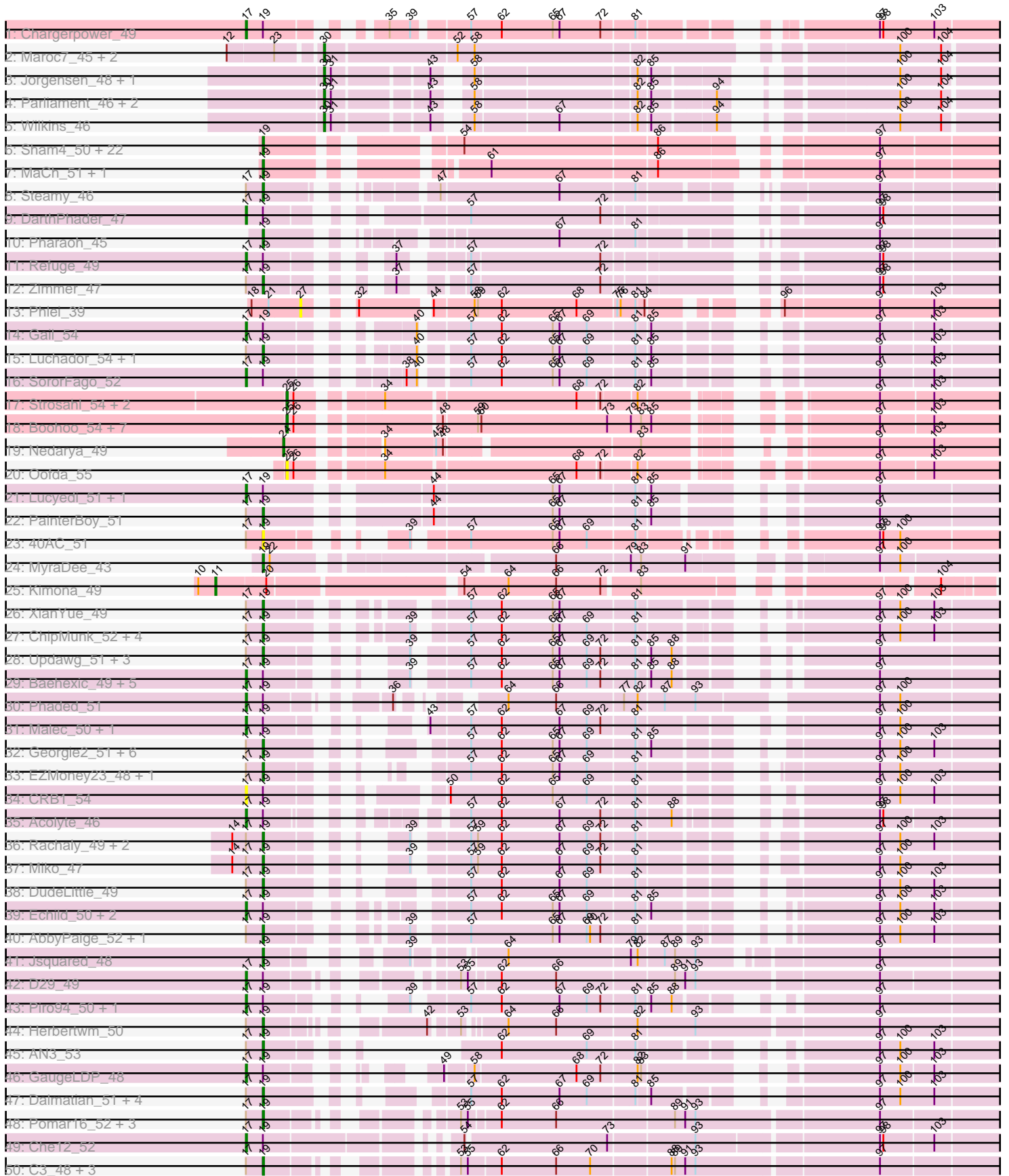


Pham 157503







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 157503 Report

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

Pham number 157503 has 383 members, 31 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower\_49
- Track 2 : Maroc7\_45, Fascinus\_43, Gyzlar\_43
- Track 3 : Jorgensen\_48, Norz\_47
- Track 4 : Parliament\_46, Topgun\_46, Teodoridan\_45
- Track 5 : Wilkins\_46
- Track 6 : Sham4\_50, Orange\_50, Insomnia\_50, Gilberta\_51, Snape\_50, Mabel\_50, TinyTimmy\_49, Jabith\_51, Et2Brutus\_49, Flaverint\_51, Fibonacci\_50, Bud\_50, Mulciber\_50, Petersenfast\_49, Bowtie\_51, Timothy\_50, Joselito\_51, Hutc2\_50, Ebony\_50, Munch\_51, Salz\_49, Aneem\_51, Lucivia\_51
- Track 7 : MaCh\_51, Bachome\_52
- Track 8 : Steamy\_46
- Track 9 : DarthPhader\_47
- Track 10 : Pharaoh\_45
- Track 11 : Refuge\_49
- Track 12 : Zimmer\_47
- Track 13 : Phlei\_39
- Track 14 : Gail\_54
- Track 15 : Luchador\_54, Jeeves\_54
- Track 16 : SororFago\_52
- Track 17 : Strosahl\_54, Waits\_54, Remus\_54
- Track 18 : Boohoo\_54, JSwag\_53, Nebulosus\_53, Looper\_54, ReMo\_53, LastResort\_53, Epsocamisio\_52, Anaysia\_54
- Track 19 : Nedarya\_49
- Track 20 : Oofda\_55
- Track 21 : Lucyedi\_51, EagleEye\_52
- Track 22 : PainterBoy\_51
- Track 23 : 40AC\_51
- Track 24 : MyraDee\_43
- Track 25 : Kimona\_49
- Track 26 : XianYue\_49
- Track 27 : ChipMunk\_52, Jerm\_52, Smeagan\_53, Dignity\_52, KingCyrus\_52
- Track 28 : Updawg\_51, Buggy\_52, Equemioh13\_51, HarryHoudini\_51
- Track 29 : Baehexic\_49, NaSiaTalie\_50, Flare16\_50, WideWale\_51, MiculUcigas\_50, Centaur\_51
- Track 30 : Phaded\_51
- Track 31 : Malec\_50, Larenn\_49

- Track 32 : Georgie2\_51, FiringLine\_50, SweetiePie\_50, Power\_49, SnapTap\_50, Crucio\_50, QueenBeesly\_50
- Track 33 : EZMoney23\_48, Iwokeuplikedis\_53
- Track 34 : CRB1\_54
- Track 35 : Acolyte\_46
- Track 36 : Rachaly\_49, Lokk\_47, BobSwaget\_46
- Track 37 : Miko\_47
- Track 38 : DudeLittle\_49
- Track 39 : Echild\_50, SemperFi\_51, Benvolio\_47
- Track 40 : AbbyPaige\_52, Whabigail7\_51
- Track 41 : Jsquared\_48
- Track 42 : D29\_49
- Track 43 : Piro94\_50, Drake55\_52
- Track 44 : Herbertwm\_50
- Track 45 : AN3\_53
- Track 46 : GaugeLDP\_48
- Track 47 : Dalmatian\_51, Heffalump\_49, QueenB2\_49, Anselm\_51, Retro23\_51
- Track 48 : Pomar16\_52, Naji\_52, D32\_51, StarStuff\_52
- Track 49 : Che12\_52
- Track 50 : C3\_48, VC3\_53, AN9\_53, ANI8\_53
- Track 51 : BabyBack\_48
- Track 52 : NothingSpecial\_48
- Track 53 : SwirlSquare\_55
- Track 54 : Trooper\_51
- Track 55 : Odin\_49
- Track 56 : RedRock\_52
- Track 57 : AnnaL29\_52, Loser\_52
- Track 58 : VA6\_51, LadyBird\_55
- Track 59 : Leviathan\_52, Agape74\_52, EvilGenius\_52
- Track 60 : DBQu4n\_52
- Track 61 : Journey13\_44
- Track 62 : Caraxes\_50, Superchunk\_49
- Track 63 : Fameo\_50
- Track 64 : Bactobuster\_49, Landor\_50
- Track 65 : Leogania\_50, BiancaTri92\_50
- Track 66 : WeiHuaDA\_52
- Track 67 : Changeling\_49
- Track 68 : Deloris\_51
- Track 69 : Kalpine\_48, Colin\_50
- Track 70 : L5\_49
- Track 71 : Jaan\_50
- Track 72 : TopsytheTRex\_46, Serenity\_50
- Track 73 : 20ES\_53
- Track 74 : Tomathan\_52, Kerberos\_52, Duplo\_52
- Track 75 : ArcherNM\_45
- Track 76 : Koduck\_51
- Track 77 : LilTurb\_51
- Track 78 : First\_0052
- Track 79 : Adzzy\_52
- Track 80 : BengiVuitton\_52
- Track 81 : Pukovnik\_49
- Track 82 : JoshKayV\_52
- Track 83 : NicoleTera\_49

- Track 84 : IronMan\_50
- Track 85 : Turbido\_51
- Track 86 : Ph8s\_52
- Track 87 : Trixie\_48
- Track 88 : MissWhite\_49
- Track 89 : TarsusIV\_49
- Track 90 : Anthony\_46
- Track 91 : Phoxy\_53, Spike509\_53, Methuselah\_49, LarryKay\_53, Daishi\_52, KADY\_53, HashRod\_54, Misomonster\_54, Farber\_53, AgronaGT15\_52, Rummer\_52, BuzzBuzz\_51, Louie6\_52, Soshari\_55
- Track 92 : Malinsilva\_55, Hercules11\_53, Wooldri\_55, SoilDragon\_53, Fernando\_53, Sabia\_53, Lilith\_54, Watson\_53, Snickers\_53, Grub\_53, Beauxregard13\_53, Anubis\_56, LugYA\_56, BreSam8\_53, PGHhamlin\_55, PotatoSplit\_55, Ollie\_53, Zetzy\_52, P28Green\_54, Manu\_53, Reba\_53, Vix\_53, SoYo\_53, DaHudson\_53, StepMih\_53, MuchMore\_56, MoneyMay\_53, HaveUMetTed\_54, Marie\_53, MarQuardt\_53, Sabinator\_52, Kalnok\_54, Phoebe\_54, Dieselweasel\_54, Microwolf\_53, Heliosoles\_52, Taurus\_54, JHC117\_53, Penny1\_54, Grif\_53, Colbster\_53, PurpleHaze\_53, PhishRPhriends\_51, EpicPhail\_54, Kalb97\_54, JeppNRM\_54, Pembroke\_53, Aglet\_54, Jobu08\_52, GingkoMaracino\_53, Grum1\_53, ACFishhook\_52, Marius\_54, Groupthink\_54, LBerry\_54, Pawn\_53, AugsMagnumOpus\_56, Gemma\_52, GtownJaz\_53, Phranny\_54, Mainiac\_53, Tiffany\_53, MadMarie\_53, Stagni\_53, JenCasNa\_54, Cullens\_53
- Track 93 : OlanP\_52
- Track 94 : Bxz2\_49
- Track 95 : Isiphiwo\_50, Dorothea\_51, Chartreuse\_51, DaVinci\_51, BABullseye\_46, SuperCallie99\_51, McFly\_52, Kazan\_53, Candra\_52, VohminGhazi\_52, EricB\_52, Pmask\_52, Neeharika16\_51
- Track 96 : Wiks\_51, Jeffabunny\_52, Indra\_55, Zulu\_53, Hexamo\_52
- Track 97 : Newrala\_52, Jordennis\_52, SmellyB\_52, Kipper29\_52, JewelBug\_53, Hoot\_47, GreedyLawyer\_52, Cookiedough\_52, SuperAwesome\_52
- Track 98 : Hammer\_53, Blue7\_54, Artemis2UCLA\_52, Gladiator\_50
- Track 99 : Zaka\_52, Yokurt\_52, WunderPhul\_52, ToneTone\_49, Helmet\_54, Garak\_54
- Track 100 : Rifter\_53
- Track 101 : Gruunaga\_52, Koko\_53, Roksolana\_53, CloudWang3\_52
- Track 102 : Tucker\_53, Priamo\_54
- Track 103 : Blinn1\_55
- Track 104 : PP\_51
- Track 105 : DroogsArmy\_45, Timshel\_47
- Track 106 : Sheen\_50
- Track 107 : HINdeR\_45
- Track 108 : EmyBug\_47, Fayely\_50, Eidsmoe\_50, Qobbit\_50, Phaeder\_50, Tubs\_50, Spouty\_48, Priya\_50
- Track 109 : Charm\_49
- Track 110 : PackMan\_49, Myxus\_50, HortumSL17\_50, Catalina\_51, Aliter\_50
- Track 111 : BogosyJay\_49, LoneWolf\_51, Maminiaina\_49, Toaka\_50
- Track 112 : Yecey3\_51
- Track 113 : Keziacharles14\_50
- Track 114 : SheaKeira\_49
- Track 115 : Arissanae\_49
- Track 116 : Elephantoon\_49

- Track 117 : Ugenie5\_47, Conquerage\_50, DreamTeam1\_49, Phonnegut\_50, Pioneer\_50, ExplosioNervosa\_50, Beemo\_50, Scherzo\_50
- Track 118 : Rahalelujah\_50
- Track 119 : Darrell\_51
- Track 120 : Vanisoa\_50
- Track 121 : Alma\_50
- Track 122 : BobbyDazzler\_39, PhailMary\_38, Bradshaw\_39, Partridge\_39, Lillie\_39, Yogi\_39, RexFury\_39, Rhodalysa\_39, Krishelle\_39, Rasputin\_39, Phrankenstein\_39, Gollum\_39, RER2\_32, Swann\_39, CosmicSans\_39, Hiro\_39, TWAMP\_39, Alpacados\_38, StCroix\_39, Naiad\_39, Bonanza\_39, Alatin\_39
- Track 123 : Shuman\_39, AppleCloud\_37, Bryce\_39, Natosaleda\_39, Erik\_39, Nancinator\_39, Jester\_39, AngryOrchard\_37, Espica\_39, Belenaria\_39, UhSalsa\_39, Harlequin\_39, Takoda\_39, Yoncess\_39, Dinger\_39
- Track 124 : RGL3\_34
- Track 125 : Success\_22
- Track 126 : Ibantik\_26

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

The start number called the most often in the published annotations is 19, it was called in 258 of the 352 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 40AC\_51, ACFishhook\_52, AN3\_53, AN9\_53, ANI8\_53, AbbyPaige\_52, Adzzy\_52, Aglet\_54, AgronaGT15\_52, Alatin\_39, Alma\_50, Alpacados\_38, Aneem\_51, AngryOrchard\_37, Anselm\_51, Anthony\_46, Anubis\_56, AppleCloud\_37, Arissanae\_49, AugsMagnumOpus\_56, BABullseye\_46, BabyBack\_48, Bachome\_52, Bactobuster\_49, Beauxregard13\_53, Beemo\_50, Belenaria\_39, BengiVuitton\_52, BiancaTri92\_50, Blinn1\_55, BobSwaget\_46, BobbyDazzler\_39, BogosyJay\_49, Bonanza\_39, Bowtie\_51, Bradshaw\_39, BreSam8\_53, Bryce\_39, Bud\_50, Buggy\_52, BuzzBuzz\_51, C3\_48, Candra\_52, Caraxes\_50, Changeling\_49, Charm\_49, Chartreuse\_51, ChipMunk\_52, CloudWang3\_52, Colbster\_53, Colin\_50, Conquerage\_50, CosmicSans\_39, Crucio\_50, Cullens\_53, D32\_51, DBQu4n\_52, DaHudson\_53, DaVinci\_51, Daishi\_52, Dalmatian\_51, Darrell\_51, Deloris\_51, Dieselweasel\_54, Dignity\_52, Dinger\_39, Dorothea\_51, DreamTeam1\_49, DudeLittle\_49, Duplo\_52, EZMoney23\_48, Ebony\_50, Eidsmoe\_50, Elephantoon\_49, EmyBug\_47, EpicPhail\_54, Equemioh13\_51, EricB\_52, Erik\_39, Espica\_39, Et2Brutus\_49, ExplosioNervosa\_50, Farber\_53, Fayely\_50, Fernando\_53, Fibonacci\_50, FiringLine\_50, Flaverint\_51, Garak\_54, Gemma\_52, Georgie2\_51, Gilberta\_51, GingkoMaracino\_53, Gollum\_39, Grif\_53, Groupthink\_54, Grub\_53, Grum1\_53, Gruunaga\_52, GtownJaz\_53, Harlequin\_39, HarryHoudini\_51, HashRod\_54, HaveUMetTed\_54, Heffalump\_49, Heliosoles\_52, Helmet\_54, Herbertwm\_50, Hercules11\_53, Hiro\_39, Hutc2\_50, Insomnia\_50, IronMan\_50, Isiphiwo\_50, Iwokeuplikedis\_53, JHC117\_53, Jaan\_50, Jabith\_51, Jeeves\_54, JenCasNa\_54, JeppNRM\_54, Jerm\_52, Jester\_39, Jobu08\_52, Joselito\_51, Jsquared\_48, KADY\_53, Kalb97\_54, Kalnoky\_54, Kalpine\_48, Kazan\_53, Kerberos\_52, Keziacharles14\_50, KingCyrus\_52, Koduck\_51, Koko\_53, Krishelle\_39, LBerry\_54, LadyBird\_55, Landor\_50, LarryKay\_53, Leogania\_50, Lilith\_54, Lillie\_39, Lokk\_47, LoneWolf\_51, Louie6\_52, Luchador\_54, Lucivia\_51, LugYA\_56, MaCh\_51, Mabel\_50, MadMarie\_53, Mainiac\_53, Malinsilva\_55,

Maminiaina\_49, Manu\_53, MarQuardt\_53, Marie\_53, Marius\_54, McFly\_52, Methuselah\_49, Microwolf\_53, Miko\_47, Misomonster\_54, MissWhite\_49, MoneyMay\_53, MuchMore\_56, Mulciber\_50, Munch\_51, MyraDee\_43, Naiad\_39, Naji\_52, Nancinator\_39, Natosaleda\_39, Neeharika16\_51, NicoleTera\_49, Odin\_49, OlanP\_52, Ollie\_53, Orange\_50, P28Green\_54, PGHhamlin\_55, PainterBoy\_51, Partridge\_39, Pawn\_53, Pembroke\_53, Penny1\_54, Petersenfast\_49, Phaeder\_50, PhailMary\_38, Pharaoh\_45, PhishRPhriends\_51, Phoebe\_54, Phonnegut\_50, Phoxy\_53, Phrankenstein\_39, Phranny\_54, Pioneer\_50, Pmask\_52, Pomar16\_52, PotatoSplit\_55, Power\_49, Priamo\_54, Priya\_50, PurpleHaze\_53, Qobbit\_50, QueenB2\_49, QueenBeesly\_50, RER2\_32, RGL3\_34, Rachaly\_49, Rahalelujah\_50, Rasputin\_39, Reba\_53, RedRock\_52, Retro23\_51, RexFury\_39, Rhodalysa\_39, Roksolana\_53, Rummer\_52, Sabia\_53, Sabinator\_52, Salz\_49, Scherzo\_50, Serenity\_50, Sham4\_50, SheaKeira\_49, Shuman\_39, Smeagan\_53, SnapTap\_50, Snape\_50, Snickers\_53, SoYo\_53, SoilDragon\_53, Soshari\_55, Spike509\_53, Spouty\_48, StCroix\_39, Stagni\_53, StarStuff\_52, Steamy\_46, StepMih\_53, SuperCallie99\_51, Superchunk\_49, Swann\_39, SweetiePie\_50, SwirlSquare\_55, TWAMP\_39, Takoda\_39, TarsusIV\_49, Taurus\_54, Tiffany\_53, Timothy\_50, TinyTimmy\_49, TipsytheTRex\_46, Toaka\_50, Tomathan\_52, ToneTone\_49, Tubs\_50, Tucker\_53, Turbido\_51, Ugenie5\_47, UhSalsa\_39, Updawg\_51, VA6\_51, VC3\_53, Vanisoa\_50, Vix\_53, VohminGhazi\_52, Watson\_53, WeiHuaDA\_52, Whabigail7\_51, Wooldri\_55, WunderPhul\_52, XianYue\_49, Yecey3\_51, Yogi\_39, Yokurt\_52, Yoncess\_39, Zaka\_52, Zetzy\_52, Zimmer\_47,

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

- 20ES\_53, Acolyte\_46, Agape74\_52, Aliter\_50, AnnaL29\_52, ArcherNM\_45, Artemis2UCLA\_52, Baehexic\_49, Benvolio\_47, Blue7\_54, Bxz2\_49, CRB1\_54, Catalina\_51, Centaur\_51, Chargerpower\_49, Che12\_52, Cookiedough\_52, D29\_49, DarthPhader\_47, Drake55\_52, EagleEye\_52, Echild\_50, EvilGenius\_52, Fameo\_50, First\_0052, Flare16\_50, Gail\_54, GaugeLDP\_48, Gladiator\_50, GreedyLawyer\_52, Hammer\_53, Hexamo\_52, Hoot\_47, HortumSL17\_50, Indra\_55, Jeffabunny\_52, JewelBug\_53, Jordennis\_52, JoshKayV\_52, Journey13\_44, Kipper29\_52, L5\_49, Larenn\_49, Leviathan\_52, LiITurb\_51, Loser\_52, Lucyedi\_51, Malec\_50, MiculUcigas\_50, Myxus\_50, NaSiaTalie\_50, Newrala\_52, NothingSpecial\_48, PackMan\_49, Ph8s\_52, Phaded\_51, Piro94\_50, Pukovnik\_49, Refuge\_49, Rifter\_53, SemperFi\_51, SmellyB\_52, SororFago\_52, SuperAwesome\_52, Trixie\_48, Trooper\_51, WideWale\_51, Wiks\_51, Zulu\_53,

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

- Anaysia\_54, Boohoo\_54, DroogsArmy\_45, Epsocamisio\_52, Fascinus\_43, Gyzlar\_43, HINdeR\_45, Ibantik\_26, JSwag\_53, Jorgensen\_48, Kimona\_49, LastResort\_53, Looper\_54, Maroc7\_45, Nebulosus\_53, Nedarya\_49, Norz\_47, Oofda\_55, PP\_51, Parliament\_46, Phlei\_39, ReMo\_53, Remus\_54, Sheen\_50, Strosahl\_54, Success\_22, Teodoridan\_45, Timshel\_47, Topgun\_46, Waits\_54, Wilkins\_46,

### Summary by start number:

Start 1:

- Found in 8 of 383 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 4 of 352
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Artemis2UCLA\_52 (A6), Blue7\_54 (A6), Gladiator\_50 (A6), Hammer\_53 (A6),



Start 11:

- Found in 1 of 383 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kimona\_49 (A19),

Start 16:

- Found in 3 of 383 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Rifter\_53 (A6),

Start 17:

- Found in 190 of 383 ( 49.6% ) of genes in pham
- Manual Annotations of this start: 60 of 352
- Called 33.2% of time when present
- Phage (with cluster) where this start called: 20ES\_53 (A2), Acolyte\_46 (A2), Agape74\_52 (A2), Aliter\_50 (A9), AnnaL29\_52 (A2), ArcherNM\_45 (A2), Baehexic\_49 (A2), Benvolio\_47 (A2), CRB1\_54 (A2), Catalina\_51 (A9), Centaur\_51 (A2), Chargerpower\_49 (A), Che12\_52 (A2), Cookiedough\_52 (A6), D29\_49 (A2), DARTHPhader\_47 (A12), Drake55\_52 (A2), EagleEye\_52 (A16), Echild\_50 (A2), EvilGenius\_52 (A2), Fameo\_50 (A2), First\_0052 (A2), Flare16\_50 (A2), Gail\_54 (A14), GaugeLDP\_48 (A2), GreedyLawyer\_52 (A6), Hexamo\_52 (A6), Hoot\_47 (A6), HortumSL17\_50 (A9), Indra\_55 (A6), Jeffabunny\_52 (A6), JewelBug\_53 (A6), Jordennis\_52 (A6), JoshKayV\_52 (A2), Journey13\_44 (A2), Kipper29\_52 (A6), L5\_49 (A2), Larenn\_49 (A2), Leviathan\_52 (A2), LilTurb\_51 (A2), Loser\_52 (A2), Lucyedi\_51 (A16), Malec\_50 (A2), MiculUcigas\_50 (A2), Myxus\_50 (A9), NaSiaTalie\_50 (A2), Newrala\_52 (A6), NothingSpecial\_48 (A2), PackMan\_49 (A9), Ph8s\_52 (A2), Phaded\_51 (A2), Piro94\_50 (A2), Pukovnik\_49 (A2), Refuge\_49 (A12), SemperFi\_51 (A2), SmellyB\_52 (A6), SororFago\_52 (A14), SuperAwesome\_52 (A6), Trixie\_48 (A2), Trooper\_51 (A2), WideWale\_51 (A2), Wiks\_51 (A6), Zulu\_53 (A6),

Start 19:

- Found in 352 of 383 ( 91.9% ) of genes in pham
- Manual Annotations of this start: 258 of 352
- Called 80.4% of time when present
- Phage (with cluster) where this start called: 40AC\_51 (A17), ACFishhook\_52 (A3), AN3\_53 (A2), AN9\_53 (A2), ANI8\_53 (A2), AbbyPaige\_52 (A2), Adzzy\_52 (A2), Aglet\_54 (A3), AgronaGT15\_52 (A3), Alatin\_39 (CA), Alma\_50 (A9), Alpacados\_38 (CA), Aneem\_51 (A11), AngryOrchard\_37 (CA), Anselm\_51 (A2), Anthony\_46 (A20), Anubis\_56 (A3), AppleCloud\_37 (CA), Arissanae\_49 (A9), AugsMagnumOpus\_56 (A3), BABullseye\_46 (A6), BabyBack\_48 (A2), Bachome\_52 (A11), Bactobuster\_49 (A2), Beauxregard13\_53 (A3), Beemo\_50 (A9), Belenaria\_39 (CA), BengiVuitton\_52 (A2), BiancaTri92\_50 (A2), Blinn1\_55 (A6), BobSwaget\_46 (A2), BobbyDazzler\_39 (CA), BogosyJay\_49 (A9), Bonanza\_39 (CA), Bowtie\_51 (A11), Bradshaw\_39 (CA), BreSam8\_53 (A3), Bryce\_39 (CA), Bud\_50 (A11), Buggy\_52 (A2), BuzzBuzz\_51 (A3), C3\_48 (A2), Candra\_52 (A6), Caraxes\_50 (A2), Changeling\_49 (A2), Charm\_49 (A9), Chartreuse\_51 (A6), ChipMunk\_52 (A2), CloudWang3\_52 (A6), Colbster\_53 (A3), Colin\_50 (A2), Conquerage\_50 (A9), CosmicSans\_39 (CA), Crucio\_50 (A2), Cullens\_53 (A3), D32\_51 (A2), DBQu4n\_52 (A2), DaHudson\_53 (A3), DaVinci\_51 (A6), Daishi\_52 (A3), Dalmatian\_51 (A2), Darrell\_51 (A9),

Deloris\_51 (A2), Dieselweasel\_54 (A3), Dignity\_52 (A2), Dinger\_39 (CA), Dorothea\_51 (A6), DreamTeam1\_49 (A9), DudeLittle\_49 (A2), Duplo\_52 (A2), EZMoney23\_48 (A2), Ebony\_50 (A11), Eidsmoe\_50 (A9), Elephantoon\_49 (A9), EmyBug\_47 (A9), EpicPhail\_54 (A3), Equemioh13\_51 (A2), EricB\_52 (A6), Erik\_39 (CA), Espica\_39 (CA), Et2Brutus\_49 (A11), ExplosioNervosa\_50 (A9), Farber\_53 (A3), Fayely\_50 (A9), Fernando\_53 (A3), Fibonacci\_50 (A11), FiringLine\_50 (A2), Flaverint\_51 (A11), Garak\_54 (A6), Gemma\_52 (A3), Georgie2\_51 (A2), Gilberta\_51 (A11), GingkoMaracino\_53 (A3), Gollum\_39 (CA), Grif\_53 (A3), Groupthink\_54 (A3), Grub\_53 (A3), Grum1\_53 (A3), Gruunaga\_52 (A6), GtownJaz\_53 (A3), Harlequin\_39 (CA), HarryHoudini\_51 (A2), HashRod\_54 (A3), HaveUMetTed\_54 (A3), Heffalump\_49 (A2), Heliosoles\_52 (A3), Helmet\_54 (A6), Herbertwm\_50 (A2), Hercules11\_53 (A3), Hiro\_39 (CA), Hutc2\_50 (A11), Insomnia\_50 (A11), IronMan\_50 (A2), Isiphiwo\_50 (A6), Iwokeuplikedis\_53 (A2), JHC117\_53 (A3), Jaan\_50 (A2), Jabith\_51 (A11), Jeeves\_54 (A14), JenCasNa\_54 (A3), JeppNRM\_54 (A3), Jerm\_52 (A2), Jester\_39 (CA), Jobu08\_52 (A3), Joselito\_51 (A11), Jsquared\_48 (A2), KADY\_53 (A3), Kalb97\_54 (A3), Kalnoky\_54 (A3), Kalpine\_48 (A2), Kazan\_53 (A6), Kerberos\_52 (A2), Keziacharles14\_50 (A9), KingCyrus\_52 (A2), Koduck\_51 (A2), Koko\_53 (A6), Krishelle\_39 (CA), LBerry\_54 (A3), LadyBird\_55 (A2), Landor\_50 (A2), LarryKay\_53 (A3), Leogania\_50 (A2), Lilith\_54 (A3), Lillie\_39 (CA), Lokk\_47 (A2), LoneWolf\_51 (A9), Louie6\_52 (A3), Luchador\_54 (A14), Lucivia\_51 (A11), LugYA\_56 (A3), MaCh\_51 (A11), Mabel\_50 (A11), MadMarie\_53 (A3), Mainiac\_53 (A3), Malinsilva\_55 (A3), Maminiaina\_49 (A9), Manu\_53 (A3), MarQuardt\_53 (A3), Marie\_53 (A3), Marius\_54 (A3), McFly\_52 (A6), Methuselah\_49 (A3), Microwolf\_53 (A3), Miko\_47 (A2), Misomonster\_54 (A3), MissWhite\_49 (A2), MoneyMay\_53 (A3), MuchMore\_56 (A3), Mulciber\_50 (A11), Munch\_51 (A11), MyraDee\_43 (A18), Naiad\_39 (CA), Naji\_52 (A2), Nancinator\_39 (CA), Natosaleda\_39 (CA), Neeharika16\_51 (A6), NicoleTera\_49 (A2), Odin\_49 (A2), OlanP\_52 (A3), Ollie\_53 (A3), Orange\_50 (A11), P28Green\_54 (A3), PGHhamlin\_55 (A3), PainterBoy\_51 (A16), Partridge\_39 (CA), Pawn\_53 (A3), Pembroke\_53 (A3), Penny1\_54 (A3), Petersenfast\_49 (A11), Phaeder\_50 (A9), PhailMary\_38 (CA), Pharaoh\_45 (A12), PhishRPhriends\_51 (A3), Phoebe\_54 (A3), Phonnegut\_50 (A9), Phoxy\_53 (A3), Phrankenstein\_39 (CA), Phranny\_54 (A3), Pioneer\_50 (A9), Pmask\_52 (A6), Pomar16\_52 (A2), PotatoSplit\_55 (A3), Power\_49 (A2), Priamo\_54 (A6), Priya\_50 (A9), PurpleHaze\_53 (A3), Qobbit\_50 (A9), QueenB2\_49 (A2), QueenBeesly\_50 (A2), RER2\_32 (CA), RGL3\_34 (CA), Rachaly\_49 (A2), Rahalelujah\_50 (A9), Rasputin\_39 (CA), Reba\_53 (A3), RedRock\_52 (A2), Retro23\_51 (A2), RexFury\_39 (CA), Rhodalysa\_39 (CA), Roksolana\_53 (A6), Rummer\_52 (A3), Sabia\_53 (A3), Sabinator\_52 (A3), Salz\_49 (A11), Scherzo\_50 (A9), Serenity\_50 (A2), Sham4\_50 (A11), SheaKeira\_49 (A9), Shuman\_39 (CA), Smeagan\_53 (A2), SnapTap\_50 (A2), Snape\_50 (A11), Snickers\_53 (A3), SoYo\_53 (A3), SoilDragon\_53 (A3), Soshari\_55 (A3), Spike509\_53 (A3), Spouty\_48 (A9), StCroix\_39 (CA), Stagni\_53 (A3), StarStuff\_52 (A2), Steamy\_46 (A12), StepMih\_53 (A3), SuperCallie99\_51 (A6), Superchunk\_49 (A2), Swann\_39 (CA), SweetiePie\_50 (A2), SwirlSquare\_55 (A2), TWAMP\_39 (CA), Takoda\_39 (CA), TarsusIV\_49 (A2), Taurus\_54 (A3), Tiffany\_53 (A3), Timothy\_50 (A11), TinyTimmy\_49 (A11), TipsytheTRex\_46 (A2), Toaka\_50 (A9), Tomathan\_52 (A2), ToneTone\_49 (A6), Tubs\_50 (A9), Tucker\_53 (A6), Turbido\_51 (A2), Ugenie5\_47 (A9), UhSalsa\_39 (CA), Updawg\_51 (A2), VA6\_51 (A2), VC3\_53 (A2), Vanisoa\_50 (A9), Vix\_53 (A3), VohminGhazi\_52 (A6), Watson\_53 (A3), WeiHuaDA\_52 (A2), Whabigail7\_51 (A2), Wooldri\_55 (A3), WunderPhul\_52 (A6), XianYue\_49 (A2), Yecey3\_51 (A9), Yogi\_39 (CA), Yokurt\_52 (A6), Yoncess\_39 (CA), Zaka\_52 (A6), Zetzy\_52 (A3), Zimmer\_47 (A12),

Start 20:

- Found in 7 of 383 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 5 of 352
- Called 71.4% of time when present
- Phage (with cluster) where this start called: DroogsArmy\_45 (A7), HINdeR\_45 (A7), PP\_51 (A7), Sheen\_50 (A7), Timshel\_47 (A7),

#### Start 22:

- Found in 83 of 383 ( 21.7% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 1.2% of time when present
- Phage (with cluster) where this start called: Bxz2\_49 (A3),

#### Start 24:

- Found in 1 of 383 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nedarya\_49 (A15),

#### Start 25:

- Found in 12 of 383 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 11 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anaysia\_54 (A15), Boohoo\_54 (A15), Epsocamisio\_52 (A15), JSwag\_53 (A15), LastResort\_53 (A15), Looper\_54 (A15), Nebulosus\_53 (A15), Oofda\_55 (A15), ReMo\_53 (A15), Remus\_54 (A15), Strosahl\_54 (A15), Waits\_54 (A15),

#### Start 27:

- Found in 1 of 383 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phlei\_39 (A13),

#### Start 29:

- Found in 1 of 383 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ibantik\_26 (singleton),

#### Start 30:

- Found in 9 of 383 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 8 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fascinus\_43 (A1), Gyzlar\_43 (A1), Jorgensen\_48 (A1), Maroc7\_45 (A1), Norz\_47 (A1), Parliament\_46 (A1), Teodoridan\_45 (A1), Topgun\_46 (A1), Wilkins\_46 (A1),

#### Start 33:

- Found in 1 of 383 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Success\_22 (singleton),

## Summary by clusters:

There are 19 clusters represented in this pham: A15, A14, singleton, A16, A11, A13, A12, CA, A19, A17, A18, A1, A20, A3, A2, A, A7, A6, A9,

Info for manual annotations of cluster A:

- Start number 17 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A1:

- Start number 30 was manually annotated 8 times for cluster A1.

Info for manual annotations of cluster A11:

- Start number 19 was manually annotated 22 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 17 was manually annotated 2 times for cluster A12.
- Start number 19 was manually annotated 3 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 17 was manually annotated 2 times for cluster A14.
- Start number 19 was manually annotated 2 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 24 was manually annotated 1 time for cluster A15.
- Start number 25 was manually annotated 11 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 17 was manually annotated 2 times for cluster A16.
- Start number 19 was manually annotated 1 time for cluster A16.

Info for manual annotations of cluster A18:

- Start number 19 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A19:

- Start number 11 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A2:

- Start number 17 was manually annotated 34 times for cluster A2.
- Start number 19 was manually annotated 66 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 19 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A3:

- Start number 19 was manually annotated 79 times for cluster A3.
- Start number 22 was manually annotated 1 time for cluster A3.

Info for manual annotations of cluster A6:

- Start number 1 was manually annotated 4 times for cluster A6.
- Start number 16 was manually annotated 1 time for cluster A6.
- Start number 17 was manually annotated 14 times for cluster A6.

- Start number 19 was manually annotated 20 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 20 was manually annotated 5 times for cluster A7.

Info for manual annotations of cluster A9:

- Start number 17 was manually annotated 5 times for cluster A9.
- Start number 19 was manually annotated 27 times for cluster A9.

Info for manual annotations of cluster CA:

- Start number 19 was manually annotated 36 times for cluster CA.

### **Gene Information:**

Gene: 20ES\_53 Start: 34234, Stop: 33689, Start Num: 17

Candidate Starts for 20ES\_53:

(Start: 17 @34234 has 60 MA's), (Start: 19 @34219 has 258 MA's), (50, 34108), (62, 34063), (69, 33988), (81, 33949), (97, 33799), (100, 33781), (103, 33751),

Gene: 40AC\_51 Start: 34942, Stop: 34445, Start Num: 19

Candidate Starts for 40AC\_51:

(Start: 17 @34957 has 60 MA's), (Start: 19 @34942 has 258 MA's), (39, 34873), (57, 34837), (65, 34765), (67, 34759), (69, 34735), (81, 34696), (97, 34552), (98, 34549), (100, 34534),

Gene: ACFishhook\_52 Start: 33821, Stop: 33231, Start Num: 19

Candidate Starts for ACFishhook\_52:

(Start: 19 @33821 has 258 MA's), (Start: 22 @33815 has 1 MA's), (52, 33671), (56, 33662), (63, 33635), (72, 33551), (97, 33347), (103, 33299),

Gene: AN3\_53 Start: 34524, Stop: 34060, Start Num: 19

Candidate Starts for AN3\_53:

(Start: 17 @34539 has 60 MA's), (Start: 19 @34524 has 258 MA's), (62, 34434), (69, 34359), (81, 34320), (97, 34170), (100, 34152), (103, 34122),

Gene: AN9\_53 Start: 33887, Stop: 33309, Start Num: 19

Candidate Starts for AN9\_53:

(Start: 17 @33902 has 60 MA's), (Start: 19 @33887 has 258 MA's), (53, 33773), (55, 33767), (62, 33740), (66, 33692), (70, 33662), (88, 33596), (89, 33593), (91, 33584), (93, 33575), (97, 33422),

Gene: ANI8\_53 Start: 33887, Stop: 33309, Start Num: 19

Candidate Starts for ANI8\_53:

(Start: 17 @33902 has 60 MA's), (Start: 19 @33887 has 258 MA's), (53, 33773), (55, 33767), (62, 33740), (66, 33692), (70, 33662), (88, 33596), (89, 33593), (91, 33584), (93, 33575), (97, 33422),

Gene: AbbyPaige\_52 Start: 34144, Stop: 33626, Start Num: 19

Candidate Starts for AbbyPaige\_52:

(Start: 17 @34159 has 60 MA's), (Start: 19 @34144 has 258 MA's), (39, 34060), (57, 34024), (65, 33952), (67, 33946), (69, 33922), (70, 33919), (72, 33910), (81, 33883), (97, 33736), (100, 33718), (103, 33688),

Gene: Acolyte\_46 Start: 33097, Stop: 32558, Start Num: 17

Candidate Starts for Acolyte\_46:

(Start: 17 @33097 has 60 MA's), (Start: 19 @33082 has 258 MA's), (57, 32968), (62, 32941), (67, 32890), (72, 32854), (81, 32827), (88, 32800), (97, 32671), (98, 32668),

Gene: Adzzy\_52 Start: 32649, Stop: 32053, Start Num: 19

Candidate Starts for Adzzy\_52:

(Start: 17 @32664 has 60 MA's), (Start: 19 @32649 has 258 MA's), (54, 32496), (66, 32421), (93, 32304), (95, 32283), (97, 32163), (98, 32160), (103, 32118),

Gene: Agape74\_52 Start: 34153, Stop: 33611, Start Num: 17

Candidate Starts for Agape74\_52:

(Start: 17 @34153 has 60 MA's), (Start: 19 @34138 has 258 MA's), (39, 34051), (57, 34015), (62, 33988), (65, 33943), (67, 33937), (69, 33913), (81, 33874), (97, 33721), (100, 33703), (103, 33673),

Gene: Aglet\_54 Start: 33857, Stop: 33267, Start Num: 19

Candidate Starts for Aglet\_54:

(Start: 19 @33857 has 258 MA's), (Start: 22 @33851 has 1 MA's), (52, 33707), (56, 33698), (63, 33671), (72, 33587), (97, 33383), (103, 33335),

Gene: AgronaGT15\_52 Start: 33705, Stop: 33118, Start Num: 19

Candidate Starts for AgronaGT15\_52:

(Start: 19 @33705 has 258 MA's), (Start: 22 @33699 has 1 MA's), (52, 33561), (56, 33552), (63, 33525), (64, 33522), (68, 33462), (72, 33441), (97, 33234), (103, 33186),

Gene: Alatin\_39 Start: 29865, Stop: 29341, Start Num: 19

Candidate Starts for Alatin\_39:

(Start: 19 @29865 has 258 MA's), (52, 29760), (97, 29448), (99, 29439), (100, 29430), (103, 29400),

Gene: Aliter\_50 Start: 33562, Stop: 33032, Start Num: 17

Candidate Starts for Aliter\_50:

(Start: 17 @33562 has 60 MA's), (Start: 19 @33547 has 258 MA's), (43, 33454), (57, 33430), (67, 33352), (81, 33289), (97, 33139),

Gene: Alma\_50 Start: 33745, Stop: 33188, Start Num: 19

Candidate Starts for Alma\_50:

(Start: 17 @33760 has 60 MA's), (Start: 19 @33745 has 258 MA's), (41, 33649), (42, 33646), (53, 33625), (68, 33535), (93, 33436), (97, 33295),

Gene: Alpacados\_38 Start: 29770, Stop: 29246, Start Num: 19

Candidate Starts for Alpacados\_38:

(Start: 19 @29770 has 258 MA's), (52, 29665), (97, 29353), (99, 29344), (100, 29335), (103, 29305),

Gene: Anaysia\_54 Start: 32758, Stop: 32216, Start Num: 25

Candidate Starts for Anaysia\_54:

(Start: 25 @32758 has 11 MA's), (26, 32752), (48, 32647), (59, 32620), (60, 32617), (73, 32506), (79, 32485), (83, 32476), (85, 32467), (97, 32320), (103, 32275),

Gene: Aneem\_51 Start: 33271, Stop: 32702, Start Num: 19

Candidate Starts for Aneem\_51:

(Start: 19 @33271 has 258 MA's), (54, 33136), (86, 32971), (97, 32815),

Gene: AngryOrchard\_37 Start: 29729, Stop: 29205, Start Num: 19

Candidate Starts for AngryOrchard\_37:

(Start: 19 @29729 has 258 MA's), (52, 29624), (97, 29312), (99, 29303), (100, 29294), (103, 29264),

Gene: AnnaL29\_52 Start: 34705, Stop: 34160, Start Num: 17

Candidate Starts for AnnaL29\_52:

(Start: 17 @34705 has 60 MA's), (Start: 19 @34690 has 258 MA's), (57, 34570), (62, 34543), (65, 34498), (67, 34492), (69, 34468), (80, 34432), (81, 34429), (85, 34420), (97, 34273), (100, 34255), (103, 34225),

Gene: Anselm\_51 Start: 34069, Stop: 33545, Start Num: 19

Candidate Starts for Anselm\_51:

(Start: 17 @34084 has 60 MA's), (Start: 19 @34069 has 258 MA's), (57, 33955), (62, 33928), (67, 33877), (69, 33853), (81, 33814), (85, 33805), (97, 33655), (100, 33637), (103, 33607),

Gene: Anthony\_46 Start: 31582, Stop: 31001, Start Num: 19

Candidate Starts for Anthony\_46:

(15, 31606), (Start: 19 @31582 has 258 MA's), (35, 31510), (57, 31441), (66, 31366), (78, 31306), (82, 31297), (92, 31255), (93, 31249), (97, 31108), (104, 31054),

Gene: Anubis\_56 Start: 33743, Stop: 33153, Start Num: 19

Candidate Starts for Anubis\_56:

(Start: 19 @33743 has 258 MA's), (Start: 22 @33737 has 1 MA's), (52, 33593), (56, 33584), (63, 33557), (72, 33473), (97, 33269), (103, 33221),

Gene: AppleCloud\_37 Start: 29816, Stop: 29292, Start Num: 19

Candidate Starts for AppleCloud\_37:

(Start: 19 @29816 has 258 MA's), (52, 29711), (97, 29399), (99, 29390), (100, 29381), (103, 29351),

Gene: ArcherNM\_45 Start: 33685, Stop: 33152, Start Num: 17

Candidate Starts for ArcherNM\_45:

(Start: 17 @33685 has 60 MA's), (Start: 19 @33670 has 258 MA's), (43, 33595), (57, 33562), (62, 33535), (65, 33490), (66, 33487), (67, 33484), (69, 33460), (81, 33421), (97, 33265), (100, 33247),

Gene: Arissanae\_49 Start: 34251, Stop: 33733, Start Num: 19

Candidate Starts for Arissanae\_49:

(Start: 17 @34266 has 60 MA's), (Start: 19 @34251 has 258 MA's), (44, 34158), (57, 34137), (65, 34065), (69, 34035), (81, 33996), (97, 33840),

Gene: Artemis2UCLA\_52 Start: 32678, Stop: 31923, Start Num: 1

Candidate Starts for Artemis2UCLA\_52:

(Start: 1 @32678 has 4 MA's), (2, 32663), (3, 32642), (4, 32612), (5, 32606), (Start: 19 @32480 has 258 MA's), (66, 32270), (67, 32267), (81, 32204), (85, 32195), (97, 32033), (98, 32030),

Gene: AugsMagnumOpus\_56 Start: 33848, Stop: 33258, Start Num: 19

Candidate Starts for AugsMagnumOpus\_56:

(Start: 19 @33848 has 258 MA's), (Start: 22 @33842 has 1 MA's), (52, 33698), (56, 33689), (63, 33662), (72, 33578), (97, 33374), (103, 33326),

Gene: BABullseye\_46 Start: 30456, Stop: 29878, Start Num: 19

Candidate Starts for BABullseye\_46:

(Start: 17 @30471 has 60 MA's), (Start: 19 @30456 has 258 MA's), (50, 30345), (58, 30327), (87, 30165), (93, 30138), (97, 29988), (98, 29985),

Gene: BabyBack\_48 Start: 34381, Stop: 33866, Start Num: 19

Candidate Starts for BabyBack\_48:

(Start: 17 @34396 has 60 MA's), (Start: 19 @34381 has 258 MA's), (58, 34276), (68, 34189), (72, 34168), (82, 34138), (83, 34135), (97, 33976), (103, 33931),

Gene: Bachome\_52 Start: 33251, Stop: 32685, Start Num: 19

Candidate Starts for Bachome\_52:

(Start: 19 @33251 has 258 MA's), (61, 33098), (86, 32957), (97, 32798),

Gene: Bactobuster\_49 Start: 34631, Stop: 34086, Start Num: 19

Candidate Starts for Bactobuster\_49:

(Start: 17 @34646 has 60 MA's), (Start: 19 @34631 has 258 MA's), (64, 34502), (66, 34460), (77, 34403), (82, 34391), (87, 34370), (93, 34343), (97, 34193), (100, 34175),

Gene: Baehexic\_49 Start: 33840, Stop: 33316, Start Num: 17

Candidate Starts for Baehexic\_49:

(Start: 17 @33840 has 60 MA's), (Start: 19 @33825 has 258 MA's), (39, 33756), (57, 33720), (62, 33693), (65, 33648), (67, 33642), (69, 33618), (72, 33606), (81, 33579), (85, 33570), (88, 33552), (97, 33429),

Gene: Beauxregard13\_53 Start: 33860, Stop: 33270, Start Num: 19

Candidate Starts for Beauxregard13\_53:

(Start: 19 @33860 has 258 MA's), (Start: 22 @33854 has 1 MA's), (52, 33710), (56, 33701), (63, 33674), (72, 33590), (97, 33386), (103, 33338),

Gene: Beemo\_50 Start: 33717, Stop: 33154, Start Num: 19

Candidate Starts for Beemo\_50:

(Start: 17 @33732 has 60 MA's), (Start: 19 @33717 has 258 MA's), (54, 33591), (68, 33501), (93, 33402), (97, 33261),

Gene: Belenaria\_39 Start: 29797, Stop: 29273, Start Num: 19

Candidate Starts for Belenaria\_39:

(Start: 19 @29797 has 258 MA's), (52, 29692), (97, 29380), (99, 29371), (100, 29362), (103, 29332),

Gene: BengiVuitton\_52 Start: 34166, Stop: 33642, Start Num: 19

Candidate Starts for BengiVuitton\_52:

(Start: 17 @34181 has 60 MA's), (Start: 19 @34166 has 258 MA's), (50, 34061), (62, 34016), (72, 33929), (81, 33902), (97, 33752), (100, 33734), (103, 33704),

Gene: Benvolio\_47 Start: 33106, Stop: 32576, Start Num: 17

Candidate Starts for Benvolio\_47:

(Start: 17 @33106 has 60 MA's), (Start: 19 @33091 has 258 MA's), (57, 32977), (62, 32950), (65, 32905), (67, 32899), (69, 32875), (81, 32836), (85, 32827), (97, 32686), (100, 32668), (103, 32638),

Gene: BiancaTri92\_50 Start: 34471, Stop: 33944, Start Num: 19

Candidate Starts for BiancaTri92\_50:

(Start: 17 @34486 has 60 MA's), (Start: 19 @34471 has 258 MA's), (39, 34387), (57, 34345), (62, 34318), (65, 34273), (67, 34267), (69, 34243), (72, 34231), (81, 34204), (97, 34054), (100, 34036), (103, 34006),

Gene: Blinn1\_55 Start: 32877, Stop: 32299, Start Num: 19

Candidate Starts for Blinn1\_55:

(Start: 17 @32892 has 60 MA's), (Start: 19 @32877 has 258 MA's), (54, 32748), (87, 32577), (93, 32550), (97, 32409), (98, 32406),



Gene: Blue7\_54 Start: 32748, Stop: 32002, Start Num: 1

Candidate Starts for Blue7\_54:

(Start: 1 @32748 has 4 MA's), (2, 32733), (3, 32712), (4, 32682), (5, 32676), (Start: 19 @32550 has 258 MA's), (66, 32340), (67, 32337), (81, 32274), (85, 32265), (97, 32112), (98, 32109),

Gene: BobSwaget\_46 Start: 32491, Stop: 31973, Start Num: 19

Candidate Starts for BobSwaget\_46:

(14, 32518), (Start: 17 @32506 has 60 MA's), (Start: 19 @32491 has 258 MA's), (39, 32419), (57, 32383), (59, 32377), (62, 32356), (67, 32305), (69, 32281), (72, 32269), (81, 32242), (97, 32083), (100, 32065), (103, 32035),

Gene: BobbyDazzler\_39 Start: 29844, Stop: 29320, Start Num: 19

Candidate Starts for BobbyDazzler\_39:

(Start: 19 @29844 has 258 MA's), (52, 29739), (97, 29427), (99, 29418), (100, 29409), (103, 29379),

Gene: BogosyJay\_49 Start: 33444, Stop: 32878, Start Num: 19

Candidate Starts for BogosyJay\_49:

(Start: 17 @33459 has 60 MA's), (Start: 19 @33444 has 258 MA's), (41, 33342), (42, 33339), (68, 33228), (93, 33129), (97, 32985),

Gene: Bonanza\_39 Start: 29772, Stop: 29248, Start Num: 19

Candidate Starts for Bonanza\_39:

(Start: 19 @29772 has 258 MA's), (52, 29667), (97, 29355), (99, 29346), (100, 29337), (103, 29307),

Gene: Boohoo\_54 Start: 32758, Stop: 32216, Start Num: 25

Candidate Starts for Boohoo\_54:

(Start: 25 @32758 has 11 MA's), (26, 32752), (48, 32647), (59, 32620), (60, 32617), (73, 32506), (79, 32485), (83, 32476), (85, 32467), (97, 32320), (103, 32275),

Gene: Bowtie\_51 Start: 33278, Stop: 32709, Start Num: 19

Candidate Starts for Bowtie\_51:

(Start: 19 @33278 has 258 MA's), (54, 33143), (86, 32978), (97, 32822),

Gene: Bradshaw\_39 Start: 29798, Stop: 29274, Start Num: 19

Candidate Starts for Bradshaw\_39:

(Start: 19 @29798 has 258 MA's), (52, 29693), (97, 29381), (99, 29372), (100, 29363), (103, 29333),

Gene: BreSam8\_53 Start: 33850, Stop: 33260, Start Num: 19

Candidate Starts for BreSam8\_53:

(Start: 19 @33850 has 258 MA's), (Start: 22 @33844 has 1 MA's), (52, 33700), (56, 33691), (63, 33664), (72, 33580), (97, 33376), (103, 33328),

Gene: Bryce\_39 Start: 29773, Stop: 29249, Start Num: 19

Candidate Starts for Bryce\_39:

(Start: 19 @29773 has 258 MA's), (52, 29668), (97, 29356), (99, 29347), (100, 29338), (103, 29308),

Gene: Bud\_50 Start: 32828, Stop: 32259, Start Num: 19

Candidate Starts for Bud\_50:

(Start: 19 @32828 has 258 MA's), (54, 32693), (86, 32528), (97, 32372),

Gene: Buggy\_52 Start: 34195, Stop: 33686, Start Num: 19

Candidate Starts for Buggy\_52:

(Start: 17 @34210 has 60 MA's), (Start: 19 @34195 has 258 MA's), (39, 34126), (57, 34090), (62, 34063), (65, 34018), (67, 34012), (69, 33988), (72, 33976), (81, 33949), (85, 33940), (88, 33922), (97, 33799),

Gene: BuzzBuzz\_51 Start: 33884, Stop: 33297, Start Num: 19

Candidate Starts for BuzzBuzz\_51:

(Start: 19 @33884 has 258 MA's), (Start: 22 @33878 has 1 MA's), (52, 33740), (56, 33731), (63, 33704), (64, 33701), (68, 33641), (72, 33620), (97, 33413), (103, 33365),

Gene: Bxz2\_49 Start: 33885, Stop: 33304, Start Num: 22

Candidate Starts for Bxz2\_49:

(Start: 19 @33891 has 258 MA's), (Start: 22 @33885 has 1 MA's), (52, 33747), (56, 33738), (63, 33711), (64, 33708), (68, 33648), (72, 33627), (97, 33420), (103, 33372),

Gene: C3\_48 Start: 33887, Stop: 33309, Start Num: 19

Candidate Starts for C3\_48:

(Start: 17 @33902 has 60 MA's), (Start: 19 @33887 has 258 MA's), (53, 33773), (55, 33767), (62, 33740), (66, 33692), (70, 33662), (88, 33596), (89, 33593), (91, 33584), (93, 33575), (97, 33422),

Gene: CRB1\_54 Start: 34574, Stop: 34032, Start Num: 17

Candidate Starts for CRB1\_54:

(Start: 17 @34574 has 60 MA's), (Start: 19 @34559 has 258 MA's), (50, 34454), (62, 34409), (65, 34364), (69, 34334), (81, 34295), (97, 34142), (100, 34124), (103, 34094),

Gene: Candra\_52 Start: 32814, Stop: 32242, Start Num: 19

Candidate Starts for Candra\_52:

(Start: 17 @32829 has 60 MA's), (Start: 19 @32814 has 258 MA's), (50, 32703), (58, 32685), (87, 32523), (93, 32496), (97, 32352), (98, 32349),

Gene: Caraxes\_50 Start: 32358, Stop: 31759, Start Num: 19

Candidate Starts for Caraxes\_50:

(Start: 17 @32373 has 60 MA's), (Start: 19 @32358 has 258 MA's), (54, 32208), (66, 32133), (73, 32088), (93, 32016), (97, 31869), (98, 31866), (100, 31851), (103, 31824),

Gene: Catalina\_51 Start: 33635, Stop: 33105, Start Num: 17

Candidate Starts for Catalina\_51:

(Start: 17 @33635 has 60 MA's), (Start: 19 @33620 has 258 MA's), (43, 33527), (57, 33503), (67, 33425), (81, 33362), (97, 33212),

Gene: Centaur\_51 Start: 34057, Stop: 33533, Start Num: 17

Candidate Starts for Centaur\_51:

(Start: 17 @34057 has 60 MA's), (Start: 19 @34042 has 258 MA's), (39, 33973), (57, 33937), (62, 33910), (65, 33865), (67, 33859), (69, 33835), (72, 33823), (81, 33796), (85, 33787), (88, 33769), (97, 33646),

Gene: Changeling\_49 Start: 34250, Stop: 33735, Start Num: 19

Candidate Starts for Changeling\_49:

(Start: 17 @34265 has 60 MA's), (Start: 19 @34250 has 258 MA's), (62, 34115), (65, 34070), (67, 34064), (69, 34040), (81, 34001), (97, 33848), (100, 33830),

Gene: Chargerpower\_49 Start: 32641, Stop: 32096, Start Num: 17

Candidate Starts for Chargerpower\_49:

(Start: 17 @32641 has 60 MA's), (Start: 19 @32626 has 258 MA's), (35, 32557), (39, 32539), (57, 32497), (62, 32470), (65, 32425), (67, 32419), (72, 32383), (81, 32356), (97, 32200), (98, 32197), (103, 32152),

Gene: Charm\_49 Start: 33504, Stop: 32941, Start Num: 19

Candidate Starts for Charm\_49:

(Start: 17 @33519 has 60 MA's), (Start: 19 @33504 has 258 MA's), (40, 33414), (54, 33384), (68, 33291), (93, 33192), (97, 33048),

Gene: Chartreuse\_51 Start: 32174, Stop: 31602, Start Num: 19

Candidate Starts for Chartreuse\_51:

(Start: 17 @32189 has 60 MA's), (Start: 19 @32174 has 258 MA's), (50, 32063), (58, 32045), (87, 31883), (93, 31856), (97, 31712), (98, 31709),

Gene: Che12\_52 Start: 32805, Stop: 32197, Start Num: 17

Candidate Starts for Che12\_52:

(Start: 17 @32805 has 60 MA's), (Start: 19 @32790 has 258 MA's), (54, 32649), (73, 32529), (93, 32457), (97, 32307), (98, 32304), (103, 32262),

Gene: ChipMunk\_52 Start: 35413, Stop: 34883, Start Num: 19

Candidate Starts for ChipMunk\_52:

(Start: 17 @35428 has 60 MA's), (Start: 19 @35413 has 258 MA's), (39, 35323), (57, 35287), (62, 35260), (65, 35215), (67, 35209), (69, 35185), (81, 35146), (97, 34993), (100, 34975), (103, 34945),

Gene: CloudWang3\_52 Start: 32568, Stop: 32023, Start Num: 19

Candidate Starts for CloudWang3\_52:

(Start: 1 @32766 has 4 MA's), (2, 32751), (3, 32730), (4, 32700), (5, 32694), (Start: 19 @32568 has 258 MA's), (66, 32358), (67, 32355), (81, 32292), (85, 32283), (97, 32133), (98, 32130),

Gene: Colbster\_53 Start: 33860, Stop: 33270, Start Num: 19

Candidate Starts for Colbster\_53:

(Start: 19 @33860 has 258 MA's), (Start: 22 @33854 has 1 MA's), (52, 33710), (56, 33701), (63, 33674), (72, 33590), (97, 33386), (103, 33338),

Gene: Colin\_50 Start: 34033, Stop: 33509, Start Num: 19

Candidate Starts for Colin\_50:

(Start: 17 @34048 has 60 MA's), (Start: 19 @34033 has 258 MA's), (62, 33886), (65, 33841), (67, 33835), (69, 33811), (81, 33772), (97, 33619), (100, 33601), (103, 33571),

Gene: Conquerage\_50 Start: 33691, Stop: 33128, Start Num: 19

Candidate Starts for Conquerage\_50:

(Start: 17 @33706 has 60 MA's), (Start: 19 @33691 has 258 MA's), (54, 33565), (68, 33475), (93, 33376), (97, 33235),

Gene: Cookiedough\_52 Start: 32808, Stop: 32215, Start Num: 17

Candidate Starts for Cookiedough\_52:

(Start: 17 @32808 has 60 MA's), (Start: 19 @32793 has 258 MA's), (50, 32682), (58, 32664), (87, 32502), (93, 32475), (97, 32325), (98, 32322),

Gene: CosmicSans\_39 Start: 29798, Stop: 29274, Start Num: 19

Candidate Starts for CosmicSans\_39:

(Start: 19 @29798 has 258 MA's), (52, 29693), (97, 29381), (99, 29372), (100, 29363), (103, 29333),

Gene: Crucio\_50 Start: 33650, Stop: 33129, Start Num: 19  
Candidate Starts for Crucio\_50:  
(Start: 17 @33665 has 60 MA's), (Start: 19 @33650 has 258 MA's), (57, 33536), (62, 33509), (65, 33464), (67, 33458), (69, 33434), (81, 33395), (85, 33386), (97, 33239), (100, 33221), (103, 33191),

Gene: Cullens\_53 Start: 33856, Stop: 33266, Start Num: 19  
Candidate Starts for Cullens\_53:  
(Start: 19 @33856 has 258 MA's), (Start: 22 @33850 has 1 MA's), (52, 33706), (56, 33697), (63, 33670), (72, 33586), (97, 33382), (103, 33334),

Gene: D29\_49 Start: 33484, Stop: 32891, Start Num: 17  
Candidate Starts for D29\_49:  
(Start: 17 @33484 has 60 MA's), (Start: 19 @33469 has 258 MA's), (53, 33352), (55, 33346), (62, 33322), (66, 33274), (89, 33175), (91, 33166), (93, 33157), (97, 33004),

Gene: D32\_51 Start: 33469, Stop: 32891, Start Num: 19  
Candidate Starts for D32\_51:  
(Start: 17 @33484 has 60 MA's), (Start: 19 @33469 has 258 MA's), (53, 33352), (55, 33346), (62, 33322), (66, 33274), (89, 33175), (91, 33166), (93, 33157), (97, 33004),

Gene: DBQu4n\_52 Start: 33468, Stop: 32890, Start Num: 19  
Candidate Starts for DBQu4n\_52:  
(Start: 17 @33483 has 60 MA's), (Start: 19 @33468 has 258 MA's), (55, 33345), (62, 33321), (66, 33273), (89, 33174), (91, 33165), (93, 33156), (97, 33003),

Gene: DaHudson\_53 Start: 33849, Stop: 33259, Start Num: 19  
Candidate Starts for DaHudson\_53:  
(Start: 19 @33849 has 258 MA's), (Start: 22 @33843 has 1 MA's), (52, 33699), (56, 33690), (63, 33663), (72, 33579), (97, 33375), (103, 33327),

Gene: DaVinci\_51 Start: 32228, Stop: 31656, Start Num: 19  
Candidate Starts for DaVinci\_51:  
(Start: 17 @32243 has 60 MA's), (Start: 19 @32228 has 258 MA's), (50, 32117), (58, 32099), (87, 31937), (93, 31910), (97, 31766), (98, 31763),

Gene: Daishi\_52 Start: 32725, Stop: 32138, Start Num: 19  
Candidate Starts for Daishi\_52:  
(Start: 19 @32725 has 258 MA's), (Start: 22 @32719 has 1 MA's), (52, 32581), (56, 32572), (63, 32545), (64, 32542), (68, 32482), (72, 32461), (97, 32254), (103, 32206),

Gene: Dalmatian\_51 Start: 34042, Stop: 33521, Start Num: 19  
Candidate Starts for Dalmatian\_51:  
(Start: 17 @34057 has 60 MA's), (Start: 19 @34042 has 258 MA's), (57, 33928), (62, 33901), (67, 33850), (69, 33826), (81, 33787), (85, 33778), (97, 33631), (100, 33613), (103, 33583),

Gene: Darrell\_51 Start: 34320, Stop: 33751, Start Num: 19  
Candidate Starts for Darrell\_51:  
(Start: 17 @34335 has 60 MA's), (Start: 19 @34320 has 258 MA's), (42, 34215), (68, 34104), (93, 34005), (97, 33858),

Gene: DARTHPhader\_47 Start: 34512, Stop: 33961, Start Num: 17  
Candidate Starts for DARTHPhader\_47:

(Start: 17 @34512 has 60 MA's), (Start: 19 @34497 has 258 MA's), (57, 34371), (72, 34257), (97, 34062), (98, 34059),

Gene: Deloris\_51 Start: 33835, Stop: 33311, Start Num: 19

Candidate Starts for Deloris\_51:

(Start: 17 @33850 has 60 MA's), (Start: 19 @33835 has 258 MA's), (50, 33730), (62, 33685), (67, 33634), (72, 33598), (81, 33571), (97, 33421), (100, 33403), (103, 33373),

Gene: Dieselweasel\_54 Start: 33859, Stop: 33269, Start Num: 19

Candidate Starts for Dieselweasel\_54:

(Start: 19 @33859 has 258 MA's), (Start: 22 @33853 has 1 MA's), (52, 33709), (56, 33700), (63, 33673), (72, 33589), (97, 33385), (103, 33337),

Gene: Dignity\_52 Start: 34218, Stop: 33691, Start Num: 19

Candidate Starts for Dignity\_52:

(Start: 17 @34233 has 60 MA's), (Start: 19 @34218 has 258 MA's), (39, 34131), (57, 34095), (62, 34068), (65, 34023), (67, 34017), (69, 33993), (81, 33954), (97, 33801), (100, 33783), (103, 33753),

Gene: Dinger\_39 Start: 29859, Stop: 29335, Start Num: 19

Candidate Starts for Dinger\_39:

(Start: 19 @29859 has 258 MA's), (52, 29754), (97, 29442), (99, 29433), (100, 29424), (103, 29394),

Gene: Dorothea\_51 Start: 32797, Stop: 32225, Start Num: 19

Candidate Starts for Dorothea\_51:

(Start: 17 @32812 has 60 MA's), (Start: 19 @32797 has 258 MA's), (50, 32686), (58, 32668), (87, 32506), (93, 32479), (97, 32335), (98, 32332),

Gene: Drake55\_52 Start: 34136, Stop: 33609, Start Num: 17

Candidate Starts for Drake55\_52:

(Start: 17 @34136 has 60 MA's), (Start: 19 @34121 has 258 MA's), (39, 34052), (57, 34016), (62, 33989), (67, 33938), (69, 33914), (72, 33902), (81, 33875), (85, 33866), (88, 33848), (97, 33722),

Gene: DreamTeam1\_49 Start: 33360, Stop: 32815, Start Num: 19

Candidate Starts for DreamTeam1\_49:

(Start: 17 @33375 has 60 MA's), (Start: 19 @33360 has 258 MA's), (54, 33258), (68, 33165), (93, 33066), (97, 32922),

Gene: DroogsArmy\_45 Start: 34322, Stop: 33822, Start Num: 20

Candidate Starts for DroogsArmy\_45:

(Start: 20 @34322 has 5 MA's), (54, 34217), (72, 34097), (83, 34067), (104, 33869),

Gene: DudeLittle\_49 Start: 33784, Stop: 33263, Start Num: 19

Candidate Starts for DudeLittle\_49:

(Start: 17 @33799 has 60 MA's), (Start: 19 @33784 has 258 MA's), (57, 33670), (62, 33643), (67, 33592), (69, 33568), (81, 33529), (97, 33373), (100, 33355), (103, 33325),

Gene: Duplo\_52 Start: 33506, Stop: 32928, Start Num: 19

Candidate Starts for Duplo\_52:

(Start: 17 @33521 has 60 MA's), (Start: 19 @33506 has 258 MA's), (53, 33389), (55, 33383), (62, 33359), (66, 33311), (70, 33281), (89, 33212), (91, 33203), (93, 33194), (97, 33041),

Gene: EZMoney23\_48 Start: 33569, Stop: 33063, Start Num: 19

Candidate Starts for EZMoney23\_48:

(Start: 17 @33584 has 60 MA's), (Start: 19 @33569 has 258 MA's), (57, 33476), (62, 33449), (65, 33404), (67, 33398), (69, 33374), (81, 33335), (97, 33176), (100, 33158),

Gene: EagleEye\_52 Start: 33301, Stop: 32738, Start Num: 17

Candidate Starts for EagleEye\_52:

(Start: 17 @33301 has 60 MA's), (Start: 19 @33286 has 258 MA's), (44, 33169), (65, 33067), (67, 33061), (81, 32998), (85, 32989), (97, 32845),

Gene: Ebony\_50 Start: 32845, Stop: 32276, Start Num: 19

Candidate Starts for Ebony\_50:

(Start: 19 @32845 has 258 MA's), (54, 32710), (86, 32545), (97, 32389),

Gene: Echild\_50 Start: 33130, Stop: 32600, Start Num: 17

Candidate Starts for Echild\_50:

(Start: 17 @33130 has 60 MA's), (Start: 19 @33115 has 258 MA's), (57, 33001), (62, 32974), (65, 32929), (67, 32923), (69, 32899), (81, 32860), (85, 32851), (97, 32710), (100, 32692), (103, 32662),

Gene: Eidsmoe\_50 Start: 33683, Stop: 33168, Start Num: 19

Candidate Starts for Eidsmoe\_50:

(Start: 17 @33698 has 60 MA's), (Start: 19 @33683 has 258 MA's), (43, 33590), (57, 33566), (67, 33488), (81, 33425), (97, 33275),

Gene: Elephantoon\_49 Start: 33065, Stop: 32502, Start Num: 19

Candidate Starts for Elephantoon\_49:

(Start: 17 @33080 has 60 MA's), (Start: 19 @33065 has 258 MA's), (42, 32963), (93, 32753), (97, 32609),

Gene: EmyBug\_47 Start: 33685, Stop: 33170, Start Num: 19

Candidate Starts for EmyBug\_47:

(Start: 17 @33700 has 60 MA's), (Start: 19 @33685 has 258 MA's), (43, 33592), (57, 33568), (67, 33490), (81, 33427), (97, 33277),

Gene: EpicPhail\_54 Start: 33860, Stop: 33270, Start Num: 19

Candidate Starts for EpicPhail\_54:

(Start: 19 @33860 has 258 MA's), (Start: 22 @33854 has 1 MA's), (52, 33710), (56, 33701), (63, 33674), (72, 33590), (97, 33386), (103, 33338),

Gene: Epsocamisio\_52 Start: 32293, Stop: 31751, Start Num: 25

Candidate Starts for Epsocamisio\_52:

(Start: 25 @32293 has 11 MA's), (26, 32287), (48, 32182), (59, 32155), (60, 32152), (73, 32041), (79, 32020), (83, 32011), (85, 32002), (97, 31855), (103, 31810),

Gene: Equemioh13\_51 Start: 33944, Stop: 33435, Start Num: 19

Candidate Starts for Equemioh13\_51:

(Start: 17 @33959 has 60 MA's), (Start: 19 @33944 has 258 MA's), (39, 33875), (57, 33839), (62, 33812), (65, 33767), (67, 33761), (69, 33737), (72, 33725), (81, 33698), (85, 33689), (88, 33671), (97, 33548),

Gene: EricB\_52 Start: 32771, Stop: 32199, Start Num: 19

Candidate Starts for EricB\_52:

(Start: 17 @32786 has 60 MA's), (Start: 19 @32771 has 258 MA's), (50, 32660), (58, 32642), (87, 32480), (93, 32453), (97, 32309), (98, 32306),

Gene: Erik\_39 Start: 29796, Stop: 29272, Start Num: 19  
Candidate Starts for Erik\_39:  
(Start: 19 @29796 has 258 MA's), (52, 29691), (97, 29379), (99, 29370), (100, 29361), (103, 29331),

Gene: Espica\_39 Start: 29797, Stop: 29273, Start Num: 19  
Candidate Starts for Espica\_39:  
(Start: 19 @29797 has 258 MA's), (52, 29692), (97, 29380), (99, 29371), (100, 29362), (103, 29332),

Gene: Et2Brutus\_49 Start: 32805, Stop: 32236, Start Num: 19  
Candidate Starts for Et2Brutus\_49:  
(Start: 19 @32805 has 258 MA's), (54, 32670), (86, 32505), (97, 32349),

Gene: EvilGenius\_52 Start: 35429, Stop: 34887, Start Num: 17  
Candidate Starts for EvilGenius\_52:  
(Start: 17 @35429 has 60 MA's), (Start: 19 @35414 has 258 MA's), (39, 35327), (57, 35291), (62, 35264), (65, 35219), (67, 35213), (69, 35189), (81, 35150), (97, 34997), (100, 34979), (103, 34949),

Gene: ExplosioNervosa\_50 Start: 33751, Stop: 33188, Start Num: 19  
Candidate Starts for ExplosioNervosa\_50:  
(Start: 17 @33766 has 60 MA's), (Start: 19 @33751 has 258 MA's), (54, 33625), (68, 33535), (93, 33436), (97, 33295),

Gene: Fameo\_50 Start: 33969, Stop: 33436, Start Num: 17  
Candidate Starts for Fameo\_50:  
(Start: 17 @33969 has 60 MA's), (Start: 19 @33954 has 258 MA's), (57, 33840), (62, 33813), (67, 33762), (69, 33738), (81, 33699), (85, 33690), (97, 33546), (100, 33528), (103, 33498),

Gene: Farber\_53 Start: 33846, Stop: 33259, Start Num: 19  
Candidate Starts for Farber\_53:  
(Start: 19 @33846 has 258 MA's), (Start: 22 @33840 has 1 MA's), (52, 33702), (56, 33693), (63, 33666), (64, 33663), (68, 33603), (72, 33582), (97, 33375), (103, 33327),

Gene: Fascinus\_43 Start: 34815, Stop: 34276, Start Num: 30  
Candidate Starts for Fascinus\_43:  
(12, 34887), (23, 34848), (Start: 30 @34815 has 8 MA's), (52, 34704), (58, 34689), (100, 34365), (104, 34329),

Gene: Fayely\_50 Start: 33652, Stop: 33137, Start Num: 19  
Candidate Starts for Fayely\_50:  
(Start: 17 @33667 has 60 MA's), (Start: 19 @33652 has 258 MA's), (43, 33559), (57, 33535), (67, 33457), (81, 33394), (97, 33244),

Gene: Fernando\_53 Start: 33856, Stop: 33266, Start Num: 19  
Candidate Starts for Fernando\_53:  
(Start: 19 @33856 has 258 MA's), (Start: 22 @33850 has 1 MA's), (52, 33706), (56, 33697), (63, 33670), (72, 33586), (97, 33382), (103, 33334),

Gene: Fibonacci\_50 Start: 32814, Stop: 32251, Start Num: 19  
Candidate Starts for Fibonacci\_50:  
(Start: 19 @32814 has 258 MA's), (54, 32685), (86, 32520), (97, 32364),

Gene: FiringLine\_50 Start: 33631, Stop: 33110, Start Num: 19  
Candidate Starts for FiringLine\_50:

(Start: 17 @33646 has 60 MA's), (Start: 19 @33631 has 258 MA's), (57, 33517), (62, 33490), (65, 33445), (67, 33439), (69, 33415), (81, 33376), (85, 33367), (97, 33220), (100, 33202), (103, 33172),

Gene: First\_0052 Start: 34110, Stop: 33565, Start Num: 17

Candidate Starts for First\_0052:

(Start: 17 @34110 has 60 MA's), (Start: 19 @34095 has 258 MA's), (50, 33984), (55, 33969), (62, 33939), (69, 33864), (81, 33825), (97, 33675), (100, 33657), (103, 33627),

Gene: Flare16\_50 Start: 33718, Stop: 33194, Start Num: 17

Candidate Starts for Flare16\_50:

(Start: 17 @33718 has 60 MA's), (Start: 19 @33703 has 258 MA's), (39, 33634), (57, 33598), (62, 33571), (65, 33526), (67, 33520), (69, 33496), (72, 33484), (81, 33457), (85, 33448), (88, 33430), (97, 33307),

Gene: Flaverint\_51 Start: 33272, Stop: 32703, Start Num: 19

Candidate Starts for Flaverint\_51:

(Start: 19 @33272 has 258 MA's), (54, 33137), (86, 32972), (97, 32816),

Gene: Gail\_54 Start: 34735, Stop: 34187, Start Num: 17

Candidate Starts for Gail\_54:

(Start: 17 @34735 has 60 MA's), (Start: 19 @34720 has 258 MA's), (40, 34630), (57, 34594), (62, 34567), (65, 34522), (67, 34516), (69, 34492), (81, 34453), (85, 34444), (97, 34297), (103, 34252),

Gene: Garak\_54 Start: 32912, Stop: 32364, Start Num: 19

Candidate Starts for Garak\_54:

(6, 33026), (7, 33011), (Start: 17 @32927 has 60 MA's), (Start: 19 @32912 has 258 MA's), (66, 32702), (67, 32699), (81, 32636), (85, 32627), (97, 32474), (98, 32471),

Gene: GaugeLDP\_48 Start: 33987, Stop: 33457, Start Num: 17

Candidate Starts for GaugeLDP\_48:

(Start: 17 @33987 has 60 MA's), (Start: 19 @33972 has 258 MA's), (49, 33888), (58, 33867), (68, 33780), (72, 33759), (82, 33729), (83, 33726), (97, 33567), (100, 33549), (103, 33522),

Gene: Gemma\_52 Start: 33745, Stop: 33155, Start Num: 19

Candidate Starts for Gemma\_52:

(Start: 19 @33745 has 258 MA's), (Start: 22 @33739 has 1 MA's), (52, 33595), (56, 33586), (63, 33559), (72, 33475), (97, 33271), (103, 33223),

Gene: Georgie2\_51 Start: 33676, Stop: 33155, Start Num: 19

Candidate Starts for Georgie2\_51:

(Start: 17 @33691 has 60 MA's), (Start: 19 @33676 has 258 MA's), (57, 33562), (62, 33535), (65, 33490), (67, 33484), (69, 33460), (81, 33421), (85, 33412), (97, 33265), (100, 33247), (103, 33217),

Gene: Gilberta\_51 Start: 33262, Stop: 32693, Start Num: 19

Candidate Starts for Gilberta\_51:

(Start: 19 @33262 has 258 MA's), (54, 33127), (86, 32962), (97, 32806),

Gene: GingkoMaracino\_53 Start: 33742, Stop: 33152, Start Num: 19

Candidate Starts for GingkoMaracino\_53:

(Start: 19 @33742 has 258 MA's), (Start: 22 @33736 has 1 MA's), (52, 33592), (56, 33583), (63, 33556), (72, 33472), (97, 33268), (103, 33220),

Gene: Gladiator\_50 Start: 32270, Stop: 31527, Start Num: 1



Candidate Starts for Gladiator\_50:

(Start: 1 @32270 has 4 MA's), (2, 32255), (3, 32234), (4, 32204), (5, 32198), (Start: 19 @32072 has 258 MA's), (66, 31862), (67, 31859), (81, 31796), (85, 31787), (97, 31637), (98, 31634),

Gene: Gollum\_39 Start: 29796, Stop: 29272, Start Num: 19

Candidate Starts for Gollum\_39:

(Start: 19 @29796 has 258 MA's), (52, 29691), (97, 29379), (99, 29370), (100, 29361), (103, 29331),

Gene: GreedyLawyer\_52 Start: 32793, Stop: 32206, Start Num: 17

Candidate Starts for GreedyLawyer\_52:

(Start: 17 @32793 has 60 MA's), (Start: 19 @32778 has 258 MA's), (50, 32667), (58, 32649), (87, 32487), (93, 32460), (97, 32316), (98, 32313),

Gene: Grif\_53 Start: 33931, Stop: 33341, Start Num: 19

Candidate Starts for Grif\_53:

(Start: 19 @33931 has 258 MA's), (Start: 22 @33925 has 1 MA's), (52, 33781), (56, 33772), (63, 33745), (72, 33661), (97, 33457), (103, 33409),

Gene: Groupthink\_54 Start: 33749, Stop: 33159, Start Num: 19

Candidate Starts for Groupthink\_54:

(Start: 19 @33749 has 258 MA's), (Start: 22 @33743 has 1 MA's), (52, 33599), (56, 33590), (63, 33563), (72, 33479), (97, 33275), (103, 33227),

Gene: Grub\_53 Start: 33848, Stop: 33258, Start Num: 19

Candidate Starts for Grub\_53:

(Start: 19 @33848 has 258 MA's), (Start: 22 @33842 has 1 MA's), (52, 33698), (56, 33689), (63, 33662), (72, 33578), (97, 33374), (103, 33326),

Gene: Grum1\_53 Start: 33856, Stop: 33266, Start Num: 19

Candidate Starts for Grum1\_53:

(Start: 19 @33856 has 258 MA's), (Start: 22 @33850 has 1 MA's), (52, 33706), (56, 33697), (63, 33670), (72, 33586), (97, 33382), (103, 33334),

Gene: Gruunaga\_52 Start: 32771, Stop: 32226, Start Num: 19

Candidate Starts for Gruunaga\_52:

(Start: 1 @32969 has 4 MA's), (2, 32954), (3, 32933), (4, 32903), (5, 32897), (Start: 19 @32771 has 258 MA's), (66, 32561), (67, 32558), (81, 32495), (85, 32486), (97, 32336), (98, 32333),

Gene: GtownJaz\_53 Start: 33858, Stop: 33268, Start Num: 19

Candidate Starts for GtownJaz\_53:

(Start: 19 @33858 has 258 MA's), (Start: 22 @33852 has 1 MA's), (52, 33708), (56, 33699), (63, 33672), (72, 33588), (97, 33384), (103, 33336),

Gene: Gyzlar\_43 Start: 33635, Stop: 33096, Start Num: 30

Candidate Starts for Gyzlar\_43:

(12, 33707), (23, 33668), (Start: 30 @33635 has 8 MA's), (52, 33524), (58, 33509), (100, 33185), (104, 33149),

Gene: HINdeR\_45 Start: 34149, Stop: 33646, Start Num: 20

Candidate Starts for HINdeR\_45:

(8, 34242), (9, 34227), (13, 34182), (Start: 20 @34149 has 5 MA's), (54, 34044), (64, 34005), (83, 33894), (104, 33693),

Gene: Hammer\_53 Start: 32552, Stop: 31803, Start Num: 1  
Candidate Starts for Hammer\_53:  
(Start: 1 @32552 has 4 MA's), (2, 32537), (3, 32516), (4, 32486), (5, 32480), (Start: 19 @32354 has 258 MA's), (66, 32144), (67, 32141), (81, 32078), (85, 32069), (97, 31913), (98, 31910),

Gene: Harlequin\_39 Start: 29803, Stop: 29279, Start Num: 19  
Candidate Starts for Harlequin\_39:  
(Start: 19 @29803 has 258 MA's), (52, 29698), (97, 29386), (99, 29377), (100, 29368), (103, 29338),

Gene: HarryHoudini\_51 Start: 34130, Stop: 33618, Start Num: 19  
Candidate Starts for HarryHoudini\_51:  
(Start: 17 @34145 has 60 MA's), (Start: 19 @34130 has 258 MA's), (39, 34061), (57, 34025), (62, 33998), (65, 33953), (67, 33947), (69, 33923), (72, 33911), (81, 33884), (85, 33875), (88, 33857), (97, 33731),

Gene: HashRod\_54 Start: 33884, Stop: 33297, Start Num: 19  
Candidate Starts for HashRod\_54:  
(Start: 19 @33884 has 258 MA's), (Start: 22 @33878 has 1 MA's), (52, 33740), (56, 33731), (63, 33704), (64, 33701), (68, 33641), (72, 33620), (97, 33413), (103, 33365),

Gene: HaveUMetTed\_54 Start: 33734, Stop: 33141, Start Num: 19  
Candidate Starts for HaveUMetTed\_54:  
(Start: 19 @33734 has 258 MA's), (Start: 22 @33728 has 1 MA's), (52, 33581), (56, 33572), (63, 33545), (72, 33461), (97, 33257), (103, 33209),

Gene: Heffalump\_49 Start: 34422, Stop: 33904, Start Num: 19  
Candidate Starts for Heffalump\_49:  
(Start: 17 @34437 has 60 MA's), (Start: 19 @34422 has 258 MA's), (57, 34308), (62, 34281), (67, 34230), (69, 34206), (81, 34167), (85, 34158), (97, 34014), (100, 33996), (103, 33966),

Gene: Heliosoles\_52 Start: 33752, Stop: 33162, Start Num: 19  
Candidate Starts for Heliosoles\_52:  
(Start: 19 @33752 has 258 MA's), (Start: 22 @33746 has 1 MA's), (52, 33602), (56, 33593), (63, 33566), (72, 33482), (97, 33278), (103, 33230),

Gene: Helmet\_54 Start: 32912, Stop: 32364, Start Num: 19  
Candidate Starts for Helmet\_54:  
(6, 33026), (7, 33011), (Start: 17 @32927 has 60 MA's), (Start: 19 @32912 has 258 MA's), (66, 32702), (67, 32699), (81, 32636), (85, 32627), (97, 32474), (98, 32471),

Gene: Herbertwm\_50 Start: 33563, Stop: 32988, Start Num: 19  
Candidate Starts for Herbertwm\_50:  
(Start: 17 @33578 has 60 MA's), (Start: 19 @33563 has 258 MA's), (42, 33458), (53, 33437), (64, 33407), (66, 33365), (82, 33296), (93, 33248), (97, 33095),

Gene: Hercules11\_53 Start: 33865, Stop: 33275, Start Num: 19  
Candidate Starts for Hercules11\_53:  
(Start: 19 @33865 has 258 MA's), (Start: 22 @33859 has 1 MA's), (52, 33715), (56, 33706), (63, 33679), (72, 33595), (97, 33391), (103, 33343),

Gene: Hexamo\_52 Start: 32557, Stop: 31985, Start Num: 17  
Candidate Starts for Hexamo\_52:

(6, 32656), (7, 32641), (Start: 17 @32557 has 60 MA's), (Start: 19 @32542 has 258 MA's), (66, 32332), (67, 32329), (81, 32266), (85, 32257), (97, 32095), (98, 32092),

Gene: Hiro\_39 Start: 30058, Stop: 29534, Start Num: 19

Candidate Starts for Hiro\_39:

(Start: 19 @30058 has 258 MA's), (52, 29953), (97, 29641), (99, 29632), (100, 29623), (103, 29593),

Gene: Hoot\_47 Start: 30644, Stop: 30057, Start Num: 17

Candidate Starts for Hoot\_47:

(Start: 17 @30644 has 60 MA's), (Start: 19 @30629 has 258 MA's), (50, 30518), (58, 30500), (87, 30338), (93, 30311), (97, 30167), (98, 30164),

Gene: HortumSL17\_50 Start: 33634, Stop: 33104, Start Num: 17

Candidate Starts for HortumSL17\_50:

(Start: 17 @33634 has 60 MA's), (Start: 19 @33619 has 258 MA's), (43, 33526), (57, 33502), (67, 33424), (81, 33361), (97, 33211),

Gene: Hutc2\_50 Start: 32814, Stop: 32251, Start Num: 19

Candidate Starts for Hutc2\_50:

(Start: 19 @32814 has 258 MA's), (54, 32685), (86, 32520), (97, 32364),

Gene: lbantik\_26 Start: 11875, Stop: 11306, Start Num: 29

Candidate Starts for lbantik\_26:

(28, 11887), (Start: 29 @11875 has 1 MA's), (49, 11779), (101, 11383), (102, 11380), (105, 11338),

Gene: Indra\_55 Start: 32928, Stop: 32365, Start Num: 17

Candidate Starts for Indra\_55:

(6, 33027), (7, 33012), (Start: 17 @32928 has 60 MA's), (Start: 19 @32913 has 258 MA's), (66, 32703), (67, 32700), (81, 32637), (85, 32628), (97, 32475), (98, 32472),

Gene: Insomnia\_50 Start: 33325, Stop: 32756, Start Num: 19

Candidate Starts for Insomnia\_50:

(Start: 19 @33325 has 258 MA's), (54, 33190), (86, 33025), (97, 32869),

Gene: IronMan\_50 Start: 34814, Stop: 34269, Start Num: 19

Candidate Starts for IronMan\_50:

(Start: 17 @34829 has 60 MA's), (Start: 19 @34814 has 258 MA's), (64, 34685), (66, 34643), (82, 34574), (87, 34553), (93, 34526), (97, 34376), (100, 34358),

Gene: Isiphiwo\_50 Start: 32318, Stop: 31740, Start Num: 19

Candidate Starts for Isiphiwo\_50:

(Start: 17 @32333 has 60 MA's), (Start: 19 @32318 has 258 MA's), (50, 32207), (58, 32189), (87, 32027), (93, 32000), (97, 31850), (98, 31847),

Gene: Iwokeuplikedis\_53 Start: 33759, Stop: 33244, Start Num: 19

Candidate Starts for Iwokeuplikedis\_53:

(Start: 17 @33774 has 60 MA's), (Start: 19 @33759 has 258 MA's), (57, 33648), (62, 33621), (65, 33576), (67, 33570), (69, 33546), (81, 33507), (97, 33351), (100, 33333),

Gene: JHC117\_53 Start: 33855, Stop: 33265, Start Num: 19

Candidate Starts for JHC117\_53:

(Start: 19 @33855 has 258 MA's), (Start: 22 @33849 has 1 MA's), (52, 33705), (56, 33696), (63, 33669), (72, 33585), (97, 33381), (103, 33333),

Gene: JSwag\_53 Start: 32482, Stop: 31940, Start Num: 25

Candidate Starts for JSwag\_53:

(Start: 25 @32482 has 11 MA's), (26, 32476), (48, 32371), (59, 32344), (60, 32341), (73, 32230), (79, 32209), (83, 32200), (85, 32191), (97, 32044), (103, 31999),

Gene: Jaan\_50 Start: 34986, Stop: 34435, Start Num: 19

Candidate Starts for Jaan\_50:

(Start: 17 @35001 has 60 MA's), (Start: 19 @34986 has 258 MA's), (64, 34854), (66, 34812), (77, 34755), (82, 34743), (87, 34722), (93, 34695), (97, 34542),

Gene: Jabith\_51 Start: 33326, Stop: 32757, Start Num: 19

Candidate Starts for Jabith\_51:

(Start: 19 @33326 has 258 MA's), (54, 33191), (86, 33026), (97, 32870),

Gene: Jeeves\_54 Start: 33492, Stop: 32962, Start Num: 19

Candidate Starts for Jeeves\_54:

(Start: 17 @33507 has 60 MA's), (Start: 19 @33492 has 258 MA's), (40, 33405), (57, 33372), (62, 33345), (65, 33300), (67, 33294), (69, 33270), (81, 33231), (85, 33222), (97, 33072), (103, 33027),

Gene: Jeffabunny\_52 Start: 32584, Stop: 32021, Start Num: 17

Candidate Starts for Jeffabunny\_52:

(6, 32683), (7, 32668), (Start: 17 @32584 has 60 MA's), (Start: 19 @32569 has 258 MA's), (66, 32359), (67, 32356), (81, 32293), (85, 32284), (97, 32131), (98, 32128),

Gene: JenCasNa\_54 Start: 33856, Stop: 33266, Start Num: 19

Candidate Starts for JenCasNa\_54:

(Start: 19 @33856 has 258 MA's), (Start: 22 @33850 has 1 MA's), (52, 33706), (56, 33697), (63, 33670), (72, 33586), (97, 33382), (103, 33334),

Gene: JeppNRM\_54 Start: 33750, Stop: 33160, Start Num: 19

Candidate Starts for JeppNRM\_54:

(Start: 19 @33750 has 258 MA's), (Start: 22 @33744 has 1 MA's), (52, 33600), (56, 33591), (63, 33564), (72, 33480), (97, 33276), (103, 33228),

Gene: Jerm\_52 Start: 34210, Stop: 33683, Start Num: 19

Candidate Starts for Jerm\_52:

(Start: 17 @34225 has 60 MA's), (Start: 19 @34210 has 258 MA's), (39, 34123), (57, 34087), (62, 34060), (65, 34015), (67, 34009), (69, 33985), (81, 33946), (97, 33793), (100, 33775), (103, 33745),

Gene: Jester\_39 Start: 29734, Stop: 29210, Start Num: 19

Candidate Starts for Jester\_39:

(Start: 19 @29734 has 258 MA's), (52, 29629), (97, 29317), (99, 29308), (100, 29299), (103, 29269),

Gene: JewelBug\_53 Start: 32963, Stop: 32376, Start Num: 17

Candidate Starts for JewelBug\_53:

(Start: 17 @32963 has 60 MA's), (Start: 19 @32948 has 258 MA's), (50, 32837), (58, 32819), (87, 32657), (93, 32630), (97, 32486), (98, 32483),

Gene: Jobu08\_52 Start: 33688, Stop: 33098, Start Num: 19

Candidate Starts for Jobu08\_52:

(Start: 19 @33688 has 258 MA's), (Start: 22 @33682 has 1 MA's), (52, 33538), (56, 33529), (63, 33502), (72, 33418), (97, 33214), (103, 33166),

Gene: Jordennis\_52 Start: 32489, Stop: 31890, Start Num: 17

Candidate Starts for Jordennis\_52:

(Start: 17 @32489 has 60 MA's), (Start: 19 @32474 has 258 MA's), (50, 32351), (58, 32333), (87, 32171), (93, 32144), (97, 32000), (98, 31997),

Gene: Jorgensen\_48 Start: 35503, Stop: 35012, Start Num: 30

Candidate Starts for Jorgensen\_48:

(Start: 30 @35503 has 8 MA's), (31, 35497), (43, 35422), (58, 35401), (82, 35269), (85, 35260), (100, 35101), (104, 35065),

Gene: Joselito\_51 Start: 33271, Stop: 32702, Start Num: 19

Candidate Starts for Joselito\_51:

(Start: 19 @33271 has 258 MA's), (54, 33136), (86, 32971), (97, 32815),

Gene: JoshKayV\_52 Start: 34313, Stop: 33765, Start Num: 17

Candidate Starts for JoshKayV\_52:

(Start: 17 @34313 has 60 MA's), (Start: 19 @34298 has 258 MA's), (57, 34169), (62, 34142), (69, 34067), (81, 34028), (85, 34019), (97, 33875), (100, 33857), (103, 33827),

Gene: Journey13\_44 Start: 32029, Stop: 31511, Start Num: 17

Candidate Starts for Journey13\_44:

(Start: 17 @32029 has 60 MA's), (Start: 19 @32014 has 258 MA's), (Start: 20 @32011 has 5 MA's), (57, 31906), (62, 31879), (65, 31834), (67, 31828), (69, 31804), (81, 31765), (97, 31615), (100, 31597),

Gene: Jsquared\_48 Start: 32621, Stop: 32070, Start Num: 19

Candidate Starts for Jsquared\_48:

(Start: 19 @32621 has 258 MA's), (39, 32543), (64, 32477), (79, 32372), (82, 32366), (87, 32345), (89, 32336), (93, 32318), (97, 32180),

Gene: KADY\_53 Start: 33884, Stop: 33297, Start Num: 19

Candidate Starts for KADY\_53:

(Start: 19 @33884 has 258 MA's), (Start: 22 @33878 has 1 MA's), (52, 33740), (56, 33731), (63, 33704), (64, 33701), (68, 33641), (72, 33620), (97, 33413), (103, 33365),

Gene: Kalb97\_54 Start: 33748, Stop: 33158, Start Num: 19

Candidate Starts for Kalb97\_54:

(Start: 19 @33748 has 258 MA's), (Start: 22 @33742 has 1 MA's), (52, 33598), (56, 33589), (63, 33562), (72, 33478), (97, 33274), (103, 33226),

Gene: Kalnoky\_54 Start: 33746, Stop: 33156, Start Num: 19

Candidate Starts for Kalnoky\_54:

(Start: 19 @33746 has 258 MA's), (Start: 22 @33740 has 1 MA's), (52, 33596), (56, 33587), (63, 33560), (72, 33476), (97, 33272), (103, 33224),

Gene: Kalpine\_48 Start: 33928, Stop: 33407, Start Num: 19

Candidate Starts for Kalpine\_48:

(Start: 17 @33943 has 60 MA's), (Start: 19 @33928 has 258 MA's), (62, 33781), (65, 33736), (67, 33730), (69, 33706), (81, 33667), (97, 33517), (100, 33499), (103, 33469),

Gene: Kazan\_53 Start: 32784, Stop: 32212, Start Num: 19

Candidate Starts for Kazan\_53:

(Start: 17 @32799 has 60 MA's), (Start: 19 @32784 has 258 MA's), (50, 32673), (58, 32655), (87, 32493), (93, 32466), (97, 32322), (98, 32319),

Gene: Kerberos\_52 Start: 33468, Stop: 32890, Start Num: 19

Candidate Starts for Kerberos\_52:

(Start: 17 @33483 has 60 MA's), (Start: 19 @33468 has 258 MA's), (53, 33351), (55, 33345), (62, 33321), (66, 33273), (70, 33243), (89, 33174), (91, 33165), (93, 33156), (97, 33003),

Gene: Keziacharles14\_50 Start: 34743, Stop: 34183, Start Num: 19

Candidate Starts for Keziacharles14\_50:

(Start: 17 @34758 has 60 MA's), (Start: 19 @34743 has 258 MA's), (41, 34641), (42, 34638), (53, 34620), (93, 34431), (97, 34290),

Gene: Kimona\_49 Start: 32039, Stop: 31437, Start Num: 11

Candidate Starts for Kimona\_49:

(10, 32054), (Start: 11 @32039 has 1 MA's), (Start: 20 @31997 has 5 MA's), (54, 31844), (64, 31805), (66, 31763), (72, 31724), (83, 31694), (104, 31478),

Gene: KingCyrus\_52 Start: 35409, Stop: 34882, Start Num: 19

Candidate Starts for KingCyrus\_52:

(Start: 17 @35424 has 60 MA's), (Start: 19 @35409 has 258 MA's), (39, 35322), (57, 35286), (62, 35259), (65, 35214), (67, 35208), (69, 35184), (81, 35145), (97, 34992), (100, 34974), (103, 34944),

Gene: Kipper29\_52 Start: 32812, Stop: 32225, Start Num: 17

Candidate Starts for Kipper29\_52:

(Start: 17 @32812 has 60 MA's), (Start: 19 @32797 has 258 MA's), (50, 32686), (58, 32668), (87, 32506), (93, 32479), (97, 32335), (98, 32332),

Gene: Koduck\_51 Start: 32906, Stop: 32382, Start Num: 19

Candidate Starts for Koduck\_51:

(Start: 17 @32921 has 60 MA's), (Start: 19 @32906 has 258 MA's), (39, 32819), (52, 32798), (57, 32786), (62, 32759), (65, 32714), (67, 32708), (69, 32684), (81, 32645), (97, 32492),

Gene: Koko\_53 Start: 32908, Stop: 32351, Start Num: 19

Candidate Starts for Koko\_53:

(Start: 1 @33106 has 4 MA's), (2, 33091), (3, 33070), (4, 33040), (5, 33034), (Start: 19 @32908 has 258 MA's), (66, 32698), (67, 32695), (81, 32632), (85, 32623), (97, 32461), (98, 32458),

Gene: Krishelle\_39 Start: 30158, Stop: 29634, Start Num: 19

Candidate Starts for Krishelle\_39:

(Start: 19 @30158 has 258 MA's), (52, 30053), (97, 29741), (99, 29732), (100, 29723), (103, 29693),

Gene: L5\_49 Start: 32996, Stop: 32457, Start Num: 17

Candidate Starts for L5\_49:

(Start: 17 @32996 has 60 MA's), (Start: 19 @32981 has 258 MA's), (39, 32894), (52, 32873), (57, 32861), (62, 32834), (65, 32789), (67, 32783), (69, 32759), (81, 32720), (97, 32567),

Gene: LBerry\_54 Start: 33860, Stop: 33270, Start Num: 19

Candidate Starts for LBerry\_54:

(Start: 19 @33860 has 258 MA's), (Start: 22 @33854 has 1 MA's), (52, 33710), (56, 33701), (63, 33674), (72, 33590), (97, 33386), (103, 33338),

Gene: LadyBird\_55 Start: 34524, Stop: 34000, Start Num: 19

Candidate Starts for LadyBird\_55:

(Start: 17 @34539 has 60 MA's), (Start: 19 @34524 has 258 MA's), (50, 34419), (62, 34374), (69, 34299), (81, 34260), (97, 34110), (100, 34092), (103, 34062),

Gene: Landor\_50 Start: 34892, Stop: 34347, Start Num: 19

Candidate Starts for Landor\_50:

(Start: 17 @34907 has 60 MA's), (Start: 19 @34892 has 258 MA's), (64, 34763), (66, 34721), (77, 34664), (82, 34652), (87, 34631), (93, 34604), (97, 34454), (100, 34436),

Gene: Larenn\_49 Start: 33825, Stop: 33295, Start Num: 17

Candidate Starts for Larenn\_49:

(Start: 17 @33825 has 60 MA's), (Start: 19 @33810 has 258 MA's), (43, 33738), (57, 33705), (62, 33678), (67, 33627), (69, 33603), (72, 33591), (81, 33564), (97, 33408), (100, 33390),

Gene: LarryKay\_53 Start: 33886, Stop: 33299, Start Num: 19

Candidate Starts for LarryKay\_53:

(Start: 19 @33886 has 258 MA's), (Start: 22 @33880 has 1 MA's), (52, 33742), (56, 33733), (63, 33706), (64, 33703), (68, 33643), (72, 33622), (97, 33415), (103, 33367),

Gene: LastResort\_53 Start: 32534, Stop: 31992, Start Num: 25

Candidate Starts for LastResort\_53:

(Start: 25 @32534 has 11 MA's), (26, 32528), (48, 32423), (59, 32396), (60, 32393), (73, 32282), (79, 32261), (83, 32252), (85, 32243), (97, 32096), (103, 32051),

Gene: Leogania\_50 Start: 34849, Stop: 34322, Start Num: 19

Candidate Starts for Leogania\_50:

(Start: 17 @34864 has 60 MA's), (Start: 19 @34849 has 258 MA's), (39, 34765), (57, 34723), (62, 34696), (65, 34651), (67, 34645), (69, 34621), (72, 34609), (81, 34582), (97, 34432), (100, 34414), (103, 34384),

Gene: Leviathan\_52 Start: 34282, Stop: 33740, Start Num: 17

Candidate Starts for Leviathan\_52:

(Start: 17 @34282 has 60 MA's), (Start: 19 @34267 has 258 MA's), (39, 34180), (57, 34144), (62, 34117), (65, 34072), (67, 34066), (69, 34042), (81, 34003), (97, 33850), (100, 33832), (103, 33802),

Gene: LilTurb\_51 Start: 34106, Stop: 33573, Start Num: 17

Candidate Starts for LilTurb\_51:

(Start: 17 @34106 has 60 MA's), (Start: 19 @34091 has 258 MA's), (39, 34007), (57, 33971), (65, 33899), (67, 33893), (69, 33869), (70, 33866), (72, 33857), (81, 33830), (97, 33683), (100, 33665), (103, 33635),

Gene: Lilith\_54 Start: 33849, Stop: 33259, Start Num: 19

Candidate Starts for Lilith\_54:

(Start: 19 @33849 has 258 MA's), (Start: 22 @33843 has 1 MA's), (52, 33699), (56, 33690), (63, 33663), (72, 33579), (97, 33375), (103, 33327),

Gene: Lillie\_39 Start: 29798, Stop: 29274, Start Num: 19

Candidate Starts for Lillie\_39:

(Start: 19 @29798 has 258 MA's), (52, 29693), (97, 29381), (99, 29372), (100, 29363), (103, 29333),

Gene: Lokk\_47 Start: 33016, Stop: 32498, Start Num: 19

Candidate Starts for Lokk\_47:

(14, 33043), (Start: 17 @33031 has 60 MA's), (Start: 19 @33016 has 258 MA's), (39, 32944), (57, 32908), (59, 32902), (62, 32881), (67, 32830), (69, 32806), (72, 32794), (81, 32767), (97, 32608), (100, 32590), (103, 32560),

Gene: LoneWolf\_51 Start: 33659, Stop: 33093, Start Num: 19

Candidate Starts for LoneWolf\_51:

(Start: 17 @33674 has 60 MA's), (Start: 19 @33659 has 258 MA's), (41, 33557), (42, 33554), (68, 33443), (93, 33344), (97, 33200),

Gene: Looper\_54 Start: 32511, Stop: 31969, Start Num: 25

Candidate Starts for Looper\_54:

(Start: 25 @32511 has 11 MA's), (26, 32505), (48, 32400), (59, 32373), (60, 32370), (73, 32259), (79, 32238), (83, 32229), (85, 32220), (97, 32073), (103, 32028),

Gene: Loser\_52 Start: 34655, Stop: 34110, Start Num: 17

Candidate Starts for Loser\_52:

(Start: 17 @34655 has 60 MA's), (Start: 19 @34640 has 258 MA's), (57, 34520), (62, 34493), (65, 34448), (67, 34442), (69, 34418), (80, 34382), (81, 34379), (85, 34370), (97, 34223), (100, 34205), (103, 34175),

Gene: Louie6\_52 Start: 33885, Stop: 33298, Start Num: 19

Candidate Starts for Louie6\_52:

(Start: 19 @33885 has 258 MA's), (Start: 22 @33879 has 1 MA's), (52, 33741), (56, 33732), (63, 33705), (64, 33702), (68, 33642), (72, 33621), (97, 33414), (103, 33366),

Gene: Luchador\_54 Start: 35277, Stop: 34750, Start Num: 19

Candidate Starts for Luchador\_54:

(Start: 17 @35292 has 60 MA's), (Start: 19 @35277 has 258 MA's), (40, 35190), (57, 35157), (62, 35130), (65, 35085), (67, 35079), (69, 35055), (81, 35016), (85, 35007), (97, 34860), (103, 34815),

Gene: Lucivia\_51 Start: 33320, Stop: 32751, Start Num: 19

Candidate Starts for Lucivia\_51:

(Start: 19 @33320 has 258 MA's), (54, 33185), (86, 33020), (97, 32864),

Gene: Lucyedi\_51 Start: 33497, Stop: 32934, Start Num: 17

Candidate Starts for Lucyedi\_51:

(Start: 17 @33497 has 60 MA's), (Start: 19 @33482 has 258 MA's), (44, 33365), (65, 33263), (67, 33257), (81, 33194), (85, 33185), (97, 33041),

Gene: LugYA\_56 Start: 33857, Stop: 33267, Start Num: 19

Candidate Starts for LugYA\_56:

(Start: 19 @33857 has 258 MA's), (Start: 22 @33851 has 1 MA's), (52, 33707), (56, 33698), (63, 33671), (72, 33587), (97, 33383), (103, 33335),

Gene: MaCh\_51 Start: 33250, Stop: 32684, Start Num: 19

Candidate Starts for MaCh\_51:

(Start: 19 @33250 has 258 MA's), (61, 33097), (86, 32956), (97, 32797),

Gene: Mabel\_50 Start: 32855, Stop: 32286, Start Num: 19

Candidate Starts for Mabel\_50:

(Start: 19 @32855 has 258 MA's), (54, 32720), (86, 32555), (97, 32399),

Gene: MadMarie\_53 Start: 33858, Stop: 33268, Start Num: 19



Candidate Starts for MadMarie\_53:

(Start: 19 @33858 has 258 MA's), (Start: 22 @33852 has 1 MA's), (52, 33708), (56, 33699), (63, 33672), (72, 33588), (97, 33384), (103, 33336),

Gene: Mainiac\_53 Start: 33850, Stop: 33260, Start Num: 19

Candidate Starts for Mainiac\_53:

(Start: 19 @33850 has 258 MA's), (Start: 22 @33844 has 1 MA's), (52, 33700), (56, 33691), (63, 33664), (72, 33580), (97, 33376), (103, 33328),

Gene: Malec\_50 Start: 34392, Stop: 33859, Start Num: 17

Candidate Starts for Malec\_50:

(Start: 17 @34392 has 60 MA's), (Start: 19 @34377 has 258 MA's), (43, 34305), (57, 34272), (62, 34245), (67, 34194), (69, 34170), (72, 34158), (81, 34131), (97, 33972), (100, 33954),

Gene: Malinsilva\_55 Start: 33848, Stop: 33258, Start Num: 19

Candidate Starts for Malinsilva\_55:

(Start: 19 @33848 has 258 MA's), (Start: 22 @33842 has 1 MA's), (52, 33698), (56, 33689), (63, 33662), (72, 33578), (97, 33374), (103, 33326),

Gene: Maminiaina\_49 Start: 33426, Stop: 32860, Start Num: 19

Candidate Starts for Maminiaina\_49:

(Start: 17 @33441 has 60 MA's), (Start: 19 @33426 has 258 MA's), (41, 33324), (42, 33321), (68, 33210), (93, 33111), (97, 32967),

Gene: Manu\_53 Start: 33749, Stop: 33159, Start Num: 19

Candidate Starts for Manu\_53:

(Start: 19 @33749 has 258 MA's), (Start: 22 @33743 has 1 MA's), (52, 33599), (56, 33590), (63, 33563), (72, 33479), (97, 33275), (103, 33227),

Gene: MarQuardt\_53 Start: 33858, Stop: 33268, Start Num: 19

Candidate Starts for MarQuardt\_53:

(Start: 19 @33858 has 258 MA's), (Start: 22 @33852 has 1 MA's), (52, 33708), (56, 33699), (63, 33672), (72, 33588), (97, 33384), (103, 33336),

Gene: Marie\_53 Start: 33856, Stop: 33266, Start Num: 19

Candidate Starts for Marie\_53:

(Start: 19 @33856 has 258 MA's), (Start: 22 @33850 has 1 MA's), (52, 33706), (56, 33697), (63, 33670), (72, 33586), (97, 33382), (103, 33334),

Gene: Marius\_54 Start: 33746, Stop: 33156, Start Num: 19

Candidate Starts for Marius\_54:

(Start: 19 @33746 has 258 MA's), (Start: 22 @33740 has 1 MA's), (52, 33596), (56, 33587), (63, 33560), (72, 33476), (97, 33272), (103, 33224),

Gene: Maroc7\_45 Start: 35124, Stop: 34585, Start Num: 30

Candidate Starts for Maroc7\_45:

(12, 35196), (23, 35157), (Start: 30 @35124 has 8 MA's), (52, 35013), (58, 34998), (100, 34674), (104, 34638),

Gene: McFly\_52 Start: 32778, Stop: 32206, Start Num: 19

Candidate Starts for McFly\_52:

(Start: 17 @32793 has 60 MA's), (Start: 19 @32778 has 258 MA's), (50, 32667), (58, 32649), (87, 32487), (93, 32460), (97, 32316), (98, 32313),

Gene: Methuselah\_49 Start: 33880, Stop: 33293, Start Num: 19

Candidate Starts for Methuselah\_49:

(Start: 19 @33880 has 258 MA's), (Start: 22 @33874 has 1 MA's), (52, 33736), (56, 33727), (63, 33700), (64, 33697), (68, 33637), (72, 33616), (97, 33409), (103, 33361),

Gene: Microwolf\_53 Start: 33872, Stop: 33267, Start Num: 19

Candidate Starts for Microwolf\_53:

(Start: 19 @33872 has 258 MA's), (Start: 22 @33866 has 1 MA's), (52, 33722), (56, 33713), (63, 33686), (72, 33602), (97, 33383), (103, 33335),

Gene: MiculUcigas\_50 Start: 33618, Stop: 33094, Start Num: 17

Candidate Starts for MiculUcigas\_50:

(Start: 17 @33618 has 60 MA's), (Start: 19 @33603 has 258 MA's), (39, 33534), (57, 33498), (62, 33471), (65, 33426), (67, 33420), (69, 33396), (72, 33384), (81, 33357), (85, 33348), (88, 33330), (97, 33207),

Gene: Miko\_47 Start: 33800, Stop: 33279, Start Num: 19

Candidate Starts for Miko\_47:

(14, 33827), (Start: 17 @33815 has 60 MA's), (Start: 19 @33800 has 258 MA's), (39, 33728), (57, 33692), (59, 33686), (62, 33665), (67, 33614), (69, 33590), (72, 33578), (81, 33551), (97, 33392), (100, 33374),

Gene: Misomonster\_54 Start: 33883, Stop: 33296, Start Num: 19

Candidate Starts for Misomonster\_54:

(Start: 19 @33883 has 258 MA's), (Start: 22 @33877 has 1 MA's), (52, 33739), (56, 33730), (63, 33703), (64, 33700), (68, 33640), (72, 33619), (97, 33412), (103, 33364),

Gene: MissWhite\_49 Start: 32171, Stop: 31665, Start Num: 19

Candidate Starts for MissWhite\_49:

(Start: 17 @32186 has 60 MA's), (Start: 19 @32171 has 258 MA's), (57, 32063), (66, 31988), (67, 31985), (69, 31961), (81, 31922), (97, 31775), (100, 31757),

Gene: MoneyMay\_53 Start: 33856, Stop: 33266, Start Num: 19

Candidate Starts for MoneyMay\_53:

(Start: 19 @33856 has 258 MA's), (Start: 22 @33850 has 1 MA's), (52, 33706), (56, 33697), (63, 33670), (72, 33586), (97, 33382), (103, 33334),

Gene: MuchMore\_56 Start: 33848, Stop: 33258, Start Num: 19

Candidate Starts for MuchMore\_56:

(Start: 19 @33848 has 258 MA's), (Start: 22 @33842 has 1 MA's), (52, 33698), (56, 33689), (63, 33662), (72, 33578), (97, 33374), (103, 33326),

Gene: Mulciber\_50 Start: 32811, Stop: 32248, Start Num: 19

Candidate Starts for Mulciber\_50:

(Start: 19 @32811 has 258 MA's), (54, 32682), (86, 32517), (97, 32361),

Gene: Munch\_51 Start: 33271, Stop: 32702, Start Num: 19

Candidate Starts for Munch\_51:

(Start: 19 @33271 has 258 MA's), (54, 33136), (86, 32971), (97, 32815),

Gene: MyraDee\_43 Start: 29930, Stop: 29361, Start Num: 19

Candidate Starts for MyraDee\_43:

(Start: 19 @29930 has 258 MA's), (Start: 22 @29924 has 1 MA's), (66, 29705), (79, 29642), (83, 29633), (91, 29594), (97, 29465), (100, 29447),

Gene: Myxus\_50 Start: 33634, Stop: 33104, Start Num: 17

Candidate Starts for Myxus\_50:

(Start: 17 @33634 has 60 MA's), (Start: 19 @33619 has 258 MA's), (43, 33526), (57, 33502), (67, 33424), (81, 33361), (97, 33211),

Gene: NaSiaTalie\_50 Start: 33715, Stop: 33191, Start Num: 17

Candidate Starts for NaSiaTalie\_50:

(Start: 17 @33715 has 60 MA's), (Start: 19 @33700 has 258 MA's), (39, 33631), (57, 33595), (62, 33568), (65, 33523), (67, 33517), (69, 33493), (72, 33481), (81, 33454), (85, 33445), (88, 33427), (97, 33304),

Gene: Naiad\_39 Start: 29811, Stop: 29287, Start Num: 19

Candidate Starts for Naiad\_39:

(Start: 19 @29811 has 258 MA's), (52, 29706), (97, 29394), (99, 29385), (100, 29376), (103, 29346),

Gene: Naji\_52 Start: 33469, Stop: 32891, Start Num: 19

Candidate Starts for Naji\_52:

(Start: 17 @33484 has 60 MA's), (Start: 19 @33469 has 258 MA's), (53, 33352), (55, 33346), (62, 33322), (66, 33274), (89, 33175), (91, 33166), (93, 33157), (97, 33004),

Gene: Nancinator\_39 Start: 29797, Stop: 29273, Start Num: 19

Candidate Starts for Nancinator\_39:

(Start: 19 @29797 has 258 MA's), (52, 29692), (97, 29380), (99, 29371), (100, 29362), (103, 29332),

Gene: Natosaleda\_39 Start: 29796, Stop: 29272, Start Num: 19

Candidate Starts for Natosaleda\_39:

(Start: 19 @29796 has 258 MA's), (52, 29691), (97, 29379), (99, 29370), (100, 29361), (103, 29331),

Gene: Nebulosus\_53 Start: 32530, Stop: 31988, Start Num: 25

Candidate Starts for Nebulosus\_53:

(Start: 25 @32530 has 11 MA's), (26, 32524), (48, 32419), (59, 32392), (60, 32389), (73, 32278), (79, 32257), (83, 32248), (85, 32239), (97, 32092), (103, 32047),

Gene: Nedarya\_49 Start: 31962, Stop: 31435, Start Num: 24

Candidate Starts for Nedarya\_49:

(Start: 24 @31962 has 1 MA's), (34, 31896), (45, 31854), (48, 31848), (83, 31689), (97, 31542), (103, 31494),

Gene: Neeharika16\_51 Start: 32238, Stop: 31666, Start Num: 19

Candidate Starts for Neeharika16\_51:

(Start: 17 @32253 has 60 MA's), (Start: 19 @32238 has 258 MA's), (50, 32127), (58, 32109), (87, 31947), (93, 31920), (97, 31776), (98, 31773),

Gene: Newrala\_52 Start: 32795, Stop: 32214, Start Num: 17

Candidate Starts for Newrala\_52:

(Start: 17 @32795 has 60 MA's), (Start: 19 @32780 has 258 MA's), (50, 32669), (58, 32651), (87, 32489), (93, 32462), (97, 32324), (98, 32321),

Gene: NicoleTera\_49 Start: 33986, Stop: 33456, Start Num: 19

Candidate Starts for NicoleTera\_49:

(Start: 17 @34001 has 60 MA's), (Start: 19 @33986 has 258 MA's), (39, 33908), (57, 33872), (59, 33866), (62, 33845), (67, 33794), (72, 33758), (81, 33731), (97, 33569), (100, 33551),

Gene: Norz\_47 Start: 35704, Stop: 35213, Start Num: 30

Candidate Starts for Norz\_47:

(Start: 30 @35704 has 8 MA's), (31, 35698), (43, 35623), (58, 35602), (82, 35470), (85, 35461), (100, 35302), (104, 35266),

Gene: NothingSpecial\_48 Start: 34231, Stop: 33707, Start Num: 17

Candidate Starts for NothingSpecial\_48:

(Start: 17 @34231 has 60 MA's), (Start: 19 @34216 has 258 MA's), (62, 34084), (65, 34039), (67, 34033), (81, 33970), (97, 33817), (98, 33814),

Gene: Odin\_49 Start: 32519, Stop: 31926, Start Num: 19

Candidate Starts for Odin\_49:

(Start: 17 @32534 has 60 MA's), (Start: 19 @32519 has 258 MA's), (54, 32375), (66, 32300), (93, 32183), (97, 32036), (98, 32033), (100, 32018), (103, 31991),

Gene: OlanP\_52 Start: 33922, Stop: 33329, Start Num: 19

Candidate Starts for OlanP\_52:

(Start: 19 @33922 has 258 MA's), (Start: 22 @33916 has 1 MA's), (52, 33769), (56, 33760), (72, 33649), (97, 33445), (103, 33397),

Gene: Ollie\_53 Start: 33727, Stop: 33137, Start Num: 19

Candidate Starts for Ollie\_53:

(Start: 19 @33727 has 258 MA's), (Start: 22 @33721 has 1 MA's), (52, 33577), (56, 33568), (63, 33541), (72, 33457), (97, 33253), (103, 33205),

Gene: Oofda\_55 Start: 32610, Stop: 32080, Start Num: 25

Candidate Starts for Oofda\_55:

(Start: 25 @32610 has 11 MA's), (26, 32604), (34, 32544), (68, 32385), (72, 32367), (82, 32340), (97, 32184), (103, 32139),

Gene: Orange\_50 Start: 32820, Stop: 32251, Start Num: 19

Candidate Starts for Orange\_50:

(Start: 19 @32820 has 258 MA's), (54, 32685), (86, 32520), (97, 32364),

Gene: P28Green\_54 Start: 33859, Stop: 33269, Start Num: 19

Candidate Starts for P28Green\_54:

(Start: 19 @33859 has 258 MA's), (Start: 22 @33853 has 1 MA's), (52, 33709), (56, 33700), (63, 33673), (72, 33589), (97, 33385), (103, 33337),

Gene: PGHhamlin\_55 Start: 33848, Stop: 33258, Start Num: 19

Candidate Starts for PGHhamlin\_55:

(Start: 19 @33848 has 258 MA's), (Start: 22 @33842 has 1 MA's), (52, 33698), (56, 33689), (63, 33662), (72, 33578), (97, 33374), (103, 33326),

Gene: PP\_51 Start: 36962, Stop: 36378, Start Num: 20

Candidate Starts for PP\_51:

(Start: 20 @36962 has 5 MA's), (44, 36830), (59, 36791), (66, 36722), (83, 36653), (97, 36479),

Gene: PackMan\_49 Start: 33634, Stop: 33104, Start Num: 17

Candidate Starts for PackMan\_49:

(Start: 17 @33634 has 60 MA's), (Start: 19 @33619 has 258 MA's), (43, 33526), (57, 33502), (67, 33424), (81, 33361), (97, 33211),

Gene: PainterBoy\_51 Start: 33419, Stop: 32871, Start Num: 19

Candidate Starts for PainterBoy\_51:

(Start: 17 @33434 has 60 MA's), (Start: 19 @33419 has 258 MA's), (44, 33302), (65, 33200), (67, 33194), (81, 33131), (85, 33122), (97, 32978),

Gene: Parliament\_46 Start: 35665, Stop: 35174, Start Num: 30

Candidate Starts for Parliament\_46:

(Start: 30 @35665 has 8 MA's), (31, 35659), (43, 35584), (58, 35563), (82, 35431), (85, 35422), (94, 35371), (100, 35263), (104, 35227),

Gene: Partridge\_39 Start: 29958, Stop: 29434, Start Num: 19

Candidate Starts for Partridge\_39:

(Start: 19 @29958 has 258 MA's), (52, 29853), (97, 29541), (99, 29532), (100, 29523), (103, 29493),

Gene: Pawn\_53 Start: 33753, Stop: 33163, Start Num: 19

Candidate Starts for Pawn\_53:

(Start: 19 @33753 has 258 MA's), (Start: 22 @33747 has 1 MA's), (52, 33603), (56, 33594), (63, 33567), (72, 33483), (97, 33279), (103, 33231),

Gene: Pembroke\_53 Start: 33857, Stop: 33267, Start Num: 19

Candidate Starts for Pembroke\_53:

(Start: 19 @33857 has 258 MA's), (Start: 22 @33851 has 1 MA's), (52, 33707), (56, 33698), (63, 33671), (72, 33587), (97, 33383), (103, 33335),

Gene: Penny1\_54 Start: 33860, Stop: 33270, Start Num: 19

Candidate Starts for Penny1\_54:

(Start: 19 @33860 has 258 MA's), (Start: 22 @33854 has 1 MA's), (52, 33710), (56, 33701), (63, 33674), (72, 33590), (97, 33386), (103, 33338),

Gene: Petersenfast\_49 Start: 32822, Stop: 32253, Start Num: 19

Candidate Starts for Petersenfast\_49:

(Start: 19 @32822 has 258 MA's), (54, 32687), (86, 32522), (97, 32366),

Gene: Ph8s\_52 Start: 33102, Stop: 32488, Start Num: 17

Candidate Starts for Ph8s\_52:

(Start: 17 @33102 has 60 MA's), (Start: 19 @33087 has 258 MA's), (54, 32934), (66, 32859), (71, 32826), (93, 32742), (95, 32721), (97, 32598), (98, 32595), (103, 32553),

Gene: Phaded\_51 Start: 34886, Stop: 34329, Start Num: 17

Candidate Starts for Phaded\_51:

(Start: 17 @34886 has 60 MA's), (Start: 19 @34871 has 258 MA's), (36, 34793), (64, 34736), (66, 34694), (77, 34637), (82, 34625), (87, 34604), (93, 34577), (97, 34436), (100, 34418),

Gene: Phaeder\_50 Start: 33619, Stop: 33104, Start Num: 19

Candidate Starts for Phaeder\_50:

(Start: 17 @33634 has 60 MA's), (Start: 19 @33619 has 258 MA's), (43, 33526), (57, 33502), (67, 33424), (81, 33361), (97, 33211),

Gene: PhailMary\_38 Start: 30120, Stop: 29596, Start Num: 19

Candidate Starts for PhailMary\_38:

(Start: 19 @30120 has 258 MA's), (52, 30015), (97, 29703), (99, 29694), (100, 29685), (103, 29655),

Gene: Pharaoh\_45 Start: 33439, Stop: 32915, Start Num: 19

Candidate Starts for Pharaoh\_45:

(Start: 19 @33439 has 258 MA's), (67, 33241), (81, 33178), (97, 33016),

Gene: PhishRPhriends\_51 Start: 32930, Stop: 32337, Start Num: 19

Candidate Starts for PhishRPhriends\_51:

(Start: 19 @32930 has 258 MA's), (Start: 22 @32924 has 1 MA's), (52, 32777), (56, 32768), (63, 32741), (72, 32657), (97, 32453), (103, 32405),

Gene: Phlei\_39 Start: 33153, Stop: 32638, Start Num: 27

Candidate Starts for Phlei\_39:

(18, 33195), (21, 33180), (27, 33153), (32, 33132), (44, 33078), (58, 33045), (59, 33042), (62, 33021), (68, 32955), (75, 32922), (76, 32919), (81, 32907), (84, 32901), (96, 32832), (97, 32751), (103, 32703),

Gene: Phoebe\_54 Start: 33849, Stop: 33259, Start Num: 19

Candidate Starts for Phoebe\_54:

(Start: 19 @33849 has 258 MA's), (Start: 22 @33843 has 1 MA's), (52, 33699), (56, 33690), (63, 33663), (72, 33579), (97, 33375), (103, 33327),

Gene: Phonnegut\_50 Start: 33716, Stop: 33153, Start Num: 19

Candidate Starts for Phonnegut\_50:

(Start: 17 @33731 has 60 MA's), (Start: 19 @33716 has 258 MA's), (54, 33590), (68, 33500), (93, 33401), (97, 33260),

Gene: Phoxy\_53 Start: 33881, Stop: 33294, Start Num: 19

Candidate Starts for Phoxy\_53:

(Start: 19 @33881 has 258 MA's), (Start: 22 @33875 has 1 MA's), (52, 33737), (56, 33728), (63, 33701), (64, 33698), (68, 33638), (72, 33617), (97, 33410), (103, 33362),

Gene: Phrankenstein\_39 Start: 29744, Stop: 29220, Start Num: 19

Candidate Starts for Phrankenstein\_39:

(Start: 19 @29744 has 258 MA's), (52, 29639), (97, 29327), (99, 29318), (100, 29309), (103, 29279),

Gene: Phranny\_54 Start: 33735, Stop: 33145, Start Num: 19

Candidate Starts for Phranny\_54:

(Start: 19 @33735 has 258 MA's), (Start: 22 @33729 has 1 MA's), (52, 33585), (56, 33576), (63, 33549), (72, 33465), (97, 33261), (103, 33213),

Gene: Pioneer\_50 Start: 33716, Stop: 33153, Start Num: 19

Candidate Starts for Pioneer\_50:

(Start: 17 @33731 has 60 MA's), (Start: 19 @33716 has 258 MA's), (54, 33590), (68, 33500), (93, 33401), (97, 33260),

Gene: Piro94\_50 Start: 34062, Stop: 33535, Start Num: 17

Candidate Starts for Piro94\_50:

(Start: 17 @34062 has 60 MA's), (Start: 19 @34047 has 258 MA's), (39, 33978), (57, 33942), (62, 33915), (67, 33864), (69, 33840), (72, 33828), (81, 33801), (85, 33792), (88, 33774), (97, 33648),

Gene: Pmask\_52 Start: 32781, Stop: 32215, Start Num: 19

Candidate Starts for Pmask\_52:

(Start: 17 @32796 has 60 MA's), (Start: 19 @32781 has 258 MA's), (50, 32670), (58, 32652), (87, 32490), (93, 32463), (97, 32325), (98, 32322),

Gene: Pomar16\_52 Start: 33509, Stop: 32931, Start Num: 19

Candidate Starts for Pomar16\_52:

(Start: 17 @33524 has 60 MA's), (Start: 19 @33509 has 258 MA's), (53, 33392), (55, 33386), (62, 33362), (66, 33314), (89, 33215), (91, 33206), (93, 33197), (97, 33044),

Gene: PotatoSplit\_55 Start: 33860, Stop: 33270, Start Num: 19

Candidate Starts for PotatoSplit\_55:

(Start: 19 @33860 has 258 MA's), (Start: 22 @33854 has 1 MA's), (52, 33710), (56, 33701), (63, 33674), (72, 33590), (97, 33386), (103, 33338),

Gene: Power\_49 Start: 33684, Stop: 33163, Start Num: 19

Candidate Starts for Power\_49:

(Start: 17 @33699 has 60 MA's), (Start: 19 @33684 has 258 MA's), (57, 33570), (62, 33543), (65, 33498), (67, 33492), (69, 33468), (81, 33429), (85, 33420), (97, 33273), (100, 33255), (103, 33225),

Gene: Priamo\_54 Start: 32522, Stop: 31971, Start Num: 19

Candidate Starts for Priamo\_54:

(Start: 16 @32537 has 1 MA's), (Start: 19 @32522 has 258 MA's), (66, 32312), (67, 32309), (81, 32246), (85, 32237), (97, 32081), (98, 32078),

Gene: Priya\_50 Start: 33686, Stop: 33171, Start Num: 19

Candidate Starts for Priya\_50:

(Start: 17 @33701 has 60 MA's), (Start: 19 @33686 has 258 MA's), (43, 33593), (57, 33569), (67, 33491), (81, 33428), (97, 33278),

Gene: Pukovnik\_49 Start: 34501, Stop: 33938, Start Num: 17

Candidate Starts for Pukovnik\_49:

(Start: 17 @34501 has 60 MA's), (Start: 19 @34486 has 258 MA's), (64, 34354), (66, 34312), (77, 34255), (87, 34222), (93, 34195), (97, 34045), (100, 34027),

Gene: PurpleHaze\_53 Start: 33748, Stop: 33158, Start Num: 19

Candidate Starts for PurpleHaze\_53:

(Start: 19 @33748 has 258 MA's), (Start: 22 @33742 has 1 MA's), (52, 33598), (56, 33589), (63, 33562), (72, 33478), (97, 33274), (103, 33226),

Gene: Qobbit\_50 Start: 33648, Stop: 33133, Start Num: 19

Candidate Starts for Qobbit\_50:

(Start: 17 @33663 has 60 MA's), (Start: 19 @33648 has 258 MA's), (43, 33555), (57, 33531), (67, 33453), (81, 33390), (97, 33240),

Gene: QueenB2\_49 Start: 33638, Stop: 33120, Start Num: 19

Candidate Starts for QueenB2\_49:

(Start: 17 @33653 has 60 MA's), (Start: 19 @33638 has 258 MA's), (57, 33524), (62, 33497), (67, 33446), (69, 33422), (81, 33383), (85, 33374), (97, 33230), (100, 33212), (103, 33182),

Gene: QueenBeesly\_50 Start: 33631, Stop: 33110, Start Num: 19

Candidate Starts for QueenBeesly\_50:

(Start: 17 @33646 has 60 MA's), (Start: 19 @33631 has 258 MA's), (57, 33517), (62, 33490), (65, 33445), (67, 33439), (69, 33415), (81, 33376), (85, 33367), (97, 33220), (100, 33202), (103, 33172),

Gene: RER2\_32 Start: 26670, Stop: 26146, Start Num: 19  
Candidate Starts for RER2\_32:  
(Start: 19 @26670 has 258 MA's), (52, 26565), (97, 26253), (99, 26244), (100, 26235), (103, 26205),

Gene: RGL3\_34 Start: 27554, Stop: 27051, Start Num: 19  
Candidate Starts for RGL3\_34:  
(13, 27584), (Start: 19 @27554 has 258 MA's), (51, 27464), (97, 27158), (99, 27149), (103, 27110),

Gene: Rachaly\_49 Start: 33948, Stop: 33430, Start Num: 19  
Candidate Starts for Rachaly\_49:  
(14, 33975), (Start: 17 @33963 has 60 MA's), (Start: 19 @33948 has 258 MA's), (39, 33876), (57, 33840), (59, 33834), (62, 33813), (67, 33762), (69, 33738), (72, 33726), (81, 33699), (97, 33540), (100, 33522), (103, 33492),

Gene: Rahalelujah\_50 Start: 33197, Stop: 32670, Start Num: 19  
Candidate Starts for Rahalelujah\_50:  
(Start: 17 @33212 has 60 MA's), (Start: 19 @33197 has 258 MA's), (47, 33098), (57, 33074), (67, 32996), (69, 32972), (81, 32933), (97, 32777),

Gene: Rasputin\_39 Start: 29768, Stop: 29244, Start Num: 19  
Candidate Starts for Rasputin\_39:  
(Start: 19 @29768 has 258 MA's), (52, 29663), (97, 29351), (99, 29342), (100, 29333), (103, 29303),

Gene: ReMo\_53 Start: 32531, Stop: 31989, Start Num: 25  
Candidate Starts for ReMo\_53:  
(Start: 25 @32531 has 11 MA's), (26, 32525), (48, 32420), (59, 32393), (60, 32390), (73, 32279), (79, 32258), (83, 32249), (85, 32240), (97, 32093), (103, 32048),

Gene: Reba\_53 Start: 33408, Stop: 32818, Start Num: 19  
Candidate Starts for Reba\_53:  
(Start: 19 @33408 has 258 MA's), (Start: 22 @33402 has 1 MA's), (52, 33258), (56, 33249), (63, 33222), (72, 33138), (97, 32934), (103, 32886),

Gene: RedRock\_52 Start: 34849, Stop: 34322, Start Num: 19  
Candidate Starts for RedRock\_52:  
(Start: 17 @34864 has 60 MA's), (Start: 19 @34849 has 258 MA's), (57, 34735), (62, 34708), (65, 34663), (67, 34657), (69, 34633), (81, 34594), (97, 34435), (100, 34417), (103, 34387),

Gene: Refuge\_49 Start: 34874, Stop: 34341, Start Num: 17  
Candidate Starts for Refuge\_49:  
(Start: 17 @34874 has 60 MA's), (Start: 19 @34859 has 258 MA's), (37, 34790), (57, 34748), (72, 34637), (97, 34442), (98, 34439),

Gene: Remus\_54 Start: 32444, Stop: 31914, Start Num: 25  
Candidate Starts for Remus\_54:  
(Start: 25 @32444 has 11 MA's), (26, 32438), (34, 32378), (68, 32219), (72, 32201), (82, 32174), (97, 32018), (103, 31973),

Gene: Retro23\_51 Start: 34038, Stop: 33517, Start Num: 19  
Candidate Starts for Retro23\_51:  
(Start: 17 @34053 has 60 MA's), (Start: 19 @34038 has 258 MA's), (57, 33924), (62, 33897), (67, 33846), (69, 33822), (81, 33783), (85, 33774), (97, 33627), (100, 33609), (103, 33579),



Gene: RexFury\_39 Start: 29829, Stop: 29305, Start Num: 19  
Candidate Starts for RexFury\_39:  
(Start: 19 @29829 has 258 MA's), (52, 29724), (97, 29412), (99, 29403), (100, 29394), (103, 29364),

Gene: Rhodalysa\_39 Start: 29798, Stop: 29274, Start Num: 19  
Candidate Starts for Rhodalysa\_39:  
(Start: 19 @29798 has 258 MA's), (52, 29693), (97, 29381), (99, 29372), (100, 29363), (103, 29333),

Gene: Rifter\_53 Start: 32329, Stop: 31766, Start Num: 16  
Candidate Starts for Rifter\_53:  
(Start: 16 @32329 has 1 MA's), (Start: 19 @32314 has 258 MA's), (66, 32104), (67, 32101), (81, 32038), (85, 32029), (97, 31876), (98, 31873),

Gene: Roksolana\_53 Start: 32814, Stop: 32257, Start Num: 19  
Candidate Starts for Roksolana\_53:  
(Start: 1 @33012 has 4 MA's), (2, 32997), (3, 32976), (4, 32946), (5, 32940), (Start: 19 @32814 has 258 MA's), (66, 32604), (67, 32601), (81, 32538), (85, 32529), (97, 32367), (98, 32364),

Gene: Rummer\_52 Start: 33884, Stop: 33297, Start Num: 19  
Candidate Starts for Rummer\_52:  
(Start: 19 @33884 has 258 MA's), (Start: 22 @33878 has 1 MA's), (52, 33740), (56, 33731), (63, 33704), (64, 33701), (68, 33641), (72, 33620), (97, 33413), (103, 33365),

Gene: Sabia\_53 Start: 33865, Stop: 33260, Start Num: 19  
Candidate Starts for Sabia\_53:  
(Start: 19 @33865 has 258 MA's), (Start: 22 @33859 has 1 MA's), (52, 33715), (56, 33706), (63, 33679), (72, 33595), (97, 33376), (103, 33328),

Gene: Sabinator\_52 Start: 33855, Stop: 33265, Start Num: 19  
Candidate Starts for Sabinator\_52:  
(Start: 19 @33855 has 258 MA's), (Start: 22 @33849 has 1 MA's), (52, 33705), (56, 33696), (63, 33669), (72, 33585), (97, 33381), (103, 33333),

Gene: Salz\_49 Start: 32793, Stop: 32224, Start Num: 19  
Candidate Starts for Salz\_49:  
(Start: 19 @32793 has 258 MA's), (54, 32658), (86, 32493), (97, 32337),

Gene: Scherzo\_50 Start: 33905, Stop: 33342, Start Num: 19  
Candidate Starts for Scherzo\_50:  
(Start: 17 @33920 has 60 MA's), (Start: 19 @33905 has 258 MA's), (54, 33779), (68, 33689), (93, 33590), (97, 33449),

Gene: SemperFi\_51 Start: 33914, Stop: 33378, Start Num: 17  
Candidate Starts for SemperFi\_51:  
(Start: 17 @33914 has 60 MA's), (Start: 19 @33899 has 258 MA's), (57, 33785), (62, 33758), (65, 33713), (67, 33707), (69, 33683), (81, 33644), (85, 33635), (97, 33488), (100, 33470), (103, 33440),

Gene: Serenity\_50 Start: 32842, Stop: 32324, Start Num: 19  
Candidate Starts for Serenity\_50:  
(Start: 19 @32842 has 258 MA's), (39, 32764), (57, 32731), (67, 32653), (72, 32617), (81, 32590), (97, 32434),

Gene: Sham4\_50 Start: 32821, Stop: 32252, Start Num: 19

Candidate Starts for Sham4\_50:

(Start: 19 @32821 has 258 MA's), (54, 32686), (86, 32521), (97, 32365),

Gene: SheaKeira\_49 Start: 33305, Stop: 32739, Start Num: 19

Candidate Starts for SheaKeira\_49:

(Start: 17 @33320 has 60 MA's), (Start: 19 @33305 has 258 MA's), (40, 33215), (54, 33182), (93, 32990), (97, 32846),

Gene: Sheen\_50 Start: 35605, Stop: 35081, Start Num: 20

Candidate Starts for Sheen\_50:

(Start: 20 @35605 has 5 MA's), (46, 35509), (66, 35416), (78, 35353), (79, 35350), (83, 35341), (90, 35308), (97, 35173), (104, 35128),

Gene: Shuman\_39 Start: 29809, Stop: 29285, Start Num: 19

Candidate Starts for Shuman\_39:

(Start: 19 @29809 has 258 MA's), (52, 29704), (97, 29392), (99, 29383), (100, 29374), (103, 29344),

Gene: Smeagan\_53 Start: 34354, Stop: 33827, Start Num: 19

Candidate Starts for Smeagan\_53:

(Start: 17 @34369 has 60 MA's), (Start: 19 @34354 has 258 MA's), (39, 34267), (57, 34231), (62, 34204), (65, 34159), (67, 34153), (69, 34129), (81, 34090), (97, 33937), (100, 33919), (103, 33889),

Gene: SmellyB\_52 Start: 32793, Stop: 32206, Start Num: 17

Candidate Starts for SmellyB\_52:

(Start: 17 @32793 has 60 MA's), (Start: 19 @32778 has 258 MA's), (50, 32667), (58, 32649), (87, 32487), (93, 32460), (97, 32316), (98, 32313),

Gene: SnapTap\_50 Start: 33710, Stop: 33189, Start Num: 19

Candidate Starts for SnapTap\_50:

(Start: 17 @33725 has 60 MA's), (Start: 19 @33710 has 258 MA's), (57, 33596), (62, 33569), (65, 33524), (67, 33518), (69, 33494), (81, 33455), (85, 33446), (97, 33299), (100, 33281), (103, 33251),

Gene: Snape\_50 Start: 32813, Stop: 32250, Start Num: 19

Candidate Starts for Snape\_50:

(Start: 19 @32813 has 258 MA's), (54, 32684), (86, 32519), (97, 32363),

Gene: Snickers\_53 Start: 33830, Stop: 33240, Start Num: 19

Candidate Starts for Snickers\_53:

(Start: 19 @33830 has 258 MA's), (Start: 22 @33824 has 1 MA's), (52, 33680), (56, 33671), (63, 33644), (72, 33560), (97, 33356), (103, 33308),

Gene: SoYo\_53 Start: 33768, Stop: 33178, Start Num: 19

Candidate Starts for SoYo\_53:

(Start: 19 @33768 has 258 MA's), (Start: 22 @33762 has 1 MA's), (52, 33618), (56, 33609), (63, 33582), (72, 33498), (97, 33294), (103, 33246),

Gene: SoilDragon\_53 Start: 33304, Stop: 32714, Start Num: 19

Candidate Starts for SoilDragon\_53:

(Start: 19 @33304 has 258 MA's), (Start: 22 @33298 has 1 MA's), (52, 33154), (56, 33145), (63, 33118), (72, 33034), (97, 32830), (103, 32782),

Gene: SororFago\_52 Start: 34625, Stop: 34074, Start Num: 17

Candidate Starts for SororFago\_52:

(Start: 17 @34625 has 60 MA's), (Start: 19 @34610 has 258 MA's), (38, 34526), (40, 34517), (57, 34484), (62, 34457), (65, 34412), (67, 34406), (69, 34382), (81, 34343), (85, 34334), (97, 34184), (103, 34139),

Gene: Soshari\_55 Start: 33880, Stop: 33293, Start Num: 19

Candidate Starts for Soshari\_55:

(Start: 19 @33880 has 258 MA's), (Start: 22 @33874 has 1 MA's), (52, 33736), (56, 33727), (63, 33700), (64, 33697), (68, 33637), (72, 33616), (97, 33409), (103, 33361),

Gene: Spike509\_53 Start: 33881, Stop: 33294, Start Num: 19

Candidate Starts for Spike509\_53:

(Start: 19 @33881 has 258 MA's), (Start: 22 @33875 has 1 MA's), (52, 33737), (56, 33728), (63, 33701), (64, 33698), (68, 33638), (72, 33617), (97, 33410), (103, 33362),

Gene: Spouty\_48 Start: 33685, Stop: 33170, Start Num: 19

Candidate Starts for Spouty\_48:

(Start: 17 @33700 has 60 MA's), (Start: 19 @33685 has 258 MA's), (43, 33592), (57, 33568), (67, 33490), (81, 33427), (97, 33277),

Gene: StCroix\_39 Start: 29811, Stop: 29287, Start Num: 19

Candidate Starts for StCroix\_39:

(Start: 19 @29811 has 258 MA's), (52, 29706), (97, 29394), (99, 29385), (100, 29376), (103, 29346),

Gene: Stagni\_53 Start: 33859, Stop: 33269, Start Num: 19

Candidate Starts for Stagni\_53:

(Start: 19 @33859 has 258 MA's), (Start: 22 @33853 has 1 MA's), (52, 33709), (56, 33700), (63, 33673), (72, 33589), (97, 33385), (103, 33337),

Gene: StarStuff\_52 Start: 33471, Stop: 32893, Start Num: 19

Candidate Starts for StarStuff\_52:

(Start: 17 @33486 has 60 MA's), (Start: 19 @33471 has 258 MA's), (53, 33354), (55, 33348), (62, 33324), (66, 33276), (89, 33177), (91, 33168), (93, 33159), (97, 33006),

Gene: Steamy\_46 Start: 33175, Stop: 32648, Start Num: 19

Candidate Starts for Steamy\_46:

(Start: 17 @33190 has 60 MA's), (Start: 19 @33175 has 258 MA's), (47, 33073), (67, 32971), (81, 32908), (97, 32749),

Gene: StepMih\_53 Start: 33850, Stop: 33260, Start Num: 19

Candidate Starts for StepMih\_53:

(Start: 19 @33850 has 258 MA's), (Start: 22 @33844 has 1 MA's), (52, 33700), (56, 33691), (63, 33664), (72, 33580), (97, 33376), (103, 33328),

Gene: Strosahl\_54 Start: 32444, Stop: 31914, Start Num: 25

Candidate Starts for Strosahl\_54:

(Start: 25 @32444 has 11 MA's), (26, 32438), (34, 32378), (68, 32219), (72, 32201), (82, 32174), (97, 32018), (103, 31973),

Gene: Success\_22 Start: 13796, Stop: 13275, Start Num: 33

Candidate Starts for Success\_22:

(Start: 33 @13796 has 1 MA's), (50, 13724), (55, 13709), (72, 13592), (74, 13583), (75, 13577), (76, 13574),

Gene: SuperAwesome\_52 Start: 32807, Stop: 32214, Start Num: 17

Candidate Starts for SuperAwesome\_52:

(Start: 17 @32807 has 60 MA's), (Start: 19 @32792 has 258 MA's), (50, 32681), (58, 32663), (87, 32501), (93, 32474), (97, 32324), (98, 32321),

Gene: SuperCallie99\_51 Start: 32665, Stop: 32087, Start Num: 19

Candidate Starts for SuperCallie99\_51:

(Start: 17 @32680 has 60 MA's), (Start: 19 @32665 has 258 MA's), (50, 32554), (58, 32536), (87, 32374), (93, 32347), (97, 32197), (98, 32194),

Gene: Superchunk\_49 Start: 32358, Stop: 31759, Start Num: 19

Candidate Starts for Superchunk\_49:

(Start: 17 @32373 has 60 MA's), (Start: 19 @32358 has 258 MA's), (54, 32208), (66, 32133), (73, 32088), (93, 32016), (97, 31869), (98, 31866), (100, 31851), (103, 31824),

Gene: Swann\_39 Start: 29796, Stop: 29272, Start Num: 19

Candidate Starts for Swann\_39:

(Start: 19 @29796 has 258 MA's), (52, 29691), (97, 29379), (99, 29370), (100, 29361), (103, 29331),

Gene: SweetiePie\_50 Start: 33842, Stop: 33318, Start Num: 19

Candidate Starts for SweetiePie\_50:

(Start: 17 @33857 has 60 MA's), (Start: 19 @33842 has 258 MA's), (57, 33728), (62, 33701), (65, 33656), (67, 33650), (69, 33626), (81, 33587), (85, 33578), (97, 33428), (100, 33410), (103, 33380),

Gene: SwirlSquare\_55 Start: 33014, Stop: 32430, Start Num: 19

Candidate Starts for SwirlSquare\_55:

(Start: 17 @33029 has 60 MA's), (Start: 19 @33014 has 258 MA's), (64, 32849), (68, 32789), (93, 32690), (97, 32537), (98, 32534), (103, 32492),

Gene: TWAMP\_39 Start: 29798, Stop: 29274, Start Num: 19

Candidate Starts for TWAMP\_39:

(Start: 19 @29798 has 258 MA's), (52, 29693), (97, 29381), (99, 29372), (100, 29363), (103, 29333),

Gene: Takoda\_39 Start: 29771, Stop: 29247, Start Num: 19

Candidate Starts for Takoda\_39:

(Start: 19 @29771 has 258 MA's), (52, 29666), (97, 29354), (99, 29345), (100, 29336), (103, 29306),

Gene: TarsusIV\_49 Start: 33682, Stop: 33143, Start Num: 19

Candidate Starts for TarsusIV\_49:

(Start: 17 @33697 has 60 MA's), (Start: 19 @33682 has 258 MA's), (42, 33598), (57, 33562), (62, 33535), (65, 33490), (67, 33484), (69, 33460), (80, 33424), (81, 33421), (85, 33412), (97, 33256),

Gene: Taurus\_54 Start: 33856, Stop: 33266, Start Num: 19

Candidate Starts for Taurus\_54:

(Start: 19 @33856 has 258 MA's), (Start: 22 @33850 has 1 MA's), (52, 33706), (56, 33697), (63, 33670), (72, 33586), (97, 33382), (103, 33334),

Gene: Teodoridan\_45 Start: 34988, Stop: 34497, Start Num: 30

Candidate Starts for Teodoridan\_45:

(Start: 30 @34988 has 8 MA's), (31, 34982), (43, 34907), (58, 34886), (82, 34754), (85, 34745), (94, 34694), (100, 34586), (104, 34550),

Gene: Tiffany\_53 Start: 33742, Stop: 33152, Start Num: 19

Candidate Starts for Tiffany\_53:

(Start: 19 @33742 has 258 MA's), (Start: 22 @33736 has 1 MA's), (52, 33592), (56, 33583), (63, 33556), (72, 33472), (97, 33268), (103, 33220),

Gene: Timothy\_50 Start: 32790, Stop: 32227, Start Num: 19

Candidate Starts for Timothy\_50:

(Start: 19 @32790 has 258 MA's), (54, 32661), (86, 32496), (97, 32340),

Gene: Timshel\_47 Start: 34579, Stop: 34079, Start Num: 20

Candidate Starts for Timshel\_47:

(Start: 20 @34579 has 5 MA's), (54, 34474), (72, 34354), (83, 34324), (104, 34126),

Gene: TinyTimmy\_49 Start: 32839, Stop: 32270, Start Num: 19

Candidate Starts for TinyTimmy\_49:

(Start: 19 @32839 has 258 MA's), (54, 32704), (86, 32539), (97, 32383),

Gene: TopsytheTRex\_46 Start: 32912, Stop: 32397, Start Num: 19

Candidate Starts for TopsytheTRex\_46:

(Start: 19 @32912 has 258 MA's), (39, 32834), (57, 32801), (67, 32723), (72, 32687), (81, 32660), (97, 32507),

Gene: Toaka\_50 Start: 33510, Stop: 32944, Start Num: 19

Candidate Starts for Toaka\_50:

(Start: 17 @33525 has 60 MA's), (Start: 19 @33510 has 258 MA's), (41, 33411), (42, 33408), (68, 33297), (93, 33198), (97, 33051),

Gene: Tomathan\_52 Start: 33468, Stop: 32890, Start Num: 19

Candidate Starts for Tomathan\_52:

(Start: 17 @33483 has 60 MA's), (Start: 19 @33468 has 258 MA's), (53, 33351), (55, 33345), (62, 33321), (66, 33273), (70, 33243), (89, 33174), (91, 33165), (93, 33156), (97, 33003),

Gene: ToneTone\_49 Start: 32472, Stop: 31927, Start Num: 19

Candidate Starts for ToneTone\_49:

(6, 32586), (7, 32571), (Start: 17 @32487 has 60 MA's), (Start: 19 @32472 has 258 MA's), (66, 32262), (67, 32259), (81, 32196), (85, 32187), (97, 32037), (98, 32034),

Gene: Topgun\_46 Start: 35080, Stop: 34586, Start Num: 30

Candidate Starts for Topgun\_46:

(Start: 30 @35080 has 8 MA's), (31, 35074), (43, 34999), (58, 34978), (82, 34843), (85, 34834), (94, 34783), (100, 34675), (104, 34639),

Gene: Trixie\_48 Start: 33814, Stop: 33275, Start Num: 17

Candidate Starts for Trixie\_48:

(Start: 17 @33814 has 60 MA's), (Start: 19 @33799 has 258 MA's), (39, 33712), (62, 33649), (67, 33598), (69, 33574), (81, 33535), (97, 33385), (100, 33367), (103, 33337),

Gene: Trooper\_51 Start: 34077, Stop: 33538, Start Num: 17

Candidate Starts for Trooper\_51:

(14, 34089), (Start: 17 @34077 has 60 MA's), (Start: 19 @34062 has 258 MA's), (39, 33984), (57, 33948), (62, 33921), (67, 33870), (69, 33846), (72, 33834), (81, 33807), (97, 33651), (100, 33633),

Gene: Tubs\_50 Start: 33619, Stop: 33104, Start Num: 19

Candidate Starts for Tubs\_50:

(Start: 17 @33634 has 60 MA's), (Start: 19 @33619 has 258 MA's), (43, 33526), (57, 33502), (67, 33424), (81, 33361), (97, 33211),

Gene: Tucker\_53 Start: 32940, Stop: 32392, Start Num: 19

Candidate Starts for Tucker\_53:

(Start: 16 @32955 has 1 MA's), (Start: 19 @32940 has 258 MA's), (66, 32730), (67, 32727), (81, 32664), (85, 32655), (97, 32502), (98, 32499),

Gene: Turbido\_51 Start: 34088, Stop: 33570, Start Num: 19

Candidate Starts for Turbido\_51:

(Start: 17 @34103 has 60 MA's), (Start: 19 @34088 has 258 MA's), (39, 34004), (57, 33968), (65, 33896), (67, 33890), (69, 33866), (70, 33863), (81, 33827), (97, 33680), (100, 33662), (103, 33632),

Gene: Ugenie5\_47 Start: 33904, Stop: 33341, Start Num: 19

Candidate Starts for Ugenie5\_47:

(Start: 17 @33919 has 60 MA's), (Start: 19 @33904 has 258 MA's), (54, 33778), (68, 33688), (93, 33589), (97, 33448),

Gene: UhSalsa\_39 Start: 29797, Stop: 29273, Start Num: 19

Candidate Starts for UhSalsa\_39:

(Start: 19 @29797 has 258 MA's), (52, 29692), (97, 29380), (99, 29371), (100, 29362), (103, 29332),

Gene: Updawg\_51 Start: 33944, Stop: 33435, Start Num: 19

Candidate Starts for Updawg\_51:

(Start: 17 @33959 has 60 MA's), (Start: 19 @33944 has 258 MA's), (39, 33875), (57, 33839), (62, 33812), (65, 33767), (67, 33761), (69, 33737), (72, 33725), (81, 33698), (85, 33689), (88, 33671), (97, 33548),

Gene: VA6\_51 Start: 34058, Stop: 33534, Start Num: 19

Candidate Starts for VA6\_51:

(Start: 17 @34073 has 60 MA's), (Start: 19 @34058 has 258 MA's), (50, 33953), (62, 33908), (69, 33833), (81, 33794), (97, 33644), (100, 33626), (103, 33596),

Gene: VC3\_53 Start: 33887, Stop: 33309, Start Num: 19

Candidate Starts for VC3\_53:

(Start: 17 @33902 has 60 MA's), (Start: 19 @33887 has 258 MA's), (53, 33773), (55, 33767), (62, 33740), (66, 33692), (70, 33662), (88, 33596), (89, 33593), (91, 33584), (93, 33575), (97, 33422),

Gene: Vanisoa\_50 Start: 34540, Stop: 33974, Start Num: 19

Candidate Starts for Vanisoa\_50:

(Start: 17 @34555 has 60 MA's), (Start: 19 @34540 has 258 MA's), (47, 34429), (93, 34234), (97, 34081),

Gene: Vix\_53 Start: 33939, Stop: 33349, Start Num: 19

Candidate Starts for Vix\_53:

(Start: 19 @33939 has 258 MA's), (Start: 22 @33933 has 1 MA's), (52, 33789), (56, 33780), (63, 33753), (72, 33669), (97, 33465), (103, 33417),

Gene: VohminGhazi\_52 Start: 32779, Stop: 32207, Start Num: 19

Candidate Starts for VohminGhazi\_52:

(Start: 17 @32794 has 60 MA's), (Start: 19 @32779 has 258 MA's), (50, 32668), (58, 32650), (87, 32488), (93, 32461), (97, 32317), (98, 32314),

Gene: Waits\_54 Start: 32652, Stop: 32116, Start Num: 25

Candidate Starts for Waits\_54:

(Start: 25 @32652 has 11 MA's), (26, 32646), (34, 32586), (68, 32427), (72, 32409), (82, 32382), (97, 32220), (103, 32175),

Gene: Watson\_53 Start: 33848, Stop: 33258, Start Num: 19

Candidate Starts for Watson\_53:

(Start: 19 @33848 has 258 MA's), (Start: 22 @33842 has 1 MA's), (52, 33698), (56, 33689), (63, 33662), (72, 33578), (97, 33374), (103, 33326),

Gene: WeiHuaDA\_52 Start: 34601, Stop: 34083, Start Num: 19

Candidate Starts for WeiHuaDA\_52:

(Start: 17 @34616 has 60 MA's), (Start: 19 @34601 has 258 MA's), (37, 34529), (39, 34517), (57, 34481), (59, 34475), (62, 34454), (65, 34409), (67, 34403), (69, 34379), (81, 34340), (97, 34193), (100, 34175), (103, 34145),

Gene: Whabigail7\_51 Start: 34073, Stop: 33555, Start Num: 19

Candidate Starts for Whabigail7\_51:

(Start: 17 @34088 has 60 MA's), (Start: 19 @34073 has 258 MA's), (39, 33989), (57, 33953), (65, 33881), (67, 33875), (69, 33851), (70, 33848), (72, 33839), (81, 33812), (97, 33665), (100, 33647), (103, 33617),

Gene: WideWale\_51 Start: 33959, Stop: 33435, Start Num: 17

Candidate Starts for WideWale\_51:

(Start: 17 @33959 has 60 MA's), (Start: 19 @33944 has 258 MA's), (39, 33875), (57, 33839), (62, 33812), (65, 33767), (67, 33761), (69, 33737), (72, 33725), (81, 33698), (85, 33689), (88, 33671), (97, 33548),

Gene: Wiks\_51 Start: 32558, Stop: 31995, Start Num: 17

Candidate Starts for Wiks\_51:

(6, 32657), (7, 32642), (Start: 17 @32558 has 60 MA's), (Start: 19 @32543 has 258 MA's), (66, 32333), (67, 32330), (81, 32267), (85, 32258), (97, 32105), (98, 32102),

Gene: Wilkins\_46 Start: 35010, Stop: 34519, Start Num: 30

Candidate Starts for Wilkins\_46:

(Start: 30 @35010 has 8 MA's), (31, 35004), (43, 34929), (58, 34908), (67, 34839), (82, 34776), (85, 34767), (94, 34716), (100, 34608), (104, 34572),

Gene: Wooldri\_55 Start: 33768, Stop: 33178, Start Num: 19

Candidate Starts for Wooldri\_55:

(Start: 19 @33768 has 258 MA's), (Start: 22 @33762 has 1 MA's), (52, 33618), (56, 33609), (63, 33582), (72, 33498), (97, 33294), (103, 33246),

Gene: WunderPhul\_52 Start: 32541, Stop: 31993, Start Num: 19

Candidate Starts for WunderPhul\_52:

(6, 32655), (7, 32640), (Start: 17 @32556 has 60 MA's), (Start: 19 @32541 has 258 MA's), (66, 32331), (67, 32328), (81, 32265), (85, 32256), (97, 32103), (98, 32100),

Gene: XianYue\_49 Start: 33430, Stop: 32909, Start Num: 19

Candidate Starts for XianYue\_49:

(Start: 17 @33445 has 60 MA's), (Start: 19 @33430 has 258 MA's), (57, 33310), (62, 33283), (65, 33238), (67, 33232), (81, 33169), (97, 33019), (100, 33001), (103, 32971),

Gene: Yecey3\_51 Start: 33196, Stop: 32624, Start Num: 19

Candidate Starts for Yecey3\_51:

(Start: 17 @33211 has 60 MA's), (Start: 19 @33196 has 258 MA's), (64, 33043), (66, 33001), (87, 32911), (93, 32884), (97, 32731),

Gene: Yogi\_39 Start: 29772, Stop: 29248, Start Num: 19

Candidate Starts for Yogi\_39:

(Start: 19 @29772 has 258 MA's), (52, 29667), (97, 29355), (99, 29346), (100, 29337), (103, 29307),

Gene: Yokurt\_52 Start: 32543, Stop: 31995, Start Num: 19

Candidate Starts for Yokurt\_52:

(6, 32657), (7, 32642), (Start: 17 @32558 has 60 MA's), (Start: 19 @32543 has 258 MA's), (66, 32333), (67, 32330), (81, 32267), (85, 32258), (97, 32105), (98, 32102),

Gene: Yoncess\_39 Start: 29773, Stop: 29249, Start Num: 19

Candidate Starts for Yoncess\_39:

(Start: 19 @29773 has 258 MA's), (52, 29668), (97, 29356), (99, 29347), (100, 29338), (103, 29308),

Gene: Zaka\_52 Start: 32543, Stop: 31995, Start Num: 19

Candidate Starts for Zaka\_52:

(6, 32657), (7, 32642), (Start: 17 @32558 has 60 MA's), (Start: 19 @32543 has 258 MA's), (66, 32333), (67, 32330), (81, 32267), (85, 32258), (97, 32105), (98, 32102),

Gene: Zetzy\_52 Start: 33419, Stop: 32829, Start Num: 19

Candidate Starts for Zetzy\_52:

(Start: 19 @33419 has 258 MA's), (Start: 22 @33413 has 1 MA's), (52, 33269), (56, 33260), (63, 33233), (72, 33149), (97, 32945), (103, 32897),

Gene: Zimmer\_47 Start: 34365, Stop: 33847, Start Num: 19

Candidate Starts for Zimmer\_47:

(Start: 17 @34380 has 60 MA's), (Start: 19 @34365 has 258 MA's), (37, 34296), (57, 34257), (72, 34146), (97, 33948), (98, 33945),

Gene: Zulu\_53 Start: 32936, Stop: 32373, Start Num: 17

Candidate Starts for Zulu\_53:

(6, 33035), (7, 33020), (Start: 17 @32936 has 60 MA's), (Start: 19 @32921 has 258 MA's), (66, 32711), (67, 32708), (81, 32645), (85, 32636), (97, 32483), (98, 32480),