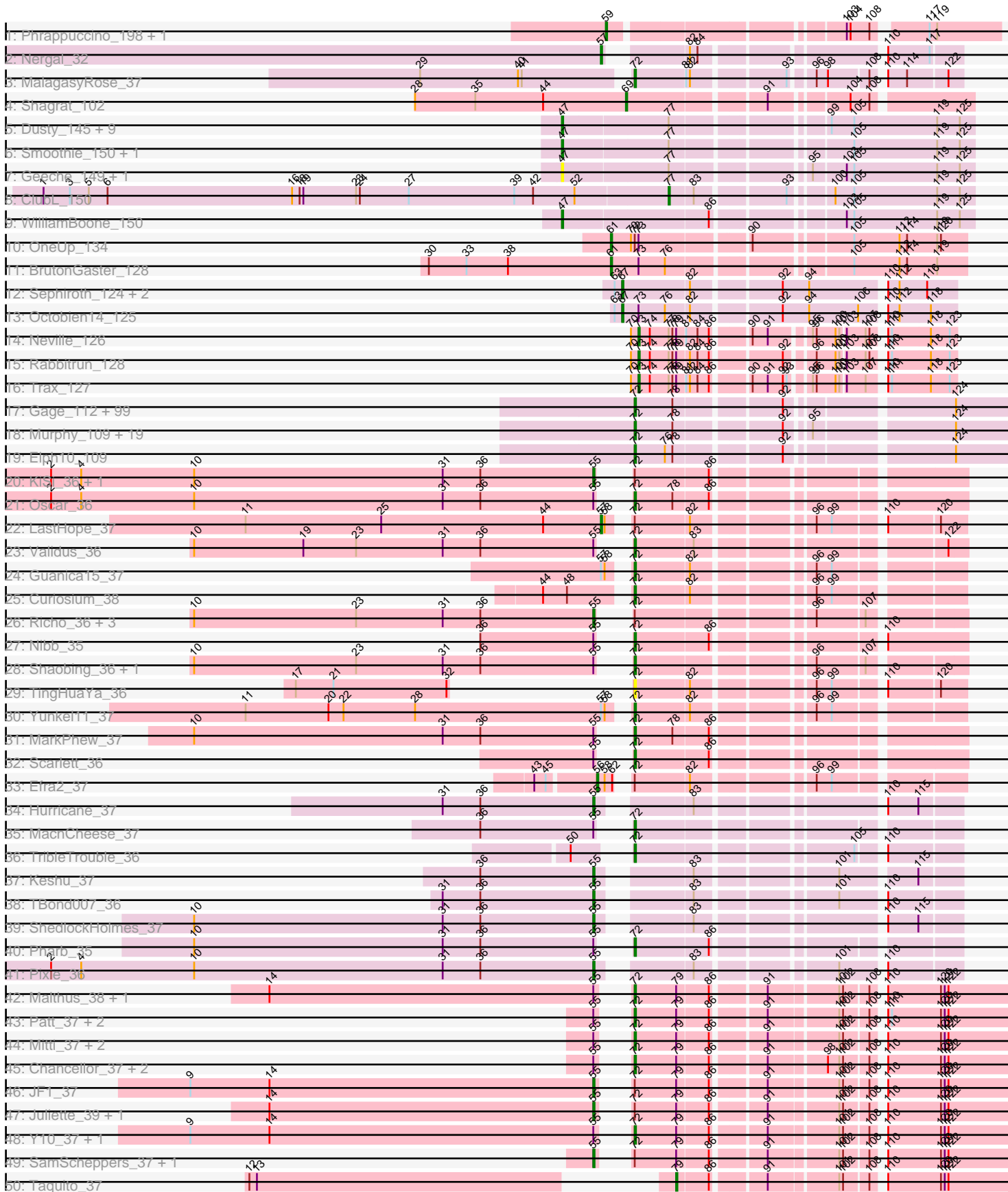
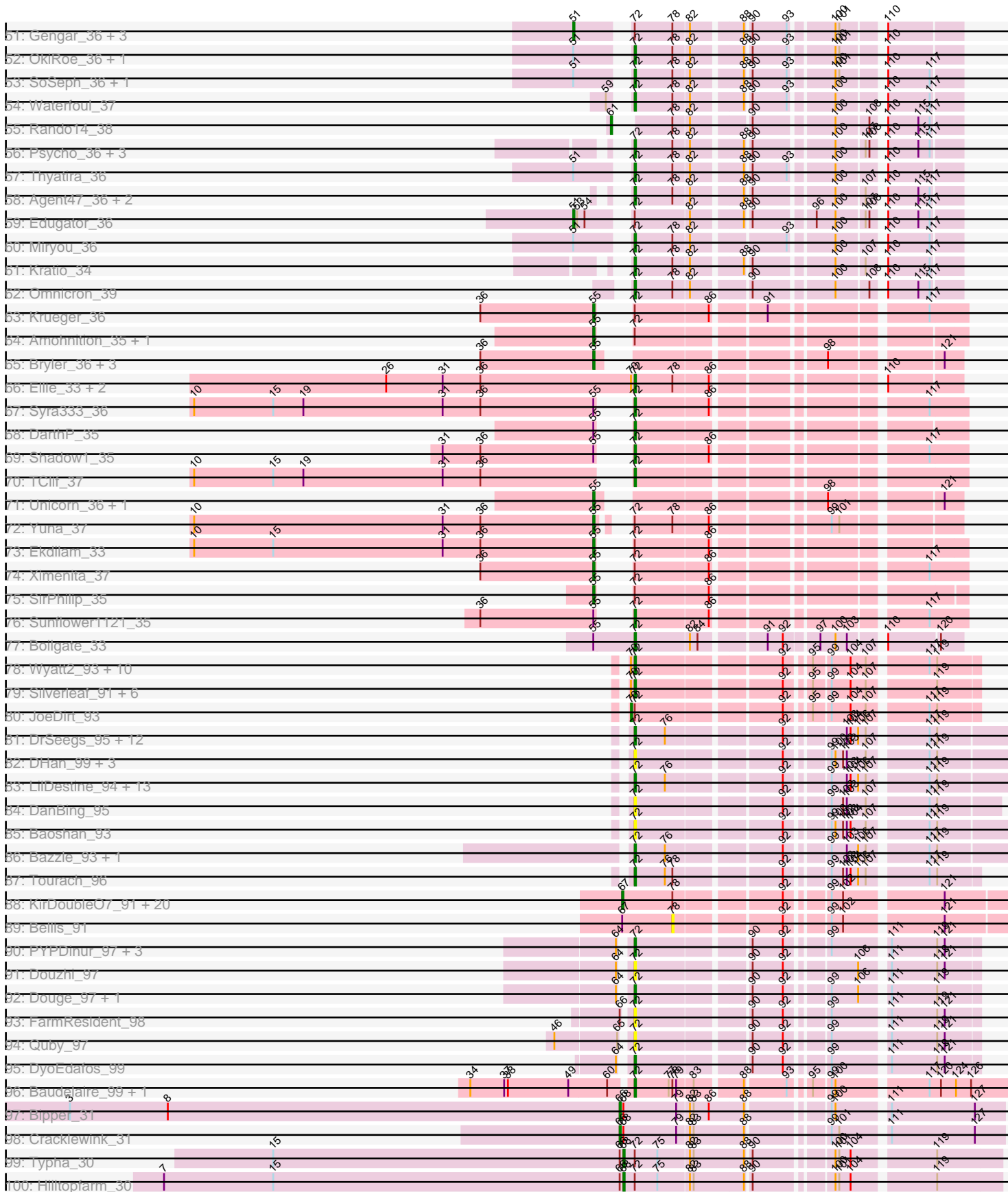


Pham 193663



Pham 193663





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 193663 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193663 has 337 members, 31 are drafts.

Phages represented in each track:

- Track 1 : Phrappuccino\_198, Settecandela\_223
- Track 2 : Nergal\_32
- Track 3 : MalagasyRose\_37
- Track 4 : Shagrat\_102
- Track 5 : Dusty\_145, Lozinak\_149, Miskis\_147, Toniann\_149, Bachita\_152, Aphelion\_148, Norvs\_147, PhinkBoden\_147, Cucurbita\_148, Engineer\_151
- Track 6 : Smoothie\_150, Culver\_149
- Track 7 : Geeche\_149, Abscondus\_148
- Track 8 : ClubL\_150
- Track 9 : WilliamBoone\_150
- Track 10 : OneUp\_134
- Track 11 : BrutonGaster\_128
- Track 12 : Sephiroth\_124, Kudefre\_129, Syleon\_129
- Track 13 : Octobien14\_125
- Track 14 : Neville\_126
- Track 15 : Rabbitrun\_128
- Track 16 : Trax\_127
- Track 17 : Gage\_112, Glexan\_109, Lilizi\_110, JeTaime\_108, Lilpickle\_109, Hopey\_110, Nimrod\_110, IHOP\_108, Paperbeatsrock\_109, Traaww1\_106, Stark\_110, DrDrey\_110, Kimchi\_114, PhatBacter\_113, RiverMonster\_109, Balomoji\_110, Adnama\_114, Contagion\_107, Murica\_114, Pat3\_107, Cjw1\_110, Misfit\_111, Inca\_107, Filch\_112, Teaspoon\_110, Cookies\_107, Pumpkin\_111, SirDuracell\_110, Mosby\_107, Bruin\_107, Bask21\_110, Elite2014\_109, Buck\_111, xkcd\_114, Miniwave\_105, Kostya\_110, Harella\_111, NelitzaMV\_107, ChosenOne\_110, TBrady12\_113, StolenFromERC\_112, Daikon\_111, Mindy\_109, ShamWow\_110, ChotaBhai\_110, Thresher\_111, Gator\_108, CrystalP\_110, Maxxinista\_112, Quallification\_111, Stank\_112, Ukulele\_104, TeardropMSU\_106, ABCat\_107, Barbarian\_109, Lilac\_111, Wiggin\_112, Cactus\_114, YassJohnny\_107, Sotrice96\_111, DoctorDiddles\_109, Hoonter\_113, Youngblood\_114, AmericanBeauty\_113, FireRed\_113, Icee\_111, Phaja\_108, Dusk\_107, BadStone\_107, Bench\_112, MPhalcon\_111, Rimmer\_108, Argent26\_114, StellaBean\_108, Tarkin\_109, Terminus\_113, Pharsalus\_107, Goldilocks\_113, Czyszczon1\_110, BugsBunny\_109, Dumbo\_110, Willez\_105, Kanye\_107, Myrale\_110, BigBubba\_111, HufflyPuff\_112, Xandras\_109, Tuco\_111, ShereKhan\_108, NoSleep\_110, Holt\_115, Rakim\_111, Toto\_108, Tomaszewski\_105, Flypotenuse\_106, Nala\_112, Phrux\_106, Asriel\_108, GooberAzure\_113, Gemini\_115

- Track 18 : Murphy\_109, Emmina\_110, Moldemort\_112, Henry\_108, HanKaySha\_110, BaboJay\_109, 244\_111, Marshmallow\_108, Easy2Say\_110, Saints25\_106, SophKB\_108, Manda\_111, Porky\_108, Highbury\_106, Goku\_109, MadamMonkfish\_109, Eureka\_110, OrionPax\_108, Simpliphy\_108, Phaux\_112
- Track 19 : Elph10\_109
- Track 20 : KiSi\_36, LeMond\_36
- Track 21 : Oscar\_36
- Track 22 : LastHope\_37
- Track 23 : Validus\_36
- Track 24 : Guanica15\_37
- Track 25 : Curiosium\_38
- Track 26 : Richo\_36, Peanam\_36, Dartin\_36, McMater\_36
- Track 27 : Nibb\_35
- Track 28 : Shaobing\_36, Niklas\_36
- Track 29 : TingHuaYa\_36
- Track 30 : Yunkel11\_37
- Track 31 : MarkPhew\_37
- Track 32 : Scarlett\_36
- Track 33 : Efra2\_37
- Track 34 : Hurricane\_37
- Track 35 : MacnCheese\_37
- Track 36 : TribbleTrouble\_36
- Track 37 : Keshu\_37
- Track 38 : TBond007\_36
- Track 39 : ShedlockHolmes\_37
- Track 40 : Pharb\_35
- Track 41 : Pixie\_36
- Track 42 : Malthus\_38, Fionnbharth\_37
- Track 43 : Patt\_37, MissDaisy\_37, Reptar3000\_37
- Track 44 : Mitti\_37, Wintermute\_37, Eponine\_39
- Track 45 : Chancellor\_37, Slarp\_37, Cheetobro\_37
- Track 46 : JF1\_37
- Track 47 : Juliette\_39, Ruthiejr\_38
- Track 48 : Y10\_37, Y2\_37
- Track 49 : SamScheppers\_37, OmniCritical\_37
- Track 50 : Taquito\_37
- Track 51 : Gengar\_36, Paola\_36, Guillsminger\_36, Leston\_36
- Track 52 : OkiRoe\_36, Feyre\_36
- Track 53 : SoSeph\_36, Heftyboy\_36
- Track 54 : Waterfoul\_37
- Track 55 : Rando14\_38
- Track 56 : Psycho\_36, Dadosky\_36, AlleyCat\_36, Larva\_36
- Track 57 : Thyatira\_36
- Track 58 : Agent47\_36, InvictusManeo\_35, Collard\_35
- Track 59 : Edugator\_36
- Track 60 : Miryou\_36
- Track 61 : Kratio\_34
- Track 62 : Omnicron\_39
- Track 63 : Krueger\_36
- Track 64 : Amohnition\_35, Hammy\_35
- Track 65 : Bryler\_36, Phrank\_36, Cain\_36, Tierra\_36
- Track 66 : Ellie\_33, Amgine\_34, Fefferhead\_35
- Track 67 : Syra333\_36

- Track 68 : DarthP\_35
- Track 69 : Shadow1\_35
- Track 70 : TClif\_37
- Track 71 : Unicorn\_36, PhelpsODU\_36
- Track 72 : Yuna\_37
- Track 73 : Ekdilam\_33
- Track 74 : Ximenita\_37
- Track 75 : SirPhilip\_35
- Track 76 : Sunflower1121\_35
- Track 77 : Boilgate\_33
- Track 78 : Wyatt2\_93, Appletree2\_91, Rose5\_93, UPIE\_91, OhShagHennessy\_88, Halena\_89, DirkDirk\_89, Enceladus\_89, CicholasNage\_89, MAckerman\_90, Wamburgxpress\_91
- Track 79 : Silverleaf\_91, AvadaKedavra\_92, Calm\_93, Tyson\_93, Acquire49\_92, LeBron\_91, Zaria\_92
- Track 80 : JoeDirt\_93
- Track 81 : DrSeegs\_95, Breezona\_96, Faith1\_96, Miley16\_96, MkaliMitinis3\_98, Itos\_96, Winky\_96, Wigglewiggles\_96, Gabriela\_96, Sarshaun\_97, Netyap\_95, Lewan\_97, Soap141\_96
- Track 82 : DHan\_99, Hafay\_97, ZhongYanYuan\_93, Claus\_95
- Track 83 : LilDestine\_94, Loadrie\_95, Rumpelstiltskin\_92, BigCheese\_96, Gardann\_96, GuuelaD\_93, Kahlid\_95, Zakai\_97, Vetrrix\_94, Crossroads\_96, Nicholasp3\_96, Wilder\_97, BobsGarage\_95, Finemlucis\_97
- Track 84 : DanBing\_95
- Track 85 : Baoshan\_93
- Track 86 : Bazzle\_93, Archie\_93
- Track 87 : Tourach\_96
- Track 88 : KirDoubleO7\_91, BourbonZero\_94, Kingsolomon\_91, Nicholas\_91, Jubie\_92, Krypton555\_95, Ellson\_92, Snenia\_92, Lumos\_93, DuncansLeg\_93, MiniMac\_97, Moostard\_90, Lolly9\_92, Finnry\_93, Jobypre\_94, MiniLon\_97, Clautastrophe\_91, MsGreen\_93, LiyuLake\_92, Samty\_92, Whirlwind\_94
- Track 89 : Bellis\_91
- Track 90 : PYPDinur\_97, Chaser\_96, Bromden\_97, BrainDrainer\_98
- Track 91 : Douzhi\_97
- Track 92 : Douge\_97, Sheng711\_98
- Track 93 : FarmResident\_98
- Track 94 : Quby\_97
- Track 95 : DyoEdafos\_99
- Track 96 : Baudelaire\_99, Aegeus\_99
- Track 97 : Bipper\_31
- Track 98 : Cracklewink\_31
- Track 99 : Typha\_30
- Track 100 : Hilltopfarm\_30
- Track 101 : DS6A\_37
- Track 102 : Kumao\_73
- Track 103 : GMA1\_67

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

The start number called the most often in the published annotations is 72, it was called in 224 of the 306 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_111, ABCat\_107, Acquire49\_92, Adnama\_114, Aegeus\_99, Agent47\_36, AlleyCat\_36, AmericanBeauty\_113, Amgine\_34, Appletree2\_91, Archie\_93, Argent26\_114, Asriel\_108, AvadaKedavra\_92, BaboJay\_109, BadStone\_107, Balomoji\_110, Baoshan\_93, Barbarian\_109, Bask21\_110, Baudelaire\_99, Bazzle\_93, Bench\_112, BigBubba\_111, BigCheese\_96, BobsGarage\_95, Boilgate\_33, BrainDrainer\_98, Breezona\_96, Bromden\_97, Bruin\_107, Buck\_111, BugsBunny\_109, Cactus\_114, Calm\_93, Chancellor\_37, Chaser\_96, Cheetobro\_37, ChosenOne\_110, ChotaBhai\_110, CicholasNage\_89, Cjw1\_110, Claus\_95, Collard\_35, Contagion\_107, Cookies\_107, Crossroads\_96, CrystalP\_110, Curiosium\_38, Czyszczonek\_110, DHan\_99, DS6A\_37, Dadosky\_36, Daikon\_111, DanBing\_95, DarthP\_35, DirkDirk\_89, DoctorDiddles\_109, Douge\_97, Douzhi\_97, DrDrey\_110, DrSeegs\_95, Dumbo\_110, Dusk\_107, DyoEdafos\_99, Easy2Say\_110, Elite2014\_109, Ellie\_33, Elph10\_109, Emmina\_110, Enceladus\_89, Eponine\_39, Eureka\_110, Faith1\_96, FarmResident\_98, Fefferhead\_35, Feyre\_36, Filch\_112, Finemlucis\_97, Fionnbharth\_37, FireRed\_113, Flypotenuse\_106, Gabriela\_96, Gage\_112, Gardann\_96, Gator\_108, Gemini\_115, Glexan\_109, Goku\_109, Goldilocks\_113, GooberAzure\_113, Guanica15\_37, GuuelaD\_93, Hafay\_97, Halena\_89, HanKaySha\_110, Harella\_111, Heftyboy\_36, Henry\_108, Highbury\_106, Holt\_115, Hoonter\_113, Hopey\_110, HuffyPuff\_112, IHOP\_108, Icee\_111, Inca\_107, InvictusManeo\_35, Itos\_96, JeTaime\_108, Kahlid\_95, Kanye\_107, Kimchi\_114, Kostya\_110, Kratio\_34, Larva\_36, LeBron\_91, Lewan\_97, LilDestine\_94, Lilac\_111, Lilizi\_110, Lilpickle\_109, Loadrie\_95, MAckerman\_90, MPhalcon\_111, MacnCheese\_37, MadamMonkfish\_109, MalagasyRose\_37, Malthus\_38, Manda\_111, MarkPhew\_37, Marshmallow\_108, Maxxinista\_112, Miley16\_96, Mindy\_109, Miniwave\_105, Miryou\_36, Misfit\_111, MissDaisy\_37, Mitti\_37, MkaliMinitis3\_98, Moldemort\_112, Mosby\_107, Murica\_114, Murphy\_109, Myrale\_110, Nala\_112, NelitzaMV\_107, Netyap\_95, Nibb\_35, Nicholasp3\_96, Niklas\_36, Nimrod\_110, NoSleep\_110, OhShagHennessy\_88, OkiRoe\_36, Omnicron\_39, OrionPax\_108, Oscar\_36, PYPDinur\_97, Paperbeatsrock\_109, Pat3\_107, Patt\_37, Phaja\_108, Pharb\_35, Pharsalus\_107, PhatBacter\_113, Phaux\_112, Phrux\_106, Porky\_108, Psycho\_36, Pumpkin\_111, Qualification\_111, Quby\_97, Rakim\_111, Reptar3000\_37, Rimmer\_108, RiverMonster\_109, Rose5\_93, Rumpelstiltskin\_92, Saints25\_106, Sarshaun\_97, Scarlett\_36, Shadow1\_35, ShamWow\_110, Shaobing\_36, Sheng711\_98, ShereKhan\_108, Silverleaf\_91, Simpliphy\_108, SirDuracell\_110, Slarp\_37, SoSeph\_36, Soap141\_96, SophKB\_108, Sotrice96\_111, Stank\_112, Stark\_110, StellaBean\_108, StolenFromERC\_112, Sunflower1121\_35, Syra333\_36, TBrady12\_113, TClif\_37, Tarkin\_109, TeardropMSU\_106, Teaspoon\_110, Terminus\_113, Thresher\_111, Thyatira\_36, TingHuaYa\_36, Tomaszewski\_105, Toto\_108, Tourach\_96, Traaww1\_106, TribbleTrouble\_36, Tuco\_111, Tyson\_93, UPIE\_91, Ukulele\_104, Validus\_36, Vetrux\_94, Wamburggrxpress\_91, Waterfoul\_37, Wiggin\_112, Wigglewiggle\_96, Wilder\_97, Willez\_105, Winky\_96, Wintermute\_37, Wyatt2\_93, Xandras\_109, Y10\_37, Y2\_37, YassJohnny\_107, Youngblood\_114, Yunkel11\_37, Zakai\_97, Zaria\_92, ZhongYanYuan\_93, xkcd\_114,

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

- Amohndition\_35, Dartin\_36, Edugator\_36, Efra2\_37, Ekdilam\_33, Gengar\_36, Guillsminger\_36, Hammy\_35, Hilltopfarm\_30, JF1\_37, JoeDirt\_93, Juliette\_39, KiSi\_36, Krueger\_36, LastHope\_37, LeMond\_36, Leston\_36, McMater\_36,

OmniCritical\_37, OneUp\_134, Paola\_36, Peanam\_36, Richo\_36, Ruthiejr\_38, SamScheppers\_37, SirPhilip\_35, Typha\_30, Ximenita\_37, Yuna\_37,

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

• Abscondus\_148, Aphelion\_148, Bachita\_152, Bellis\_91, Bipper\_31, BourbonZero\_94, BrutonGaster\_128, Bryler\_36, Cain\_36, Clautastrophe\_91, ClubL\_150, Cracklewink\_31, Cucurbita\_148, Culver\_149, DuncansLeg\_93, Dusty\_145, Ellson\_92, Engineer\_151, Finnry\_93, GMA1\_67, Geeche\_149, Hurricane\_37, Jobypre\_94, Jubie\_92, Keshu\_37, Kingsolomon\_91, KirDoubleO7\_91, Krypton555\_95, Kudrefre\_129, Kumao\_73, LiyuLake\_92, Lolly9\_92, Lozinak\_149, Lumos\_93, MiniLon\_97, MiniMac\_97, Miskis\_147, Moostard\_90, MsGreen\_93, Nergal\_32, Neville\_126, Nicholas\_91, Norvs\_147, Octobien14\_125, PhelpsODU\_36, PhinkBoden\_147, Phrank\_36, Phrappuccino\_198, Pixie\_36, Rabbitrun\_128, Rando14\_38, Samty\_92, Sephiroth\_124, Settecandela\_223, Shagrat\_102, ShedlockHolmes\_37, Smoothie\_150, Snenia\_92, Syleon\_129, TBond007\_36, Taquito\_37, Tierra\_36, Toniann\_149, Trax\_127, Unicorn\_36, Whirlwind\_94, WilliamBoone\_150,

### Summary by start number:

Start 47:

- Found in 15 of 337 ( 4.5% ) of genes in pham
- Manual Annotations of this start: 11 of 306
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abscondus\_148 (CQ1), Aphelion\_148 (CQ1), Bachita\_152 (CQ1), Cucurbita\_148 (CQ1), Culver\_149 (CQ1), Dusty\_145 (CQ1), Engineer\_151 (CQ1), Geeche\_149 (CQ1), Lozinak\_149 (CQ1), Miskis\_147 (CQ1), Norvs\_147 (CQ1), PhinkBoden\_147 (CQ1), Smoothie\_150 (CQ1), Toniann\_149 (CQ1), WilliamBoone\_150 (CQ1),

Start 51:

- Found in 11 of 337 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 5 of 306
- Called 45.5% of time when present
- Phage (with cluster) where this start called: Edugator\_36 (K5), Gengar\_36 (K5), Guillsminger\_36 (K5), Leston\_36 (K5), Paola\_36 (K5),

Start 55:

- Found in 56 of 337 ( 16.6% ) of genes in pham
- Manual Annotations of this start: 26 of 306
- Called 51.8% of time when present
- Phage (with cluster) where this start called: Amohnition\_35 (K6), Bryler\_36 (K6), Cain\_36 (K6), Dartin\_36 (K1), Ekdilam\_33 (K6), Hammy\_35 (K6), Hurricane\_37 (K3), JF1\_37 (K4), Juliette\_39 (K4), Keshu\_37 (K3), KiSi\_36 (K1), Krueger\_36 (K6), LeMond\_36 (K1), McMater\_36 (K1), OmniCritical\_37 (K4), Peanam\_36 (K1), PhelpsODU\_36 (K6), Phrank\_36 (K6), Pixie\_36 (K3), Richo\_36 (K1), Ruthiejr\_38 (K4), SamScheppers\_37 (K4), ShedlockHolmes\_37 (K3), SirPhilip\_35 (K6), TBond007\_36 (K3), Tierra\_36 (K6), Unicorn\_36 (K6), Ximenita\_37 (K6), Yuna\_37 (K6),

Start 56:

- Found in 1 of 337 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 306



- Called 100.0% of time when present
- Phage (with cluster) where this start called: Efra2\_37 (K1),

Start 57:

- Found in 4 of 337 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 306
- Called 50.0% of time when present
- Phage (with cluster) where this start called: LastHope\_37 (K1), Nergal\_32 (AG),

Start 59:

- Found in 3 of 337 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 306
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Phrappuccino\_198 (AA), Settecandela\_223 (AA),

Start 61:

- Found in 3 of 337 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 3 of 306
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BrutonGaster\_128 (CQ2), OneUp\_134 (CQ2), Rando14\_38 (K5),

Start 66:

- Found in 5 of 337 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 306
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Bipper\_31 (Y), Cracklewink\_31 (Y),

Start 67:

- Found in 26 of 337 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 20 of 306
- Called 96.2% of time when present
- Phage (with cluster) where this start called: BourbonZero\_94 (L3), Clautastrophe\_91 (L3), DuncansLeg\_93 (L3), Ellson\_92 (L3), Finnry\_93 (L3), Jobypre\_94 (L3), Jubie\_92 (L3), Kingsolomon\_91 (L3), KirDoubleO7\_91 (L3), Krypton555\_95 (L3), Kudrefre\_129 (DU1), LiyuLake\_92 (L3), Lolly9\_92 (L3), Lumos\_93 (L3), MiniLon\_97 (L3), MiniMac\_97 (L3), Moostard\_90 (L3), MsGreen\_93 (L3), Nicholas\_91 (L3), Octobien14\_125 (DU1), Samty\_92 (L3), Sephiroth\_124 (DU1), Snenia\_92 (L3), Syleon\_129 (DU1), Whirlwind\_94 (L3),

Start 68:

- Found in 4 of 337 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 306
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Hilltopfarm\_30 (Y), Typha\_30 (Y),

Start 69:

- Found in 1 of 337 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 306
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shagrat\_102 (CF),

Start 70:

- Found in 26 of 337 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 1 of 306
- Called 3.8% of time when present
- Phage (with cluster) where this start called: JoeDirt\_93 (L1),

Start 71:

- Found in 1 of 337 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 306
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao\_73 (singleton),

Start 72:

- Found in 270 of 337 ( 80.1% ) of genes in pham
- Manual Annotations of this start: 224 of 306
- Called 89.3% of time when present
- Phage (with cluster) where this start called: 244\_111 (E), ABCat\_107 (E), Acquire49\_92 (L1), Adnama\_114 (E), Aegeus\_99 (L5), Agent47\_36 (K5), AlleyCat\_36 (K5), AmericanBeauty\_113 (E), Amgine\_34 (K6), Appletree2\_91 (L1), Archie\_93 (L2), Argent26\_114 (E), Asriel\_108 (E), AvadaKedavra\_92 (L1), BaboJay\_109 (E), BadStone\_107 (E), Balomoji\_110 (E), Baoshan\_93 (L2), Barbarian\_109 (E), Bask21\_110 (E), Baudelaire\_99 (L5), Bazzle\_93 (L2), Bench\_112 (E), BigBubba\_111 (E), BigCheese\_96 (L2), BobsGarage\_95 (L2), Boilgate\_33 (K8), BrainDrainer\_98 (L4), Breezona\_96 (L2), Bromden\_97 (L4), Bruin\_107 (E), Buck\_111 (E), BugsBunny\_109 (E), Cactus\_114 (E), Calm\_93 (L1), Chancellor\_37 (K4), Chaser\_96 (L4), Cheetobro\_37 (K4), ChosenOne\_110 (E), ChotaBhai\_110 (E), CicholasNage\_89 (L1), Cjw1\_110 (E), Claus\_95 (L2), Collard\_35 (K5), Contagion\_107 (E), Cookies\_107 (E), Crossroads\_96 (L2), CrystalP\_110 (E), Curiosium\_38 (K1), Czyszczone1\_110 (E), DHan\_99 (L2), DS6A\_37 (singleton), Dadosky\_36 (K5), Daikon\_111 (E), DanBing\_95 (L2), DarthP\_35 (K6), DirkDirk\_89 (L1), DoctorDiddles\_109 (E), Douge\_97 (L4), Douzhi\_97 (L4), DrDrey\_110 (E), DrSeegs\_95 (L2), Dumbo\_110 (E), Dusk\_107 (E), DyoEdafos\_99 (L4), Easy2Say\_110 (E), Elite2014\_109 (E), Ellie\_33 (K6), Elph10\_109 (E), Emmina\_110 (E), Enceladus\_89 (L1), Eponine\_39 (K4), Eureka\_110 (E), Faith1\_96 (L2), FarmResident\_98 (L4), Fefferhead\_35 (K6), Feyre\_36 (K5), Filch\_112 (E), Finemlucis\_97 (L2), Fionnbharth\_37 (K4), FireRed\_113 (E), Flypotenuse\_106 (E), Gabriela\_96 (L2), Gage\_112 (E), Gardann\_96 (L2), Gator\_108 (E), Gemini\_115 (E), Glexan\_109 (E), Goku\_109 (E), Goldilocks\_113 (E), GooberAzure\_113 (E), Guanica15\_37 (K1), GuuelaD\_93 (L2), Hafay\_97 (L2), Halena\_89 (L1), HanKaySha\_110 (E), Harella\_111 (E), Heftyboy\_36 (K5), Henry\_108 (E), Highbury\_106 (E), Holt\_115 (E), Hoonter\_113 (E), Hopey\_110 (E), HuffyPuff\_112 (E), IHOP\_108 (E), Icee\_111 (E), Inca\_107 (E), InvictusManeo\_35 (K5), Itos\_96 (L2), JeTaimie\_108 (E), Kahlid\_95 (L2), Kanye\_107 (E), Kimchi\_114 (E), Kostya\_110 (E), Kratio\_34 (K5), Larva\_36 (K5), LeBron\_91 (L1), Lewan\_97 (L2), LilDestine\_94 (L2), Lilac\_111 (E), Lilizi\_110 (E), Lilpickle\_109 (E), Loadrie\_95 (L2), MAckerman\_90 (L1), MPhalcon\_111 (E), MacnCheese\_37 (K3), MadamMonkfish\_109 (E), MalagasyRose\_37 (AG), Malthus\_38 (K4), Manda\_111 (E), MarkPhew\_37 (K1), Marshmallow\_108 (E), Maxxinista\_112 (E), Miley16\_96 (L2), Mindy\_109 (E), Miniwave\_105 (E), Miryou\_36 (K5), Misfit\_111 (E), MissDaisy\_37 (K4), Mitti\_37 (K4), MkaliMitinis3\_98 (L2), Moldemort\_112 (E), Mosby\_107 (E), Murica\_114 (E), Murphy\_109 (E), Myrale\_110 (E), Nala\_112 (E), NelitzaMV\_107 (E), Netyap\_95 (L2), Nibb\_35 (K1), Nicholasp3\_96 (L2), Niklas\_36 (K1), Nimrod\_110 (E), NoSleep\_110 (E), OhShagHennessy\_88 (L1), OkiRoe\_36 (K5), Omnicron\_39 (K5), OrionPax\_108

(E), Oscar\_36 (K1), PYPDinur\_97 (L4), Paperbeatsrock\_109 (E), Pat3\_107 (E), Patt\_37 (K4), Phaja\_108 (E), Pharb\_35 (K3), Pharsalus\_107 (E), PhatBacter\_113 (E), Phaux\_112 (E), Phrux\_106 (E), Porky\_108 (E), Psycho\_36 (K5), Pumpkin\_111 (E), Quallification\_111 (E), Quby\_97 (L4), Rakim\_111 (E), Reptar3000\_37 (K4), Rimmer\_108 (E), RiverMonster\_109 (E), Rose5\_93 (L1), Rumpelstiltskin\_92 (L2), Saints25\_106 (E), Sarshaun\_97 (L2), Scarlett\_36 (K1), Shadow1\_35 (K6), ShamWow\_110 (E), Shaobing\_36 (K1), Sheng711\_98 (L4), ShereKhan\_108 (E), Silverleaf\_91 (L1), Simpliphy\_108 (E), SirDuracell\_110 (E), Slarp\_37 (K4), SoSeph\_36 (K5), Soap141\_96 (L2), SophKB\_108 (E), Sotrice96\_111 (E), Stank\_112 (E), Stark\_110 (E), StellaBean\_108 (E), StolenFromERC\_112 (E), Sunflower1121\_35 (K6), Syra333\_36 (K6), TBrady12\_113 (E), TClif\_37 (K6), Tarkin\_109 (E), TeardropMSU\_106 (E), Teaspoon\_110 (E), Terminus\_113 (E), Thresher\_111 (E), Thyatira\_36 (K5), TingHuaYa\_36 (K1), Tomaszewski\_105 (E), Toto\_108 (E), Tourach\_96 (L2), Traaww1\_106 (E), TribbleTrouble\_36 (K3), Tuco\_111 (E), Tyson\_93 (L1), UPIE\_91 (L1), Ukulele\_104 (E), Validus\_36 (K1), Vetrix\_94 (L2), Wamburgrxpress\_91 (L1), Waterfoul\_37 (K5), Wiggin\_112 (E), Wigglewiggles\_96 (L2), Wilder\_97 (L2), Willez\_105 (E), Winky\_96 (L2), Wintermute\_37 (K4), Wyatt2\_93 (L1), Xandras\_109 (E), Y10\_37 (K4), Y2\_37 (K4), YassJohnny\_107 (E), Youngblood\_114 (E), Yunkel11\_37 (K1), Zakai\_97 (L2), Zaria\_92 (L1), ZhongYanYuan\_93 (L2), xkcd\_114 (E),

#### Start 73:

- Found in 6 of 337 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 3 of 306
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Neville\_126 (DU2), Rabbitrun\_128 (DU2), Trax\_127 (DU2),

#### Start 77:

- Found in 20 of 337 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 1 of 306
- Called 5.0% of time when present
- Phage (with cluster) where this start called: ClubL\_150 (CQ1),

#### Start 78:

- Found in 177 of 337 ( 52.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.6% of time when present
- Phage (with cluster) where this start called: Bellis\_91 (L3),

#### Start 79:

- Found in 27 of 337 ( 8.0% ) of genes in pham
- Manual Annotations of this start: 1 of 306
- Called 3.7% of time when present
- Phage (with cluster) where this start called: Taquito\_37 (K4),

#### Start 80:

- Found in 1 of 337 ( 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: GMA1\_67 (singleton),

### Summary by clusters:

There are 21 clusters represented in this pham: AA, singleton, E, CQ2, AG, L1, L4, CF, K3, K1, L5, L2, K6, K5, K4, Y, DU1, DU2, K8, CQ1, L3,

Info for manual annotations of cluster AA:

- Start number 59 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AG:

- Start number 57 was manually annotated 1 time for cluster AG.
- Start number 72 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster CF:

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

Info for manual annotations of cluster CQ1:

- Start number 47 was manually annotated 11 times for cluster CQ1.
- Start number 77 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 61 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster DU1:

- Start number 67 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 73 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster E:

- Start number 72 was manually annotated 119 times for cluster E.

Info for manual annotations of cluster K1:

- Start number 55 was manually annotated 3 times for cluster K1.
- Start number 56 was manually annotated 1 time for cluster K1.
- Start number 57 was manually annotated 1 time for cluster K1.
- Start number 72 was manually annotated 10 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 55 was manually annotated 5 times for cluster K3.
- Start number 72 was manually annotated 3 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 55 was manually annotated 5 times for cluster K4.
- Start number 72 was manually annotated 13 times for cluster K4.
- Start number 79 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster K5:

- Start number 51 was manually annotated 5 times for cluster K5.
- Start number 61 was manually annotated 1 time for cluster K5.
- Start number 72 was manually annotated 16 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 55 was manually annotated 13 times for cluster K6.
- Start number 72 was manually annotated 8 times for cluster K6.

Info for manual annotations of cluster K8:

- Start number 72 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster L1:

- Start number 70 was manually annotated 1 time for cluster L1.
- Start number 72 was manually annotated 18 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 72 was manually annotated 28 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 67 was manually annotated 16 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 72 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 72 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster Y:

- Start number 66 was manually annotated 2 times for cluster Y.
- Start number 68 was manually annotated 2 times for cluster Y.

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

Gene: 244\_111 Start: 62553, Stop: 62816, Start Num: 72

Candidate Starts for 244\_111:

(Start: 72 @62553 has 224 MA's), (78, 62583), (92, 62658), (95, 62673), (124, 62775),

Gene: ABCat\_107 Start: 63757, Stop: 64020, Start Num: 72

Candidate Starts for ABCat\_107:

(Start: 72 @63757 has 224 MA's), (78, 63787), (92, 63862), (124, 63979),

Gene: Abscondus\_148 Start: 80394, Stop: 80693, Start Num: 47

Candidate Starts for Abscondus\_148:

(Start: 47 @80394 has 11 MA's), (Start: 77 @80475 has 1 MA's), (95, 80568), (103, 80592), (105, 80598), (119, 80664), (125, 80682),

Gene: Acquire49\_92 Start: 57880, Stop: 58119, Start Num: 72

Candidate Starts for Acquire49\_92:

(Start: 70 @57877 has 1 MA's), (Start: 72 @57880 has 224 MA's), (92, 57985), (95, 58000), (99, 58012), (104, 58027), (107, 58039), (119, 58087),

Gene: Adnama\_114 Start: 63046, Stop: 63309, Start Num: 72

Candidate Starts for Adnama\_114:

(Start: 72 @63046 has 224 MA's), (78, 63076), (92, 63151), (124, 63268),

Gene: Aegeus\_99 Start: 60382, Stop: 60651, Start Num: 72

Candidate Starts for Aegeus\_99:

(34, 60259), (37, 60286), (38, 60289), (49, 60337), (60, 60367), (Start: 72 @60382 has 224 MA's), (Start: 77 @60409 has 1 MA's), (78, 60412), (Start: 79 @60415 has 1 MA's), (83, 60427), (88, 60460), (93, 60490), (95, 60502), (99, 60514), (100, 60517), (117, 60583), (120, 60592), (124, 60604), (126, 60616),

Gene: Agent47\_36 Start: 30297, Stop: 30521, Start Num: 72

Candidate Starts for Agent47\_36:

(Start: 72 @30297 has 224 MA's), (78, 30327), (82, 30339), (88, 30375), (90, 30378), (100, 30435), (107, 30456), (110, 30465), (115, 30489), (117, 30498),

Gene: AlleyCat\_36 Start: 30143, Stop: 30367, Start Num: 72

Candidate Starts for AlleyCat\_36:

(Start: 72 @30143 has 224 MA's), (78, 30173), (82, 30185), (88, 30221), (90, 30224), (100, 30281), (107, 30302), (108, 30305), (110, 30311), (115, 30335), (117, 30344),

Gene: AmericanBeauty\_113 Start: 63088, Stop: 63351, Start Num: 72

Candidate Starts for AmericanBeauty\_113:

(Start: 72 @63088 has 224 MA's), (78, 63118), (92, 63193), (124, 63310),

Gene: Amgine\_34 Start: 29490, Stop: 29714, Start Num: 72

Candidate Starts for Amgine\_34:

(26, 29292), (31, 29337), (36, 29367), (Start: 70 @29487 has 1 MA's), (Start: 72 @29490 has 224 MA's), (78, 29520), (86, 29547), (110, 29658),

Gene: Amohndition\_35 Start: 29885, Stop: 30115, Start Num: 55

Candidate Starts for Amohndition\_35:

(Start: 55 @29885 has 26 MA's), (Start: 72 @29888 has 224 MA's),

Gene: Aphelion\_148 Start: 81287, Stop: 81586, Start Num: 47

Candidate Starts for Aphelion\_148:

(Start: 47 @81287 has 11 MA's), (Start: 77 @81368 has 1 MA's), (99, 81473), (105, 81491), (119, 81557), (125, 81575),

Gene: Appletree2\_91 Start: 57640, Stop: 57879, Start Num: 72

Candidate Starts for Appletree2\_91:

(Start: 70 @57637 has 1 MA's), (Start: 72 @57640 has 224 MA's), (92, 57745), (95, 57760), (99, 57772), (104, 57787), (107, 57799), (117, 57841), (119, 57847),

Gene: Archie\_93 Start: 59561, Stop: 59821, Start Num: 72

Candidate Starts for Archie\_93:

(Start: 72 @59561 has 224 MA's), (76, 59585), (92, 59666), (99, 59693), (103, 59705), (106, 59714), (107, 59720), (117, 59762), (119, 59768),

Gene: Argent26\_114 Start: 62970, Stop: 63233, Start Num: 72

Candidate Starts for Argent26\_114:

(Start: 72 @62970 has 224 MA's), (78, 63000), (92, 63075), (124, 63192),

Gene: Asriel\_108 Start: 61503, Stop: 61766, Start Num: 72

Candidate Starts for Asriel\_108:

(Start: 72 @61503 has 224 MA's), (78, 61533), (92, 61608), (124, 61725),

Gene: AvadaKedavra\_92 Start: 57992, Stop: 58231, Start Num: 72

Candidate Starts for AvadaKedavra\_92:

(Start: 70 @57989 has 1 MA's), (Start: 72 @57992 has 224 MA's), (92, 58097), (95, 58112), (99, 58124), (104, 58139), (107, 58151), (119, 58199),

Gene: BaboJay\_109 Start: 63726, Stop: 63989, Start Num: 72

Candidate Starts for BaboJay\_109:

(Start: 72 @63726 has 224 MA's), (78, 63756), (92, 63831), (95, 63846), (124, 63948),

Gene: Bachita\_152 Start: 81434, Stop: 81733, Start Num: 47

Candidate Starts for Bachita\_152:

(Start: 47 @81434 has 11 MA's), (Start: 77 @81515 has 1 MA's), (99, 81620), (105, 81638), (119, 81704), (125, 81722),

Gene: BadStone\_107 Start: 63305, Stop: 63568, Start Num: 72

Candidate Starts for BadStone\_107:

(Start: 72 @63305 has 224 MA's), (78, 63335), (92, 63410), (124, 63527),

Gene: Balomoji\_110 Start: 63286, Stop: 63549, Start Num: 72

Candidate Starts for Balomoji\_110:

(Start: 72 @63286 has 224 MA's), (78, 63316), (92, 63391), (124, 63508),

Gene: Baoshan\_93 Start: 60216, Stop: 60476, Start Num: 72

Candidate Starts for Baoshan\_93:

(Start: 72 @60216 has 224 MA's), (92, 60321), (99, 60348), (100, 60351), (102, 60357), (103, 60360), (104, 60363), (107, 60375), (117, 60417), (119, 60423),

Gene: Barbarian\_109 Start: 61503, Stop: 61766, Start Num: 72

Candidate Starts for Barbarian\_109:

(Start: 72 @61503 has 224 MA's), (78, 61533), (92, 61608), (124, 61725),

Gene: Bask21\_110 Start: 62122, Stop: 62385, Start Num: 72

Candidate Starts for Bask21\_110:

(Start: 72 @62122 has 224 MA's), (78, 62152), (92, 62227), (124, 62344),

Gene: Baudelaire\_99 Start: 60382, Stop: 60651, Start Num: 72

Candidate Starts for Baudelaire\_99:

(34, 60259), (37, 60286), (38, 60289), (49, 60337), (60, 60367), (Start: 72 @60382 has 224 MA's), (Start: 77 @60409 has 1 MA's), (78, 60412), (Start: 79 @60415 has 1 MA's), (83, 60427), (88, 60460), (93, 60490), (95, 60502), (99, 60514), (100, 60517), (117, 60583), (120, 60592), (124, 60604), (126, 60616),

Gene: Bazzle\_93 Start: 60117, Stop: 60377, Start Num: 72

Candidate Starts for Bazzle\_93:

(Start: 72 @60117 has 224 MA's), (76, 60141), (92, 60222), (99, 60249), (103, 60261), (106, 60270), (107, 60276), (117, 60318), (119, 60324),

Gene: Bellis\_91 Start: 59773, Stop: 60003, Start Num: 78

Candidate Starts for Bellis\_91:

(Start: 67 @59734 has 20 MA's), (78, 59773), (92, 59848), (99, 59875), (102, 59884), (121, 59956),

Gene: Bench\_112 Start: 63727, Stop: 63990, Start Num: 72

Candidate Starts for Bench\_112:

(Start: 72 @63727 has 224 MA's), (78, 63757), (92, 63832), (124, 63949),

Gene: BigBubba\_111 Start: 62199, Stop: 62462, Start Num: 72  
Candidate Starts for BigBubba\_111:  
(Start: 72 @62199 has 224 MA's), (78, 62229), (92, 62304), (124, 62421),

Gene: BigCheese\_96 Start: 60326, Stop: 60586, Start Num: 72  
Candidate Starts for BigCheese\_96:  
(Start: 72 @60326 has 224 MA's), (76, 60350), (92, 60431), (99, 60458), (103, 60470), (104, 60473),  
(106, 60479), (107, 60485), (117, 60527), (119, 60533),

Gene: Bipper\_31 Start: 28074, Stop: 28352, Start Num: 66  
Candidate Starts for Bipper\_31:  
(3, 27636), (8, 27714), (Start: 66 @28074 has 2 MA's), (Start: 68 @28077 has 2 MA's), (Start: 79  
@28119 has 1 MA's), (82, 28128), (83, 28131), (86, 28143), (88, 28170), (99, 28224), (100, 28227),  
(111, 28263), (127, 28329),

Gene: BobsGarage\_95 Start: 60326, Stop: 60586, Start Num: 72  
Candidate Starts for BobsGarage\_95:  
(Start: 72 @60326 has 224 MA's), (76, 60350), (92, 60431), (99, 60458), (103, 60470), (104, 60473),  
(106, 60479), (107, 60485), (117, 60527), (119, 60533),

Gene: Boilgate\_33 Start: 31436, Stop: 31663, Start Num: 72  
Candidate Starts for Boilgate\_33:  
(Start: 55 @31433 has 26 MA's), (Start: 72 @31436 has 224 MA's), (82, 31478), (84, 31484), (91,  
31529), (92, 31541), (97, 31565), (100, 31577), (103, 31586), (110, 31607), (120, 31646),

Gene: BourbonZero\_94 Start: 59760, Stop: 60029, Start Num: 67  
Candidate Starts for BourbonZero\_94:  
(Start: 67 @59760 has 20 MA's), (78, 59799), (92, 59874), (99, 59901), (102, 59910), (121, 59982),

Gene: BrainDrainer\_98 Start: 60036, Stop: 60275, Start Num: 72  
Candidate Starts for BrainDrainer\_98:  
(64, 60030), (Start: 72 @60036 has 224 MA's), (90, 60117), (92, 60141), (99, 60168), (111, 60207),  
(119, 60243), (121, 60249),

Gene: Breezona\_96 Start: 60332, Stop: 60592, Start Num: 72  
Candidate Starts for Breezona\_96:  
(Start: 72 @60332 has 224 MA's), (76, 60356), (92, 60437), (103, 60476), (104, 60479), (106, 60485),  
(107, 60491), (117, 60533), (119, 60539),

Gene: Bromden\_97 Start: 60914, Stop: 61153, Start Num: 72  
Candidate Starts for Bromden\_97:  
(64, 60908), (Start: 72 @60914 has 224 MA's), (90, 60995), (92, 61019), (99, 61046), (111, 61085),  
(119, 61121), (121, 61127),

Gene: Bruin\_107 Start: 62411, Stop: 62674, Start Num: 72  
Candidate Starts for Bruin\_107:  
(Start: 72 @62411 has 224 MA's), (78, 62441), (92, 62516), (124, 62633),

Gene: BrutonGaster\_128 Start: 76649, Stop: 76906, Start Num: 61  
Candidate Starts for BrutonGaster\_128:  
(30, 76505), (33, 76535), (38, 76568), (Start: 61 @76649 has 3 MA's), (Start: 73 @76670 has 3 MA's),  
(76, 76691), (105, 76817), (112, 76853), (114, 76859), (119, 76883),



Gene: Bryler\_36 Start: 28890, Stop: 29123, Start Num: 55  
Candidate Starts for Bryler\_36:  
(36, 28800), (Start: 55 @28890 has 26 MA's), (98, 29031), (121, 29109),

Gene: Buck\_111 Start: 64227, Stop: 64490, Start Num: 72  
Candidate Starts for Buck\_111:  
(Start: 72 @64227 has 224 MA's), (78, 64257), (92, 64332), (124, 64449),

Gene: BugsBunny\_109 Start: 63725, Stop: 63988, Start Num: 72  
Candidate Starts for BugsBunny\_109:  
(Start: 72 @63725 has 224 MA's), (78, 63755), (92, 63830), (124, 63947),

Gene: Cactus\_114 Start: 62665, Stop: 62928, Start Num: 72  
Candidate Starts for Cactus\_114:  
(Start: 72 @62665 has 224 MA's), (78, 62695), (92, 62770), (124, 62887),

Gene: Cain\_36 Start: 28878, Stop: 29111, Start Num: 55  
Candidate Starts for Cain\_36:  
(36, 28788), (Start: 55 @28878 has 26 MA's), (98, 29019), (121, 29097),

Gene: Calm\_93 Start: 57891, Stop: 58130, Start Num: 72  
Candidate Starts for Calm\_93:  
(Start: 70 @57888 has 1 MA's), (Start: 72 @57891 has 224 MA's), (92, 57996), (95, 58011), (99, 58023), (104, 58038), (107, 58050), (119, 58098),

Gene: Chancellor\_37 Start: 30638, Stop: 30919, Start Num: 72  
Candidate Starts for Chancellor\_37:  
(Start: 55 @30632 has 26 MA's), (Start: 72 @30638 has 224 MA's), (Start: 79 @30671 has 1 MA's), (86, 30695), (91, 30731), (98, 30773), (101, 30782), (102, 30785), (108, 30803), (110, 30809), (120, 30851), (121, 30854), (122, 30857),

Gene: Chaser\_96 Start: 59337, Stop: 59576, Start Num: 72  
Candidate Starts for Chaser\_96:  
(64, 59331), (Start: 72 @59337 has 224 MA's), (90, 59418), (92, 59442), (99, 59469), (111, 59508), (119, 59544), (121, 59550),

Gene: Cheetobro\_37 Start: 30635, Stop: 30916, Start Num: 72  
Candidate Starts for Cheetobro\_37:  
(Start: 55 @30629 has 26 MA's), (Start: 72 @30635 has 224 MA's), (Start: 79 @30668 has 1 MA's), (86, 30692), (91, 30728), (98, 30770), (101, 30779), (102, 30782), (108, 30800), (110, 30806), (120, 30848), (121, 30851), (122, 30854),

Gene: ChosenOne\_110 Start: 62611, Stop: 62874, Start Num: 72  
Candidate Starts for ChosenOne\_110:  
(Start: 72 @62611 has 224 MA's), (78, 62641), (92, 62716), (124, 62833),

Gene: ChotaBhai\_110 Start: 63064, Stop: 63327, Start Num: 72  
Candidate Starts for ChotaBhai\_110:  
(Start: 72 @63064 has 224 MA's), (78, 63094), (92, 63169), (124, 63286),

Gene: CicholasNage\_89 Start: 57544, Stop: 57783, Start Num: 72  
Candidate Starts for CicholasNage\_89:

(Start: 70 @57541 has 1 MA's), (Start: 72 @57544 has 224 MA's), (92, 57649), (95, 57664), (99, 57676), (104, 57691), (107, 57703), (117, 57745), (119, 57751),

Gene: Cjw1\_110 Start: 64420, Stop: 64683, Start Num: 72

Candidate Starts for Cjw1\_110:

(Start: 72 @64420 has 224 MA's), (78, 64450), (92, 64525), (124, 64642),

Gene: Claus\_95 Start: 60040, Stop: 60279, Start Num: 72

Candidate Starts for Claus\_95:

(Start: 72 @60040 has 224 MA's), (92, 60145), (99, 60172), (100, 60175), (102, 60181), (103, 60184), (107, 60199), (117, 60241), (119, 60247),

Gene: Clautastrophe\_91 Start: 59729, Stop: 59998, Start Num: 67

Candidate Starts for Clautastrophe\_91:

(Start: 67 @59729 has 20 MA's), (78, 59768), (92, 59843), (99, 59870), (102, 59879), (121, 59951),

Gene: ClubL\_150 Start: 80767, Stop: 80985, Start Num: 77

Candidate Starts for ClubL\_150:

(1, 80272), (3, 80293), (5, 80308), (6, 80323), (16, 80470), (18, 80476), (19, 80479), (23, 80521), (24, 80524), (27, 80563), (39, 80647), (42, 80662), (52, 80695), (Start: 77 @80767 has 1 MA's), (83, 80785), (93, 80848), (100, 80875), (105, 80890), (119, 80956), (125, 80974),

Gene: Collard\_35 Start: 30258, Stop: 30482, Start Num: 72

Candidate Starts for Collard\_35:

(Start: 72 @30258 has 224 MA's), (78, 30288), (82, 30300), (88, 30336), (90, 30339), (100, 30396), (107, 30417), (110, 30426), (115, 30450), (117, 30459),

Gene: Contagion\_107 Start: 62773, Stop: 63036, Start Num: 72

Candidate Starts for Contagion\_107:

(Start: 72 @62773 has 224 MA's), (78, 62803), (92, 62878), (124, 62995),

Gene: Cookies\_107 Start: 63050, Stop: 63313, Start Num: 72

Candidate Starts for Cookies\_107:

(Start: 72 @63050 has 224 MA's), (78, 63080), (92, 63155), (124, 63272),

Gene: Cracklewink\_31 Start: 28074, Stop: 28352, Start Num: 66

Candidate Starts for Cracklewink\_31:

(Start: 66 @28074 has 2 MA's), (Start: 68 @28077 has 2 MA's), (Start: 79 @28119 has 1 MA's), (82, 28128), (83, 28131), (88, 28170), (99, 28224), (101, 28230), (111, 28263), (127, 28329),

Gene: Crossroads\_96 Start: 60044, Stop: 60304, Start Num: 72

Candidate Starts for Crossroads\_96:

(Start: 72 @60044 has 224 MA's), (76, 60068), (92, 60149), (99, 60176), (103, 60188), (104, 60191), (106, 60197), (107, 60203), (117, 60245), (119, 60251),

Gene: CrystalP\_110 Start: 63783, Stop: 64046, Start Num: 72

Candidate Starts for CrystalP\_110:

(Start: 72 @63783 has 224 MA's), (78, 63813), (92, 63888), (124, 64005),

Gene: Cucurbita\_148 Start: 81747, Stop: 82046, Start Num: 47

Candidate Starts for Cucurbita\_148:

(Start: 47 @81747 has 11 MA's), (Start: 77 @81828 has 1 MA's), (99, 81933), (105, 81951), (119, 82017), (125, 82035),

Gene: Culver\_149 Start: 80011, Stop: 80310, Start Num: 47  
Candidate Starts for Culver\_149:  
(Start: 47 @80011 has 11 MA's), (Start: 77 @80092 has 1 MA's), (105, 80215), (119, 80281), (125, 80299),

Gene: Curiosium\_38 Start: 29582, Stop: 29809, Start Num: 72  
Candidate Starts for Curiosium\_38:  
(44, 29525), (48, 29543), (Start: 72 @29582 has 224 MA's), (82, 29624), (96, 29705), (99, 29717),

Gene: Czyszczone1\_110 Start: 62766, Stop: 63029, Start Num: 72  
Candidate Starts for Czyszczone1\_110:  
(Start: 72 @62766 has 224 MA's), (78, 62796), (92, 62871), (124, 62988),

Gene: DHan\_99 Start: 60263, Stop: 60523, Start Num: 72  
Candidate Starts for DHan\_99:  
(Start: 72 @60263 has 224 MA's), (92, 60368), (99, 60395), (100, 60398), (102, 60404), (103, 60407), (107, 60422), (117, 60464), (119, 60470),

Gene: DS6A\_37 Start: 31428, Stop: 31652, Start Num: 72  
Candidate Starts for DS6A\_37:  
(Start: 72 @31428 has 224 MA's), (78, 31458), (81, 31467), (82, 31470), (83, 31473), (88, 31506), (95, 31548), (96, 31551), (99, 31563), (100, 31566), (114, 31611), (115, 31620), (117, 31629),

Gene: Dadosky\_36 Start: 30144, Stop: 30368, Start Num: 72  
Candidate Starts for Dadosky\_36:  
(Start: 72 @30144 has 224 MA's), (78, 30174), (82, 30186), (88, 30222), (90, 30225), (100, 30282), (107, 30303), (108, 30306), (110, 30312), (115, 30336), (117, 30345),

Gene: Daikon\_111 Start: 62582, Stop: 62845, Start Num: 72  
Candidate Starts for Daikon\_111:  
(Start: 72 @62582 has 224 MA's), (78, 62612), (92, 62687), (124, 62804),

Gene: DanBing\_95 Start: 59956, Stop: 60210, Start Num: 72  
Candidate Starts for DanBing\_95:  
(Start: 72 @59956 has 224 MA's), (92, 60061), (99, 60088), (102, 60097), (103, 60100), (107, 60115), (117, 60157), (119, 60163),

Gene: DarthP\_35 Start: 29810, Stop: 30037, Start Num: 72  
Candidate Starts for DarthP\_35:  
(Start: 55 @29807 has 26 MA's), (Start: 72 @29810 has 224 MA's),

Gene: Dartin\_36 Start: 28807, Stop: 29037, Start Num: 55  
Candidate Starts for Dartin\_36:  
(10, 28489), (23, 28618), (31, 28687), (36, 28717), (Start: 55 @28807 has 26 MA's), (Start: 72 @28810 has 224 MA's), (96, 28933), (107, 28969),

Gene: DirkDirk\_89 Start: 57220, Stop: 57459, Start Num: 72  
Candidate Starts for DirkDirk\_89:  
(Start: 70 @57217 has 1 MA's), (Start: 72 @57220 has 224 MA's), (92, 57325), (95, 57340), (99, 57352), (104, 57367), (107, 57379), (117, 57421), (119, 57427),

Gene: DoctorDiddles\_109 Start: 62552, Stop: 62815, Start Num: 72

Candidate Starts for DoctorDiddles\_109:

(Start: 72 @62552 has 224 MA's), (78, 62582), (92, 62657), (124, 62774),

Gene: Douge\_97 Start: 59456, Stop: 59695, Start Num: 72

Candidate Starts for Douge\_97:

(64, 59450), (Start: 72 @59456 has 224 MA's), (90, 59537), (92, 59561), (99, 59588), (106, 59609), (111, 59627), (119, 59663),

Gene: Douzhi\_97 Start: 59725, Stop: 59964, Start Num: 72

Candidate Starts for Douzhi\_97:

(64, 59719), (Start: 72 @59725 has 224 MA's), (90, 59806), (92, 59830), (106, 59878), (111, 59896), (119, 59932), (121, 59938),

Gene: DrDrey\_110 Start: 64443, Stop: 64706, Start Num: 72

Candidate Starts for DrDrey\_110:

(Start: 72 @64443 has 224 MA's), (78, 64473), (92, 64548), (124, 64665),

Gene: DrSeegs\_95 Start: 60332, Stop: 60592, Start Num: 72

Candidate Starts for DrSeegs\_95:

(Start: 72 @60332 has 224 MA's), (76, 60356), (92, 60437), (103, 60476), (104, 60479), (106, 60485), (107, 60491), (117, 60533), (119, 60539),

Gene: Dumbo\_110 Start: 62803, Stop: 63066, Start Num: 72

Candidate Starts for Dumbo\_110:

(Start: 72 @62803 has 224 MA's), (78, 62833), (92, 62908), (124, 63025),

Gene: DuncansLeg\_93 Start: 59748, Stop: 60017, Start Num: 67

Candidate Starts for DuncansLeg\_93:

(Start: 67 @59748 has 20 MA's), (78, 59787), (92, 59862), (99, 59889), (102, 59898), (121, 59970),

Gene: Dusk\_107 Start: 62965, Stop: 63228, Start Num: 72

Candidate Starts for Dusk\_107:

(Start: 72 @62965 has 224 MA's), (78, 62995), (92, 63070), (124, 63187),

Gene: Dusty\_145 Start: 80222, Stop: 80521, Start Num: 47

Candidate Starts for Dusty\_145:

(Start: 47 @80222 has 11 MA's), (Start: 77 @80303 has 1 MA's), (99, 80408), (105, 80426), (119, 80492), (125, 80510),

Gene: DyoEdafos\_99 Start: 60045, Stop: 60284, Start Num: 72

Candidate Starts for DyoEdafos\_99:

(64, 60039), (Start: 72 @60045 has 224 MA's), (90, 60126), (92, 60150), (99, 60177), (111, 60216), (119, 60252), (121, 60258),

Gene: Easy2Say\_110 Start: 63437, Stop: 63700, Start Num: 72

Candidate Starts for Easy2Say\_110:

(Start: 72 @63437 has 224 MA's), (78, 63467), (92, 63542), (95, 63557), (124, 63659),

Gene: Edugator\_36 Start: 30537, Stop: 30794, Start Num: 51

Candidate Starts for Edugator\_36:

(Start: 51 @30537 has 5 MA's), (53, 30540), (54, 30546), (Start: 72 @30570 has 224 MA's), (82, 30612), (88, 30648), (90, 30651), (96, 30693), (100, 30708), (107, 30729), (108, 30732), (110, 30738), (115, 30762), (117, 30771),

Gene: Efra2\_37 Start: 29012, Stop: 29254, Start Num: 56

Candidate Starts for Efra2\_37:

(43, 28967), (45, 28976), (Start: 56 @29012 has 1 MA's), (58, 29018), (62, 29024), (Start: 72 @29027 has 224 MA's), (82, 29069), (96, 29150), (99, 29162),

Gene: Ekdilam\_33 Start: 29562, Stop: 29792, Start Num: 55

Candidate Starts for Ekdilam\_33:

(10, 29244), (15, 29307), (31, 29442), (36, 29472), (Start: 55 @29562 has 26 MA's), (Start: 72 @29565 has 224 MA's), (86, 29622),

Gene: Elite2014\_109 Start: 62610, Stop: 62873, Start Num: 72

Candidate Starts for Elite2014\_109:

(Start: 72 @62610 has 224 MA's), (78, 62640), (92, 62715), (124, 62832),

Gene: Ellie\_33 Start: 29603, Stop: 29827, Start Num: 72

Candidate Starts for Ellie\_33:

(26, 29405), (31, 29450), (36, 29480), (Start: 70 @29600 has 1 MA's), (Start: 72 @29603 has 224 MA's), (78, 29633), (86, 29660), (110, 29771),

Gene: Ellson\_92 Start: 60063, Stop: 60332, Start Num: 67

Candidate Starts for Ellson\_92:

(Start: 67 @60063 has 20 MA's), (78, 60102), (92, 60177), (99, 60204), (102, 60213), (121, 60285),

Gene: Elph10\_109 Start: 62449, Stop: 62712, Start Num: 72

Candidate Starts for Elph10\_109:

(Start: 72 @62449 has 224 MA's), (76, 62473), (78, 62479), (92, 62554), (124, 62671),

Gene: Emmina\_110 Start: 62388, Stop: 62651, Start Num: 72

Candidate Starts for Emmina\_110:

(Start: 72 @62388 has 224 MA's), (78, 62418), (92, 62493), (95, 62508), (124, 62610),

Gene: Enceladus\_89 Start: 57921, Stop: 58160, Start Num: 72

Candidate Starts for Enceladus\_89:

(Start: 70 @57918 has 1 MA's), (Start: 72 @57921 has 224 MA's), (92, 58026), (95, 58041), (99, 58053), (104, 58068), (107, 58080), (117, 58122), (119, 58128),

Gene: Engineer\_151 Start: 81270, Stop: 81569, Start Num: 47

Candidate Starts for Engineer\_151:

(Start: 47 @81270 has 11 MA's), (Start: 77 @81351 has 1 MA's), (99, 81456), (105, 81474), (119, 81540), (125, 81558),

Gene: Eponine\_39 Start: 31391, Stop: 31672, Start Num: 72

Candidate Starts for Eponine\_39:

(Start: 55 @31385 has 26 MA's), (Start: 72 @31391 has 224 MA's), (Start: 79 @31424 has 1 MA's), (86, 31448), (91, 31484), (101, 31535), (102, 31538), (108, 31556), (110, 31562), (120, 31604), (121, 31607), (122, 31610),

Gene: Eureka\_110 Start: 63576, Stop: 63839, Start Num: 72

Candidate Starts for Eureka\_110:

(Start: 72 @63576 has 224 MA's), (78, 63606), (92, 63681), (95, 63696), (124, 63798),

Gene: Faith1\_96 Start: 59969, Stop: 60229, Start Num: 72

Candidate Starts for Faith1\_96:

(Start: 72 @59969 has 224 MA's), (76, 59993), (92, 60074), (103, 60113), (104, 60116), (106, 60122), (107, 60128), (117, 60170), (119, 60176),

Gene: FarmResident\_98 Start: 59612, Stop: 59851, Start Num: 72

Candidate Starts for FarmResident\_98:

(Start: 66 @59606 has 2 MA's), (Start: 72 @59612 has 224 MA's), (90, 59693), (92, 59717), (99, 59744), (111, 59783), (119, 59819), (121, 59825),

Gene: Fefferhead\_35 Start: 29803, Stop: 30027, Start Num: 72

Candidate Starts for Fefferhead\_35:

(26, 29605), (31, 29650), (36, 29680), (Start: 70 @29800 has 1 MA's), (Start: 72 @29803 has 224 MA's), (78, 29833), (86, 29860), (110, 29971),

Gene: Feyre\_36 Start: 30208, Stop: 30432, Start Num: 72

Candidate Starts for Feyre\_36:

(Start: 51 @30175 has 5 MA's), (Start: 72 @30208 has 224 MA's), (78, 30238), (82, 30250), (88, 30286), (90, 30289), (93, 30316), (100, 30346), (101, 30349), (110, 30376),

Gene: Filch\_112 Start: 62762, Stop: 63025, Start Num: 72

Candidate Starts for Filch\_112:

(Start: 72 @62762 has 224 MA's), (78, 62792), (92, 62867), (124, 62984),

Gene: Finemlucis\_97 Start: 61077, Stop: 61337, Start Num: 72

Candidate Starts for Finemlucis\_97:

(Start: 72 @61077 has 224 MA's), (76, 61101), (92, 61182), (99, 61209), (103, 61221), (104, 61224), (106, 61230), (107, 61236), (117, 61278), (119, 61284),

Gene: Finnry\_93 Start: 60082, Stop: 60351, Start Num: 67

Candidate Starts for Finnry\_93:

(Start: 67 @60082 has 20 MA's), (78, 60121), (92, 60196), (99, 60223), (102, 60232), (121, 60304),

Gene: Fionnbharth\_37 Start: 30626, Stop: 30907, Start Num: 72

Candidate Starts for Fionnbharth\_37:

(14, 30362), (Start: 55 @30620 has 26 MA's), (Start: 72 @30626 has 224 MA's), (Start: 79 @30659 has 1 MA's), (86, 30683), (91, 30719), (101, 30770), (102, 30773), (108, 30791), (110, 30797), (120, 30839), (121, 30842), (122, 30845),

Gene: FireRed\_113 Start: 63852, Stop: 64115, Start Num: 72

Candidate Starts for FireRed\_113:

(Start: 72 @63852 has 224 MA's), (78, 63882), (92, 63957), (124, 64074),

Gene: Flypotenuse\_106 Start: 62157, Stop: 62420, Start Num: 72

Candidate Starts for Flypotenuse\_106:

(Start: 72 @62157 has 224 MA's), (78, 62187), (92, 62262), (124, 62379),

Gene: GMA1\_67 Start: 40045, Stop: 40320, Start Num: 80

Candidate Starts for GMA1\_67:

(80, 40045), (87, 40081), (99, 40165), (113, 40216),

Gene: Gabriela\_96 Start: 59315, Stop: 59575, Start Num: 72

Candidate Starts for Gabriela\_96:

(Start: 72 @59315 has 224 MA's), (76, 59339), (92, 59420), (103, 59459), (104, 59462), (106, 59468), (107, 59474), (117, 59516), (119, 59522),

Gene: Gage\_112 Start: 63108, Stop: 63371, Start Num: 72

Candidate Starts for Gage\_112:

(Start: 72 @63108 has 224 MA's), (78, 63138), (92, 63213), (124, 63330),

Gene: Gardann\_96 Start: 59810, Stop: 60070, Start Num: 72

Candidate Starts for Gardann\_96:

(Start: 72 @59810 has 224 MA's), (76, 59834), (92, 59915), (99, 59942), (103, 59954), (104, 59957), (106, 59963), (107, 59969), (117, 60011), (119, 60017),

Gene: Gator\_108 Start: 63017, Stop: 63280, Start Num: 72

Candidate Starts for Gator\_108:

(Start: 72 @63017 has 224 MA's), (78, 63047), (92, 63122), (124, 63239),

Gene: Geeche\_149 Start: 80647, Stop: 80946, Start Num: 47

Candidate Starts for Geeche\_149:

(Start: 47 @80647 has 11 MA's), (Start: 77 @80728 has 1 MA's), (95, 80821), (103, 80845), (105, 80851), (119, 80917), (125, 80935),

Gene: Gemini\_115 Start: 63487, Stop: 63750, Start Num: 72

Candidate Starts for Gemini\_115:

(Start: 72 @63487 has 224 MA's), (78, 63517), (92, 63592), (124, 63709),

Gene: Gengar\_36 Start: 30285, Stop: 30542, Start Num: 51

Candidate Starts for Gengar\_36:

(Start: 51 @30285 has 5 MA's), (Start: 72 @30318 has 224 MA's), (78, 30348), (82, 30360), (88, 30396), (90, 30399), (93, 30426), (100, 30456), (101, 30459), (110, 30486),

Gene: Glexan\_109 Start: 63167, Stop: 63430, Start Num: 72

Candidate Starts for Glexan\_109:

(Start: 72 @63167 has 224 MA's), (78, 63197), (92, 63272), (124, 63389),

Gene: Goku\_109 Start: 63305, Stop: 63568, Start Num: 72

Candidate Starts for Goku\_109:

(Start: 72 @63305 has 224 MA's), (78, 63335), (92, 63410), (95, 63425), (124, 63527),

Gene: Goldilocks\_113 Start: 62986, Stop: 63249, Start Num: 72

Candidate Starts for Goldilocks\_113:

(Start: 72 @62986 has 224 MA's), (78, 63016), (92, 63091), (124, 63208),

Gene: GooberAzure\_113 Start: 62970, Stop: 63233, Start Num: 72

Candidate Starts for GooberAzure\_113:

(Start: 72 @62970 has 224 MA's), (78, 63000), (92, 63075), (124, 63192),

Gene: Guanica15\_37 Start: 28984, Stop: 29211, Start Num: 72

Candidate Starts for Guanica15\_37:

(Start: 57 @28972 has 2 MA's), (58, 28975), (Start: 72 @28984 has 224 MA's), (82, 29026), (96, 29107), (99, 29119),

Gene: Guillsminger\_36 Start: 30256, Stop: 30513, Start Num: 51

Candidate Starts for Guillsminger\_36:

(Start: 51 @30256 has 5 MA's), (Start: 72 @30289 has 224 MA's), (78, 30319), (82, 30331), (88, 30367), (90, 30370), (93, 30397), (100, 30427), (101, 30430), (110, 30457),

Gene: GuuelaD\_93 Start: 59928, Stop: 60188, Start Num: 72

Candidate Starts for GuuelaD\_93:

(Start: 72 @59928 has 224 MA's), (76, 59952), (92, 60033), (99, 60060), (103, 60072), (104, 60075), (106, 60081), (107, 60087), (117, 60129), (119, 60135),

Gene: Hafay\_97 Start: 60035, Stop: 60274, Start Num: 72

Candidate Starts for Hafay\_97:

(Start: 72 @60035 has 224 MA's), (92, 60140), (99, 60167), (100, 60170), (102, 60176), (103, 60179), (107, 60194), (117, 60236), (119, 60242),

Gene: Halena\_89 Start: 56807, Stop: 57046, Start Num: 72

Candidate Starts for Halena\_89:

(Start: 70 @56804 has 1 MA's), (Start: 72 @56807 has 224 MA's), (92, 56912), (95, 56927), (99, 56939), (104, 56954), (107, 56966), (117, 57008), (119, 57014),

Gene: Hammy\_35 Start: 29798, Stop: 30028, Start Num: 55

Candidate Starts for Hammy\_35:

(Start: 55 @29798 has 26 MA's), (Start: 72 @29801 has 224 MA's),

Gene: HanKaySha\_110 Start: 63158, Stop: 63421, Start Num: 72

Candidate Starts for HanKaySha\_110:

(Start: 72 @63158 has 224 MA's), (78, 63188), (92, 63263), (95, 63278), (124, 63380),

Gene: Harella\_111 Start: 63683, Stop: 63946, Start Num: 72

Candidate Starts for Harella\_111:

(Start: 72 @63683 has 224 MA's), (78, 63713), (92, 63788), (124, 63905),

Gene: Heftyboy\_36 Start: 30435, Stop: 30659, Start Num: 72

Candidate Starts for Heftyboy\_36:

(Start: 51 @30402 has 5 MA's), (Start: 72 @30435 has 224 MA's), (78, 30465), (82, 30477), (88, 30513), (90, 30516), (93, 30543), (100, 30573), (101, 30576), (110, 30603), (117, 30636),

Gene: Henry\_108 Start: 62968, Stop: 63231, Start Num: 72

Candidate Starts for Henry\_108:

(Start: 72 @62968 has 224 MA's), (78, 62998), (92, 63073), (95, 63088), (124, 63190),

Gene: Highbury\_106 Start: 61315, Stop: 61578, Start Num: 72

Candidate Starts for Highbury\_106:

(Start: 72 @61315 has 224 MA's), (78, 61345), (92, 61420), (95, 61435), (124, 61537),

Gene: Hilltopfarm\_30 Start: 27540, Stop: 27812, Start Num: 68

Candidate Starts for Hilltopfarm\_30:

(7, 27174), (15, 27261), (Start: 66 @27537 has 2 MA's), (Start: 68 @27540 has 2 MA's), (Start: 72 @27549 has 224 MA's), (75, 27567), (82, 27591), (83, 27594), (88, 27633), (90, 27636), (100, 27690), (101, 27693), (104, 27702), (119, 27762),

Gene: Holt\_115 Start: 63384, Stop: 63647, Start Num: 72

Candidate Starts for Holt\_115:

(Start: 72 @63384 has 224 MA's), (78, 63414), (92, 63489), (124, 63606),



Gene: Hoonter\_113 Start: 63463, Stop: 63726, Start Num: 72  
Candidate Starts for Hoonter\_113:  
(Start: 72 @63463 has 224 MA's), (78, 63493), (92, 63568), (124, 63685),

Gene: Hokey\_110 Start: 63769, Stop: 64032, Start Num: 72  
Candidate Starts for Hokey\_110:  
(Start: 72 @63769 has 224 MA's), (78, 63799), (92, 63874), (124, 63991),

Gene: HufflyPuff\_112 Start: 64078, Stop: 64341, Start Num: 72  
Candidate Starts for HufflyPuff\_112:  
(Start: 72 @64078 has 224 MA's), (78, 64108), (92, 64183), (124, 64300),

Gene: Hurricane\_37 Start: 30347, Stop: 30586, Start Num: 55  
Candidate Starts for Hurricane\_37:  
(31, 30227), (36, 30257), (Start: 55 @30347 has 26 MA's), (83, 30404), (110, 30530), (115, 30554),

Gene: IHOP\_108 Start: 62686, Stop: 62949, Start Num: 72  
Candidate Starts for IHOP\_108:  
(Start: 72 @62686 has 224 MA's), (78, 62716), (92, 62791), (124, 62908),

Gene: Icee\_111 Start: 62494, Stop: 62757, Start Num: 72  
Candidate Starts for Icee\_111:  
(Start: 72 @62494 has 224 MA's), (78, 62524), (92, 62599), (124, 62716),

Gene: Inca\_107 Start: 61175, Stop: 61438, Start Num: 72  
Candidate Starts for Inca\_107:  
(Start: 72 @61175 has 224 MA's), (78, 61205), (92, 61280), (124, 61397),

Gene: InvictusManeo\_35 Start: 30301, Stop: 30525, Start Num: 72  
Candidate Starts for InvictusManeo\_35:  
(Start: 72 @30301 has 224 MA's), (78, 30331), (82, 30343), (88, 30379), (90, 30382), (100, 30439),  
(107, 30460), (110, 30469), (115, 30493), (117, 30502),

Gene: Itos\_96 Start: 58875, Stop: 59135, Start Num: 72  
Candidate Starts for Itos\_96:  
(Start: 72 @58875 has 224 MA's), (76, 58899), (92, 58980), (103, 59019), (104, 59022), (106, 59028),  
(107, 59034), (117, 59076), (119, 59082),

Gene: JF1\_37 Start: 30619, Stop: 30906, Start Num: 55  
Candidate Starts for JF1\_37:  
(9, 30298), (14, 30361), (Start: 55 @30619 has 26 MA's), (Start: 72 @30625 has 224 MA's), (Start: 79  
@30658 has 1 MA's), (86, 30682), (91, 30718), (101, 30769), (102, 30772), (108, 30790), (110,  
30796), (120, 30838), (121, 30841), (122, 30844),

Gene: JeTaime\_108 Start: 62594, Stop: 62857, Start Num: 72  
Candidate Starts for JeTaime\_108:  
(Start: 72 @62594 has 224 MA's), (78, 62624), (92, 62699), (124, 62816),

Gene: Jobypre\_94 Start: 59729, Stop: 59998, Start Num: 67  
Candidate Starts for Jobypre\_94:  
(Start: 67 @59729 has 20 MA's), (78, 59768), (92, 59843), (99, 59870), (102, 59879), (121, 59951),

Gene: JoeDirt\_93 Start: 58479, Stop: 58721, Start Num: 70

Candidate Starts for JoeDirt\_93:

(Start: 70 @58479 has 1 MA's), (Start: 72 @58482 has 224 MA's), (92, 58587), (95, 58602), (99, 58614), (104, 58629), (107, 58641), (117, 58683), (119, 58689),

Gene: Jubie\_92 Start: 59864, Stop: 60133, Start Num: 67

Candidate Starts for Jubie\_92:

(Start: 67 @59864 has 20 MA's), (78, 59903), (92, 59978), (99, 60005), (102, 60014), (121, 60086),

Gene: Juliette\_39 Start: 30778, Stop: 31065, Start Num: 55

Candidate Starts for Juliette\_39:

(14, 30520), (Start: 55 @30778 has 26 MA's), (Start: 72 @30784 has 224 MA's), (Start: 79 @30817 has 1 MA's), (86, 30841), (91, 30877), (101, 30928), (102, 30931), (108, 30949), (110, 30955), (120, 30997), (121, 31000), (122, 31003),

Gene: Kahlid\_95 Start: 59728, Stop: 59988, Start Num: 72

Candidate Starts for Kahlid\_95:

(Start: 72 @59728 has 224 MA's), (76, 59752), (92, 59833), (99, 59860), (103, 59872), (104, 59875), (106, 59881), (107, 59887), (117, 59929), (119, 59935),

Gene: Kanye\_107 Start: 63219, Stop: 63482, Start Num: 72

Candidate Starts for Kanye\_107:

(Start: 72 @63219 has 224 MA's), (78, 63249), (92, 63324), (124, 63441),

Gene: Keshu\_37 Start: 30338, Stop: 30577, Start Num: 55

Candidate Starts for Keshu\_37:

(36, 30248), (Start: 55 @30338 has 26 MA's), (83, 30395), (101, 30491), (115, 30545),

Gene: KiSi\_36 Start: 29106, Stop: 29339, Start Num: 55

Candidate Starts for KiSi\_36:

(2, 28674), (4, 28698), (10, 28788), (31, 28986), (36, 29016), (Start: 55 @29106 has 26 MA's), (Start: 72 @29109 has 224 MA's), (86, 29166),

Gene: Kimchi\_114 Start: 63111, Stop: 63374, Start Num: 72

Candidate Starts for Kimchi\_114:

(Start: 72 @63111 has 224 MA's), (78, 63141), (92, 63216), (124, 63333),

Gene: Kingsolomon\_91 Start: 59838, Stop: 60107, Start Num: 67

Candidate Starts for Kingsolomon\_91:

(Start: 67 @59838 has 20 MA's), (78, 59877), (92, 59952), (99, 59979), (102, 59988), (121, 60060),

Gene: KirDoubleO7\_91 Start: 59750, Stop: 60019, Start Num: 67

Candidate Starts for KirDoubleO7\_91:

(Start: 67 @59750 has 20 MA's), (78, 59789), (92, 59864), (99, 59891), (102, 59900), (121, 59972),

Gene: Kostya\_110 Start: 62788, Stop: 63051, Start Num: 72

Candidate Starts for Kostya\_110:

(Start: 72 @62788 has 224 MA's), (78, 62818), (92, 62893), (124, 63010),

Gene: Kratio\_34 Start: 29847, Stop: 30071, Start Num: 72

Candidate Starts for Kratio\_34:

(Start: 72 @29847 has 224 MA's), (78, 29877), (82, 29889), (88, 29925), (90, 29928), (100, 29985), (107, 30006), (110, 30015), (117, 30048),

Gene: Krueger\_36 Start: 28751, Stop: 28984, Start Num: 55

Candidate Starts for Krueger\_36:

(36, 28661), (Start: 55 @28751 has 26 MA's), (Start: 72 @28754 has 224 MA's), (86, 28811), (91, 28847), (117, 28955),

Gene: Krypton555\_95 Start: 60241, Stop: 60510, Start Num: 67

Candidate Starts for Krypton555\_95:

(Start: 67 @60241 has 20 MA's), (78, 60280), (92, 60355), (99, 60382), (102, 60391), (121, 60463),

Gene: Kudrefre\_129 Start: 69576, Stop: 69818, Start Num: 67

Candidate Starts for Kudrefre\_129:

(63, 69570), (Start: 67 @69576 has 20 MA's), (82, 69627), (92, 69690), (94, 69711), (110, 69765), (112, 69774), (116, 69795),

Gene: Kumao\_73 Start: 50178, Stop: 50432, Start Num: 71

Candidate Starts for Kumao\_73:

(Start: 71 @50178 has 1 MA's), (Start: 79 @50211 has 1 MA's), (85, 50229), (89, 50256), (90, 50259), (99, 50319), (106, 50337), (109, 50352), (112, 50367),

Gene: Larva\_36 Start: 30011, Stop: 30235, Start Num: 72

Candidate Starts for Larva\_36:

(Start: 72 @30011 has 224 MA's), (78, 30041), (82, 30053), (88, 30089), (90, 30092), (100, 30149), (107, 30170), (108, 30173), (110, 30179), (115, 30203), (117, 30212),

Gene: LastHope\_37 Start: 28857, Stop: 29096, Start Num: 57

Candidate Starts for LastHope\_37:

(11, 28575), (25, 28683), (44, 28812), (Start: 57 @28857 has 2 MA's), (58, 28860), (Start: 72 @28869 has 224 MA's), (82, 28911), (96, 28992), (99, 29004), (110, 29037), (120, 29076),

Gene: LeBron\_91 Start: 57114, Stop: 57353, Start Num: 72

Candidate Starts for LeBron\_91:

(Start: 70 @57111 has 1 MA's), (Start: 72 @57114 has 224 MA's), (92, 57219), (95, 57234), (99, 57246), (104, 57261), (107, 57273), (119, 57321),

Gene: LeMond\_36 Start: 29177, Stop: 29410, Start Num: 55

Candidate Starts for LeMond\_36:

(2, 28745), (4, 28769), (10, 28859), (31, 29057), (36, 29087), (Start: 55 @29177 has 26 MA's), (Start: 72 @29180 has 224 MA's), (86, 29237),

Gene: Leston\_36 Start: 30386, Stop: 30643, Start Num: 51

Candidate Starts for Leston\_36:

(Start: 51 @30386 has 5 MA's), (Start: 72 @30419 has 224 MA's), (78, 30449), (82, 30461), (88, 30497), (90, 30500), (93, 30527), (100, 30557), (101, 30560), (110, 30587),

Gene: Lewan\_97 Start: 59968, Stop: 60228, Start Num: 72

Candidate Starts for Lewan\_97:

(Start: 72 @59968 has 224 MA's), (76, 59992), (92, 60073), (103, 60112), (104, 60115), (106, 60121), (107, 60127), (117, 60169), (119, 60175),

Gene: LilDestine\_94 Start: 59639, Stop: 59899, Start Num: 72

Candidate Starts for LilDestine\_94:

(Start: 72 @59639 has 224 MA's), (76, 59663), (92, 59744), (99, 59771), (103, 59783), (104, 59786), (106, 59792), (107, 59798), (117, 59840), (119, 59846),

Gene: Lilac\_111 Start: 63912, Stop: 64175, Start Num: 72  
Candidate Starts for Lilac\_111:  
(Start: 72 @63912 has 224 MA's), (78, 63942), (92, 64017), (124, 64134),

Gene: Lilizi\_110 Start: 63198, Stop: 63461, Start Num: 72  
Candidate Starts for Lilizi\_110:  
(Start: 72 @63198 has 224 MA's), (78, 63228), (92, 63303), (124, 63420),

Gene: Lilpickle\_109 Start: 62610, Stop: 62873, Start Num: 72  
Candidate Starts for Lilpickle\_109:  
(Start: 72 @62610 has 224 MA's), (78, 62640), (92, 62715), (124, 62832),

Gene: LiyuLake\_92 Start: 59823, Stop: 60092, Start Num: 67  
Candidate Starts for LiyuLake\_92:  
(Start: 67 @59823 has 20 MA's), (78, 59862), (92, 59937), (99, 59964), (102, 59973), (121, 60045),

Gene: Loadrie\_95 Start: 60130, Stop: 60390, Start Num: 72  
Candidate Starts for Loadrie\_95:  
(Start: 72 @60130 has 224 MA's), (76, 60154), (92, 60235), (99, 60262), (103, 60274), (104, 60277),  
(106, 60283), (107, 60289), (117, 60331), (119, 60337),

Gene: Lolly9\_92 Start: 59914, Stop: 60183, Start Num: 67  
Candidate Starts for Lolly9\_92:  
(Start: 67 @59914 has 20 MA's), (78, 59953), (92, 60028), (99, 60055), (102, 60064), (121, 60136),

Gene: Lozinak\_149 Start: 81275, Stop: 81574, Start Num: 47  
Candidate Starts for Lozinak\_149:  
(Start: 47 @81275 has 11 MA's), (Start: 77 @81356 has 1 MA's), (99, 81461), (105, 81479), (119,  
81545), (125, 81563),

Gene: Lumos\_93 Start: 59726, Stop: 59995, Start Num: 67  
Candidate Starts for Lumos\_93:  
(Start: 67 @59726 has 20 MA's), (78, 59765), (92, 59840), (99, 59867), (102, 59876), (121, 59948),

Gene: MAckerman\_90 Start: 56800, Stop: 57039, Start Num: 72  
Candidate Starts for MAckerman\_90:  
(Start: 70 @56797 has 1 MA's), (Start: 72 @56800 has 224 MA's), (92, 56905), (95, 56920), (99,  
56932), (104, 56947), (107, 56959), (117, 57001), (119, 57007),

Gene: MPhalcon\_111 Start: 63313, Stop: 63576, Start Num: 72  
Candidate Starts for MPhalcon\_111:  
(Start: 72 @63313 has 224 MA's), (78, 63343), (92, 63418), (124, 63535),

Gene: MacnCheese\_37 Start: 30394, Stop: 30618, Start Num: 72  
Candidate Starts for MacnCheese\_37:  
(36, 30301), (Start: 55 @30391 has 26 MA's), (Start: 72 @30394 has 224 MA's),

Gene: MadamMonkfish\_109 Start: 62620, Stop: 62883, Start Num: 72  
Candidate Starts for MadamMonkfish\_109:  
(Start: 72 @62620 has 224 MA's), (78, 62650), (92, 62725), (95, 62740), (124, 62842),

Gene: MalagasyRose\_37 Start: 29428, Stop: 29652, Start Num: 72

Candidate Starts for MalagasyRose\_37:

(29, 29272), (40, 29350), (41, 29353), (Start: 72 @29428 has 224 MA's), (81, 29467), (82, 29470), (93, 29536), (96, 29551), (98, 29560), (108, 29590), (110, 29596), (114, 29611), (122, 29641),

Gene: Malthus\_38 Start: 30550, Stop: 30831, Start Num: 72

Candidate Starts for Malthus\_38:

(14, 30286), (Start: 55 @30544 has 26 MA's), (Start: 72 @30550 has 224 MA's), (Start: 79 @30583 has 1 MA's), (86, 30607), (91, 30643), (101, 30694), (102, 30697), (108, 30715), (110, 30721), (120, 30763), (121, 30766), (122, 30769),

Gene: Manda\_111 Start: 63350, Stop: 63613, Start Num: 72

Candidate Starts for Manda\_111:

(Start: 72 @63350 has 224 MA's), (78, 63380), (92, 63455), (95, 63470), (124, 63572),

Gene: MarkPhew\_37 Start: 29081, Stop: 29311, Start Num: 72

Candidate Starts for MarkPhew\_37:

(10, 28760), (31, 28958), (36, 28988), (Start: 55 @29078 has 26 MA's), (Start: 72 @29081 has 224 MA's), (78, 29111), (86, 29138),

Gene: Marshmallow\_108 Start: 63308, Stop: 63571, Start Num: 72

Candidate Starts for Marshmallow\_108:

(Start: 72 @63308 has 224 MA's), (78, 63338), (92, 63413), (95, 63428), (124, 63530),

Gene: Maxxinista\_112 Start: 63097, Stop: 63360, Start Num: 72

Candidate Starts for Maxxinista\_112:

(Start: 72 @63097 has 224 MA's), (78, 63127), (92, 63202), (124, 63319),

Gene: McMater\_36 Start: 28807, Stop: 29037, Start Num: 55

Candidate Starts for McMater\_36:

(10, 28489), (23, 28618), (31, 28687), (36, 28717), (Start: 55 @28807 has 26 MA's), (Start: 72 @28810 has 224 MA's), (96, 28933), (107, 28969),

Gene: Miley16\_96 Start: 60332, Stop: 60592, Start Num: 72

Candidate Starts for Miley16\_96:

(Start: 72 @60332 has 224 MA's), (76, 60356), (92, 60437), (103, 60476), (104, 60479), (106, 60485), (107, 60491), (117, 60533), (119, 60539),

Gene: Mindy\_109 Start: 62629, Stop: 62892, Start Num: 72

Candidate Starts for Mindy\_109:

(Start: 72 @62629 has 224 MA's), (78, 62659), (92, 62734), (124, 62851),

Gene: MiniLon\_97 Start: 59915, Stop: 60184, Start Num: 67

Candidate Starts for MiniLon\_97:

(Start: 67 @59915 has 20 MA's), (78, 59954), (92, 60029), (99, 60056), (102, 60065), (121, 60137),

Gene: MiniMac\_97 Start: 59910, Stop: 60179, Start Num: 67

Candidate Starts for MiniMac\_97:

(Start: 67 @59910 has 20 MA's), (78, 59949), (92, 60024), (99, 60051), (102, 60060), (121, 60132),

Gene: Miniwave\_105 Start: 62806, Stop: 63069, Start Num: 72

Candidate Starts for Miniwave\_105:

(Start: 72 @62806 has 224 MA's), (78, 62836), (92, 62911), (124, 63028),

Gene: Miryou\_36 Start: 30274, Stop: 30498, Start Num: 72

Candidate Starts for Miryou\_36:

(Start: 51 @30241 has 5 MA's), (Start: 72 @30274 has 224 MA's), (78, 30304), (82, 30316), (93, 30382), (100, 30412), (110, 30442), (117, 30475),

Gene: Misfit\_111 Start: 64409, Stop: 64672, Start Num: 72

Candidate Starts for Misfit\_111:

(Start: 72 @64409 has 224 MA's), (78, 64439), (92, 64514), (124, 64631),

Gene: Miskis\_147 Start: 80036, Stop: 80335, Start Num: 47

Candidate Starts for Miskis\_147:

(Start: 47 @80036 has 11 MA's), (Start: 77 @80117 has 1 MA's), (99, 80222), (105, 80240), (119, 80306), (125, 80324),

Gene: MissDaisy\_37 Start: 30393, Stop: 30674, Start Num: 72

Candidate Starts for MissDaisy\_37:

(Start: 55 @30387 has 26 MA's), (Start: 72 @30393 has 224 MA's), (Start: 79 @30426 has 1 MA's), (86, 30450), (91, 30486), (101, 30537), (102, 30540), (108, 30558), (110, 30564), (111, 30567), (120, 30606), (121, 30609), (122, 30612),

Gene: Mitti\_37 Start: 30551, Stop: 30832, Start Num: 72

Candidate Starts for Mitti\_37:

(Start: 55 @30545 has 26 MA's), (Start: 72 @30551 has 224 MA's), (Start: 79 @30584 has 1 MA's), (86, 30608), (91, 30644), (101, 30695), (102, 30698), (108, 30716), (110, 30722), (120, 30764), (121, 30767), (122, 30770),

Gene: MkaliMitinis3\_98 Start: 60094, Stop: 60354, Start Num: 72

Candidate Starts for MkaliMitinis3\_98:

(Start: 72 @60094 has 224 MA's), (76, 60118), (92, 60199), (103, 60238), (104, 60241), (106, 60247), (107, 60253), (117, 60295), (119, 60301),

Gene: Moldemort\_112 Start: 63078, Stop: 63341, Start Num: 72

Candidate Starts for Moldemort\_112:

(Start: 72 @63078 has 224 MA's), (78, 63108), (92, 63183), (95, 63198), (124, 63300),

Gene: Moostard\_90 Start: 59833, Stop: 60102, Start Num: 67

Candidate Starts for Moostard\_90:

(Start: 67 @59833 has 20 MA's), (78, 59872), (92, 59947), (99, 59974), (102, 59983), (121, 60055),

Gene: Mosby\_107 Start: 62773, Stop: 63036, Start Num: 72

Candidate Starts for Mosby\_107:

(Start: 72 @62773 has 224 MA's), (78, 62803), (92, 62878), (124, 62995),

Gene: MsGreen\_93 Start: 59728, Stop: 59997, Start Num: 67

Candidate Starts for MsGreen\_93:

(Start: 67 @59728 has 20 MA's), (78, 59767), (92, 59842), (99, 59869), (102, 59878), (121, 59950),

Gene: Murica\_114 Start: 65112, Stop: 65375, Start Num: 72

Candidate Starts for Murica\_114:

(Start: 72 @65112 has 224 MA's), (78, 65142), (92, 65217), (124, 65334),

Gene: Murphy\_109 Start: 63470, Stop: 63733, Start Num: 72

Candidate Starts for Murphy\_109:

(Start: 72 @63470 has 224 MA's), (78, 63500), (92, 63575), (95, 63590), (124, 63692),

Gene: Myrale\_110 Start: 63567, Stop: 63830, Start Num: 72

Candidate Starts for Myrale\_110:

(Start: 72 @63567 has 224 MA's), (78, 63597), (92, 63672), (124, 63789),

Gene: Nala\_112 Start: 63822, Stop: 64085, Start Num: 72

Candidate Starts for Nala\_112:

(Start: 72 @63822 has 224 MA's), (78, 63852), (92, 63927), (124, 64044),

Gene: NelitzaMV\_107 Start: 61795, Stop: 62058, Start Num: 72

Candidate Starts for NelitzaMV\_107:

(Start: 72 @61795 has 224 MA's), (78, 61825), (92, 61900), (124, 62017),

Gene: Nergal\_32 Start: 27271, Stop: 27504, Start Num: 57

Candidate Starts for Nergal\_32:

(Start: 57 @27271 has 2 MA's), (82, 27319), (84, 27325), (110, 27448), (117, 27481),

Gene: Netyap\_95 Start: 59970, Stop: 60230, Start Num: 72

Candidate Starts for Netyap\_95:

(Start: 72 @59970 has 224 MA's), (76, 59994), (92, 60075), (103, 60114), (104, 60117), (106, 60123), (107, 60129), (117, 60171), (119, 60177),

Gene: Neville\_126 Start: 70558, Stop: 70776, Start Num: 73

Candidate Starts for Neville\_126:

(Start: 70 @70552 has 1 MA's), (Start: 73 @70558 has 3 MA's), (74, 70567), (Start: 77 @70582 has 1 MA's), (78, 70585), (Start: 79 @70588 has 1 MA's), (81, 70594), (84, 70603), (86, 70612), (90, 70636), (91, 70648), (95, 70675), (96, 70678), (100, 70693), (101, 70696), (103, 70699), (107, 70714), (108, 70717), (110, 70723), (111, 70726), (118, 70756), (123, 70771),

Gene: Nibb\_35 Start: 28648, Stop: 28878, Start Num: 72

Candidate Starts for Nibb\_35:

(36, 28555), (Start: 55 @28645 has 26 MA's), (Start: 72 @28648 has 224 MA's), (86, 28705), (110, 28816),

Gene: Nicholas\_91 Start: 59838, Stop: 60107, Start Num: 67

Candidate Starts for Nicholas\_91:

(Start: 67 @59838 has 20 MA's), (78, 59877), (92, 59952), (99, 59979), (102, 59988), (121, 60060),

Gene: Nicholasp3\_96 Start: 59810, Stop: 60070, Start Num: 72

Candidate Starts for Nicholasp3\_96:

(Start: 72 @59810 has 224 MA's), (76, 59834), (92, 59915), (99, 59942), (103, 59954), (104, 59957), (106, 59963), (107, 59969), (117, 60011), (119, 60017),

Gene: Niklas\_36 Start: 28813, Stop: 29040, Start Num: 72

Candidate Starts for Niklas\_36:

(10, 28492), (23, 28621), (31, 28690), (36, 28720), (Start: 55 @28810 has 26 MA's), (Start: 72 @28813 has 224 MA's), (96, 28936), (107, 28972),

Gene: Nimrod\_110 Start: 63456, Stop: 63719, Start Num: 72

Candidate Starts for Nimrod\_110:

(Start: 72 @63456 has 224 MA's), (78, 63486), (92, 63561), (124, 63678),

Gene: NoSleep\_110 Start: 62630, Stop: 62893, Start Num: 72  
Candidate Starts for NoSleep\_110:  
(Start: 72 @62630 has 224 MA's), (78, 62660), (92, 62735), (124, 62852),

Gene: Norvs\_147 Start: 80466, Stop: 80765, Start Num: 47  
Candidate Starts for Norvs\_147:  
(Start: 47 @80466 has 11 MA's), (Start: 77 @80547 has 1 MA's), (99, 80652), (105, 80670), (119, 80736), (125, 80754),

Gene: Octobien14\_125 Start: 68110, Stop: 68352, Start Num: 67  
Candidate Starts for Octobien14\_125:  
(63, 68104), (Start: 67 @68110 has 20 MA's), (Start: 73 @68122 has 3 MA's), (76, 68143), (82, 68161), (92, 68224), (94, 68245), (106, 68284), (110, 68299), (112, 68308), (118, 68332),

Gene: OhShagHennessy\_88 Start: 57057, Stop: 57296, Start Num: 72  
Candidate Starts for OhShagHennessy\_88:  
(Start: 70 @57054 has 1 MA's), (Start: 72 @57057 has 224 MA's), (92, 57162), (95, 57177), (99, 57189), (104, 57204), (107, 57216), (117, 57258), (119, 57264),

Gene: OkiRoe\_36 Start: 30291, Stop: 30515, Start Num: 72  
Candidate Starts for OkiRoe\_36:  
(Start: 51 @30258 has 5 MA's), (Start: 72 @30291 has 224 MA's), (78, 30321), (82, 30333), (88, 30369), (90, 30372), (93, 30399), (100, 30429), (101, 30432), (110, 30459),

Gene: OmniCritical\_37 Start: 30529, Stop: 30816, Start Num: 55  
Candidate Starts for OmniCritical\_37:  
(Start: 55 @30529 has 26 MA's), (Start: 72 @30535 has 224 MA's), (Start: 79 @30568 has 1 MA's), (86, 30592), (91, 30628), (101, 30679), (102, 30682), (108, 30700), (110, 30706), (120, 30748), (121, 30751), (122, 30754),

Gene: Omnicron\_39 Start: 29782, Stop: 30006, Start Num: 72  
Candidate Starts for Omnicron\_39:  
(Start: 72 @29782 has 224 MA's), (78, 29812), (82, 29824), (90, 29863), (100, 29920), (108, 29944), (110, 29950), (115, 29974), (117, 29983),

Gene: OneUp\_134 Start: 80067, Stop: 80324, Start Num: 61  
Candidate Starts for OneUp\_134:  
(Start: 61 @80067 has 3 MA's), (Start: 70 @80082 has 1 MA's), (Start: 72 @80085 has 224 MA's), (Start: 73 @80088 has 3 MA's), (90, 80166), (105, 80235), (112, 80271), (114, 80277), (119, 80301), (120, 80304),

Gene: OrionPax\_108 Start: 62703, Stop: 62966, Start Num: 72  
Candidate Starts for OrionPax\_108:  
(Start: 72 @62703 has 224 MA's), (78, 62733), (92, 62808), (95, 62823), (124, 62925),

Gene: Oscar\_36 Start: 29182, Stop: 29412, Start Num: 72  
Candidate Starts for Oscar\_36:  
(2, 28747), (4, 28771), (10, 28861), (31, 29059), (36, 29089), (Start: 55 @29179 has 26 MA's), (Start: 72 @29182 has 224 MA's), (78, 29212), (86, 29239),

Gene: PYPDinur\_97 Start: 60288, Stop: 60527, Start Num: 72  
Candidate Starts for PYPDinur\_97:



(64, 60282), (Start: 72 @60288 has 224 MA's), (90, 60369), (92, 60393), (99, 60420), (111, 60459), (119, 60495), (121, 60501),

Gene: Paola\_36 Start: 30256, Stop: 30513, Start Num: 51

Candidate Starts for Paola\_36:

(Start: 51 @30256 has 5 MA's), (Start: 72 @30289 has 224 MA's), (78, 30319), (82, 30331), (88, 30367), (90, 30370), (93, 30397), (100, 30427), (101, 30430), (110, 30457),

Gene: Paperbeatsrock\_109 Start: 63484, Stop: 63747, Start Num: 72

Candidate Starts for Paperbeatsrock\_109:

(Start: 72 @63484 has 224 MA's), (78, 63514), (92, 63589), (124, 63706),

Gene: Pat3\_107 Start: 62123, Stop: 62386, Start Num: 72

Candidate Starts for Pat3\_107:

(Start: 72 @62123 has 224 MA's), (78, 62153), (92, 62228), (124, 62345),

Gene: Patt\_37 Start: 30369, Stop: 30650, Start Num: 72

Candidate Starts for Patt\_37:

(Start: 55 @30363 has 26 MA's), (Start: 72 @30369 has 224 MA's), (Start: 79 @30402 has 1 MA's), (86, 30426), (91, 30462), (101, 30513), (102, 30516), (108, 30534), (110, 30540), (111, 30543), (120, 30582), (121, 30585), (122, 30588),

Gene: Peanam\_36 Start: 28807, Stop: 29037, Start Num: 55

Candidate Starts for Peanam\_36:

(10, 28489), (23, 28618), (31, 28687), (36, 28717), (Start: 55 @28807 has 26 MA's), (Start: 72 @28810 has 224 MA's), (96, 28933), (107, 28969),

Gene: Phaja\_108 Start: 62688, Stop: 62951, Start Num: 72

Candidate Starts for Phaja\_108:

(Start: 72 @62688 has 224 MA's), (78, 62718), (92, 62793), (124, 62910),

Gene: Pharb\_35 Start: 29653, Stop: 29877, Start Num: 72

Candidate Starts for Pharb\_35:

(10, 29332), (31, 29530), (36, 29560), (Start: 55 @29650 has 26 MA's), (Start: 72 @29653 has 224 MA's), (86, 29710),

Gene: Pharsalus\_107 Start: 63183, Stop: 63446, Start Num: 72

Candidate Starts for Pharsalus\_107:

(Start: 72 @63183 has 224 MA's), (78, 63213), (92, 63288), (124, 63405),

Gene: PhatBacter\_113 Start: 63852, Stop: 64115, Start Num: 72

Candidate Starts for PhatBacter\_113:

(Start: 72 @63852 has 224 MA's), (78, 63882), (92, 63957), (124, 64074),

Gene: Phaux\_112 Start: 64412, Stop: 64675, Start Num: 72

Candidate Starts for Phaux\_112:

(Start: 72 @64412 has 224 MA's), (78, 64442), (92, 64517), (95, 64532), (124, 64634),

Gene: PhelpsODU\_36 Start: 28916, Stop: 29149, Start Num: 55

Candidate Starts for PhelpsODU\_36:

(Start: 55 @28916 has 26 MA's), (98, 29057), (121, 29135),

Gene: PhinkBoden\_147 Start: 80864, Stop: 81163, Start Num: 47

Candidate Starts for PhinkBoden\_147:

(Start: 47 @80864 has 11 MA's), (Start: 77 @80945 has 1 MA's), (99, 81050), (105, 81068), (119, 81134), (125, 81152),

Gene: Phrank\_36 Start: 28866, Stop: 29099, Start Num: 55

Candidate Starts for Phrank\_36:

(36, 28776), (Start: 55 @28866 has 26 MA's), (98, 29007), (121, 29085),

Gene: Phrappuccino\_198 Start: 133100, Stop: 133375, Start Num: 59

Candidate Starts for Phrappuccino\_198:

(Start: 59 @133100 has 2 MA's), (103, 133265), (104, 133268), (108, 133283), (117, 133319), (119, 133325),

Gene: Phrux\_106 Start: 62490, Stop: 62753, Start Num: 72

Candidate Starts for Phrux\_106:

(Start: 72 @62490 has 224 MA's), (78, 62520), (92, 62595), (124, 62712),

Gene: Pixie\_36 Start: 29889, Stop: 30128, Start Num: 55

Candidate Starts for Pixie\_36:

(2, 29457), (4, 29481), (10, 29571), (31, 29769), (36, 29799), (Start: 55 @29889 has 26 MA's), (83, 29946), (101, 30042), (110, 30072),

Gene: Porky\_108 Start: 62234, Stop: 62497, Start Num: 72

Candidate Starts for Porky\_108:

(Start: 72 @62234 has 224 MA's), (78, 62264), (92, 62339), (95, 62354), (124, 62456),

Gene: Psycho\_36 Start: 30141, Stop: 30365, Start Num: 72

Candidate Starts for Psycho\_36:

(Start: 72 @30141 has 224 MA's), (78, 30171), (82, 30183), (88, 30219), (90, 30222), (100, 30279), (107, 30300), (108, 30303), (110, 30309), (115, 30333), (117, 30342),

Gene: Pumpkin\_111 Start: 62830, Stop: 63093, Start Num: 72

Candidate Starts for Pumpkin\_111:

(Start: 72 @62830 has 224 MA's), (78, 62860), (92, 62935), (124, 63052),

Gene: Quallification\_111 Start: 63898, Stop: 64161, Start Num: 72

Candidate Starts for Quallification\_111:

(Start: 72 @63898 has 224 MA's), (78, 63928), (92, 64003), (124, 64120),

Gene: Quby\_97 Start: 59700, Stop: 59939, Start Num: 72

Candidate Starts for Quby\_97:

(46, 59646), (65, 59694), (Start: 72 @59700 has 224 MA's), (90, 59781), (92, 59805), (99, 59832), (111, 59871), (119, 59907), (121, 59913),

Gene: Rabbitrun\_128 Start: 72178, Stop: 72396, Start Num: 73

Candidate Starts for Rabbitrun\_128:

(Start: 70 @72172 has 1 MA's), (Start: 73 @72178 has 3 MA's), (74, 72187), (Start: 77 @72202 has 1 MA's), (78, 72205), (Start: 79 @72208 has 1 MA's), (82, 72217), (84, 72223), (86, 72232), (92, 72280), (96, 72298), (100, 72313), (101, 72316), (103, 72319), (107, 72334), (108, 72337), (110, 72343), (111, 72346), (118, 72376), (123, 72391),

Gene: Rakim\_111 Start: 62900, Stop: 63163, Start Num: 72

Candidate Starts for Rakim\_111:

(Start: 72 @62900 has 224 MA's), (78, 62930), (92, 63005), (124, 63122),

Gene: Rando14\_38 Start: 29354, Stop: 29578, Start Num: 61

Candidate Starts for Rando14\_38:

(Start: 61 @29354 has 3 MA's), (78, 29384), (82, 29396), (90, 29435), (100, 29492), (108, 29516), (110, 29522), (115, 29546), (117, 29555),

Gene: Reptar3000\_37 Start: 30360, Stop: 30641, Start Num: 72

Candidate Starts for Reptar3000\_37:

(Start: 55 @30354 has 26 MA's), (Start: 72 @30360 has 224 MA's), (Start: 79 @30393 has 1 MA's), (86, 30417), (91, 30453), (101, 30504), (102, 30507), (108, 30525), (110, 30531), (111, 30534), (120, 30573), (121, 30576), (122, 30579),

Gene: Richo\_36 Start: 28807, Stop: 29037, Start Num: 55

Candidate Starts for Richo\_36:

(10, 28489), (23, 28618), (31, 28687), (36, 28717), (Start: 55 @28807 has 26 MA's), (Start: 72 @28810 has 224 MA's), (96, 28933), (107, 28969),

Gene: Rimmer\_108 Start: 63289, Stop: 63552, Start Num: 72

Candidate Starts for Rimmer\_108:

(Start: 72 @63289 has 224 MA's), (78, 63319), (92, 63394), (124, 63511),

Gene: RiverMonster\_109 Start: 63385, Stop: 63648, Start Num: 72

Candidate Starts for RiverMonster\_109:

(Start: 72 @63385 has 224 MA's), (78, 63415), (92, 63490), (124, 63607),

Gene: Rose5\_93 Start: 58324, Stop: 58563, Start Num: 72

Candidate Starts for Rose5\_93:

(Start: 70 @58321 has 1 MA's), (Start: 72 @58324 has 224 MA's), (92, 58429), (95, 58444), (99, 58456), (104, 58471), (107, 58483), (117, 58525), (119, 58531),

Gene: Rumpelstiltskin\_92 Start: 59603, Stop: 59863, Start Num: 72

Candidate Starts for Rumpelstiltskin\_92:

(Start: 72 @59603 has 224 MA's), (76, 59627), (92, 59708), (99, 59735), (103, 59747), (104, 59750), (106, 59756), (107, 59762), (117, 59804), (119, 59810),

Gene: Ruthiejr\_38 Start: 30510, Stop: 30797, Start Num: 55

Candidate Starts for Ruthiejr\_38:

(14, 30252), (Start: 55 @30510 has 26 MA's), (Start: 72 @30516 has 224 MA's), (Start: 79 @30549 has 1 MA's), (86, 30573), (91, 30609), (101, 30660), (102, 30663), (108, 30681), (110, 30687), (120, 30729), (121, 30732), (122, 30735),

Gene: Saints25\_106 Start: 61315, Stop: 61578, Start Num: 72

Candidate Starts for Saints25\_106:

(Start: 72 @61315 has 224 MA's), (78, 61345), (92, 61420), (95, 61435), (124, 61537),

Gene: SamScheppers\_37 Start: 31023, Stop: 31310, Start Num: 55

Candidate Starts for SamScheppers\_37:

(Start: 55 @31023 has 26 MA's), (Start: 72 @31029 has 224 MA's), (Start: 79 @31062 has 1 MA's), (86, 31086), (91, 31122), (101, 31173), (102, 31176), (108, 31194), (110, 31200), (120, 31242), (121, 31245), (122, 31248),

Gene: Samty\_92 Start: 59826, Stop: 60095, Start Num: 67

Candidate Starts for Samty\_92:

(Start: 67 @59826 has 20 MA's), (78, 59865), (92, 59940), (99, 59967), (102, 59976), (121, 60048),

Gene: Sarshaun\_97 Start: 60721, Stop: 60981, Start Num: 72

Candidate Starts for Sarshaun\_97:

(Start: 72 @60721 has 224 MA's), (76, 60745), (92, 60826), (103, 60865), (104, 60868), (106, 60874), (107, 60880), (117, 60922), (119, 60928),

Gene: Scarlett\_36 Start: 29182, Stop: 29412, Start Num: 72

Candidate Starts for Scarlett\_36:

(Start: 55 @29179 has 26 MA's), (Start: 72 @29182 has 224 MA's), (86, 29239),

Gene: Sephiroth\_124 Start: 69346, Stop: 69588, Start Num: 67

Candidate Starts for Sephiroth\_124:

(63, 69340), (Start: 67 @69346 has 20 MA's), (82, 69397), (92, 69460), (94, 69481), (110, 69535), (112, 69544), (116, 69565),

Gene: Settecandela\_223 Start: 141947, Stop: 142222, Start Num: 59

Candidate Starts for Settecandela\_223:

(Start: 59 @141947 has 2 MA's), (103, 142112), (104, 142115), (108, 142130), (117, 142166), (119, 142172),

Gene: Shadow1\_35 Start: 28661, Stop: 28891, Start Num: 72

Candidate Starts for Shadow1\_35:

(31, 28538), (36, 28568), (Start: 55 @28658 has 26 MA's), (Start: 72 @28661 has 224 MA's), (86, 28718), (117, 28862),

Gene: Shagrat\_102 Start: 54294, Stop: 54536, Start Num: 69

Candidate Starts for Shagrat\_102:

(28, 54126), (35, 54174), (44, 54228), (Start: 69 @54294 has 1 MA's), (91, 54393), (104, 54447), (108, 54462),

Gene: ShamWow\_110 Start: 63783, Stop: 64046, Start Num: 72

Candidate Starts for ShamWow\_110:

(Start: 72 @63783 has 224 MA's), (78, 63813), (92, 63888), (124, 64005),

Gene: Shaobing\_36 Start: 28810, Stop: 29037, Start Num: 72

Candidate Starts for Shaobing\_36:

(10, 28489), (23, 28618), (31, 28687), (36, 28717), (Start: 55 @28807 has 26 MA's), (Start: 72 @28810 has 224 MA's), (96, 28933), (107, 28969),

Gene: ShedlockHolmes\_37 Start: 30411, Stop: 30650, Start Num: 55

Candidate Starts for ShedlockHolmes\_37:

(10, 30093), (31, 30291), (36, 30321), (Start: 55 @30411 has 26 MA's), (83, 30468), (110, 30594), (115, 30618),

Gene: Sheng711\_98 Start: 59764, Stop: 60003, Start Num: 72

Candidate Starts for Sheng711\_98:

(64, 59758), (Start: 72 @59764 has 224 MA's), (90, 59845), (92, 59869), (99, 59896), (106, 59917), (111, 59935), (119, 59971),

Gene: ShereKhan\_108 Start: 64144, Stop: 64407, Start Num: 72

Candidate Starts for ShereKhan\_108:

(Start: 72 @64144 has 224 MA's), (78, 64174), (92, 64249), (124, 64366),

Gene: Silverleaf\_91 Start: 57820, Stop: 58059, Start Num: 72

Candidate Starts for Silverleaf\_91:

(Start: 70 @57817 has 1 MA's), (Start: 72 @57820 has 224 MA's), (92, 57925), (95, 57940), (99, 57952), (104, 57967), (107, 57979), (119, 58027),

Gene: Simpliphy\_108 Start: 62956, Stop: 63219, Start Num: 72

Candidate Starts for Simpliphy\_108:

(Start: 72 @62956 has 224 MA's), (78, 62986), (92, 63061), (95, 63076), (124, 63178),

Gene: SirDuracell\_110 Start: 62622, Stop: 62885, Start Num: 72

Candidate Starts for SirDuracell\_110:

(Start: 72 @62622 has 224 MA's), (78, 62652), (92, 62727), (124, 62844),

Gene: SirPhilip\_35 Start: 28286, Stop: 28516, Start Num: 55

Candidate Starts for SirPhilip\_35:

(Start: 55 @28286 has 26 MA's), (Start: 72 @28289 has 224 MA's), (86, 28346),

Gene: Slarp\_37 Start: 30638, Stop: 30919, Start Num: 72

Candidate Starts for Slarp\_37:

(Start: 55 @30632 has 26 MA's), (Start: 72 @30638 has 224 MA's), (Start: 79 @30671 has 1 MA's), (86, 30695), (91, 30731), (98, 30773), (101, 30782), (102, 30785), (108, 30803), (110, 30809), (120, 30851), (121, 30854), (122, 30857),

Gene: Smoothie\_150 Start: 80851, Stop: 81150, Start Num: 47

Candidate Starts for Smoothie\_150:

(Start: 47 @80851 has 11 MA's), (Start: 77 @80932 has 1 MA's), (105, 81055), (119, 81121), (125, 81139),

Gene: Snenia\_92 Start: 59730, Stop: 59999, Start Num: 67

Candidate Starts for Snenia\_92:

(Start: 67 @59730 has 20 MA's), (78, 59769), (92, 59844), (99, 59871), (102, 59880), (121, 59952),

Gene: SoSeph\_36 Start: 30435, Stop: 30659, Start Num: 72

Candidate Starts for SoSeph\_36:

(Start: 51 @30402 has 5 MA's), (Start: 72 @30435 has 224 MA's), (78, 30465), (82, 30477), (88, 30513), (90, 30516), (93, 30543), (100, 30573), (101, 30576), (110, 30603), (117, 30636),

Gene: Soap141\_96 Start: 60721, Stop: 60981, Start Num: 72

Candidate Starts for Soap141\_96:

(Start: 72 @60721 has 224 MA's), (76, 60745), (92, 60826), (103, 60865), (104, 60868), (106, 60874), (107, 60880), (117, 60922), (119, 60928),

Gene: SophKB\_108 Start: 62945, Stop: 63208, Start Num: 72

Candidate Starts for SophKB\_108:

(Start: 72 @62945 has 224 MA's), (78, 62975), (92, 63050), (95, 63065), (124, 63167),

Gene: Sotrice96\_111 Start: 63409, Stop: 63672, Start Num: 72

Candidate Starts for Sotrice96\_111:

(Start: 72 @63409 has 224 MA's), (78, 63439), (92, 63514), (124, 63631),

Gene: Stank\_112 Start: 63183, Stop: 63446, Start Num: 72

Candidate Starts for Stank\_112:

(Start: 72 @63183 has 224 MA's), (78, 63213), (92, 63288), (124, 63405),

Gene: Stark\_110 Start: 63269, Stop: 63532, Start Num: 72

Candidate Starts for Stark\_110:

(Start: 72 @63269 has 224 MA's), (78, 63299), (92, 63374), (124, 63491),

Gene: StellaBean\_108 Start: 63566, Stop: 63829, Start Num: 72

Candidate Starts for StellaBean\_108:

(Start: 72 @63566 has 224 MA's), (78, 63596), (92, 63671), (124, 63788),

Gene: StolenFromERC\_112 Start: 63108, Stop: 63371, Start Num: 72

Candidate Starts for StolenFromERC\_112:

(Start: 72 @63108 has 224 MA's), (78, 63138), (92, 63213), (124, 63330),

Gene: Sunflower1121\_35 Start: 28754, Stop: 28984, Start Num: 72

Candidate Starts for Sunflower1121\_35:

(36, 28661), (Start: 55 @28751 has 26 MA's), (Start: 72 @28754 has 224 MA's), (86, 28811), (117, 28955),

Gene: Syleon\_129 Start: 70097, Stop: 70339, Start Num: 67

Candidate Starts for Syleon\_129:

(63, 70091), (Start: 67 @70097 has 20 MA's), (82, 70148), (92, 70211), (94, 70232), (110, 70286), (112, 70295), (116, 70316),

Gene: Syra333\_36 Start: 28680, Stop: 28910, Start Num: 72

Candidate Starts for Syra333\_36:

(10, 28359), (15, 28422), (19, 28446), (31, 28557), (36, 28587), (Start: 55 @28677 has 26 MA's), (Start: 72 @28680 has 224 MA's), (86, 28737), (117, 28881),

Gene: TBond007\_36 Start: 29888, Stop: 30127, Start Num: 55

Candidate Starts for TBond007\_36:

(31, 29768), (36, 29798), (Start: 55 @29888 has 26 MA's), (83, 29945), (101, 30041), (110, 30071),

Gene: TBrady12\_113 Start: 62620, Stop: 62883, Start Num: 72

Candidate Starts for TBrady12\_113:

(Start: 72 @62620 has 224 MA's), (78, 62650), (92, 62725), (124, 62842),

Gene: TClif\_37 Start: 29261, Stop: 29491, Start Num: 72

Candidate Starts for TClif\_37:

(10, 28940), (15, 29003), (19, 29027), (31, 29138), (36, 29168), (Start: 72 @29261 has 224 MA's),

Gene: Taquito\_37 Start: 31057, Stop: 31305, Start Num: 79

Candidate Starts for Taquito\_37:

(12, 30796), (13, 30802), (Start: 79 @31057 has 1 MA's), (86, 31081), (91, 31117), (101, 31168), (102, 31171), (108, 31189), (110, 31195), (120, 31237), (121, 31240), (122, 31243),

Gene: Tarkin\_109 Start: 64009, Stop: 64272, Start Num: 72

Candidate Starts for Tarkin\_109:

(Start: 72 @64009 has 224 MA's), (78, 64039), (92, 64114), (124, 64231),

Gene: TeardropMSU\_106 Start: 62511, Stop: 62774, Start Num: 72

Candidate Starts for TeardropMSU\_106:

(Start: 72 @62511 has 224 MA's), (78, 62541), (92, 62616), (124, 62733),

Gene: Teaspoon\_110 Start: 63168, Stop: 63431, Start Num: 72

Candidate Starts for Teaspoon\_110:

(Start: 72 @63168 has 224 MA's), (78, 63198), (92, 63273), (124, 63390),

Gene: Terminus\_113 Start: 64409, Stop: 64672, Start Num: 72

Candidate Starts for Terminus\_113:

(Start: 72 @64409 has 224 MA's), (78, 64439), (92, 64514), (124, 64631),

Gene: Thresher\_111 Start: 64049, Stop: 64312, Start Num: 72

Candidate Starts for Thresher\_111:

(Start: 72 @64049 has 224 MA's), (78, 64079), (92, 64154), (124, 64271),

Gene: Thyatira\_36 Start: 30289, Stop: 30513, Start Num: 72

Candidate Starts for Thyatira\_36:

(Start: 51 @30256 has 5 MA's), (Start: 72 @30289 has 224 MA's), (78, 30319), (82, 30331), (88, 30367), (90, 30370), (93, 30397), (100, 30427), (110, 30457),

Gene: Tierra\_36 Start: 29587, Stop: 29820, Start Num: 55

Candidate Starts for Tierra\_36:

(36, 29497), (Start: 55 @29587 has 26 MA's), (98, 29728), (121, 29806),

Gene: TingHuaYa\_36 Start: 28723, Stop: 28950, Start Num: 72

Candidate Starts for TingHuaYa\_36:

(17, 28600), (21, 28630), (32, 28720), (Start: 72 @28723 has 224 MA's), (82, 28765), (96, 28846), (99, 28858), (110, 28891), (120, 28930),

Gene: Tomaszewski\_105 Start: 62947, Stop: 63210, Start Num: 72

Candidate Starts for Tomaszewski\_105:

(Start: 72 @62947 has 224 MA's), (78, 62977), (92, 63052), (124, 63169),

Gene: Toniann\_149 Start: 80607, Stop: 80906, Start Num: 47

Candidate Starts for Toniann\_149:

(Start: 47 @80607 has 11 MA's), (Start: 77 @80688 has 1 MA's), (99, 80793), (105, 80811), (119, 80877), (125, 80895),

Gene: Toto\_108 Start: 63783, Stop: 64046, Start Num: 72

Candidate Starts for Toto\_108:

(Start: 72 @63783 has 224 MA's), (78, 63813), (92, 63888), (124, 64005),

Gene: Tourach\_96 Start: 60701, Stop: 60940, Start Num: 72

Candidate Starts for Tourach\_96:

(Start: 72 @60701 has 224 MA's), (76, 60725), (78, 60731), (92, 60806), (99, 60833), (102, 60842), (103, 60845), (104, 60848), (106, 60854), (107, 60860), (117, 60902), (119, 60908),

Gene: Traaww1\_106 Start: 62332, Stop: 62595, Start Num: 72

Candidate Starts for Traaww1\_106:

(Start: 72 @62332 has 224 MA's), (78, 62362), (92, 62437), (124, 62554),

Gene: Trax\_127 Start: 71378, Stop: 71596, Start Num: 73

Candidate Starts for Trax\_127:

(Start: 70 @71372 has 1 MA's), (Start: 73 @71378 has 3 MA's), (74, 71387), (Start: 77 @71402 has 1 MA's), (78, 71405), (Start: 79 @71408 has 1 MA's), (81, 71414), (82, 71417), (84, 71423), (86, 71432), (90, 71456), (91, 71468), (92, 71480), (93, 71483), (95, 71495), (96, 71498), (100, 71513), (101, 71516), (103, 71519), (107, 71534), (110, 71543), (111, 71546), (118, 71576), (123, 71591),

Gene: TribelTrouble\_36 Start: 30199, Stop: 30423, Start Num: 72

Candidate Starts for TribelTrouble\_36:

(50, 30175), (Start: 72 @30199 has 224 MA's), (105, 30352), (110, 30367),

Gene: Tuco\_111 Start: 64570, Stop: 64833, Start Num: 72

Candidate Starts for Tuco\_111:

(Start: 72 @64570 has 224 MA's), (78, 64600), (92, 64675), (124, 64792),

Gene: Typha\_30 Start: 27510, Stop: 27782, Start Num: 68

Candidate Starts for Typha\_30:

(15, 27231), (Start: 66 @27507 has 2 MA's), (Start: 68 @27510 has 2 MA's), (Start: 72 @27519 has 224 MA's), (75, 27537), (82, 27561), (83, 27564), (88, 27603), (90, 27606), (100, 27660), (101, 27663), (104, 27672), (119, 27732),

Gene: Tyson\_93 Start: 58217, Stop: 58456, Start Num: 72

Candidate Starts for Tyson\_93:

(Start: 70 @58214 has 1 MA's), (Start: 72 @58217 has 224 MA's), (92, 58322), (95, 58337), (99, 58349), (104, 58364), (107, 58376), (119, 58424),

Gene: UPIE\_91 Start: 57813, Stop: 58052, Start Num: 72

Candidate Starts for UPIE\_91:

(Start: 70 @57810 has 1 MA's), (Start: 72 @57813 has 224 MA's), (92, 57918), (95, 57933), (99, 57945), (104, 57960), (107, 57972), (117, 58014), (119, 58020),

Gene: Ukulele\_104 Start: 62768, Stop: 63031, Start Num: 72

Candidate Starts for Ukulele\_104:

(Start: 72 @62768 has 224 MA's), (78, 62798), (92, 62873), (124, 62990),

Gene: Unicorn\_36 Start: 28916, Stop: 29149, Start Num: 55

Candidate Starts for Unicorn\_36:

(Start: 55 @28916 has 26 MA's), (98, 29057), (121, 29135),

Gene: Validus\_36 Start: 28742, Stop: 28969, Start Num: 72

Candidate Starts for Validus\_36:

(10, 28421), (19, 28508), (23, 28550), (31, 28619), (36, 28649), (Start: 55 @28739 has 26 MA's), (Start: 72 @28742 has 224 MA's), (83, 28787), (122, 28955),

Gene: Vetrix\_94 Start: 59584, Stop: 59844, Start Num: 72

Candidate Starts for Vetrix\_94:

(Start: 72 @59584 has 224 MA's), (76, 59608), (92, 59689), (99, 59716), (103, 59728), (104, 59731), (106, 59737), (107, 59743), (117, 59785), (119, 59791),

Gene: Wamburgexpress\_91 Start: 57941, Stop: 58180, Start Num: 72

Candidate Starts for Wamburgexpress\_91:

(Start: 70 @57938 has 1 MA's), (Start: 72 @57941 has 224 MA's), (92, 58046), (95, 58061), (99, 58073), (104, 58088), (107, 58100), (117, 58142), (119, 58148),

Gene: Waterfoul\_37 Start: 30530, Stop: 30754, Start Num: 72



Candidate Starts for Waterfoul\_37:

(Start: 59 @30524 has 2 MA's), (Start: 72 @30530 has 224 MA's), (78, 30560), (82, 30572), (88, 30608), (90, 30611), (93, 30638), (100, 30668), (110, 30698), (117, 30731),

Gene: Whirlwind\_94 Start: 60069, Stop: 60338, Start Num: 67

Candidate Starts for Whirlwind\_94:

(Start: 67 @60069 has 20 MA's), (78, 60108), (92, 60183), (99, 60210), (102, 60219), (121, 60291),

Gene: Wiggin\_112 Start: 62613, Stop: 62876, Start Num: 72

Candidate Starts for Wiggin\_112:

(Start: 72 @62613 has 224 MA's), (78, 62643), (92, 62718), (124, 62835),

Gene: Wigglewigggle\_96 Start: 59892, Stop: 60152, Start Num: 72

Candidate Starts for Wigglewigggle\_96:

(Start: 72 @59892 has 224 MA's), (76, 59916), (92, 59997), (103, 60036), (104, 60039), (106, 60045), (107, 60051), (117, 60093), (119, 60099),

Gene: Wilder\_97 Start: 59728, Stop: 59988, Start Num: 72

Candidate Starts for Wilder\_97:

(Start: 72 @59728 has 224 MA's), (76, 59752), (92, 59833), (99, 59860), (103, 59872), (104, 59875), (106, 59881), (107, 59887), (117, 59929), (119, 59935),

Gene: Willez\_105 Start: 61735, Stop: 61998, Start Num: 72

Candidate Starts for Willez\_105:

(Start: 72 @61735 has 224 MA's), (78, 61765), (92, 61840), (124, 61957),

Gene: WilliamBoone\_150 Start: 78865, Stop: 79164, Start Num: 47

Candidate Starts for WilliamBoone\_150:

(Start: 47 @78865 has 11 MA's), (86, 78976), (103, 79063), (105, 79069), (119, 79135), (125, 79153),

Gene: Winky\_96 Start: 60332, Stop: 60592, Start Num: 72

Candidate Starts for Winky\_96:

(Start: 72 @60332 has 224 MA's), (76, 60356), (92, 60437), (103, 60476), (104, 60479), (106, 60485), (107, 60491), (117, 60533), (119, 60539),

Gene: Wintermute\_37 Start: 30625, Stop: 30906, Start Num: 72

Candidate Starts for Wintermute\_37:

(Start: 55 @30619 has 26 MA's), (Start: 72 @30625 has 224 MA's), (Start: 79 @30658 has 1 MA's), (86, 30682), (91, 30718), (101, 30769), (102, 30772), (108, 30790), (110, 30796), (120, 30838), (121, 30841), (122, 30844),

Gene: Wyatt2\_93 Start: 58248, Stop: 58487, Start Num: 72

Candidate Starts for Wyatt2\_93:

(Start: 70 @58245 has 1 MA's), (Start: 72 @58248 has 224 MA's), (92, 58353), (95, 58368), (99, 58380), (104, 58395), (107, 58407), (117, 58449), (119, 58455),

Gene: Xandras\_109 Start: 62436, Stop: 62699, Start Num: 72

Candidate Starts for Xandras\_109:

(Start: 72 @62436 has 224 MA's), (78, 62466), (92, 62541), (124, 62658),

Gene: Ximenita\_37 Start: 28862, Stop: 29095, Start Num: 55

Candidate Starts for Ximenita\_37:

(36, 28772), (Start: 55 @28862 has 26 MA's), (Start: 72 @28865 has 224 MA's), (86, 28922), (117, 29066),

Gene: Y10\_37 Start: 30625, Stop: 30906, Start Num: 72

Candidate Starts for Y10\_37:

(9, 30298), (14, 30361), (Start: 55 @30619 has 26 MA's), (Start: 72 @30625 has 224 MA's), (Start: 79 @30658 has 1 MA's), (86, 30682), (91, 30718), (101, 30769), (102, 30772), (108, 30790), (110, 30796), (120, 30838), (121, 30841), (122, 30844),

Gene: Y2\_37 Start: 30625, Stop: 30906, Start Num: 72

Candidate Starts for Y2\_37:

(9, 30298), (14, 30361), (Start: 55 @30619 has 26 MA's), (Start: 72 @30625 has 224 MA's), (Start: 79 @30658 has 1 MA's), (86, 30682), (91, 30718), (101, 30769), (102, 30772), (108, 30790), (110, 30796), (120, 30838), (121, 30841), (122, 30844),

Gene: YassJohnny\_107 Start: 61756, Stop: 62019, Start Num: 72

Candidate Starts for YassJohnny\_107:

(Start: 72 @61756 has 224 MA's), (78, 61786), (92, 61861), (124, 61978),

Gene: Youngblood\_114 Start: 63905, Stop: 64168, Start Num: 72

Candidate Starts for Youngblood\_114:

(Start: 72 @63905 has 224 MA's), (78, 63935), (92, 64010), (124, 64127),

Gene: Yuna\_37 Start: 29330, Stop: 29563, Start Num: 55

Candidate Starts for Yuna\_37:

(10, 29012), (31, 29210), (36, 29240), (Start: 55 @29330 has 26 MA's), (Start: 72 @29339 has 224 MA's), (78, 29369), (86, 29396), (99, 29474), (101, 29480),

Gene: Yunkel11\_37 Start: 28983, Stop: 29210, Start Num: 72

Candidate Starts for Yunkel11\_37:

(11, 28689), (20, 28755), (22, 28767), (28, 28824), (Start: 57 @28971 has 2 MA's), (58, 28974), (Start: 72 @28983 has 224 MA's), (82, 29025), (96, 29106), (99, 29118),

Gene: Zakai\_97 Start: 60371, Stop: 60631, Start Num: 72

Candidate Starts for Zakai\_97:

(Start: 72 @60371 has 224 MA's), (76, 60395), (92, 60476), (99, 60503), (103, 60515), (104, 60518), (106, 60524), (107, 60530), (117, 60572), (119, 60578),

Gene: Zaria\_92 Start: 57356, Stop: 57595, Start Num: 72

Candidate Starts for Zaria\_92:

(Start: 70 @57353 has 1 MA's), (Start: 72 @57356 has 224 MA's), (92, 57461), (95, 57476), (99, 57488), (104, 57503), (107, 57515), (119, 57563),

Gene: ZhongYanYuan\_93 Start: 59783, Stop: 60043, Start Num: 72

Candidate Starts for ZhongYanYuan\_93:

(Start: 72 @59783 has 224 MA's), (92, 59888), (99, 59915), (100, 59918), (102, 59924), (103, 59927), (107, 59942), (117, 59984), (119, 59990),

Gene: xkcd\_114 Start: 64090, Stop: 64353, Start Num: 72

Candidate Starts for xkcd\_114:

(Start: 72 @64090 has 224 MA's), (78, 64120), (92, 64195), (124, 64312),