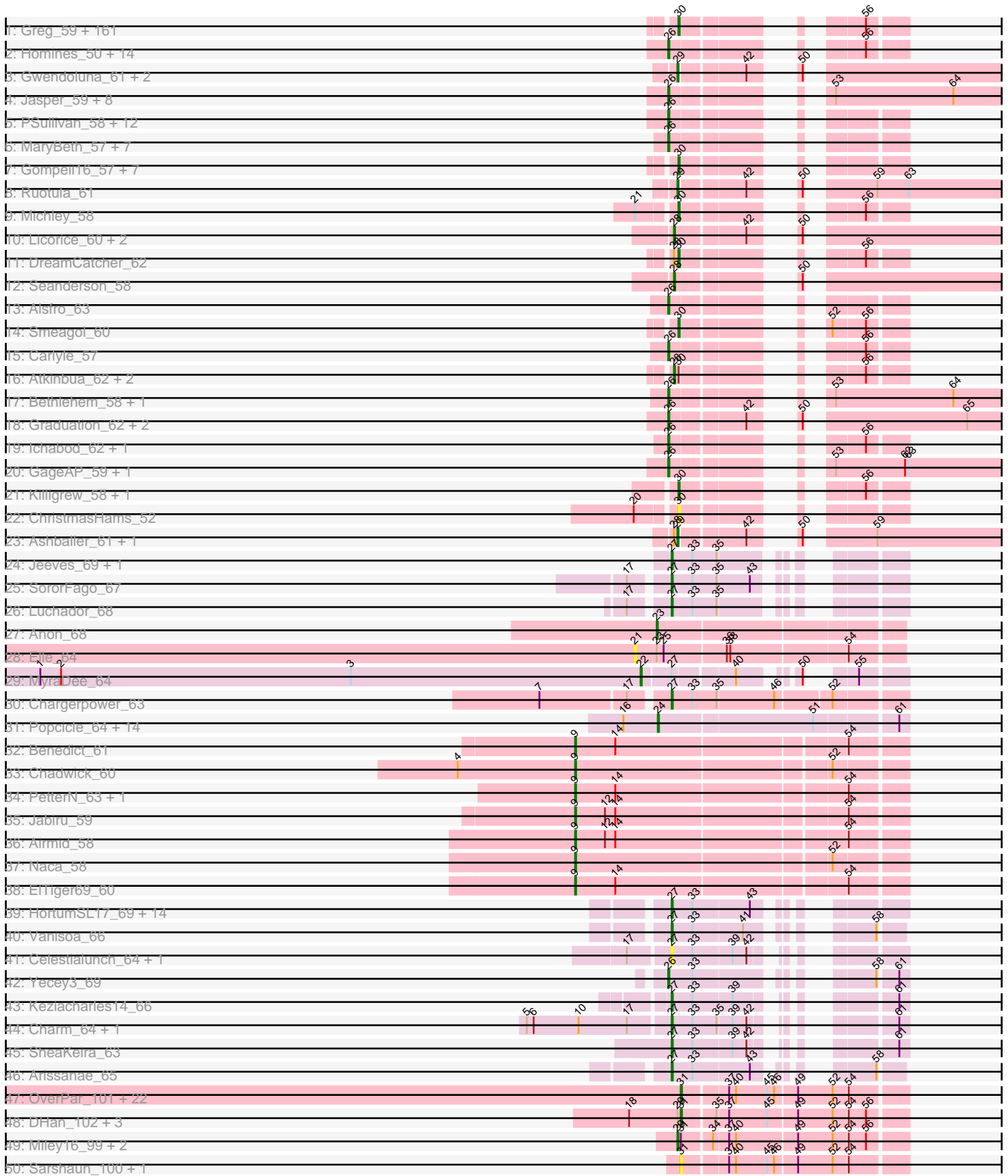
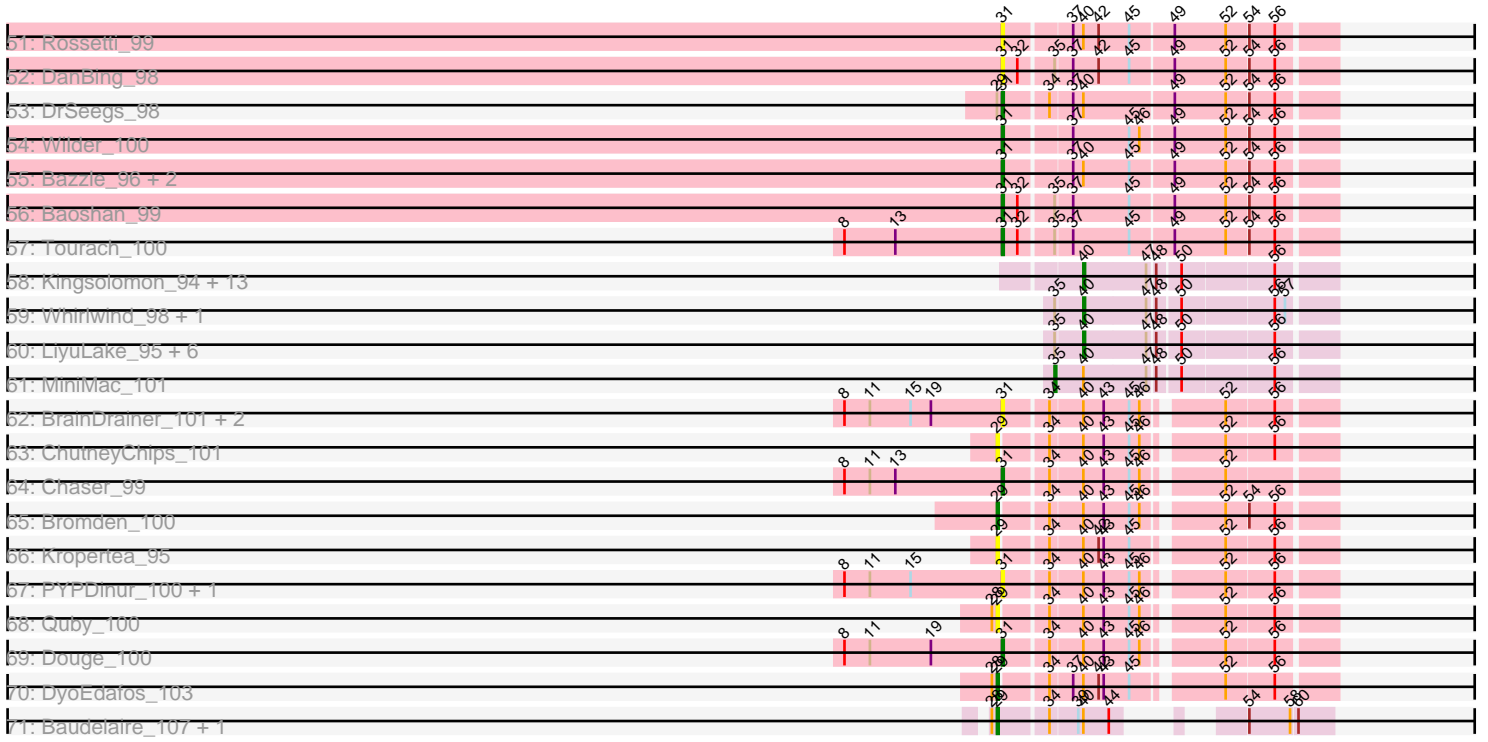


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 294349 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294349 has 379 members, 58 are drafts.

Phages represented in each track:

- Track 1 : Greg\_59, Jerm2\_59, MrGordo\_58, Monet\_61, Peterson\_62, Buttons\_56, Sagefire\_60, Rohr\_59, SwissCheese\_59, Kenmech\_63, Jorgensen\_59, Big3\_57, Solon\_56, CactusRose\_56, Marcell\_55, Oogway\_57, Dexes\_58, Tripl3t\_60, Marge\_57, Hami1\_53, Phlippers\_56, PinkPlastic\_58, Sumter\_54, Snazzy\_57, Magnito\_57, GMonster\_55, ConceptII\_61, Briton15\_62, Francis47\_57, Tote\_54, PowerRanger\_56, PacerPaul\_58, Trouble\_60, Bruns\_57, Wilkins\_57, Tasp14\_61, Naira\_61, Seabiscuit\_62, Gandalf20\_61, Marsha\_57, Agaliana\_53, Topgun\_57, Arcanine\_60, BaconJack\_63, Dussy\_60, StewieG\_55, Kugel\_58, Smairt\_61, Abbyshoes\_61, JackSparrow\_61, BigPaolini\_57, Bigchungji\_58, Blue\_57, PascalRango\_58, Lesedi\_54, Papez\_61, Violet\_56, Levia\_56, Zephyr\_59, Chanagan\_54, TheloniousMonk\_59, Wheeler\_58, Burton\_58, Payneful\_58, Puppet\_57, HanShotFirst\_59, Pippin\_59, MPlant7149\_57, Ajay\_59, Abrogate\_570, Target\_59, DrFeelGood\_56, Aldrich\_56, Edtherson\_57, Adahisdi\_58, HermioneGrange\_59, Aeneas\_61, ILeeKay\_61, Marchy\_53, Nerujay\_60, ShortQueendom\_51, PattyP\_60, Zeuska\_57, Kykar\_58, Niza\_60, Fushigi\_55, Nhonho\_57, NEHalo\_56, Hermia\_58, Magnar\_56, Watermelon\_59, Hope4ever\_60, GrecoEtereo\_58, Gyzlar\_54, Mkhuseleli\_56, Perseus\_58, RidgeCB\_58, Rutherford\_59, Rhynn\_56, Crispicous1\_55, Sanya\_54, Museum\_59, Sibs6\_60, Rufus\_59, Slagathor\_60, Mule\_56, Raid\_57, BPBiobs31\_60, McGuire\_60, IgnatiusPatJac\_58, Arlo\_56, Bob3\_57, Petruchio\_57, Applejack\_53, Treddle\_59, CatBus\_56, Moose\_57, Ringer\_58, Rajelicia\_59, Ciao\_57, HarryOW\_57, Maroc7\_56, Bxb1\_53, PhrostyMug\_58, Iqorha\_53, DirtDevil\_57, Paphu\_57, BeesKnees\_61, Forsytheast\_57, KBG\_59, Swole\_59, JuliaChild\_59, Fajezeel\_59, Fascinus\_54, Inyanga\_53, KikiBouba\_57, McSinger\_58, BigMau\_60, LunarLander\_59, Fenn\_61, BarrowTuph\_59, Zeeculate\_56, Kanely\_60, BK1\_52, AFIS\_55, Eyeball\_59, Altman\_61, Squee\_59, Blesser\_55, Lopton\_58, Molly\_59, GroundGoblin\_57, Noxious\_56, Petp2012\_59, PhineBark\_58, Espresso\_57, BluSpix\_56, Bigfoot\_52, A6\_52, TwoPeat\_60, Acme\_59, Lamina13\_60
- Track 2 : Homines\_50, SarFire\_55, Blackflame\_55, Makemake\_59, Sorpresa\_56, ProMouse\_58, Sandaddy\_55, LilBib\_58, Gachnar\_57, DD5\_57, Lockley\_56, KyMonks1A\_61, KSSJEB\_58, Turj99\_56, Thor\_55
- Track 3 : Gwendoluna\_61, Pelly\_58, Dulcie\_58
- Track 4 : Jasper\_59, Norz\_59, Beatrix\_58, PherrisBueller\_57, StrongArm\_57, Dreamboat\_59, Bexan\_56, Ohno789\_59, Doom\_56
- Track 5 : PSullivan\_58, Euphoria\_56, MilleFeuille\_53, Pita2\_61, Scowl\_59, Froghopper\_55, Sunshine924\_60, Marco3\_62, Manatee\_59, CartmannCramer\_57, Anglerfish\_59, Paraselene\_56, QTRlifeCrisis\_58

- Track 6 : MaryBeth\_57, SkiPole\_63, Dynamix\_60, MetalQZJ\_56, Corvo\_59, Switzer\_59, STLscum\_61, Pepe\_55
- Track 7 : Gompeii16\_57, Barriga\_59, Bircsak\_57, Mryolo\_55, Alvin\_57, Teodoridan\_56, EnzoK\_58, Parliament\_58
- Track 8 : Ruotula\_61
- Track 9 : Michley\_58
- Track 10 : Licorice\_60, BillKnuckles\_56, Traft412\_61
- Track 11 : DreamCatcher\_62
- Track 12 : Seanderson\_58
- Track 13 : Alsfro\_63
- Track 14 : Smeagol\_60
- Track 15 : Carlyle\_57
- Track 16 : Atkinbua\_62, Rubeus\_58, Pinto\_59
- Track 17 : Bethlehem\_58, Pari\_61
- Track 18 : Graduation\_62, Bones\_58, Cueylyss\_59
- Track 19 : Ichabod\_62, U2\_57
- Track 20 : GageAP\_59, SpikeBT\_57
- Track 21 : Killigrew\_58, Whitspit\_55
- Track 22 : ChristmasHams\_52
- Track 23 : Ashballer\_61, JC27\_61
- Track 24 : Jeeves\_69, Gail\_67
- Track 25 : SororFago\_67
- Track 26 : Luchador\_68
- Track 27 : Anon\_68
- Track 28 : Elle\_64
- Track 29 : MyraDee\_64
- Track 30 : Chargerpower\_63
- Track 31 : Popcicle\_64, QuinnKiro\_63, Veracruz\_62, Caviar\_64, Panamaxus\_62, Lambert1\_64, Todacoro\_64, Hookmount\_64, EtoileNova\_63, Pocahontas\_64, Texage\_62, Norbert\_61, Noella\_64, ResDef\_63, Margo\_64
- Track 32 : Benedict\_61
- Track 33 : Chadwick\_60
- Track 34 : PetterN\_63, Scorpio\_62
- Track 35 : Jabiru\_59
- Track 36 : Airmid\_58
- Track 37 : Naca\_58
- Track 38 : EITiger69\_60
- Track 39 : HortumSL17\_69, Lilleskat\_64, Tubs\_68, Beemo\_69, Catalina\_70, RyeScarlet\_70, EdogawaKiddo\_66, Onglai\_66, Aliter\_69, PackMan\_67, Myxus\_68, Sachima\_64, Pioneer\_69, Phonnegut\_69, Phaeder\_68
- Track 40 : Vanisoa\_66
- Track 41 : Celestialunch\_64, MegTheThird\_64
- Track 42 : Yecey3\_69
- Track 43 : Keziacharles14\_66
- Track 44 : Charm\_64, DreamTeam1\_64
- Track 45 : SheaKeira\_63
- Track 46 : Arissanae\_65
- Track 47 : OverPar\_101, GuuelaD\_96, MkaliMitinis3\_101, Lewan\_100, Netyap\_98, LilDestine\_97, Faith1\_99, Itos\_99, Rumpelstiltskin\_95, BobsGarage\_98, Loadrie\_98, BigCheese\_99, Nicholasp3\_99, Vetric\_97, Underpass\_91, Kahlid\_98, Finemlucis\_100, Lynnae\_100, Wigglewiggle\_99, Zakai\_100, Gabriela\_99, SoJulia\_101, Gardann\_99
- Track 48 : DHan\_102, Claus\_98, ZhongYanYuan\_96, Hafay\_100

- Track 49 : Miley16\_99, Breezona\_99, Winky\_99
- Track 50 : Sarshaun\_100, Soap141\_99
- Track 51 : Rossetti\_99
- Track 52 : DanBing\_98
- Track 53 : DrSeegs\_98
- Track 54 : Wilder\_100
- Track 55 : Bazzle\_96, Archie\_96, Crossroads\_99
- Track 56 : Baoshan\_99
- Track 57 : Tourach\_100
- Track 58 : Kingsolomon\_94, Jubie\_95, Nicholas\_94, Lumos\_96, Snenia\_95, Finnry\_96, Jobypre\_96, MsGreen\_96, Moostard\_93, TriFive\_97, Bellis\_96, Samty\_95, Red305\_97, Clautastrophe\_94
- Track 59 : Whirlwind\_98, Krypton555\_99
- Track 60 : LiyuLake\_95, KirDoubleO7\_94, BourbonZero\_97, Ellson\_95, MiniLon\_101, DuncansLeg\_97, Lolly9\_96
- Track 61 : MiniMac\_101
- Track 62 : BrainDrainer\_101, Douzhi\_100, FarmResident\_101
- Track 63 : ChutneyChips\_101
- Track 64 : Chaser\_99
- Track 65 : Bromden\_100
- Track 66 : Kropertea\_95
- Track 67 : PYPDinur\_100, Sheng711\_101
- Track 68 : Quby\_100
- Track 69 : Douge\_100
- Track 70 : DyoEdafos\_103
- Track 71 : Baudelaire\_107, Aegeus\_107

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

The start number called the most often in the published annotations is 30, it was called in 156 of the 321 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- A6\_52, AFIS\_55, Abbyshoes\_61, Abrogate\_570, Acme\_59, Adahisdi\_58, Aeneas\_61, Agaliana\_53, Ajay\_59, Aldrich\_56, Altman\_61, Alvin\_57, Applejack\_53, Arcanine\_60, Arlo\_56, BK1\_52, BPBiebs31\_60, BaconJack\_63, Barriga\_59, BarrowTuph\_59, BeesKnees\_61, Big3\_57, BigMau\_60, BigPaolini\_57, Bigchungi\_58, Bigfoot\_52, Bircsak\_57, Blesser\_55, BluSpix\_56, Blue\_57, Bob3\_57, Briton15\_62, Bruns\_57, Burton\_58, Buttons\_56, Bxb1\_53, CactusRose\_56, CatBus\_56, Chanagan\_54, ChristmasHams\_52, Ciao\_57, ConceptII\_61, Crispicious1\_55, Dexes\_58, DirtDevil\_57, DrFeelGood\_56, DreamCatcher\_62, Dussy\_60, Edtherson\_57, EnzoK\_58, Espresso\_57, Eyeball\_59, Fajezeel\_59, Fascinus\_54, Fenn\_61, Forsytheast\_57, Francis47\_57, Fushigi\_55, GMonster\_55, Gandalf20\_61, Gompeii16\_57, GrecoEtereo\_58, Greg\_59, GroundGoblin\_57, Gyzlar\_54, Hami1\_53, HanShotFirst\_59, HarryOW\_57, Hermia\_58, HermioneGrange\_59, Hope4ever\_60, ILeeKay\_61, IgnatiusPatJac\_58, Inyanga\_53, Iqorha\_53, JackSparrow\_61, Jerm2\_59, Jorgensen\_59, JuliaChild\_59, KBG\_59, Kanely\_60, Kenmech\_63, KikiBouba\_57, Killigrew\_58, Kugel\_58, Kykar\_58, Lamina13\_60, Lesedi\_54, Levia\_56, Lopton\_58, LunarLander\_59, MPlant7149\_57, Magnar\_56, Magnito\_57, Marcell\_55, Marchy\_53, Marge\_57, Maroc7\_56, Marsha\_57, McGuire\_60,

McSinger\_58, Michley\_58, Mkhuseleli\_56, Molly\_59, Monet\_61, Moose\_57, MrGordo\_58, Mryolo\_55, Mule\_56, Museum\_59, NEHalo\_56, Naira\_61, Nerujay\_60, Nhonho\_57, Niza\_60, Noxious\_56, Oogway\_57, PacerPaul\_58, Papez\_61, Paphu\_57, Parliament\_58, PascalRango\_58, PattyP\_60, Payneful\_58, Perseus\_58, Peterson\_62, Petp2012\_59, Petruchio\_57, PhineBark\_58, Phlippers\_56, PhrostyMug\_58, PinkPlastic\_58, Pippin\_59, PowerRanger\_56, Puppet\_57, Raid\_57, Rajelicia\_59, Rhynn\_56, RidgeCB\_58, Ringer\_58, Rohr\_59, Rufus\_59, Rutherford\_59, Sagefire\_60, Sanya\_54, Seabiscuit\_62, ShortQueendom\_51, Sibs6\_60, Slagathor\_60, Smairt\_61, Smeagol\_60, Snazzy\_57, Solon\_56, Squee\_59, StewieG\_55, Sumter\_54, SwissCheese\_59, Swole\_59, Target\_59, Tasp14\_61, Teodoridan\_56, TheloniousMonk\_59, Topgun\_57, Tote\_54, Treddle\_59, Tripl3t\_60, Trouble\_60, TwoPeat\_60, Violet\_56, Watermelon\_59, Wheeler\_58, Whitspit\_55, Wilkins\_57, Zeeculate\_56, Zephyr\_59, Zeuska\_57,

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

- Atkinbua\_62, Pinto\_59, Rubeus\_58,

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

- Aegeus\_107, Airmid\_58, Aliter\_69, Alsfro\_63, Anglerfish\_59, Anon\_68, Archie\_96, Arissanae\_65, Ashballer\_61, Baoshan\_99, Baudelaire\_107, Bazzle\_96, Beatrix\_58, Beemo\_69, Bellis\_96, Benedict\_61, Bethlehem\_58, Bexan\_56, BigCheese\_99, BillKnuckles\_56, Blackflame\_55, BobsGarage\_98, Bones\_58, BourbonZero\_97, BrainDrainer\_101, Breezona\_99, Bromden\_100, Carlyle\_57, CartmannCramer\_57, Catalina\_70, Caviar\_64, Celestiallunch\_64, Chadwick\_60, Chargerpower\_63, Charm\_64, Chaser\_99, ChutneyChips\_101, Claus\_98, Clautastrophe\_94, Corvo\_59, Crossroads\_99, Cueylyss\_59, DD5\_57, DHan\_102, DanBing\_98, Doom\_56, Douge\_100, Douzhi\_100, DrSeegs\_98, DreamTeam1\_64, Dreamboat\_59, Dulcie\_58, DuncansLeg\_97, Dynamix\_60, DyoEdafos\_103, EdogawaKiddo\_66, ElTiger69\_60, Elle\_64, Ellson\_95, EtoileNova\_63, Euphoria\_56, Faith1\_99, FarmResident\_101, Finemlucis\_100, Finnry\_96, Froghopper\_55, Gabriela\_99, Gachnar\_57, GageAP\_59, Gail\_67, Gardann\_99, Graduation\_62, GuuelaD\_96, Gwendoluna\_61, Hafay\_100, Homines\_50, Hookmount\_64, HortumSL17\_69, Ichabod\_62, Itos\_99, JC27\_61, Jabiru\_59, Jasper\_59, Jeeves\_69, Jobypre\_96, Jubie\_95, KSSJEB\_58, Kahlid\_98, Keziacharles14\_66, Kingsolomon\_94, KirDoubleO7\_94, Kropertea\_95, Krypton555\_99, KyMonks1A\_61, Lambert1\_64, Lewan\_100, Licorice\_60, LilBib\_58, LilDestine\_97, Lilleskat\_64, LiyuLake\_95, Loadrie\_98, Lockley\_56, Lolly9\_96, Luchador\_68, Lumos\_96, Lynnae\_100, Makemake\_59, Manatee\_59, Marco3\_62, Margo\_64, MaryBeth\_57, MegTheThird\_64, MetalQZJ\_56, Miley16\_99, MilleFeuille\_53, MiniLon\_101, MiniMac\_101, MkaliMitinis3\_101, Moostard\_93, MsGreen\_96, MyraDee\_64, Myxus\_68, Naca\_58, Netyap\_98, Nicholas\_94, Nicholasp3\_99, Noella\_64, Norbert\_61, Norz\_59, Ohno789\_59, Onglai\_66, OverPar\_101, PSullivan\_58, PYPDinur\_100, PackMan\_67, Panamaxus\_62, Paraselene\_56, Pari\_61, Pelly\_58, Pepe\_55, PetterN\_63, Phaeder\_68, PherrisBueller\_57, Phonnegut\_69, Pioneer\_69, Pita2\_61, Pocahontas\_64, Popcicle\_64, ProMouse\_58, QTRlifeCrisis\_58, Quby\_100, QuinnKiro\_63, Red305\_97, ResDef\_63, Rossetti\_99, Rumpelstiltskin\_95, Ruotula\_61, RyeScarlet\_70, STLscum\_61, Sachima\_64, Samty\_95, Sandaddy\_55, SarFire\_55, Sarshaun\_100, Scorpia\_62, Scowl\_59, Seanderson\_58, SheaKeira\_63, Sheng711\_101, SkiPole\_63, Snenia\_95, SoJulia\_101, Soap141\_99, SororFago\_67, Sorpresa\_56, SpikeBT\_57, StrongArm\_57, Sunshine924\_60, Switzer\_59, Texage\_62, Thor\_55, Todacoro\_64, Tourach\_100, Traft412\_61, TriFive\_97, Tubs\_68, Turj99\_56, U2\_57, Underpass\_91, Vanisoa\_66, Veracruz\_62, Vetrrix\_97, Whirlwind\_98, Wigglewiggles\_99, Wilder\_100, Winky\_99, Yecey3\_69, Zakai\_100,

ZhongYanYuan\_96,

### Summary by start number:

#### Start 9:

- Found in 8 of 379 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 8 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Airmid\_58 (A5), Benedict\_61 (A5), Chadwick\_60 (A5), ElTiger69\_60 (A5), Jabiru\_59 (A5), Naca\_58 (A5), PetterN\_63 (A5), Scorpia\_62 (A5),

#### Start 21:

- Found in 2 of 379 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Elle\_64 (A15),

#### Start 22:

- Found in 1 of 379 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MyraDee\_64 (A18),

#### Start 23:

- Found in 2 of 379 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Anon\_68 (A15),

#### Start 24:

- Found in 15 of 379 ( 4.0% ) of genes in pham
- Manual Annotations of this start: 14 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Caviar\_64 (A3), EtoileNova\_63 (A3), Hookmount\_64 (A3), Lambert1\_64 (A3), Margo\_64 (A3), Noella\_64 (A3), Norbert\_61 (A3), Panamaxus\_62 (A3), Pocahontas\_64 (A3), Popcicle\_64 (A3), QuinnKiro\_63 (A3), ResDef\_63 (A3), Texage\_62 (A3), Todacoro\_64 (A3), Veracruz\_62 (A3),

#### Start 26:

- Found in 57 of 379 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 51 of 321
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alsfro\_63 (A1), Anglerfish\_59 (A1), Beatrix\_58 (A1), Bethlehem\_58 (A1), Bexan\_56 (A1), Blackflame\_55 (A1), Bones\_58 (A1), Carlyle\_57 (A1), CartmannCramer\_57 (A1), Corvo\_59 (A1), Cueyllyss\_59 (A1), DD5\_57 (A1), Doom\_56 (A1), Dreamboat\_59 (A1), Dynamix\_60 (A1), Euphoria\_56 (A1), Froghopper\_55 (A1), Gachnar\_57 (A1), GageAP\_59 (A1), Graduation\_62 (A1), Homines\_50 (A1), Ichabod\_62 (A1), Jasper\_59 (A1), KSSJEB\_58 (A1), KyMonks1A\_61 (A1), LilBib\_58 (A1), Lockley\_56 (A1), Makemake\_59 (A1), Manatee\_59 (A1), Marco3\_62 (A1), MaryBeth\_57 (A1), MetalQZJ\_56 (A1), MilleFeuille\_53 (A1), Norz\_59 (A1), Ohno789\_59 (A1), PSullivan\_58 (A1), Paraselene\_56 (A1), Pari\_61 (A1), Pepe\_55 (A1), PherrisBueller\_57 (A1), Pita2\_61

(A1), ProMouse\_58 (A1), QTRlifeCrisis\_58 (A1), STLscum\_61 (A1), Sandaddy\_55 (A1), SarFire\_55 (A1), Scowl\_59 (A1), SkiPole\_63 (A1), Sorpresa\_56 (A1), SpikeBT\_57 (A1), StrongArm\_57 (A1), Sunshine924\_60 (A1), Switzer\_59 (A1), Thor\_55 (A1), Turj99\_56 (A1), U2\_57 (A1), Yecey3\_69 (A9),

#### Start 27:

- Found in 29 of 379 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 21 of 321
- Called 96.6% of time when present
- Phage (with cluster) where this start called: Aliter\_69 (A9), Arissanæ\_65 (A9), Beemo\_69 (A9), Catalina\_70 (A9), Celestiallunch\_64 (A9), Chargerpower\_63 (A22), Charm\_64 (A9), DreamTeam1\_64 (A9), EdogawaKiddo\_66 (A9), Gail\_67 (A14), HortumSL17\_69 (A9), Jeeves\_69 (A14), Keziacharles14\_66 (A9), Lilleskat\_64 (A9), Luchador\_68 (A14), MegTheThird\_64 (A9), Myxus\_68 (A9), Onglai\_66 (A9), PackMan\_67 (A9), Phaeder\_68 (A9), Phonnegut\_69 (A9), Pioneer\_69 (A9), RyeScarlet\_70 (A9), Sachima\_64 (A9), SheaKeira\_63 (A9), SororFago\_67 (A14), Tubs\_68 (A9), Vanisoa\_66 (A9),

#### Start 28:

- Found in 14 of 379 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 7 of 321
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Atkinbua\_62 (A1), BillKnuckles\_56 (A1), Licorice\_60 (A1), Pinto\_59 (A1), Rubeus\_58 (A1), Seanderson\_58 (A1), Traft412\_61 (A1),

#### Start 29:

- Found in 21 of 379 ( 5.5% ) of genes in pham
- Manual Annotations of this start: 13 of 321
- Called 76.2% of time when present
- Phage (with cluster) where this start called: Aegeus\_107 (L5), Ashballer\_61 (A1), Baudelaire\_107 (L5), Breezona\_99 (L2), Bromden\_100 (L4), ChutneyChips\_101 (L4), Dulcie\_58 (A1), DyoEdafos\_103 (L4), Gwendoluna\_61 (A1), JC27\_61 (A1), Kropertea\_95 (L4), Miley16\_99 (L2), Pelly\_58 (A1), Quby\_100 (L4), Ruotula\_61 (A1), Winky\_99 (L2),

#### Start 30:

- Found in 179 of 379 ( 47.2% ) of genes in pham
- Manual Annotations of this start: 156 of 321
- Called 98.3% of time when present
- Phage (with cluster) where this start called: A6\_52 (A1), AFIS\_55 (A1), Abbyshoes\_61 (A1), Abrogate\_570 (A1), Acme\_59 (A1), Adahisdi\_58 (A1), Aeneas\_61 (A1), Agaliana\_53 (A1), Ajay\_59 (A1), Aldrich\_56 (A1), Altman\_61 (A1), Alvin\_57 (A1), Applejack\_53 (A1), Arcanine\_60 (A1), Arlo\_56 (A1), BK1\_52 (A1), BPBiabs31\_60 (A1), BaconJack\_63 (A1), Barriga\_59 (A1), BarrowTuph\_59 (A1), BeesKnees\_61 (A1), Big3\_57 (A1), BigMau\_60 (A1), BigPaolini\_57 (A1), Bigchungi\_58 (A1), Bigfoot\_52 (A1), Bircsak\_57 (A1), Blessner\_55 (A1), BluSpix\_56 (A1), Blue\_57 (A1), Bob3\_57 (A1), Briton15\_62 (A1), Bruns\_57 (A1), Burton\_58 (A1), Buttons\_56 (A1), Bxb1\_53 (A1), CactusRose\_56 (A1), CatBus\_56 (A1), Chanagan\_54 (A1), ChristmasHams\_52 (A1), Ciao\_57 (A1), Conceptll\_61 (A1), Crispicous1\_55 (A1), Dexes\_58 (A1), DirtDevil\_57 (A1), DrFeelGood\_56 (A1), DreamCatcher\_62 (A1), Dussy\_60 (A1), Edtherson\_57 (A1), EnzoK\_58 (A1), Espresso\_57 (A1), Eyeball\_59 (A1), Fajezeel\_59 (A1), Fascinus\_54 (A1), Fenn\_61

(A1), Forsytheast\_57 (A1), Francis47\_57 (A1), Fushigi\_55 (A1), GMonster\_55 (A1), Gandalf20\_61 (A1), Gompeii16\_57 (A1), GrecoEtereo\_58 (A1), Greg\_59 (A1), GroundGoblin\_57 (A1), Gyzzar\_54 (A1), Hami1\_53 (A1), HanShotFirst\_59 (A1), HarryOW\_57 (A1), Hermia\_58 (A1), HermioneGrange\_59 (A1), Hope4ever\_60 (A1), ILeeKay\_61 (A1), IgnatiusPatJac\_58 (A1), Inyanga\_53 (A1), Iqorha\_53 (A1), JackSparrow\_61 (A1), Jerm2\_59 (A1), Jorgensen\_59 (A1), JuliaChild\_59 (A1), KBG\_59 (A1), Kanely\_60 (A1), Kenmech\_63 (A1), KikiBouba\_57 (A1), Killigrew\_58 (A1), Kugel\_58 (A1), Kykar\_58 (A1), Lamina13\_60 (A1), Lesedi\_54 (A1), Levia\_56 (A1), Lopton\_58 (A1), LunarLander\_59 (A1), MPlant7149\_57 (A1), Magnar\_56 (A1), Magnito\_57 (A1), Marcell\_55 (A1), Marchy\_53 (A1), Marge\_57 (A1), Maroc7\_56 (A1), Marsha\_57 (A1), McGuire\_60 (A1), McSinger\_58 (A1), Michley\_58 (A1), Mkhuseleli\_56 (A1), Molly\_59 (A1), Monet\_61 (A1), Moose\_57 (A1), MrGordo\_58 (A1), Mryolo\_55 (A1), Mule\_56 (A1), Museum\_59 (A1), NEHalo\_56 (A1), Naira\_61 (A1), Nerujay\_60 (A1), Nhonho\_57 (A1), Niza\_60 (A1), Noxious\_56 (A1), Oogway\_57 (A1), PacerPaul\_58 (A1), Papez\_61 (A1), Paphu\_57 (A1), Parliament\_58 (A1), PascalRango\_58 (A1), PattyP\_60 (A1), Payneful\_58 (A1), Perseus\_58 (A1), Peterson\_62 (A1), Petp2012\_59 (A1), Petruccio\_57 (A1), PhineBark\_58 (A1), Phippers\_56 (A1), PhrostyMug\_58 (A1), PinkPlastic\_58 (A1), Pippin\_59 (A1), PowerRanger\_56 (A1), Puppet\_57 (A1), Raid\_57 (A1), Rajelicia\_59 (A1), Rhynn\_56 (A1), RidgeCB\_58 (A1), Ringer\_58 (A1), Rohr\_59 (A1), Rufus\_59 (A1), Rutherford\_59 (A1), Sagefire\_60 (A1), Sanya\_54 (A1), Seabiscuit\_62 (A1), ShortQueendom\_51 (A1), Sibs6\_60 (A1), Slagathor\_60 (A1), Smairt\_61 (A1), Smeagol\_60 (A1), Snazzy\_57 (A1), Solon\_56 (A1), Squee\_59 (A1), StewieG\_55 (A1), Sumter\_54 (A1), SwissCheese\_59 (A1), Swole\_59 (A1), Target\_59 (A1), Tasp14\_61 (A1), Teodoridan\_56 (A1), TheloniousMonk\_59 (A1), Topgun\_57 (A1), Tote\_54 (A1), Treddle\_59 (A1), Trip13t\_60 (A1), Trouble\_60 (A1), TwoPeat\_60 (A1), Violet\_56 (A1), Watermelon\_59 (A1), Wheeler\_58 (A1), Whispit\_55 (A1), Wilkins\_57 (A1), Zeecculate\_56 (A1), Zephyr\_59 (A1), Zeuska\_57 (A1),

#### Start 31:

- Found in 48 of 379 ( 12.7% ) of genes in pham
- Manual Annotations of this start: 30 of 321
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Archie\_96 (L2), Baoshan\_99 (L2), Bazzle\_96 (L2), BigCheese\_99 (L2), BobsGarage\_98 (L2), BrainDrainer\_101 (L4), Chaser\_99 (L4), Claus\_98 (L2), Crossroads\_99 (L2), DHan\_102 (L2), DanBing\_98 (L2), Douge\_100 (L4), Douzhi\_100 (L4), DrSeegs\_98 (L2), Faith1\_99 (L2), FarmResident\_101 (L4), Finemlucis\_100 (L2), Gabriela\_99 (L2), Gardann\_99 (L2), GuuelaD\_96 (L2), Hafay\_100 (L2), Itos\_99 (L2), Kahlid\_98 (L2), Lewan\_100 (L2), LilDestine\_97 (L2), Loadrie\_98 (L2), Lynnae\_100 (L2), MkaliMitinis3\_101 (L2), Netyap\_98 (L2), Nicholasp3\_99 (L2), OverPar\_101 (L2), PYPDinur\_100 (L4), Rossetti\_99 (L2), Rumpelstiltskin\_95 (L2), Sarshaun\_100 (L2), Sheng711\_101 (L4), SoJulia\_101 (L2), Soap141\_99 (L2), Tourach\_100 (L2), Underpass\_91 (L2), Vetric\_97 (L2), Wigglewiggles\_99 (L2), Wilder\_100 (L2), Zakai\_100 (L2), ZhongYanYuan\_96 (L2),

#### Start 35:

- Found in 24 of 379 ( 6.3% ) of genes in pham
- Manual Annotations of this start: 1 of 321
- Called 4.2% of time when present
- Phage (with cluster) where this start called: MiniMac\_101 (L3),

#### Start 40:

- Found in 72 of 379 ( 19.0% ) of genes in pham
- Manual Annotations of this start: 18 of 321
- Called 31.9% of time when present
- Phage (with cluster) where this start called: Bellis\_96 (L3), BourbonZero\_97 (L3), Clautastrophe\_94 (L3), DuncansLeg\_97 (L3), Ellson\_95 (L3), Finnry\_96 (L3), Jobypre\_96 (L3), Jubie\_95 (L3), Kingsolomon\_94 (L3), KirDoubleO7\_94 (L3), Krypton555\_99 (L3), LiyuLake\_95 (L3), Lolly9\_96 (L3), Lumos\_96 (L3), MiniLon\_101 (L3), Moostard\_93 (L3), MsGreen\_96 (L3), Nicholas\_94 (L3), Red305\_97 (L3), Samty\_95 (L3), Snenia\_95 (L3), TriFive\_97 (L3), Whirlwind\_98 (L3),

### Summary by clusters:

There are 12 clusters represented in this pham: A15, A14, A22, L4, A18, A1, A3, L5, L2, L3, A9, A5,

Info for manual annotations of cluster A1:

- Start number 26 was manually annotated 50 times for cluster A1.
- Start number 28 was manually annotated 7 times for cluster A1.
- Start number 29 was manually annotated 6 times for cluster A1.
- Start number 30 was manually annotated 156 times for cluster A1.

Info for manual annotations of cluster A14:

- Start number 27 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 23 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster A18:

- Start number 22 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A22:

- Start number 27 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster A3:

- Start number 24 was manually annotated 14 times for cluster A3.

Info for manual annotations of cluster A5:

- Start number 9 was manually annotated 8 times for cluster A5.

Info for manual annotations of cluster A9:

- Start number 26 was manually annotated 1 time for cluster A9.
- Start number 27 was manually annotated 16 times for cluster A9.

Info for manual annotations of cluster L2:

- Start number 29 was manually annotated 3 times for cluster L2.
- Start number 31 was manually annotated 28 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 35 was manually annotated 1 time for cluster L3.
- Start number 40 was manually annotated 18 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 29 was manually annotated 2 times for cluster L4.

- Start number 31 was manually annotated 2 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 29 was manually annotated 2 times for cluster L5.

**Gene Information:**

Gene: A6\_52 Start: 38092, Stop: 37958, Start Num: 30

Candidate Starts for A6\_52:

(Start: 30 @38092 has 156 MA's), (56, 37990),

Gene: AFIS\_55 Start: 38799, Stop: 38665, Start Num: 30

Candidate Starts for AFIS\_55:

(Start: 30 @38799 has 156 MA's), (56, 38697),

Gene: Abbysshoes\_61 Start: 40860, Stop: 40726, Start Num: 30

Candidate Starts for Abbysshoes\_61:

(Start: 30 @40860 has 156 MA's), (56, 40758),

Gene: Abrogate\_570 Start: 40665, Stop: 40531, Start Num: 30

Candidate Starts for Abrogate\_570:

(Start: 30 @40665 has 156 MA's), (56, 40563),

Gene: Acme\_59 Start: 39262, Stop: 39128, Start Num: 30

Candidate Starts for Acme\_59:

(Start: 30 @39262 has 156 MA's), (56, 39160),

Gene: Adahisdi\_58 Start: 40395, Stop: 40261, Start Num: 30

Candidate Starts for Adahisdi\_58:

(Start: 30 @40395 has 156 MA's), (56, 40293),

Gene: Aegeus\_107 Start: 62949, Stop: 63086, Start Num: 29

Candidate Starts for Aegeus\_107:

(Start: 28 @62946 has 7 MA's), (Start: 29 @62949 has 13 MA's), (34, 62976), (39, 62991), (Start: 40 @62994 has 18 MA's), (44, 63009), (54, 63039), (58, 63063), (60, 63066),

Gene: Aeneas\_61 Start: 41102, Stop: 40968, Start Num: 30

Candidate Starts for Aeneas\_61:

(Start: 30 @41102 has 156 MA's), (56, 41000),

Gene: Agaliana\_53 Start: 37073, Stop: 36939, Start Num: 30

Candidate Starts for Agaliana\_53:

(Start: 30 @37073 has 156 MA's), (56, 36971),

Gene: Airmid\_58 Start: 39243, Stop: 38977, Start Num: 9

Candidate Starts for Airmid\_58:

(Start: 9 @39243 has 8 MA's), (12, 39219), (14, 39210), (54, 39024),

Gene: Ajay\_59 Start: 40476, Stop: 40342, Start Num: 30

Candidate Starts for Ajay\_59:

(Start: 30 @40476 has 156 MA's), (56, 40374),

Gene: Aldrich\_56 Start: 39960, Stop: 39826, Start Num: 30  
Candidate Starts for Aldrich\_56:  
(Start: 30 @39960 has 156 MA's), (56, 39858),

Gene: Aliter\_69 Start: 40655, Stop: 40506, Start Num: 27  
Candidate Starts for Aliter\_69:  
(Start: 27 @40655 has 21 MA's), (33, 40637), (43, 40589),

Gene: Alsfro\_63 Start: 40052, Stop: 39909, Start Num: 26  
Candidate Starts for Alsfro\_63:  
(Start: 26 @40052 has 51 MA's),

Gene: Altman\_61 Start: 40582, Stop: 40448, Start Num: 30  
Candidate Starts for Altman\_61:  
(Start: 30 @40582 has 156 MA's), (56, 40480),

Gene: Alvin\_57 Start: 39789, Stop: 39655, Start Num: 30  
Candidate Starts for Alvin\_57:  
(Start: 30 @39789 has 156 MA's),

Gene: Anglerfish\_59 Start: 40711, Stop: 40568, Start Num: 26  
Candidate Starts for Anglerfish\_59:  
(Start: 26 @40711 has 51 MA's),

Gene: Anon\_68 Start: 39528, Stop: 39328, Start Num: 23  
Candidate Starts for Anon\_68:  
(Start: 23 @39528 has 1 MA's),

Gene: Applejack\_53 Start: 36632, Stop: 36498, Start Num: 30  
Candidate Starts for Applejack\_53:  
(Start: 30 @36632 has 156 MA's), (56, 36530),

Gene: Arcanine\_60 Start: 40322, Stop: 40188, Start Num: 30  
Candidate Starts for Arcanine\_60:  
(Start: 30 @40322 has 156 MA's), (56, 40220),

Gene: Archie\_96 Start: 60983, Stop: 61165, Start Num: 31  
Candidate Starts for Archie\_96:  
(Start: 31 @60983 has 30 MA's), (37, 61019), (Start: 40 @61025 has 18 MA's), (45, 61052), (49, 61076), (52, 61106), (54, 61118), (56, 61133),

Gene: Arissanae\_65 Start: 40920, Stop: 40774, Start Num: 27  
Candidate Starts for Arissanae\_65:  
(Start: 27 @40920 has 21 MA's), (33, 40902), (43, 40854), (58, 40794),

Gene: Arlo\_56 Start: 38792, Stop: 38658, Start Num: 30  
Candidate Starts for Arlo\_56:  
(Start: 30 @38792 has 156 MA's), (56, 38690),

Gene: Ashballer\_61 Start: 40810, Stop: 40559, Start Num: 29  
Candidate Starts for Ashballer\_61:  
(Start: 28 @40813 has 7 MA's), (Start: 29 @40810 has 13 MA's), (42, 40759), (50, 40741), (59, 40696),

Gene: Atkinbua\_62 Start: 40268, Stop: 40131, Start Num: 28  
Candidate Starts for Atkinbua\_62:  
(Start: 28 @40268 has 7 MA's), (Start: 30 @40265 has 156 MA's), (56, 40163),

Gene: BK1\_52 Start: 38092, Stop: 37958, Start Num: 30  
Candidate Starts for BK1\_52:  
(Start: 30 @38092 has 156 MA's), (56, 37990),

Gene: BPBiebs31\_60 Start: 40754, Stop: 40620, Start Num: 30  
Candidate Starts for BPBiebs31\_60:  
(Start: 30 @40754 has 156 MA's), (56, 40652),

Gene: BaconJack\_63 Start: 41853, Stop: 41719, Start Num: 30  
Candidate Starts for BaconJack\_63:  
(Start: 30 @41853 has 156 MA's), (56, 41751),

Gene: Baoshan\_99 Start: 61599, Stop: 61781, Start Num: 31  
Candidate Starts for Baoshan\_99:  
(Start: 31 @61599 has 30 MA's), (32, 61608), (Start: 35 @61626 has 1 MA's), (37, 61635), (45, 61668),  
(49, 61692), (52, 61722), (54, 61734), (56, 61749),

Gene: Barriga\_59 Start: 38979, Stop: 38845, Start Num: 30  
Candidate Starts for Barriga\_59:  
(Start: 30 @38979 has 156 MA's),

Gene: BarrowTuph\_59 Start: 39907, Stop: 39773, Start Num: 30  
Candidate Starts for BarrowTuph\_59:  
(Start: 30 @39907 has 156 MA's), (56, 39805),

Gene: Baudelaire\_107 Start: 62949, Stop: 63086, Start Num: 29  
Candidate Starts for Baudelaire\_107:  
(Start: 28 @62946 has 7 MA's), (Start: 29 @62949 has 13 MA's), (34, 62976), (39, 62991), (Start: 40  
@62994 has 18 MA's), (44, 63009), (54, 63039), (58, 63063), (60, 63066),

Gene: Bazzle\_96 Start: 61539, Stop: 61721, Start Num: 31  
Candidate Starts for Bazzle\_96:  
(Start: 31 @61539 has 30 MA's), (37, 61575), (Start: 40 @61581 has 18 MA's), (45, 61608), (49,  
61632), (52, 61662), (54, 61674), (56, 61689),

Gene: Beatrix\_58 Start: 40913, Stop: 40653, Start Num: 26  
Candidate Starts for Beatrix\_58:  
(Start: 26 @40913 has 51 MA's), (53, 40826), (64, 40724),

Gene: Beemo\_69 Start: 40825, Stop: 40676, Start Num: 27  
Candidate Starts for Beemo\_69:  
(Start: 27 @40825 has 21 MA's), (33, 40807), (43, 40759),

Gene: BeesKnees\_61 Start: 39847, Stop: 39713, Start Num: 30  
Candidate Starts for BeesKnees\_61:  
(Start: 30 @39847 has 156 MA's), (56, 39745),

Gene: Bellis\_96 Start: 61101, Stop: 61235, Start Num: 40

Candidate Starts for Bellis\_96:

(Start: 40 @61101 has 18 MA's), (47, 61137), (48, 61140), (50, 61152), (56, 61203),

Gene: Benedict\_61 Start: 39533, Stop: 39267, Start Num: 9

Candidate Starts for Benedict\_61:

(Start: 9 @39533 has 8 MA's), (14, 39500), (54, 39314),

Gene: Bethlehem\_58 Start: 41462, Stop: 41202, Start Num: 26

Candidate Starts for Bethlehem\_58:

(Start: 26 @41462 has 51 MA's), (53, 41375), (64, 41273),

Gene: Bexan\_56 Start: 40692, Stop: 40432, Start Num: 26

Candidate Starts for Bexan\_56:

(Start: 26 @40692 has 51 MA's), (53, 40605), (64, 40503),

Gene: Big3\_57 Start: 40553, Stop: 40419, Start Num: 30

Candidate Starts for Big3\_57:

(Start: 30 @40553 has 156 MA's), (56, 40451),

Gene: BigCheese\_99 Start: 61757, Stop: 61939, Start Num: 31

Candidate Starts for BigCheese\_99:

(Start: 31 @61757 has 30 MA's), (37, 61793), (Start: 40 @61799 has 18 MA's), (45, 61826), (46, 61832), (49, 61850), (52, 61880), (54, 61892),

Gene: BigMau\_60 Start: 39207, Stop: 39073, Start Num: 30

Candidate Starts for BigMau\_60:

(Start: 30 @39207 has 156 MA's), (56, 39105),

Gene: BigPaolini\_57 Start: 38390, Stop: 38256, Start Num: 30

Candidate Starts for BigPaolini\_57:

(Start: 30 @38390 has 156 MA's), (56, 38288),

Gene: Bigchungj\_58 Start: 39152, Stop: 39018, Start Num: 30

Candidate Starts for Bigchungj\_58:

(Start: 30 @39152 has 156 MA's), (56, 39050),

Gene: Bigfoot\_52 Start: 39345, Stop: 39211, Start Num: 30

Candidate Starts for Bigfoot\_52:

(Start: 30 @39345 has 156 MA's), (56, 39243),

Gene: BillKnuckles\_56 Start: 41364, Stop: 41107, Start Num: 28

Candidate Starts for BillKnuckles\_56:

(Start: 28 @41364 has 7 MA's), (42, 41307), (50, 41289),

Gene: Bircsak\_57 Start: 40580, Stop: 40446, Start Num: 30

Candidate Starts for Bircsak\_57:

(Start: 30 @40580 has 156 MA's),

Gene: Blackflame\_55 Start: 39548, Stop: 39405, Start Num: 26

Candidate Starts for Blackflame\_55:

(Start: 26 @39548 has 51 MA's), (56, 39437),

Gene: Blessor\_55 Start: 39373, Stop: 39239, Start Num: 30

Candidate Starts for Blesser\_55:  
(Start: 30 @39373 has 156 MA's), (56, 39271),

Gene: BluSpix\_56 Start: 35839, Stop: 35705, Start Num: 30  
Candidate Starts for BluSpix\_56:  
(Start: 30 @35839 has 156 MA's), (56, 35737),

Gene: Blue\_57 Start: 40422, Stop: 40288, Start Num: 30  
Candidate Starts for Blue\_57:  
(Start: 30 @40422 has 156 MA's), (56, 40320),

Gene: Bob3\_57 Start: 38473, Stop: 38339, Start Num: 30  
Candidate Starts for Bob3\_57:  
(Start: 30 @38473 has 156 MA's), (56, 38371),

Gene: BobsGarage\_98 Start: 61757, Stop: 61939, Start Num: 31  
Candidate Starts for BobsGarage\_98:  
(Start: 31 @61757 has 30 MA's), (37, 61793), (Start: 40 @61799 has 18 MA's), (45, 61826), (46, 61832), (49, 61850), (52, 61880), (54, 61892),

Gene: Bones\_58 Start: 41008, Stop: 40748, Start Num: 26  
Candidate Starts for Bones\_58:  
(Start: 26 @41008 has 51 MA's), (42, 40948), (50, 40930), (65, 40807),

Gene: BourbonZero\_97 Start: 61299, Stop: 61433, Start Num: 40  
Candidate Starts for BourbonZero\_97:  
(Start: 35 @61284 has 1 MA's), (Start: 40 @61299 has 18 MA's), (47, 61335), (48, 61338), (50, 61350), (56, 61401),

Gene: BrainDrainer\_101 Start: 61531, Stop: 61704, Start Num: 31  
Candidate Starts for BrainDrainer\_101:  
(8, 61438), (11, 61453), (15, 61477), (19, 61489), (Start: 31 @61531 has 30 MA's), (34, 61555), (Start: 40 @61573 has 18 MA's), (43, 61585), (45, 61600), (46, 61606), (52, 61645), (56, 61672),

Gene: Breezona\_99 Start: 61842, Stop: 62027, Start Num: 29  
Candidate Starts for Breezona\_99:  
(Start: 29 @61842 has 13 MA's), (Start: 31 @61845 has 30 MA's), (34, 61869), (37, 61881), (Start: 40 @61887 has 18 MA's), (49, 61938), (52, 61968), (54, 61980), (56, 61995),

Gene: Briton15\_62 Start: 40265, Stop: 40131, Start Num: 30  
Candidate Starts for Briton15\_62:  
(Start: 30 @40265 has 156 MA's), (56, 40163),

Gene: Bromden\_100 Start: 62267, Stop: 62440, Start Num: 29  
Candidate Starts for Bromden\_100:  
(Start: 29 @62267 has 13 MA's), (34, 62291), (Start: 40 @62309 has 18 MA's), (43, 62321), (45, 62336), (46, 62342), (52, 62381), (54, 62393), (56, 62408),

Gene: Bruns\_57 Start: 38964, Stop: 38830, Start Num: 30  
Candidate Starts for Bruns\_57:  
(Start: 30 @38964 has 156 MA's), (56, 38862),

Gene: Burton\_58 Start: 40146, Stop: 40012, Start Num: 30

Candidate Starts for Burton\_58:  
(Start: 30 @40146 has 156 MA's), (56, 40044),

Gene: Buttons\_56 Start: 37913, Stop: 37779, Start Num: 30  
Candidate Starts for Buttons\_56:  
(Start: 30 @37913 has 156 MA's), (56, 37811),

Gene: Bxb1\_53 Start: 38664, Stop: 38530, Start Num: 30  
Candidate Starts for Bxb1\_53:  
(Start: 30 @38664 has 156 MA's), (56, 38562),

Gene: CactusRose\_56 Start: 39341, Stop: 39207, Start Num: 30  
Candidate Starts for CactusRose\_56:  
(Start: 30 @39341 has 156 MA's), (56, 39239),

Gene: Carlyle\_57 Start: 37358, Stop: 37215, Start Num: 26  
Candidate Starts for Carlyle\_57:  
(Start: 26 @37358 has 51 MA's), (56, 37247),

Gene: CartmannCramer\_57 Start: 41747, Stop: 41604, Start Num: 26  
Candidate Starts for CartmannCramer\_57:  
(Start: 26 @41747 has 51 MA's),

Gene: CatBus\_56 Start: 40152, Stop: 40018, Start Num: 30  
Candidate Starts for CatBus\_56:  
(Start: 30 @40152 has 156 MA's), (56, 40050),

Gene: Catalina\_70 Start: 40728, Stop: 40579, Start Num: 27  
Candidate Starts for Catalina\_70:  
(Start: 27 @40728 has 21 MA's), (33, 40710), (43, 40662),

Gene: Caviar\_64 Start: 40846, Stop: 40643, Start Num: 24  
Candidate Starts for Caviar\_64:  
(16, 40876), (Start: 24 @40846 has 14 MA's), (51, 40717), (61, 40651),

Gene: Celestiallunch\_64 Start: 40002, Stop: 39859, Start Num: 27  
Candidate Starts for Celestiallunch\_64:  
(17, 40035), (Start: 27 @40002 has 21 MA's), (33, 39984), (39, 39951), (42, 39939),

Gene: Chadwick\_60 Start: 39218, Stop: 38952, Start Num: 9  
Candidate Starts for Chadwick\_60:  
(4, 39320), (Start: 9 @39218 has 8 MA's), (52, 39011),

Gene: Chanagan\_54 Start: 37998, Stop: 37864, Start Num: 30  
Candidate Starts for Chanagan\_54:  
(Start: 30 @37998 has 156 MA's), (56, 37896),

Gene: Chargerpower\_63 Start: 38909, Stop: 38718, Start Num: 27  
Candidate Starts for Chargerpower\_63:  
(7, 39011), (17, 38939), (Start: 27 @38909 has 21 MA's), (33, 38891), (Start: 35 @38870 has 1 MA's),  
(46, 38822), (52, 38777),

Gene: Charm\_64 Start: 40061, Stop: 39918, Start Num: 27

Candidate Starts for Charm\_64:

(5, 40181), (6, 40175), (10, 40136), (17, 40094), (Start: 27 @40061 has 21 MA's), (33, 40043), (Start: 35 @40022 has 1 MA's), (39, 40010), (42, 39998), (61, 39926),

Gene: Chaser\_99 Start: 60883, Stop: 61056, Start Num: 31

Candidate Starts for Chaser\_99:

(8, 60790), (11, 60805), (13, 60820), (Start: 31 @60883 has 30 MA's), (34, 60907), (Start: 40 @60925 has 18 MA's), (43, 60937), (45, 60952), (46, 60958), (52, 60997),

Gene: ChristmasHams\_52 Start: 37478, Stop: 37344, Start Num: 30

Candidate Starts for ChristmasHams\_52:

(20, 37508), (Start: 30 @37478 has 156 MA's),

Gene: ChutneyChips\_101 Start: 61397, Stop: 61570, Start Num: 29

Candidate Starts for ChutneyChips\_101:

(Start: 29 @61397 has 13 MA's), (34, 61421), (Start: 40 @61439 has 18 MA's), (43, 61451), (45, 61466), (46, 61472), (52, 61511), (56, 61538),

Gene: Ciao\_57 Start: 39371, Stop: 39237, Start Num: 30

Candidate Starts for Ciao\_57:

(Start: 30 @39371 has 156 MA's), (56, 39269),

Gene: Claus\_98 Start: 61500, Stop: 61682, Start Num: 31

Candidate Starts for Claus\_98:

(18, 61455), (Start: 29 @61497 has 13 MA's), (Start: 31 @61500 has 30 MA's), (Start: 35 @61527 has 1 MA's), (37, 61536), (45, 61569), (49, 61593), (52, 61623), (54, 61635), (56, 61650),

Gene: Clautastrophe\_94 Start: 61096, Stop: 61230, Start Num: 40

Candidate Starts for Clautastrophe\_94:

(Start: 40 @61096 has 18 MA's), (47, 61132), (48, 61135), (50, 61147), (56, 61198),

Gene: ConceptII\_61 Start: 41437, Stop: 41303, Start Num: 30

Candidate Starts for ConceptII\_61:

(Start: 30 @41437 has 156 MA's), (56, 41335),

Gene: Corvo\_59 Start: 40902, Stop: 40759, Start Num: 26

Candidate Starts for Corvo\_59:

(Start: 26 @40902 has 51 MA's),

Gene: Crispicous1\_55 Start: 38394, Stop: 38260, Start Num: 30

Candidate Starts for Crispicous1\_55:

(Start: 30 @38394 has 156 MA's), (56, 38292),

Gene: Crossroads\_99 Start: 61475, Stop: 61657, Start Num: 31

Candidate Starts for Crossroads\_99:

(Start: 31 @61475 has 30 MA's), (37, 61511), (Start: 40 @61517 has 18 MA's), (45, 61544), (49, 61568), (52, 61598), (54, 61610), (56, 61625),

Gene: Cueyllyss\_59 Start: 41208, Stop: 40948, Start Num: 26

Candidate Starts for Cueyllyss\_59:

(Start: 26 @41208 has 51 MA's), (42, 41148), (50, 41130), (65, 41007),

Gene: DD5\_57 Start: 40238, Stop: 40095, Start Num: 26

Candidate Starts for DD5\_57:  
(Start: 26 @40238 has 51 MA's), (56, 40127),

Gene: DHan\_102 Start: 61776, Stop: 61958, Start Num: 31  
Candidate Starts for DHan\_102:  
(18, 61731), (Start: 29 @61773 has 13 MA's), (Start: 31 @61776 has 30 MA's), (Start: 35 @61803 has 1 MA's), (37, 61812), (45, 61845), (49, 61869), (52, 61899), (54, 61911), (56, 61926),

Gene: DanBing\_98 Start: 61291, Stop: 61473, Start Num: 31  
Candidate Starts for DanBing\_98:  
(Start: 31 @61291 has 30 MA's), (32, 61300), (Start: 35 @61318 has 1 MA's), (37, 61327), (42, 61342), (45, 61360), (49, 61384), (52, 61414), (54, 61426), (56, 61441),

Gene: Dexes\_58 Start: 40275, Stop: 40141, Start Num: 30  
Candidate Starts for Dexes\_58:  
(Start: 30 @40275 has 156 MA's), (56, 40173),

Gene: DirtDevil\_57 Start: 39960, Stop: 39826, Start Num: 30  
Candidate Starts for DirtDevil\_57:  
(Start: 30 @39960 has 156 MA's), (56, 39858),

Gene: Doom\_56 Start: 39819, Stop: 39559, Start Num: 26  
Candidate Starts for Doom\_56:  
(Start: 26 @39819 has 51 MA's), (53, 39732), (64, 39630),

Gene: Douge\_100 Start: 60951, Stop: 61124, Start Num: 31  
Candidate Starts for Douge\_100:  
(8, 60858), (11, 60873), (19, 60909), (Start: 31 @60951 has 30 MA's), (34, 60975), (Start: 40 @60993 has 18 MA's), (43, 61005), (45, 61020), (46, 61026), (52, 61065), (56, 61092),

Gene: Douzhi\_100 Start: 61220, Stop: 61393, Start Num: 31  
Candidate Starts for Douzhi\_100:  
(8, 61127), (11, 61142), (15, 61166), (19, 61178), (Start: 31 @61220 has 30 MA's), (34, 61244), (Start: 40 @61262 has 18 MA's), (43, 61274), (45, 61289), (46, 61295), (52, 61334), (56, 61361),

Gene: DrFeelGood\_56 Start: 39234, Stop: 39100, Start Num: 30  
Candidate Starts for DrFeelGood\_56:  
(Start: 30 @39234 has 156 MA's), (56, 39132),

Gene: DrSeegs\_98 Start: 61845, Stop: 62027, Start Num: 31  
Candidate Starts for DrSeegs\_98:  
(Start: 29 @61842 has 13 MA's), (Start: 31 @61845 has 30 MA's), (34, 61869), (37, 61881), (Start: 40 @61887 has 18 MA's), (49, 61938), (52, 61968), (54, 61980), (56, 61995),

Gene: DreamCatcher\_62 Start: 40897, Stop: 40763, Start Num: 30  
Candidate Starts for DreamCatcher\_62:  
(Start: 28 @40900 has 7 MA's), (Start: 30 @40897 has 156 MA's), (56, 40795),

Gene: DreamTeam1\_64 Start: 39893, Stop: 39750, Start Num: 27  
Candidate Starts for DreamTeam1\_64:  
(5, 40013), (6, 40007), (10, 39968), (17, 39926), (Start: 27 @39893 has 21 MA's), (33, 39875), (Start: 35 @39854 has 1 MA's), (39, 39842), (42, 39830), (61, 39758),

Gene: Dreamboat\_59 Start: 39108, Stop: 38848, Start Num: 26  
Candidate Starts for Dreamboat\_59:  
(Start: 26 @39108 has 51 MA's), (53, 39021), (64, 38919),

Gene: Dulcie\_58 Start: 39702, Stop: 39451, Start Num: 29  
Candidate Starts for Dulcie\_58:  
(Start: 29 @39702 has 13 MA's), (42, 39651), (50, 39633),

Gene: DuncansLeg\_97 Start: 61287, Stop: 61421, Start Num: 40  
Candidate Starts for DuncansLeg\_97:  
(Start: 35 @61272 has 1 MA's), (Start: 40 @61287 has 18 MA's), (47, 61323), (48, 61326), (50, 61338),  
(56, 61389),

Gene: Dussy\_60 Start: 40880, Stop: 40746, Start Num: 30  
Candidate Starts for Dussy\_60:  
(Start: 30 @40880 has 156 MA's), (56, 40778),

Gene: Dynamix\_60 Start: 39645, Stop: 39502, Start Num: 26  
Candidate Starts for Dynamix\_60:  
(Start: 26 @39645 has 51 MA's),

Gene: DyoEdafos\_103 Start: 61511, Stop: 61684, Start Num: 29  
Candidate Starts for DyoEdafos\_103:  
(Start: 28 @61508 has 7 MA's), (Start: 29 @61511 has 13 MA's), (34, 61535), (37, 61547), (Start: 40  
@61553 has 18 MA's), (42, 61562), (43, 61565), (45, 61580), (52, 61625), (56, 61652),

Gene: EdogawaKiddo\_66 Start: 40695, Stop: 40546, Start Num: 27  
Candidate Starts for EdogawaKiddo\_66:  
(Start: 27 @40695 has 21 MA's), (33, 40677), (43, 40629),

Gene: Edtherson\_57 Start: 39654, Stop: 39520, Start Num: 30  
Candidate Starts for Edtherson\_57:  
(Start: 30 @39654 has 156 MA's), (56, 39552),

Gene: EITiger69\_60 Start: 39467, Stop: 39201, Start Num: 9  
Candidate Starts for EITiger69\_60:  
(Start: 9 @39467 has 8 MA's), (14, 39434), (54, 39248),

Gene: Elle\_64 Start: 38131, Stop: 37913, Start Num: 21  
Candidate Starts for Elle\_64:  
(21, 38131), (Start: 23 @38113 has 1 MA's), (25, 38107), (36, 38056), (38, 38053), (54, 37957),

Gene: Ellson\_95 Start: 61602, Stop: 61736, Start Num: 40  
Candidate Starts for Ellson\_95:  
(Start: 35 @61587 has 1 MA's), (Start: 40 @61602 has 18 MA's), (47, 61638), (48, 61641), (50, 61653),  
(56, 61704),

Gene: EnzoK\_58 Start: 37486, Stop: 37352, Start Num: 30  
Candidate Starts for EnzoK\_58:  
(Start: 30 @37486 has 156 MA's),

Gene: Espresso\_57 Start: 40290, Stop: 40156, Start Num: 30  
Candidate Starts for Espresso\_57:

(Start: 30 @40290 has 156 MA's), (56, 40188),

Gene: EtoileNova\_63 Start: 40850, Stop: 40647, Start Num: 24

Candidate Starts for EtoileNova\_63:

(16, 40880), (Start: 24 @40850 has 14 MA's), (51, 40721), (61, 40655),

Gene: Euphoria\_56 Start: 39547, Stop: 39404, Start Num: 26

Candidate Starts for Euphoria\_56:

(Start: 26 @39547 has 51 MA's),

Gene: Eyeball\_59 Start: 39749, Stop: 39615, Start Num: 30

Candidate Starts for Eyeball\_59:

(Start: 30 @39749 has 156 MA's), (56, 39647),

Gene: Faith1\_99 Start: 61400, Stop: 61582, Start Num: 31

Candidate Starts for Faith1\_99:

(Start: 31 @61400 has 30 MA's), (37, 61436), (Start: 40 @61442 has 18 MA's), (45, 61469), (46, 61475), (49, 61493), (52, 61523), (54, 61535),

Gene: Fajezeel\_59 Start: 39720, Stop: 39586, Start Num: 30

Candidate Starts for Fajezeel\_59:

(Start: 30 @39720 has 156 MA's), (56, 39618),

Gene: FarmResident\_101 Start: 61107, Stop: 61280, Start Num: 31

Candidate Starts for FarmResident\_101:

(8, 61014), (11, 61029), (15, 61053), (19, 61065), (Start: 31 @61107 has 30 MA's), (34, 61131), (Start: 40 @61149 has 18 MA's), (43, 61161), (45, 61176), (46, 61182), (52, 61221), (56, 61248),

Gene: Fascinus\_54 Start: 39859, Stop: 39725, Start Num: 30

Candidate Starts for Fascinus\_54:

(Start: 30 @39859 has 156 MA's), (56, 39757),

Gene: Fenn\_61 Start: 41648, Stop: 41514, Start Num: 30

Candidate Starts for Fenn\_61:

(Start: 30 @41648 has 156 MA's), (56, 41546),

Gene: Finemlucis\_100 Start: 62460, Stop: 62642, Start Num: 31

Candidate Starts for Finemlucis\_100:

(Start: 31 @62460 has 30 MA's), (37, 62496), (Start: 40 @62502 has 18 MA's), (45, 62529), (46, 62535), (49, 62553), (52, 62583), (54, 62595),

Gene: Finnry\_96 Start: 61449, Stop: 61583, Start Num: 40

Candidate Starts for Finnry\_96:

(Start: 40 @61449 has 18 MA's), (47, 61485), (48, 61488), (50, 61500), (56, 61551),

Gene: Forsytheast\_57 Start: 39132, Stop: 38998, Start Num: 30

Candidate Starts for Forsytheast\_57:

(Start: 30 @39132 has 156 MA's), (56, 39030),

Gene: Francis47\_57 Start: 40917, Stop: 40783, Start Num: 30

Candidate Starts for Francis47\_57:

(Start: 30 @40917 has 156 MA's), (56, 40815),

Gene: Froghopper\_55 Start: 38579, Stop: 38436, Start Num: 26  
Candidate Starts for Froghopper\_55:  
(Start: 26 @38579 has 51 MA's),

Gene: Fushigi\_55 Start: 38393, Stop: 38259, Start Num: 30  
Candidate Starts for Fushigi\_55:  
(Start: 30 @38393 has 156 MA's), (56, 38291),

Gene: GMonster\_55 Start: 38356, Stop: 38222, Start Num: 30  
Candidate Starts for GMonster\_55:  
(Start: 30 @38356 has 156 MA's), (56, 38254),

Gene: Gabriela\_99 Start: 60746, Stop: 60928, Start Num: 31  
Candidate Starts for Gabriela\_99:  
(Start: 31 @60746 has 30 MA's), (37, 60782), (Start: 40 @60788 has 18 MA's), (45, 60815), (46, 60821), (49, 60839), (52, 60869), (54, 60881),

Gene: Gachnar\_57 Start: 39213, Stop: 39070, Start Num: 26  
Candidate Starts for Gachnar\_57:  
(Start: 26 @39213 has 51 MA's), (56, 39102),

Gene: GageAP\_59 Start: 40447, Stop: 40187, Start Num: 26  
Candidate Starts for GageAP\_59:  
(Start: 26 @40447 has 51 MA's), (53, 40360), (62, 40300), (63, 40297),

Gene: Gail\_67 Start: 41407, Stop: 41258, Start Num: 27  
Candidate Starts for Gail\_67:  
(Start: 27 @41407 has 21 MA's), (33, 41389), (Start: 35 @41368 has 1 MA's),

Gene: Gandalf20\_61 Start: 41575, Stop: 41441, Start Num: 30  
Candidate Starts for Gandalf20\_61:  
(Start: 30 @41575 has 156 MA's), (56, 41473),

Gene: Gardann\_99 Start: 61193, Stop: 61375, Start Num: 31  
Candidate Starts for Gardann\_99:  
(Start: 31 @61193 has 30 MA's), (37, 61229), (Start: 40 @61235 has 18 MA's), (45, 61262), (46, 61268), (49, 61286), (52, 61316), (54, 61328),

Gene: Gompeii16\_57 Start: 40581, Stop: 40447, Start Num: 30  
Candidate Starts for Gompeii16\_57:  
(Start: 30 @40581 has 156 MA's),

Gene: Graduation\_62 Start: 41280, Stop: 41020, Start Num: 26  
Candidate Starts for Graduation\_62:  
(Start: 26 @41280 has 51 MA's), (42, 41220), (50, 41202), (65, 41079),

Gene: GrecoEtereo\_58 Start: 39479, Stop: 39345, Start Num: 30  
Candidate Starts for GrecoEtereo\_58:  
(Start: 30 @39479 has 156 MA's), (56, 39377),

Gene: Greg\_59 Start: 39720, Stop: 39586, Start Num: 30  
Candidate Starts for Greg\_59:  
(Start: 30 @39720 has 156 MA's), (56, 39618),

Gene: GroundGoblin\_57 Start: 40102, Stop: 39968, Start Num: 30

Candidate Starts for GroundGoblin\_57:

(Start: 30 @40102 has 156 MA's), (56, 40000),

Gene: GuuelaD\_96 Start: 61359, Stop: 61541, Start Num: 31

Candidate Starts for GuuelaD\_96:

(Start: 31 @61359 has 30 MA's), (37, 61395), (Start: 40 @61401 has 18 MA's), (45, 61428), (46, 61434), (49, 61452), (52, 61482), (54, 61494),

Gene: Gwendoluna\_61 Start: 41840, Stop: 41589, Start Num: 29

Candidate Starts for Gwendoluna\_61:

(Start: 29 @41840 has 13 MA's), (42, 41789), (50, 41771),

Gene: Gyzlar\_54 Start: 37793, Stop: 37659, Start Num: 30

Candidate Starts for Gyzlar\_54:

(Start: 30 @37793 has 156 MA's), (56, 37691),

Gene: Hafay\_100 Start: 61495, Stop: 61677, Start Num: 31

Candidate Starts for Hafay\_100:

(18, 61450), (Start: 29 @61492 has 13 MA's), (Start: 31 @61495 has 30 MA's), (Start: 35 @61522 has 1 MA's), (37, 61531), (45, 61564), (49, 61588), (52, 61618), (54, 61630), (56, 61645),

Gene: Hami1\_53 Start: 34833, Stop: 34699, Start Num: 30

Candidate Starts for Hami1\_53:

(Start: 30 @34833 has 156 MA's), (56, 34731),

Gene: HanShotFirst\_59 Start: 40295, Stop: 40161, Start Num: 30

Candidate Starts for HanShotFirst\_59:

(Start: 30 @40295 has 156 MA's), (56, 40193),

Gene: HarryOW\_57 Start: 38977, Stop: 38843, Start Num: 30

Candidate Starts for HarryOW\_57:

(Start: 30 @38977 has 156 MA's), (56, 38875),

Gene: Hermia\_58 Start: 40152, Stop: 40018, Start Num: 30

Candidate Starts for Hermia\_58:

(Start: 30 @40152 has 156 MA's), (56, 40050),

Gene: HermioneGrange\_59 Start: 39701, Stop: 39567, Start Num: 30

Candidate Starts for HermioneGrange\_59:

(Start: 30 @39701 has 156 MA's), (56, 39599),

Gene: Homines\_50 Start: 35670, Stop: 35527, Start Num: 26

Candidate Starts for Homines\_50:

(Start: 26 @35670 has 51 MA's), (56, 35559),

Gene: Hookmount\_64 Start: 40847, Stop: 40644, Start Num: 24

Candidate Starts for Hookmount\_64:

(16, 40877), (Start: 24 @40847 has 14 MA's), (51, 40718), (61, 40652),

Gene: Hope4ever\_60 Start: 40461, Stop: 40327, Start Num: 30

Candidate Starts for Hope4ever\_60:

(Start: 30 @40461 has 156 MA's), (56, 40359),

Gene: HortumSL17\_69 Start: 40727, Stop: 40578, Start Num: 27

Candidate Starts for HortumSL17\_69:

(Start: 27 @40727 has 21 MA's), (33, 40709), (43, 40661),

Gene: ILeeKay\_61 Start: 40319, Stop: 40185, Start Num: 30

Candidate Starts for ILeeKay\_61:

(Start: 30 @40319 has 156 MA's), (56, 40217),

Gene: Ichabod\_62 Start: 41147, Stop: 41004, Start Num: 26

Candidate Starts for Ichabod\_62:

(Start: 26 @41147 has 51 MA's), (56, 41036),

Gene: IgnatiusPatJac\_58 Start: 39784, Stop: 39650, Start Num: 30

Candidate Starts for IgnatiusPatJac\_58:

(Start: 30 @39784 has 156 MA's), (56, 39682),

Gene: Inyanga\_53 Start: 38018, Stop: 37884, Start Num: 30

Candidate Starts for Inyanga\_53:

(Start: 30 @38018 has 156 MA's), (56, 37916),

Gene: Iqorha\_53 Start: 38017, Stop: 37883, Start Num: 30

Candidate Starts for Iqorha\_53:

(Start: 30 @38017 has 156 MA's), (56, 37915),

Gene: Itos\_99 Start: 60306, Stop: 60488, Start Num: 31

Candidate Starts for Itos\_99:

(Start: 31 @60306 has 30 MA's), (37, 60342), (Start: 40 @60348 has 18 MA's), (45, 60375), (46, 60381), (49, 60399), (52, 60429), (54, 60441),

Gene: JC27\_61 Start: 40499, Stop: 40248, Start Num: 29

Candidate Starts for JC27\_61:

(Start: 28 @40502 has 7 MA's), (Start: 29 @40499 has 13 MA's), (42, 40448), (50, 40430), (59, 40385),

Gene: Jabiru\_59 Start: 39387, Stop: 39121, Start Num: 9

Candidate Starts for Jabiru\_59:

(Start: 9 @39387 has 8 MA's), (12, 39363), (14, 39354), (54, 39168),

Gene: JackSparrow\_61 Start: 40371, Stop: 40237, Start Num: 30

Candidate Starts for JackSparrow\_61:

(Start: 30 @40371 has 156 MA's), (56, 40269),

Gene: Jasper\_59 Start: 38994, Stop: 38734, Start Num: 26

Candidate Starts for Jasper\_59:

(Start: 26 @38994 has 51 MA's), (53, 38907), (64, 38805),

Gene: Jeeves\_69 Start: 40401, Stop: 40252, Start Num: 27

Candidate Starts for Jeeves\_69:

(Start: 27 @40401 has 21 MA's), (33, 40383), (Start: 35 @40362 has 1 MA's),

Gene: Jerm2\_59 Start: 39956, Stop: 39822, Start Num: 30

Candidate Starts for Jerm2\_59:

(Start: 30 @39956 has 156 MA's), (56, 39854),

Gene: Jobypre\_96 Start: 61096, Stop: 61230, Start Num: 40

Candidate Starts for Jobypre\_96:

(Start: 40 @61096 has 18 MA's), (47, 61132), (48, 61135), (50, 61147), (56, 61198),

Gene: Jorgensen\_59 Start: 39780, Stop: 39646, Start Num: 30

Candidate Starts for Jorgensen\_59:

(Start: 30 @39780 has 156 MA's), (56, 39678),

Gene: Jubie\_95 Start: 61231, Stop: 61365, Start Num: 40

Candidate Starts for Jubie\_95:

(Start: 40 @61231 has 18 MA's), (47, 61267), (48, 61270), (50, 61282), (56, 61333),

Gene: JuliaChild\_59 Start: 39638, Stop: 39504, Start Num: 30

Candidate Starts for JuliaChild\_59:

(Start: 30 @39638 has 156 MA's), (56, 39536),

Gene: KBG\_59 Start: 41762, Stop: 41628, Start Num: 30

Candidate Starts for KBG\_59:

(Start: 30 @41762 has 156 MA's), (56, 41660),

Gene: KSSJEB\_58 Start: 39422, Stop: 39279, Start Num: 26

Candidate Starts for KSSJEB\_58:

(Start: 26 @39422 has 51 MA's), (56, 39311),

Gene: Kahlid\_98 Start: 61111, Stop: 61293, Start Num: 31

Candidate Starts for Kahlid\_98:

(Start: 31 @61111 has 30 MA's), (37, 61147), (Start: 40 @61153 has 18 MA's), (45, 61180), (46, 61186), (49, 61204), (52, 61234), (54, 61246),

Gene: Kanely\_60 Start: 40359, Stop: 40225, Start Num: 30

Candidate Starts for Kanely\_60:

(Start: 30 @40359 has 156 MA's), (56, 40257),

Gene: Kenmech\_63 Start: 42006, Stop: 41872, Start Num: 30

Candidate Starts for Kenmech\_63:

(Start: 30 @42006 has 156 MA's), (56, 41904),

Gene: Keziacharles14\_66 Start: 41498, Stop: 41355, Start Num: 27

Candidate Starts for Keziacharles14\_66:

(Start: 27 @41498 has 21 MA's), (33, 41480), (39, 41447), (61, 41363),

Gene: KikiBouba\_57 Start: 39961, Stop: 39827, Start Num: 30

Candidate Starts for KikiBouba\_57:

(Start: 30 @39961 has 156 MA's), (56, 39859),

Gene: Killigrew\_58 Start: 40539, Stop: 40405, Start Num: 30

Candidate Starts for Killigrew\_58:

(Start: 30 @40539 has 156 MA's), (56, 40437),

Gene: Kingsolomon\_94 Start: 61205, Stop: 61339, Start Num: 40

Candidate Starts for Kingsolomon\_94:

(Start: 40 @61205 has 18 MA's), (47, 61241), (48, 61244), (50, 61256), (56, 61307),

Gene: KirDoubleO7\_94 Start: 61289, Stop: 61423, Start Num: 40

Candidate Starts for KirDoubleO7\_94:

(Start: 35 @61274 has 1 MA's), (Start: 40 @61289 has 18 MA's), (47, 61325), (48, 61328), (50, 61340), (56, 61391),

Gene: Kropertea\_95 Start: 60713, Stop: 60886, Start Num: 29

Candidate Starts for Kropertea\_95:

(Start: 29 @60713 has 13 MA's), (34, 60737), (Start: 40 @60755 has 18 MA's), (42, 60764), (43, 60767), (45, 60782), (52, 60827), (56, 60854),

Gene: Krypton555\_99 Start: 61780, Stop: 61914, Start Num: 40

Candidate Starts for Krypton555\_99:

(Start: 35 @61765 has 1 MA's), (Start: 40 @61780 has 18 MA's), (47, 61816), (48, 61819), (50, 61831), (56, 61882), (57, 61888),

Gene: Kugel\_58 Start: 40607, Stop: 40473, Start Num: 30

Candidate Starts for Kugel\_58:

(Start: 30 @40607 has 156 MA's), (56, 40505),

Gene: KyMonks1A\_61 Start: 40000, Stop: 39857, Start Num: 26

Candidate Starts for KyMonks1A\_61:

(Start: 26 @40000 has 51 MA's), (56, 39889),

Gene: Kykar\_58 Start: 39437, Stop: 39303, Start Num: 30

Candidate Starts for Kykar\_58:

(Start: 30 @39437 has 156 MA's), (56, 39335),

Gene: Lambert1\_64 Start: 40846, Stop: 40643, Start Num: 24

Candidate Starts for Lambert1\_64:

(16, 40876), (Start: 24 @40846 has 14 MA's), (51, 40717), (61, 40651),

Gene: Lamina13\_60 Start: 39739, Stop: 39605, Start Num: 30

Candidate Starts for Lamina13\_60:

(Start: 30 @39739 has 156 MA's), (56, 39637),

Gene: Lesedi\_54 Start: 38344, Stop: 38210, Start Num: 30

Candidate Starts for Lesedi\_54:

(Start: 30 @38344 has 156 MA's), (56, 38242),

Gene: Levia\_56 Start: 39458, Stop: 39324, Start Num: 30

Candidate Starts for Levia\_56:

(Start: 30 @39458 has 156 MA's), (56, 39356),

Gene: Lewan\_100 Start: 61399, Stop: 61581, Start Num: 31

Candidate Starts for Lewan\_100:

(Start: 31 @61399 has 30 MA's), (37, 61435), (Start: 40 @61441 has 18 MA's), (45, 61468), (46, 61474), (49, 61492), (52, 61522), (54, 61534),

Gene: Licorice\_60 Start: 41831, Stop: 41574, Start Num: 28

Candidate Starts for Licorice\_60:

(Start: 28 @41831 has 7 MA's), (42, 41774), (50, 41756),

Gene: LilBib\_58 Start: 41131, Stop: 40988, Start Num: 26

Candidate Starts for LilBib\_58:

(Start: 26 @41131 has 51 MA's), (56, 41020),

Gene: LilDestine\_97 Start: 61070, Stop: 61252, Start Num: 31

Candidate Starts for LilDestine\_97:

(Start: 31 @61070 has 30 MA's), (37, 61106), (Start: 40 @61112 has 18 MA's), (45, 61139), (46, 61145), (49, 61163), (52, 61193), (54, 61205),

Gene: Lilleskat\_64 Start: 40511, Stop: 40362, Start Num: 27

Candidate Starts for Lilleskat\_64:

(Start: 27 @40511 has 21 MA's), (33, 40493), (43, 40445),

Gene: LiyuLake\_95 Start: 61362, Stop: 61496, Start Num: 40

Candidate Starts for LiyuLake\_95:

(Start: 35 @61347 has 1 MA's), (Start: 40 @61362 has 18 MA's), (47, 61398), (48, 61401), (50, 61413), (56, 61464),

Gene: Loadrie\_98 Start: 61561, Stop: 61743, Start Num: 31

Candidate Starts for Loadrie\_98:

(Start: 31 @61561 has 30 MA's), (37, 61597), (Start: 40 @61603 has 18 MA's), (45, 61630), (46, 61636), (49, 61654), (52, 61684), (54, 61696),

Gene: Lockley\_56 Start: 39400, Stop: 39257, Start Num: 26

Candidate Starts for Lockley\_56:

(Start: 26 @39400 has 51 MA's), (56, 39289),

Gene: Lolly9\_96 Start: 61453, Stop: 61587, Start Num: 40

Candidate Starts for Lolly9\_96:

(Start: 35 @61438 has 1 MA's), (Start: 40 @61453 has 18 MA's), (47, 61489), (48, 61492), (50, 61504), (56, 61555),

Gene: Lopton\_58 Start: 41812, Stop: 41678, Start Num: 30

Candidate Starts for Lopton\_58:

(Start: 30 @41812 has 156 MA's), (56, 41710),

Gene: Luchador\_68 Start: 41978, Stop: 41829, Start Num: 27

Candidate Starts for Luchador\_68:

(17, 42008), (Start: 27 @41978 has 21 MA's), (33, 41960), (Start: 35 @41939 has 1 MA's),

Gene: Lumos\_96 Start: 61093, Stop: 61227, Start Num: 40

Candidate Starts for Lumos\_96:

(Start: 40 @61093 has 18 MA's), (47, 61129), (48, 61132), (50, 61144), (56, 61195),

Gene: LunarLander\_59 Start: 39641, Stop: 39507, Start Num: 30

Candidate Starts for LunarLander\_59:

(Start: 30 @39641 has 156 MA's), (56, 39539),

Gene: Lynnae\_100 Start: 61171, Stop: 61353, Start Num: 31

Candidate Starts for Lynnae\_100:

(Start: 31 @61171 has 30 MA's), (37, 61207), (Start: 40 @61213 has 18 MA's), (45, 61240), (46, 61246), (49, 61264), (52, 61294), (54, 61306),

Gene: MPlant7149\_57 Start: 38517, Stop: 38383, Start Num: 30  
Candidate Starts for MPlant7149\_57:  
(Start: 30 @38517 has 156 MA's), (56, 38415),

Gene: Magnar\_56 Start: 39959, Stop: 39825, Start Num: 30  
Candidate Starts for Magnar\_56:  
(Start: 30 @39959 has 156 MA's), (56, 39857),

Gene: Magnito\_57 Start: 39684, Stop: 39550, Start Num: 30  
Candidate Starts for Magnito\_57:  
(Start: 30 @39684 has 156 MA's), (56, 39582),

Gene: Makemake\_59 Start: 40359, Stop: 40216, Start Num: 26  
Candidate Starts for Makemake\_59:  
(Start: 26 @40359 has 51 MA's), (56, 40248),

Gene: Manatee\_59 Start: 40057, Stop: 39914, Start Num: 26  
Candidate Starts for Manatee\_59:  
(Start: 26 @40057 has 51 MA's),

Gene: Marcell\_55 Start: 38966, Stop: 38832, Start Num: 30  
Candidate Starts for Marcell\_55:  
(Start: 30 @38966 has 156 MA's), (56, 38864),

Gene: Marchy\_53 Start: 37054, Stop: 36920, Start Num: 30  
Candidate Starts for Marchy\_53:  
(Start: 30 @37054 has 156 MA's), (56, 36952),

Gene: Marco3\_62 Start: 41738, Stop: 41595, Start Num: 26  
Candidate Starts for Marco3\_62:  
(Start: 26 @41738 has 51 MA's),

Gene: Marge\_57 Start: 39855, Stop: 39721, Start Num: 30  
Candidate Starts for Marge\_57:  
(Start: 30 @39855 has 156 MA's), (56, 39753),

Gene: Margo\_64 Start: 40872, Stop: 40669, Start Num: 24  
Candidate Starts for Margo\_64:  
(16, 40902), (Start: 24 @40872 has 14 MA's), (51, 40743), (61, 40677),

Gene: Maroc7\_56 Start: 40254, Stop: 40120, Start Num: 30  
Candidate Starts for Maroc7\_56:  
(Start: 30 @40254 has 156 MA's), (56, 40152),

Gene: Marsha\_57 Start: 40396, Stop: 40262, Start Num: 30  
Candidate Starts for Marsha\_57:  
(Start: 30 @40396 has 156 MA's), (56, 40294),

Gene: MaryBeth\_57 Start: 40279, Stop: 40136, Start Num: 26  
Candidate Starts for MaryBeth\_57:  
(Start: 26 @40279 has 51 MA's),

Gene: McGuire\_60 Start: 39619, Stop: 39485, Start Num: 30  
Candidate Starts for McGuire\_60:  
(Start: 30 @39619 has 156 MA's), (56, 39517),

Gene: McSinger\_58 Start: 39589, Stop: 39455, Start Num: 30  
Candidate Starts for McSinger\_58:  
(Start: 30 @39589 has 156 MA's), (56, 39487),

Gene: MegTheThird\_64 Start: 40001, Stop: 39861, Start Num: 27  
Candidate Starts for MegTheThird\_64:  
(17, 40034), (Start: 27 @40001 has 21 MA's), (33, 39983), (39, 39950), (42, 39938),

Gene: MetalQZJ\_56 Start: 40279, Stop: 40136, Start Num: 26  
Candidate Starts for MetalQZJ\_56:  
(Start: 26 @40279 has 51 MA's),

Gene: Michley\_58 Start: 39990, Stop: 39856, Start Num: 30  
Candidate Starts for Michley\_58:  
(21, 40020), (Start: 30 @39990 has 156 MA's), (56, 39888),

Gene: Miley16\_99 Start: 61842, Stop: 62027, Start Num: 29  
Candidate Starts for Miley16\_99:  
(Start: 29 @61842 has 13 MA's), (Start: 31 @61845 has 30 MA's), (34, 61869), (37, 61881), (Start: 40 @61887 has 18 MA's), (49, 61938), (52, 61968), (54, 61980), (56, 61995),

Gene: MilleFeuille\_53 Start: 39432, Stop: 39289, Start Num: 26  
Candidate Starts for MilleFeuille\_53:  
(Start: 26 @39432 has 51 MA's),

Gene: MiniLon\_101 Start: 61454, Stop: 61588, Start Num: 40  
Candidate Starts for MiniLon\_101:  
(Start: 35 @61439 has 1 MA's), (Start: 40 @61454 has 18 MA's), (47, 61490), (48, 61493), (50, 61505), (56, 61556),

Gene: MiniMac\_101 Start: 61434, Stop: 61583, Start Num: 35  
Candidate Starts for MiniMac\_101:  
(Start: 35 @61434 has 1 MA's), (Start: 40 @61449 has 18 MA's), (47, 61485), (48, 61488), (50, 61500), (56, 61551),

Gene: MkaliMitinis3\_101 Start: 61525, Stop: 61707, Start Num: 31  
Candidate Starts for MkaliMitinis3\_101:  
(Start: 31 @61525 has 30 MA's), (37, 61561), (Start: 40 @61567 has 18 MA's), (45, 61594), (46, 61600), (49, 61618), (52, 61648), (54, 61660),

Gene: Mkhuseli\_56 Start: 38717, Stop: 38583, Start Num: 30  
Candidate Starts for Mkhuseli\_56:  
(Start: 30 @38717 has 156 MA's), (56, 38615),

Gene: Molly\_59 Start: 38935, Stop: 38801, Start Num: 30  
Candidate Starts for Molly\_59:  
(Start: 30 @38935 has 156 MA's), (56, 38833),

Gene: Monet\_61 Start: 41021, Stop: 40887, Start Num: 30

Candidate Starts for Monet\_61:  
(Start: 30 @41021 has 156 MA's), (56, 40919),

Gene: Moose\_57 Start: 39132, Stop: 38998, Start Num: 30  
Candidate Starts for Moose\_57:  
(Start: 30 @39132 has 156 MA's), (56, 39030),

Gene: Moostard\_93 Start: 61200, Stop: 61334, Start Num: 40  
Candidate Starts for Moostard\_93:  
(Start: 40 @61200 has 18 MA's), (47, 61236), (48, 61239), (50, 61251), (56, 61302),

Gene: MrGordo\_58 Start: 39793, Stop: 39659, Start Num: 30  
Candidate Starts for MrGordo\_58:  
(Start: 30 @39793 has 156 MA's), (56, 39691),

Gene: Mryolo\_55 Start: 39838, Stop: 39704, Start Num: 30  
Candidate Starts for Mryolo\_55:  
(Start: 30 @39838 has 156 MA's),

Gene: MsGreen\_96 Start: 61095, Stop: 61229, Start Num: 40  
Candidate Starts for MsGreen\_96:  
(Start: 40 @61095 has 18 MA's), (47, 61131), (48, 61134), (50, 61146), (56, 61197),

Gene: Mule\_56 Start: 38388, Stop: 38254, Start Num: 30  
Candidate Starts for Mule\_56:  
(Start: 30 @38388 has 156 MA's), (56, 38286),

Gene: Museum\_59 Start: 40085, Stop: 39951, Start Num: 30  
Candidate Starts for Museum\_59:  
(Start: 30 @40085 has 156 MA's), (56, 39983),

Gene: MyraDee\_64 Start: 37954, Stop: 37787, Start Num: 22  
Candidate Starts for MyraDee\_64:  
(1, 38476), (2, 38458), (3, 38206), (Start: 22 @37954 has 1 MA's), (Start: 27 @37930 has 21 MA's),  
(Start: 40 @37882 has 18 MA's), (50, 37846), (55, 37825),

Gene: Myxus\_68 Start: 40727, Stop: 40578, Start Num: 27  
Candidate Starts for Myxus\_68:  
(Start: 27 @40727 has 21 MA's), (33, 40709), (43, 40661),

Gene: NEHalo\_56 Start: 39867, Stop: 39733, Start Num: 30  
Candidate Starts for NEHalo\_56:  
(Start: 30 @39867 has 156 MA's), (56, 39765),

Gene: Naca\_58 Start: 39771, Stop: 39505, Start Num: 9  
Candidate Starts for Naca\_58:  
(Start: 9 @39771 has 8 MA's), (52, 39564),

Gene: Naira\_61 Start: 41695, Stop: 41561, Start Num: 30  
Candidate Starts for Naira\_61:  
(Start: 30 @41695 has 156 MA's), (56, 41593),

Gene: Nerujay\_60 Start: 40434, Stop: 40300, Start Num: 30

Candidate Starts for Nerujay\_60:  
(Start: 30 @40434 has 156 MA's), (56, 40332),

Gene: Netyap\_98 Start: 61401, Stop: 61583, Start Num: 31  
Candidate Starts for Netyap\_98:  
(Start: 31 @61401 has 30 MA's), (37, 61437), (Start: 40 @61443 has 18 MA's), (45, 61470), (46, 61476), (49, 61494), (52, 61524), (54, 61536),

Gene: Nhonho\_57 Start: 40780, Stop: 40646, Start Num: 30  
Candidate Starts for Nhonho\_57:  
(Start: 30 @40780 has 156 MA's), (56, 40678),

Gene: Nicholas\_94 Start: 61205, Stop: 61339, Start Num: 40  
Candidate Starts for Nicholas\_94:  
(Start: 40 @61205 has 18 MA's), (47, 61241), (48, 61244), (50, 61256), (56, 61307),

Gene: Nicholasp3\_99 Start: 61193, Stop: 61375, Start Num: 31  
Candidate Starts for Nicholasp3\_99:  
(Start: 31 @61193 has 30 MA's), (37, 61229), (Start: 40 @61235 has 18 MA's), (45, 61262), (46, 61268), (49, 61286), (52, 61316), (54, 61328),

Gene: Niza\_60 Start: 41442, Stop: 41308, Start Num: 30  
Candidate Starts for Niza\_60:  
(Start: 30 @41442 has 156 MA's), (56, 41340),

Gene: Noella\_64 Start: 40847, Stop: 40644, Start Num: 24  
Candidate Starts for Noella\_64:  
(16, 40877), (Start: 24 @40847 has 14 MA's), (51, 40718), (61, 40652),

Gene: Norbert\_61 Start: 40846, Stop: 40643, Start Num: 24  
Candidate Starts for Norbert\_61:  
(16, 40876), (Start: 24 @40846 has 14 MA's), (51, 40717), (61, 40651),

Gene: Norz\_59 Start: 41380, Stop: 41120, Start Num: 26  
Candidate Starts for Norz\_59:  
(Start: 26 @41380 has 51 MA's), (53, 41293), (64, 41191),

Gene: Noxious\_56 Start: 40152, Stop: 40018, Start Num: 30  
Candidate Starts for Noxious\_56:  
(Start: 30 @40152 has 156 MA's), (56, 40050),

Gene: Ohno789\_59 Start: 40571, Stop: 40311, Start Num: 26  
Candidate Starts for Ohno789\_59:  
(Start: 26 @40571 has 51 MA's), (53, 40484), (64, 40382),

Gene: Onglai\_66 Start: 38931, Stop: 38782, Start Num: 27  
Candidate Starts for Onglai\_66:  
(Start: 27 @38931 has 21 MA's), (33, 38913), (43, 38865),

Gene: Oogway\_57 Start: 39790, Stop: 39656, Start Num: 30  
Candidate Starts for Oogway\_57:  
(Start: 30 @39790 has 156 MA's), (56, 39688),

Gene: OverPar\_101 Start: 61561, Stop: 61743, Start Num: 31  
Candidate Starts for OverPar\_101:  
(Start: 31 @61561 has 30 MA's), (37, 61597), (Start: 40 @61603 has 18 MA's), (45, 61630), (46, 61636), (49, 61654), (52, 61684), (54, 61696),

Gene: PSullivan\_58 Start: 38828, Stop: 38685, Start Num: 26  
Candidate Starts for PSullivan\_58:  
(Start: 26 @38828 has 51 MA's),

Gene: PYPDinur\_100 Start: 61783, Stop: 61956, Start Num: 31  
Candidate Starts for PYPDinur\_100:  
(8, 61690), (11, 61705), (15, 61729), (Start: 31 @61783 has 30 MA's), (34, 61807), (Start: 40 @61825 has 18 MA's), (43, 61837), (45, 61852), (46, 61858), (52, 61897), (56, 61924),

Gene: PacerPaul\_58 Start: 40284, Stop: 40150, Start Num: 30  
Candidate Starts for PacerPaul\_58:  
(Start: 30 @40284 has 156 MA's), (56, 40182),

Gene: PackMan\_67 Start: 40602, Stop: 40453, Start Num: 27  
Candidate Starts for PackMan\_67:  
(Start: 27 @40602 has 21 MA's), (33, 40584), (43, 40536),

Gene: Panamaxus\_62 Start: 40846, Stop: 40643, Start Num: 24  
Candidate Starts for Panamaxus\_62:  
(16, 40876), (Start: 24 @40846 has 14 MA's), (51, 40717), (61, 40651),

Gene: Papez\_61 Start: 41812, Stop: 41678, Start Num: 30  
Candidate Starts for Papez\_61:  
(Start: 30 @41812 has 156 MA's), (56, 41710),

Gene: Paphu\_57 Start: 39421, Stop: 39287, Start Num: 30  
Candidate Starts for Paphu\_57:  
(Start: 30 @39421 has 156 MA's), (56, 39319),

Gene: Paraselene\_56 Start: 40336, Stop: 40193, Start Num: 26  
Candidate Starts for Paraselene\_56:  
(Start: 26 @40336 has 51 MA's),

Gene: Pari\_61 Start: 39772, Stop: 39512, Start Num: 26  
Candidate Starts for Pari\_61:  
(Start: 26 @39772 has 51 MA's), (53, 39685), (64, 39583),

Gene: Parliament\_58 Start: 40049, Stop: 39915, Start Num: 30  
Candidate Starts for Parliament\_58:  
(Start: 30 @40049 has 156 MA's),

Gene: PascalRango\_58 Start: 40088, Stop: 39954, Start Num: 30  
Candidate Starts for PascalRango\_58:  
(Start: 30 @40088 has 156 MA's), (56, 39986),

Gene: PattyP\_60 Start: 40478, Stop: 40344, Start Num: 30  
Candidate Starts for PattyP\_60:  
(Start: 30 @40478 has 156 MA's), (56, 40376),

Gene: Payneful\_58 Start: 39771, Stop: 39637, Start Num: 30  
Candidate Starts for Payneful\_58:  
(Start: 30 @39771 has 156 MA's), (56, 39669),

Gene: Pelly\_58 Start: 39989, Stop: 39738, Start Num: 29  
Candidate Starts for Pelly\_58:  
(Start: 29 @39989 has 13 MA's), (42, 39938), (50, 39920),

Gene: Pepe\_55 Start: 38549, Stop: 38406, Start Num: 26  
Candidate Starts for Pepe\_55:  
(Start: 26 @38549 has 51 MA's),

Gene: Perseus\_58 Start: 40793, Stop: 40659, Start Num: 30  
Candidate Starts for Perseus\_58:  
(Start: 30 @40793 has 156 MA's), (56, 40691),

Gene: Peterson\_62 Start: 42031, Stop: 41897, Start Num: 30  
Candidate Starts for Peterson\_62:  
(Start: 30 @42031 has 156 MA's), (56, 41929),

Gene: Petp2012\_59 Start: 40827, Stop: 40693, Start Num: 30  
Candidate Starts for Petp2012\_59:  
(Start: 30 @40827 has 156 MA's), (56, 40725),

Gene: Petruccio\_57 Start: 39237, Stop: 39103, Start Num: 30  
Candidate Starts for Petruccio\_57:  
(Start: 30 @39237 has 156 MA's), (56, 39135),

Gene: PetterN\_63 Start: 39541, Stop: 39275, Start Num: 9  
Candidate Starts for PetterN\_63:  
(Start: 9 @39541 has 8 MA's), (14, 39508), (54, 39322),

Gene: Phaeder\_68 Start: 40602, Stop: 40453, Start Num: 27  
Candidate Starts for Phaeder\_68:  
(Start: 27 @40602 has 21 MA's), (33, 40584), (43, 40536),

Gene: PherrisBueller\_57 Start: 38645, Stop: 38385, Start Num: 26  
Candidate Starts for PherrisBueller\_57:  
(Start: 26 @38645 has 51 MA's), (53, 38558), (64, 38456),

Gene: PhineBark\_58 Start: 40476, Stop: 40342, Start Num: 30  
Candidate Starts for PhineBark\_58:  
(Start: 30 @40476 has 156 MA's), (56, 40374),

Gene: Phlippers\_56 Start: 40591, Stop: 40457, Start Num: 30  
Candidate Starts for Phlippers\_56:  
(Start: 30 @40591 has 156 MA's), (56, 40489),

Gene: Phonnegut\_69 Start: 40824, Stop: 40675, Start Num: 27  
Candidate Starts for Phonnegut\_69:  
(Start: 27 @40824 has 21 MA's), (33, 40806), (43, 40758),

Gene: PhrostyMug\_58 Start: 40562, Stop: 40428, Start Num: 30  
Candidate Starts for PhrostyMug\_58:  
(Start: 30 @40562 has 156 MA's), (56, 40460),

Gene: PinkPlastic\_58 Start: 39549, Stop: 39415, Start Num: 30  
Candidate Starts for PinkPlastic\_58:  
(Start: 30 @39549 has 156 MA's), (56, 39447),

Gene: Pinto\_59 Start: 40150, Stop: 40013, Start Num: 28  
Candidate Starts for Pinto\_59:  
(Start: 28 @40150 has 7 MA's), (Start: 30 @40147 has 156 MA's), (56, 40045),

Gene: Pioneer\_69 Start: 40824, Stop: 40675, Start Num: 27  
Candidate Starts for Pioneer\_69:  
(Start: 27 @40824 has 21 MA's), (33, 40806), (43, 40758),

Gene: Pippin\_59 Start: 39764, Stop: 39630, Start Num: 30  
Candidate Starts for Pippin\_59:  
(Start: 30 @39764 has 156 MA's), (56, 39662),

Gene: Pita2\_61 Start: 40325, Stop: 40182, Start Num: 26  
Candidate Starts for Pita2\_61:  
(Start: 26 @40325 has 51 MA's),

Gene: Pocahontas\_64 Start: 40843, Stop: 40640, Start Num: 24  
Candidate Starts for Pocahontas\_64:  
(16, 40873), (Start: 24 @40843 has 14 MA's), (51, 40714), (61, 40648),

Gene: Popcicle\_64 Start: 40843, Stop: 40640, Start Num: 24  
Candidate Starts for Popcicle\_64:  
(16, 40873), (Start: 24 @40843 has 14 MA's), (51, 40714), (61, 40648),

Gene: PowerRanger\_56 Start: 40985, Stop: 40851, Start Num: 30  
Candidate Starts for PowerRanger\_56:  
(Start: 30 @40985 has 156 MA's), (56, 40883),

Gene: ProMouse\_58 Start: 40099, Stop: 39956, Start Num: 26  
Candidate Starts for ProMouse\_58:  
(Start: 26 @40099 has 51 MA's), (56, 39988),

Gene: Puppet\_57 Start: 40265, Stop: 40131, Start Num: 30  
Candidate Starts for Puppet\_57:  
(Start: 30 @40265 has 156 MA's), (56, 40163),

Gene: QTRlifeCrisis\_58 Start: 40342, Stop: 40199, Start Num: 26  
Candidate Starts for QTRlifeCrisis\_58:  
(Start: 26 @40342 has 51 MA's),

Gene: Quby\_100 Start: 61112, Stop: 61285, Start Num: 29  
Candidate Starts for Quby\_100:  
(Start: 28 @61109 has 7 MA's), (Start: 29 @61112 has 13 MA's), (34, 61136), (Start: 40 @61154 has 18 MA's), (43, 61166), (45, 61181), (46, 61187), (52, 61226), (56, 61253),

Gene: QuinnKiro\_63 Start: 40846, Stop: 40643, Start Num: 24  
Candidate Starts for QuinnKiro\_63:  
(16, 40876), (Start: 24 @40846 has 14 MA's), (51, 40717), (61, 40651),

Gene: Raid\_57 Start: 39512, Stop: 39378, Start Num: 30  
Candidate Starts for Raid\_57:  
(Start: 30 @39512 has 156 MA's), (56, 39410),

Gene: Rajelicia\_59 Start: 40856, Stop: 40722, Start Num: 30  
Candidate Starts for Rajelicia\_59:  
(Start: 30 @40856 has 156 MA's), (56, 40754),

Gene: Red305\_97 Start: 61096, Stop: 61230, Start Num: 40  
Candidate Starts for Red305\_97:  
(Start: 40 @61096 has 18 MA's), (47, 61132), (48, 61135), (50, 61147), (56, 61198),

Gene: ResDef\_63 Start: 40846, Stop: 40643, Start Num: 24  
Candidate Starts for ResDef\_63:  
(16, 40876), (Start: 24 @40846 has 14 MA's), (51, 40717), (61, 40651),

Gene: Rhynn\_56 Start: 38880, Stop: 38746, Start Num: 30  
Candidate Starts for Rhynn\_56:  
(Start: 30 @38880 has 156 MA's), (56, 38778),

Gene: RidgeCB\_58 Start: 40123, Stop: 39989, Start Num: 30  
Candidate Starts for RidgeCB\_58:  
(Start: 30 @40123 has 156 MA's), (56, 40021),

Gene: Ringer\_58 Start: 41030, Stop: 40896, Start Num: 30  
Candidate Starts for Ringer\_58:  
(Start: 30 @41030 has 156 MA's), (56, 40928),

Gene: Rohr\_59 Start: 40002, Stop: 39868, Start Num: 30  
Candidate Starts for Rohr\_59:  
(Start: 30 @40002 has 156 MA's), (56, 39900),

Gene: Rossetti\_99 Start: 61561, Stop: 61743, Start Num: 31  
Candidate Starts for Rossetti\_99:  
(Start: 31 @61561 has 30 MA's), (37, 61597), (Start: 40 @61603 has 18 MA's), (42, 61612), (45, 61630), (49, 61654), (52, 61684), (54, 61696), (56, 61711),

Gene: Rubeus\_58 Start: 37943, Stop: 37806, Start Num: 28  
Candidate Starts for Rubeus\_58:  
(Start: 28 @37943 has 7 MA's), (Start: 30 @37940 has 156 MA's), (56, 37838),

Gene: Rufus\_59 Start: 39468, Stop: 39334, Start Num: 30  
Candidate Starts for Rufus\_59:  
(Start: 30 @39468 has 156 MA's), (56, 39366),

Gene: Rumpelstiltskin\_95 Start: 60986, Stop: 61168, Start Num: 31  
Candidate Starts for Rumpelstiltskin\_95:  
(Start: 31 @60986 has 30 MA's), (37, 61022), (Start: 40 @61028 has 18 MA's), (45, 61055), (46, 61061), (49, 61079), (52, 61109), (54, 61121),

Gene: Ruotula\_61 Start: 42152, Stop: 41901, Start Num: 29  
Candidate Starts for Ruotula\_61:  
(Start: 29 @42152 has 13 MA's), (42, 42101), (50, 42083), (59, 42038), (63, 42011),

Gene: Rutherferd\_59 Start: 40099, Stop: 39965, Start Num: 30  
Candidate Starts for Rutherferd\_59:  
(Start: 30 @40099 has 156 MA's), (56, 39997),

Gene: RyeScarlet\_70 Start: 40799, Stop: 40650, Start Num: 27  
Candidate Starts for RyeScarlet\_70:  
(Start: 27 @40799 has 21 MA's), (33, 40781), (43, 40733),

Gene: STLscum\_61 Start: 40923, Stop: 40780, Start Num: 26  
Candidate Starts for STLscum\_61:  
(Start: 26 @40923 has 51 MA's),

Gene: Sachima\_64 Start: 40628, Stop: 40479, Start Num: 27  
Candidate Starts for Sachima\_64:  
(Start: 27 @40628 has 21 MA's), (33, 40610), (43, 40562),

Gene: Sagefire\_60 Start: 40676, Stop: 40542, Start Num: 30  
Candidate Starts for Sagefire\_60:  
(Start: 30 @40676 has 156 MA's), (56, 40574),

Gene: Samty\_95 Start: 61193, Stop: 61327, Start Num: 40  
Candidate Starts for Samty\_95:  
(Start: 40 @61193 has 18 MA's), (47, 61229), (48, 61232), (50, 61244), (56, 61295),

Gene: Sandaddy\_55 Start: 39509, Stop: 39366, Start Num: 26  
Candidate Starts for Sandaddy\_55:  
(Start: 26 @39509 has 51 MA's), (56, 39398),

Gene: Sanya\_54 Start: 39790, Stop: 39656, Start Num: 30  
Candidate Starts for Sanya\_54:  
(Start: 30 @39790 has 156 MA's), (56, 39688),

Gene: SarFire\_55 Start: 39071, Stop: 38928, Start Num: 26  
Candidate Starts for SarFire\_55:  
(Start: 26 @39071 has 51 MA's), (56, 38960),

Gene: Sarshaun\_100 Start: 62153, Stop: 62335, Start Num: 31  
Candidate Starts for Sarshaun\_100:  
(Start: 31 @62153 has 30 MA's), (37, 62189), (Start: 40 @62195 has 18 MA's), (45, 62222), (46, 62228), (49, 62246), (52, 62276), (54, 62288),

Gene: Scorpia\_62 Start: 39600, Stop: 39334, Start Num: 9  
Candidate Starts for Scorpia\_62:  
(Start: 9 @39600 has 8 MA's), (14, 39567), (54, 39381),

Gene: Scowl\_59 Start: 39900, Stop: 39757, Start Num: 26  
Candidate Starts for Scowl\_59:  
(Start: 26 @39900 has 51 MA's),

Gene: Seabiscuit\_62 Start: 39881, Stop: 39747, Start Num: 30

Candidate Starts for Seabiscuit\_62:

(Start: 30 @39881 has 156 MA's), (56, 39779),

Gene: Seanderson\_58 Start: 41329, Stop: 41072, Start Num: 28

Candidate Starts for Seanderson\_58:

(Start: 28 @41329 has 7 MA's), (50, 41254),

Gene: SheaKeira\_63 Start: 39912, Stop: 39769, Start Num: 27

Candidate Starts for SheaKeira\_63:

(Start: 27 @39912 has 21 MA's), (33, 39894), (39, 39861), (42, 39849), (61, 39777),

Gene: Sheng711\_101 Start: 61307, Stop: 61480, Start Num: 31

Candidate Starts for Sheng711\_101:

(8, 61214), (11, 61229), (15, 61253), (Start: 31 @61307 has 30 MA's), (34, 61331), (Start: 40 @61349 has 18 MA's), (43, 61361), (45, 61376), (46, 61382), (52, 61421), (56, 61448),

Gene: ShortQueendom\_51 Start: 36829, Stop: 36695, Start Num: 30

Candidate Starts for ShortQueendom\_51:

(Start: 30 @36829 has 156 MA's), (56, 36727),

Gene: Sibs6\_60 Start: 38579, Stop: 38445, Start Num: 30

Candidate Starts for Sibs6\_60:

(Start: 30 @38579 has 156 MA's), (56, 38477),

Gene: SkiPole\_63 Start: 40593, Stop: 40450, Start Num: 26

Candidate Starts for SkiPole\_63:

(Start: 26 @40593 has 51 MA's),

Gene: Slagathor\_60 Start: 40909, Stop: 40775, Start Num: 30

Candidate Starts for Slagathor\_60:

(Start: 30 @40909 has 156 MA's), (56, 40807),

Gene: Smairt\_61 Start: 41555, Stop: 41421, Start Num: 30

Candidate Starts for Smairt\_61:

(Start: 30 @41555 has 156 MA's), (56, 41453),

Gene: Smeagol\_60 Start: 41059, Stop: 40925, Start Num: 30

Candidate Starts for Smeagol\_60:

(Start: 30 @41059 has 156 MA's), (52, 40984), (56, 40957),

Gene: Snazzy\_57 Start: 39444, Stop: 39310, Start Num: 30

Candidate Starts for Snazzy\_57:

(Start: 30 @39444 has 156 MA's), (56, 39342),

Gene: Snenia\_95 Start: 61097, Stop: 61231, Start Num: 40

Candidate Starts for Snenia\_95:

(Start: 40 @61097 has 18 MA's), (47, 61133), (48, 61136), (50, 61148), (56, 61199),

Gene: SoJulia\_101 Start: 62917, Stop: 63099, Start Num: 31

Candidate Starts for SoJulia\_101:

(Start: 31 @62917 has 30 MA's), (37, 62953), (Start: 40 @62959 has 18 MA's), (45, 62986), (46, 62992), (49, 63010), (52, 63040), (54, 63052),

Gene: Soap141\_99 Start: 62153, Stop: 62335, Start Num: 31

Candidate Starts for Soap141\_99:

(Start: 31 @62153 has 30 MA's), (37, 62189), (Start: 40 @62195 has 18 MA's), (45, 62222), (46, 62228), (49, 62246), (52, 62276), (54, 62288),

Gene: Solon\_56 Start: 39316, Stop: 39182, Start Num: 30

Candidate Starts for Solon\_56:

(Start: 30 @39316 has 156 MA's), (56, 39214),

Gene: SororFago\_67 Start: 41621, Stop: 41472, Start Num: 27

Candidate Starts for SororFago\_67:

(17, 41651), (Start: 27 @41621 has 21 MA's), (33, 41603), (Start: 35 @41582 has 1 MA's), (43, 41555),

Gene: Sorpresa\_56 Start: 39511, Stop: 39368, Start Num: 26

Candidate Starts for Sorpresa\_56:

(Start: 26 @39511 has 51 MA's), (56, 39400),

Gene: SpikeBT\_57 Start: 39705, Stop: 39445, Start Num: 26

Candidate Starts for SpikeBT\_57:

(Start: 26 @39705 has 51 MA's), (53, 39618), (62, 39558), (63, 39555),

Gene: Squee\_59 Start: 40162, Stop: 40028, Start Num: 30

Candidate Starts for Squee\_59:

(Start: 30 @40162 has 156 MA's), (56, 40060),

Gene: StewieG\_55 Start: 36836, Stop: 36702, Start Num: 30

Candidate Starts for StewieG\_55:

(Start: 30 @36836 has 156 MA's), (56, 36734),

Gene: StrongArm\_57 Start: 40820, Stop: 40560, Start Num: 26

Candidate Starts for StrongArm\_57:

(Start: 26 @40820 has 51 MA's), (53, 40733), (64, 40631),

Gene: Sumter\_54 Start: 40052, Stop: 39918, Start Num: 30

Candidate Starts for Sumter\_54:

(Start: 30 @40052 has 156 MA's), (56, 39950),

Gene: Sunshine924\_60 Start: 39199, Stop: 39056, Start Num: 26

Candidate Starts for Sunshine924\_60:

(Start: 26 @39199 has 51 MA's),

Gene: SwissCheese\_59 Start: 39632, Stop: 39498, Start Num: 30

Candidate Starts for SwissCheese\_59:

(Start: 30 @39632 has 156 MA's), (56, 39530),

Gene: Switzer\_59 Start: 41665, Stop: 41522, Start Num: 26

Candidate Starts for Switzer\_59:

(Start: 26 @41665 has 51 MA's),

Gene: Swole\_59 Start: 39113, Stop: 38979, Start Num: 30

Candidate Starts for Swole\_59:  
(Start: 30 @39113 has 156 MA's), (56, 39011),

Gene: Target\_59 Start: 38402, Stop: 38268, Start Num: 30  
Candidate Starts for Target\_59:  
(Start: 30 @38402 has 156 MA's), (56, 38300),

Gene: Tasp14\_61 Start: 40363, Stop: 40229, Start Num: 30  
Candidate Starts for Tasp14\_61:  
(Start: 30 @40363 has 156 MA's), (56, 40261),

Gene: Teodoridan\_56 Start: 39136, Stop: 39002, Start Num: 30  
Candidate Starts for Teodoridan\_56:  
(Start: 30 @39136 has 156 MA's),

Gene: Texage\_62 Start: 40847, Stop: 40644, Start Num: 24  
Candidate Starts for Texage\_62:  
(16, 40877), (Start: 24 @40847 has 14 MA's), (51, 40718), (61, 40652),

Gene: TheloniousMonk\_59 Start: 41765, Stop: 41631, Start Num: 30  
Candidate Starts for TheloniousMonk\_59:  
(Start: 30 @41765 has 156 MA's), (56, 41663),

Gene: Thor\_55 Start: 38429, Stop: 38286, Start Num: 26  
Candidate Starts for Thor\_55:  
(Start: 26 @38429 has 51 MA's), (56, 38318),

Gene: Todacoro\_64 Start: 40846, Stop: 40643, Start Num: 24  
Candidate Starts for Todacoro\_64:  
(16, 40876), (Start: 24 @40846 has 14 MA's), (51, 40717), (61, 40651),

Gene: Topgun\_57 Start: 39202, Stop: 39068, Start Num: 30  
Candidate Starts for Topgun\_57:  
(Start: 30 @39202 has 156 MA's), (56, 39100),

Gene: Tote\_54 Start: 36380, Stop: 36246, Start Num: 30  
Candidate Starts for Tote\_54:  
(Start: 30 @36380 has 156 MA's), (56, 36278),

Gene: Tourach\_100 Start: 62232, Stop: 62414, Start Num: 31  
Candidate Starts for Tourach\_100:  
(8, 62139), (13, 62169), (Start: 31 @62232 has 30 MA's), (32, 62241), (Start: 35 @62259 has 1 MA's),  
(37, 62268), (45, 62301), (49, 62325), (52, 62355), (54, 62367), (56, 62382),

Gene: Traft412\_61 Start: 40928, Stop: 40671, Start Num: 28  
Candidate Starts for Traft412\_61:  
(Start: 28 @40928 has 7 MA's), (42, 40871), (50, 40853),

Gene: Treddle\_59 Start: 40533, Stop: 40399, Start Num: 30  
Candidate Starts for Treddle\_59:  
(Start: 30 @40533 has 156 MA's), (56, 40431),

Gene: TriFive\_97 Start: 61209, Stop: 61343, Start Num: 40

Candidate Starts for TriFive\_97:

(Start: 40 @61209 has 18 MA's), (47, 61245), (48, 61248), (50, 61260), (56, 61311),

Gene: Tripl3t\_60 Start: 41504, Stop: 41370, Start Num: 30

Candidate Starts for Tripl3t\_60:

(Start: 30 @41504 has 156 MA's), (56, 41402),

Gene: Trouble\_60 Start: 40856, Stop: 40722, Start Num: 30

Candidate Starts for Trouble\_60:

(Start: 30 @40856 has 156 MA's), (56, 40754),

Gene: Tubs\_68 Start: 40602, Stop: 40453, Start Num: 27

Candidate Starts for Tubs\_68:

(Start: 27 @40602 has 21 MA's), (33, 40584), (43, 40536),

Gene: Turj99\_56 Start: 40896, Stop: 40753, Start Num: 26

Candidate Starts for Turj99\_56:

(Start: 26 @40896 has 51 MA's), (56, 40785),

Gene: TwoPeat\_60 Start: 39599, Stop: 39465, Start Num: 30

Candidate Starts for TwoPeat\_60:

(Start: 30 @39599 has 156 MA's), (56, 39497),

Gene: U2\_57 Start: 40613, Stop: 40470, Start Num: 26

Candidate Starts for U2\_57:

(Start: 26 @40613 has 51 MA's), (56, 40502),

Gene: Underpass\_91 Start: 56229, Stop: 56411, Start Num: 31

Candidate Starts for Underpass\_91:

(Start: 31 @56229 has 30 MA's), (37, 56265), (Start: 40 @56271 has 18 MA's), (45, 56298), (46, 56304), (49, 56322), (52, 56352), (54, 56364),

Gene: Vanisoa\_66 Start: 41485, Stop: 41339, Start Num: 27

Candidate Starts for Vanisoa\_66:

(Start: 27 @41485 has 21 MA's), (33, 41467), (41, 41425), (58, 41359),

Gene: Veracruz\_62 Start: 40846, Stop: 40643, Start Num: 24

Candidate Starts for Veracruz\_62:

(16, 40876), (Start: 24 @40846 has 14 MA's), (51, 40717), (61, 40651),

Gene: Vetric\_97 Start: 61015, Stop: 61197, Start Num: 31

Candidate Starts for Vetric\_97:

(Start: 31 @61015 has 30 MA's), (37, 61051), (Start: 40 @61057 has 18 MA's), (45, 61084), (46, 61090), (49, 61108), (52, 61138), (54, 61150),

Gene: Violet\_56 Start: 40459, Stop: 40325, Start Num: 30

Candidate Starts for Violet\_56:

(Start: 30 @40459 has 156 MA's), (56, 40357),

Gene: Watermelon\_59 Start: 39819, Stop: 39685, Start Num: 30

Candidate Starts for Watermelon\_59:

(Start: 30 @39819 has 156 MA's), (56, 39717),

Gene: Wheeler\_58 Start: 39624, Stop: 39490, Start Num: 30  
Candidate Starts for Wheeler\_58:  
(Start: 30 @39624 has 156 MA's), (56, 39522),

Gene: Whirlwind\_98 Start: 61608, Stop: 61742, Start Num: 40  
Candidate Starts for Whirlwind\_98:  
(Start: 35 @61593 has 1 MA's), (Start: 40 @61608 has 18 MA's), (47, 61644), (48, 61647), (50, 61659),  
(56, 61710), (57, 61716),

Gene: Whitspit\_55 Start: 37367, Stop: 37233, Start Num: 30  
Candidate Starts for Whitspit\_55:  
(Start: 30 @37367 has 156 MA's), (56, 37265),

Gene: Wigglewigggle\_99 Start: 61323, Stop: 61505, Start Num: 31  
Candidate Starts for Wigglewigggle\_99:  
(Start: 31 @61323 has 30 MA's), (37, 61359), (Start: 40 @61365 has 18 MA's), (45, 61392), (46,  
61398), (49, 61416), (52, 61446), (54, 61458),

Gene: Wilder\_100 Start: 61159, Stop: 61341, Start Num: 31  
Candidate Starts for Wilder\_100:  
(Start: 31 @61159 has 30 MA's), (37, 61195), (45, 61228), (46, 61234), (49, 61252), (52, 61282), (54,  
61294), (56, 61309),

Gene: Wilkins\_57 Start: 39132, Stop: 38998, Start Num: 30  
Candidate Starts for Wilkins\_57:  
(Start: 30 @39132 has 156 MA's), (56, 39030),

Gene: Winky\_99 Start: 61842, Stop: 62027, Start Num: 29  
Candidate Starts for Winky\_99:  
(Start: 29 @61842 has 13 MA's), (Start: 31 @61845 has 30 MA's), (34, 61869), (37, 61881), (Start: 40  
@61887 has 18 MA's), (49, 61938), (52, 61968), (54, 61980), (56, 61995),

Gene: Yecey3\_69 Start: 40709, Stop: 40557, Start Num: 26  
Candidate Starts for Yecey3\_69:  
(Start: 26 @40709 has 51 MA's), (33, 40688), (58, 40580), (61, 40565),

Gene: Zakai\_100 Start: 61802, Stop: 61984, Start Num: 31  
Candidate Starts for Zakai\_100:  
(Start: 31 @61802 has 30 MA's), (37, 61838), (Start: 40 @61844 has 18 MA's), (45, 61871), (46,  
61877), (49, 61895), (52, 61925), (54, 61937),

Gene: Zeeculate\_56 Start: 40569, Stop: 40435, Start Num: 30  
Candidate Starts for Zeeculate\_56:  
(Start: 30 @40569 has 156 MA's), (56, 40467),

Gene: Zephyr\_59 Start: 39575, Stop: 39441, Start Num: 30  
Candidate Starts for Zephyr\_59:  
(Start: 30 @39575 has 156 MA's), (56, 39473),

Gene: Zeuska\_57 Start: 40195, Stop: 40061, Start Num: 30  
Candidate Starts for Zeuska\_57:  
(Start: 30 @40195 has 156 MA's), (56, 40093),

Gene: ZhongYanYuan\_96 Start: 61296, Stop: 61478, Start Num: 31

Candidate Starts for ZhongYanYuan\_96:

(18, 61251), (Start: 29 @61293 has 13 MA's), (Start: 31 @61296 has 30 MA's), (Start: 35 @61323 has 1 MA's), (37, 61332), (45, 61365), (49, 61389), (52, 61419), (54, 61431), (56, 61446),