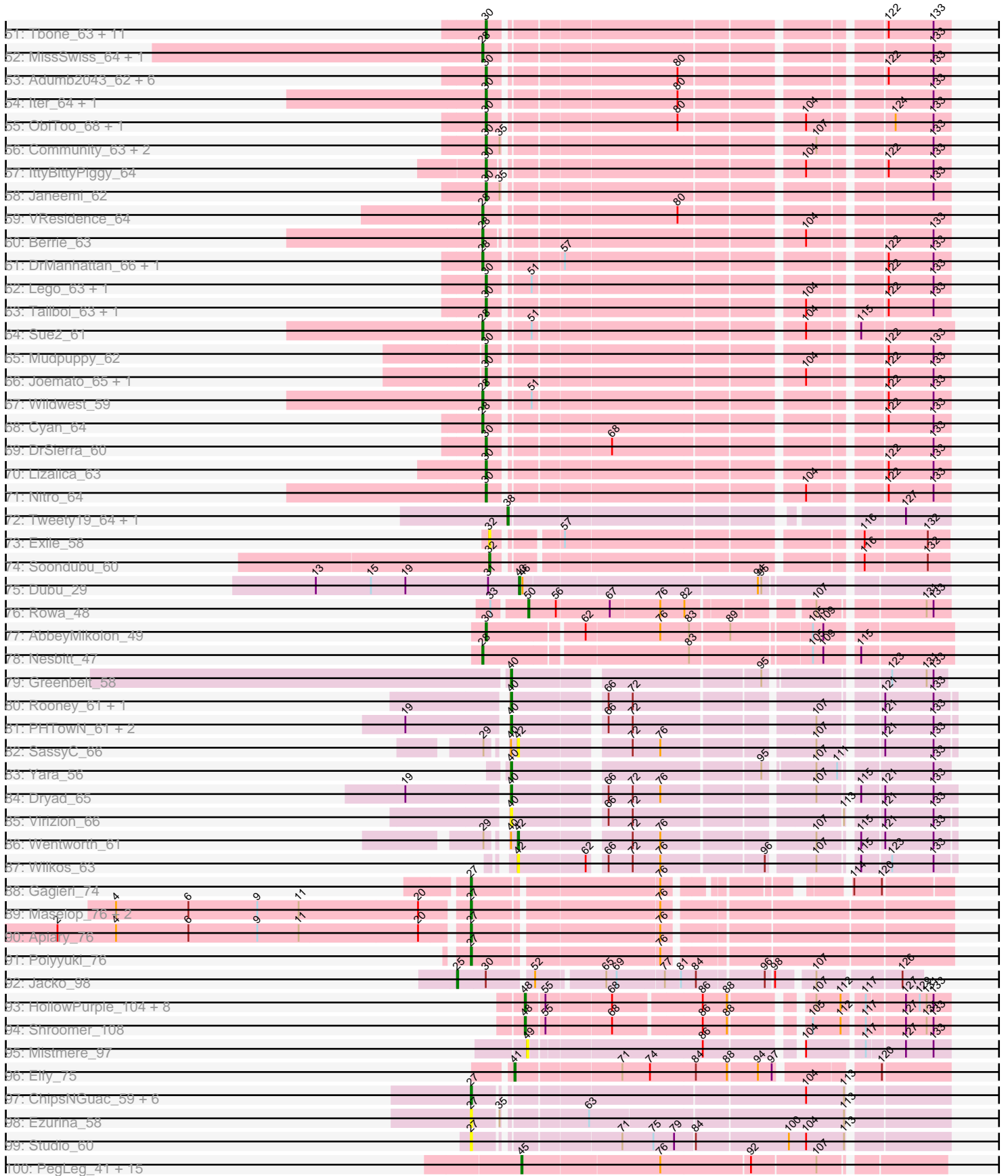




Pham 311208





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 311208 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311208 has 234 members, 41 are drafts.

Phages represented in each track:

- Track 1 : Severus\_65, KittenMittens\_64
- Track 2 : Rowdy\_69, Shapes\_69, DustyMartin\_69
- Track 3 : Eaglepride\_69
- Track 4 : Chupacabra\_65, Goose\_68
- Track 5 : Rebeuca\_68, Kristoff\_66
- Track 6 : Trike\_64, Poompha\_64, Drake94\_65, PeaceMeal1\_65
- Track 7 : Pharaoh\_73
- Track 8 : Refuge\_76
- Track 9 : Anthony\_58
- Track 10 : Garak\_81, Indra\_83, Temprado\_81, Tucker\_80, Roksolana\_80, ToneTone\_77, BennyP\_80, Koko\_81, WunderPhul\_80, Helmet\_82, BlessJoy\_80, Lilbunny\_79, Wiks\_79
- Track 11 : Cookiedough\_80, DelvinSonDorr\_76
- Track 12 : Zaka\_80, Yokurt\_79, Zulu\_81, Blue7\_81, Artemis2UCLA\_79
- Track 13 : DaVinci\_78, Kazan\_81, Candra\_78, SuperCallie99\_77, Hoot\_75, VohminGhazi\_80, BABullseye\_73
- Track 14 : Rifter\_80
- Track 15 : Hexamo\_79, CloudWang3\_80
- Track 16 : Neeharika16\_79, Pmask\_79, SuperAwesome\_80
- Track 17 : Jordennis\_78
- Track 18 : EricB\_79, SmellyB\_80, GreedyLawyer\_75, Kipper29\_80, Dorothea\_80, Chartreuse\_79
- Track 19 : Isiphiwo\_77
- Track 20 : Newrala\_79
- Track 21 : Charm\_74, DreamTeam1\_74
- Track 22 : MegTheThird\_75
- Track 23 : Celestialunch\_75
- Track 24 : Klodlith\_75
- Track 25 : SheaKeira\_74
- Track 26 : Settecandela\_209
- Track 27 : Phrappuccino\_184
- Track 28 : PitaDog\_56, Christian\_56, Pterodactyl\_56
- Track 29 : Litotes\_57, CallieOMalley\_58, Suppi\_58, Canowicakte\_58, PartyCup\_59, Wayne\_60
- Track 30 : DreamTeam\_55, Gisselle\_55
- Track 31 : Bodacious\_56, Lucy\_55, Lennox\_56, ChewChew\_56, CristinaYang\_56, Lasagna\_54, LilStuart\_55, Nancia\_56

- Track 32 : Temper16\_55, Maria1952\_54, Daiboju\_55, Sergei\_55, Herb\_55, KingBob\_55
- Track 33 : DrRobert\_54, Makoto\_55
- Track 34 : Moki\_55, HeadNerd\_55, Huckleberry\_55
- Track 35 : AppleCider\_57
- Track 36 : MeganNoll\_58, RAP15\_59
- Track 37 : Oxynfrius\_58
- Track 38 : MrGloopy\_58
- Track 39 : BigMack\_56
- Track 40 : Carpal\_57
- Track 41 : Preamble\_57
- Track 42 : Graynor\_61
- Track 43 : MrBoss\_60
- Track 44 : Urla\_56
- Track 45 : Korra\_59, Fluke\_58, Glenn\_59
- Track 46 : Bennie\_56
- Track 47 : OurGirlNessie\_54
- Track 48 : Scuttle\_57
- Track 49 : ThursdayNight\_67
- Track 50 : Michkear\_67
- Track 51 : Tbone\_63, Eraser\_63, Flutur\_63, Skelbel\_64, Asa16\_63, London\_63, AGrandiflora\_65, Niobe\_63, Tutumahutu\_65, Powerpuff\_65, YesChef\_63, Warda\_64
- Track 52 : MissSwiss\_64, PandaPo\_64
- Track 53 : Adumb2043\_62, AEgle\_61, Amploria\_63, Turab\_62, Elezi\_62, Subaru\_63, Jstan\_64
- Track 54 : Iter\_64, Ascela\_65
- Track 55 : ObiToo\_68, Crewmate\_68
- Track 56 : Community\_63, Tuck\_63, Phives\_64
- Track 57 : IttyBittyPiggy\_64
- Track 58 : Janeemi\_62
- Track 59 : VResidence\_64
- Track 60 : Berrie\_63
- Track 61 : DrManhattan\_66, Adolin\_65
- Track 62 : Lego\_63, Kaylissa\_65
- Track 63 : Tallboi\_63, JohnDoe\_64
- Track 64 : Sue2\_61
- Track 65 : Mudpuppy\_62
- Track 66 : Joemato\_65, Simpson\_69
- Track 67 : Wildwest\_59
- Track 68 : Cyan\_64
- Track 69 : DrSierra\_60
- Track 70 : Lizalica\_63
- Track 71 : Nitro\_64
- Track 72 : Tweety19\_64, Snek\_63
- Track 73 : Exile\_58
- Track 74 : Soondubu\_60
- Track 75 : Dubu\_29
- Track 76 : Rowa\_48
- Track 77 : AbbeyMikolon\_49
- Track 78 : Nesbitt\_47
- Track 79 : Greenbelt\_58
- Track 80 : Rooney\_61, Gibson\_61
- Track 81 : PHTowN\_61, Lizz\_61, ShakeNBake\_61

- Track 82 : SassyC\_66
- Track 83 : Yara\_56
- Track 84 : Dryad\_65
- Track 85 : Virizion\_66
- Track 86 : Wentworth\_61
- Track 87 : Wilkos\_63
- Track 88 : Gagieri\_74
- Track 89 : Maselop\_76, CoffeeBean\_76, Braxoaddie\_76
- Track 90 : Apiary\_76
- Track 91 : Polyzuki\_76
- Track 92 : Jacko\_98
- Track 93 : HollowPurple\_104, Welcome\_105, ASegato\_101, Necrophoxinus\_105, StevieWelch\_103, Fork\_99, Erenyeager\_103, Issa7\_102, SteakFry\_106
- Track 94 : Shroomer\_108
- Track 95 : Mistmere\_97
- Track 96 : Elfy\_75
- Track 97 : ChipsNGuac\_59, Neuville\_58, Gerri43\_58, CardboardBox\_59, AnnabelLee\_60, Roberts\_59, ChamoyPickle\_60
- Track 98 : Ezurina\_58
- Track 99 : Studio\_60
- Track 100 : PegLeg\_41, LilhomieP\_40, Diminimus\_42, IPHane7\_41, Bongo\_41, Izel\_42, SlimJimmy\_40, Auspice\_41, Dulcita\_42, FreakyGoo\_42, TpuDiCK\_43, TyDawg\_41, Skinny\_42, KleverKiS\_42, Bricole\_41, Glaske16\_42
- Track 101 : RoseMarie\_47
- Track 102 : Reindeer\_42
- Track 103 : Nanosmite\_47
- Track 104 : Lukepolites\_35
- Track 105 : Mbo2\_82
- Track 106 : TPA2\_52
- Track 107 : Finch\_218

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

The start number called the most often in the published annotations is 50, it was called in 32 of the 193 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Anthony\_58, BABullseye\_73, BennyP\_80, BlessJoy\_80, Candra\_78, Chupacabra\_65, DaVinci\_78, DustyMartin\_69, Garak\_81, Goose\_68, Helmet\_82, Hoot\_75, Indra\_83, Jordennis\_78, Kazan\_81, KittenMittens\_64, Koko\_81, Kristoff\_66, Lilbunny\_79, Neeharika16\_79, Newrala\_79, Pmask\_79, Rebeuca\_68, Rifter\_80, Roksolana\_80, Rowa\_48, Rowdy\_69, Severus\_65, Shapes\_69, SuperAwesome\_80, SuperCallie99\_77, Temprado\_81, ToneTone\_77, Tucker\_80, VohminGhazi\_80, Wiks\_79, WunderPhul\_80,

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

- Artemis2UCLA\_79, Blue7\_81, Chartreuse\_79, CloudWang3\_80, Cookiedough\_80, DelvinSonDorr\_76, Dorothea\_80, Drake94\_65, Eaglepride\_69, EricB\_79, GreedyLawyer\_75, Hexamo\_79, Isiphiwo\_77, Kipper29\_80, PeaceMeal1\_65, Poompha\_64, SmellyB\_80, Trike\_64, Yokurt\_79, Zaka\_80, Zulu\_81,

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

- AEgle\_61, AGrandiflora\_65, ASegato\_101, AbbeyMikolon\_49, Adolin\_65, Adumb2043\_62, Amploria\_63, AnnabelLee\_60, Apiary\_76, AppleCider\_57, Asa16\_63, Ascela\_65, Auspice\_41, Bennie\_56, Berrie\_63, BigMack\_56, Bodacious\_56, Bongo\_41, Braxoaddie\_76, Bricole\_41, CallieOMalley\_58, Canowicakte\_58, CardboardBox\_59, Carpal\_57, Celestialunch\_75, ChamoyPickle\_60, Charm\_74, ChewChew\_56, ChipsNGuac\_59, Christian\_56, CoffeeBean\_76, Community\_63, Crewmate\_68, CristinaYang\_56, Cyan\_64, Daiboju\_55, Diminimus\_42, DrManhattan\_66, DrRobert\_54, DrSierra\_60, DreamTeam1\_74, DreamTeam\_55, Dryad\_65, Dubu\_29, Dulcita\_42, Elezi\_62, Elyf\_75, Eraser\_63, Erenyeager\_103, Exile\_58, Ezurina\_58, Finch\_218, Fluke\_58, Flutur\_63, Fork\_99, FreakyGoo\_42, Gagieri\_74, Gerri43\_58, Gibson\_61, Gisselle\_55, Glaske16\_42, Glenn\_59, Graynor\_61, Greenbelt\_58, HeadNerd\_55, Herb\_55, HollowPurple\_104, Huckleberry\_55, IPhone7\_41, Issa7\_102, Iter\_64, IttyBittyPiggy\_64, Izel\_42, Jacko\_98, Janeemi\_62, Joemato\_65, JohnDoe\_64, Jstan\_64, Kaylissa\_65, KingBob\_55, KleverKiS\_42, Klodlith\_75, Korra\_59, Lasagna\_54, Lego\_63, Lennox\_56, LilStuart\_55, LilhomieP\_40, Litotes\_57, Lizalica\_63, Lizz\_61, London\_63, Lucy\_55, Lukepolites\_35, Makoto\_55, Maria1952\_54, Maselop\_76, Mbo2\_82, MegTheThird\_75, MeganNoll\_58, Michkear\_67, MissSwiss\_64, Mistmere\_97, Moki\_55, MrBoss\_60, MrGloopy\_58, Mudpuppy\_62, Nancia\_56, Nanosmite\_47, Necrophoxinus\_105, Nesbitt\_47, Neuvillelette\_58, Niobe\_63, Nitro\_64, ObiToo\_68, OurGirlNessie\_54, Oxynfrius\_58, PHTown\_61, PandaPo\_64, PartyCup\_59, PegLeg\_41, Pharaoh\_73, Phives\_64, Phrappuccino\_184, PitaDog\_56, Polyyuki\_76, Powerpuff\_65, Preamble\_57, Pterodactyl\_56, RAP15\_59, Refuge\_76, Reindeer\_42, Roberts\_59, Rooney\_61, RoseMarie\_47, SassyC\_66, Scuttle\_57, Sergei\_55, Settecandela\_209, ShakeNBake\_61, SheaKeira\_74, Shroomer\_108, Simpson\_69, Skelbel\_64, Skinny\_42, SlimJimmy\_40, Snek\_63, Soondubu\_60, SteakFry\_106, StevieWelch\_103, Studio\_60, Subaru\_63, Sue2\_61, Suppi\_58, TPA2\_52, Tallboi\_63, Tbone\_63, Temper16\_55, ThursdayNight\_67, TpudiCK\_43, Tuck\_63, Turab\_62, Tutumahutu\_65, Tweety19\_64, TyDawg\_41, Urla\_56, VResidence\_64, Virizion\_66, Warda\_64, Wayne\_60, Welcome\_105, Wentworth\_61, Wildwest\_59, Wilkos\_63, Yara\_56, YesChef\_63,

### Summary by start number:

Start 14:

- Found in 4 of 234 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Bennie\_56 (AK),

Start 21:

- Found in 1 of 234 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finch\_218 (singleton),

Start 22:

- Found in 1 of 234 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present

- Phage (with cluster) where this start called: TPA2\_52 (singleton),

#### Start 24:

- Found in 12 of 234 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 4 of 193
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Drake94\_65 (A10), PeaceMeal1\_65 (A10), Poompha\_64 (A10), Trike\_64 (A10),

#### Start 25:

- Found in 2 of 234 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Jacko\_98 (ED1),

#### Start 27:

- Found in 16 of 234 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 10 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnnabelLee\_60 (FR), Apiary\_76 (CR6), Braxoaddie\_76 (CR6), CardboardBox\_59 (FR), ChamoyPickle\_60 (FR), ChipsNGuac\_59 (FR), CoffeeBean\_76 (CR6), Ezurina\_58 (FR), Gagieri\_74 (CR6), Gerri43\_58 (FR), Maselop\_76 (CR6), Mbo2\_82 (singleton), Neuville\_58 (FR), Polyyuki\_76 (CR6), Roberts\_59 (FR), Studio\_60 (FR),

#### Start 28:

- Found in 10 of 234 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 9 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adolin\_65 (AZ1), Berrie\_63 (AZ1), Cyan\_64 (AZ1), DrManhattan\_66 (AZ1), MissSwiss\_64 (AZ1), Nesbitt\_47 (BL), PandaPo\_64 (AZ1), Sue2\_61 (AZ1), VResidence\_64 (AZ1), Wildwest\_59 (AZ1),

#### Start 30:

- Found in 40 of 234 ( 17.1% ) of genes in pham
- Manual Annotations of this start: 29 of 193
- Called 97.5% of time when present
- Phage (with cluster) where this start called: AEgle\_61 (AZ1), AGrandiflora\_65 (AZ1), AbbeyMikolon\_49 (BL), Adumb2043\_62 (AZ1), Amploria\_63 (AZ1), Asa16\_63 (AZ1), Ascela\_65 (AZ1), Community\_63 (AZ1), Crewmate\_68 (AZ1), DrSierra\_60 (AZ1), Elezi\_62 (AZ1), Eraser\_63 (AZ1), Flutur\_63 (AZ1), Iter\_64 (AZ1), IttyBittyPiggy\_64 (AZ1), Janeemi\_62 (AZ1), Joemato\_65 (AZ1), JohnDoe\_64 (AZ1), Jstan\_64 (AZ1), Kaylissa\_65 (AZ1), Lego\_63 (AZ1), Lizalica\_63 (AZ1), London\_63 (AZ1), Mudpuppy\_62 (AZ1), Niobe\_63 (AZ1), Nitro\_64 (AZ1), ObiToo\_68 (AZ1), Phives\_64 (AZ1), Powerpuff\_65 (AZ1), Simpson\_69 (AZ1), Skelbel\_64 (AZ1), Subaru\_63 (AZ1), Tallboi\_63 (AZ1), Tbone\_63 (AZ1), Tuck\_63 (AZ1), Turab\_62 (AZ1), Tutumahutu\_65 (AZ1), Warda\_64 (AZ1), YesChef\_63 (AZ1),

#### Start 32:

- Found in 5 of 234 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Exile\_58 (AZ6), Soondubu\_60 (AZ6),

Start 34:

- Found in 12 of 234 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Eaglepride\_69 (A10),

Start 36:

- Found in 17 of 234 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 16 of 193
- Called 94.1% of time when present
- Phage (with cluster) where this start called: Bodacious\_56 (AK), ChewChew\_56 (AK), Christian\_56 (AK), CristinaYang\_56 (AK), HeadNerd\_55 (AK), Huckleberry\_55 (AK), Lasagna\_54 (AK), Lennox\_56 (AK), LilStuart\_55 (AK), Lucy\_55 (AK), Moki\_55 (AK), Nancia\_56 (AK), OurGirlNessie\_54 (AK), PitaDog\_56 (AK), Pterodactyl\_56 (AK), Urla\_56 (AK),

Start 37:

- Found in 7 of 234 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 7 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BigMack\_56 (AK), DreamTeam\_55 (AK), Fluke\_58 (AK), Gisselle\_55 (AK), Glenn\_59 (AK), Korra\_59 (AK), Oxynfrius\_58 (AK),

Start 38:

- Found in 5 of 234 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 4 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Charm\_74 (A9), DreamTeam1\_74 (A9), Snek\_63 (AZ3), ThursdayNight\_67 (AZ), Tweety19\_64 (AZ3),

Start 39:

- Found in 2 of 234 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DrRobert\_54 (AK), Makoto\_55 (AK),

Start 40:

- Found in 15 of 234 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 9 of 193
- Called 86.7% of time when present
- Phage (with cluster) where this start called: Celestiallunch\_75 (A9), Dryad\_65 (BN), Gibson\_61 (BN), Greenbelt\_58 (BN), Klodlith\_75 (A9), Lizz\_61 (BN), MegTheThird\_75 (A9), PHTown\_61 (BN), Rooney\_61 (BN), ShakeNBake\_61 (BN), SheaKeira\_74 (A9), Virizion\_66 (BN), Yara\_56 (BN),

Start 41:

- Found in 3 of 234 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 3 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elfy\_75 (FP), Preamble\_57 (AK), Refuge\_76 (A12),

Start 42:

- Found in 4 of 234 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 2 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pharaoh\_73 (A12), SassyC\_66 (BN), Wentworth\_61 (BN), Wilkos\_63 (BN),

Start 43:

- Found in 2 of 234 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Dubu\_29 (BJ),

Start 44:

- Found in 20 of 234 ( 8.5% ) of genes in pham
- Manual Annotations of this start: 18 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AppleCider\_57 (AK), CallieOMalley\_58 (AK), Canowicakte\_58 (AK), Carpal\_57 (AK), Daiboju\_55 (AK), Graynor\_61 (AK), Herb\_55 (AK), KingBob\_55 (AK), Litotes\_57 (AK), Maria1952\_54 (AK), MeganNoll\_58 (AK), MrBoss\_60 (AK), MrGloopy\_58 (AK), PartyCup\_59 (AK), RAP15\_59 (AK), Scuttle\_57 (AK), Sergei\_55 (AK), Suppi\_58 (AK), Temper16\_55 (AK), Wayne\_60 (AK),

Start 45:

- Found in 20 of 234 ( 8.5% ) of genes in pham
- Manual Annotations of this start: 16 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Auspice\_41 (M1), Bongo\_41 (M1), Bricole\_41 (M1), Diminimus\_42 (M1), Dulcita\_42 (M1), FreakyGoo\_42 (M1), Glaske16\_42 (M1), IPhane7\_41 (M1), Izel\_42 (M1), KleverKiS\_42 (M1), LilhomieP\_40 (M1), Michkear\_67 (AZ), Nanosmite\_47 (M3), PegLeg\_41 (M1), Reindeer\_42 (M1), RoseMarie\_47 (M1), Skinny\_42 (M1), SlimJimmy\_40 (M1), TpudiCK\_43 (M1), TyDawg\_41 (M1),

Start 47:

- Found in 1 of 234 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Settecandela\_209 (AA),

Start 48:

- Found in 31 of 234 ( 13.2% ) of genes in pham
- Manual Annotations of this start: 16 of 193
- Called 54.8% of time when present
- Phage (with cluster) where this start called: ASegato\_101 (ED2), Artemis2UCLA\_79 (A6), Blue7\_81 (A6), CloudWang3\_80 (A6), Erenyeager\_103 (ED2), Fork\_99 (ED2), Hexamo\_79 (A6), HollowPurple\_104 (ED2), Issa7\_102 (ED2), Necrophoxinus\_105 (ED2), Shroomer\_108 (ED2), SteakFry\_106 (ED2), StevieWelch\_103 (ED2), Welcome\_105 (ED2), Yokurt\_79 (A6), Zaka\_80 (A6), Zulu\_81 (A6),

Start 49:

- Found in 1 of 234 ( 0.4% ) of genes in pham

- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mistmere\_97 (ED3),

#### Start 50:

- Found in 58 of 234 ( 24.8% ) of genes in pham
- Manual Annotations of this start: 32 of 193
- Called 63.8% of time when present
- Phage (with cluster) where this start called: Anthony\_58 (A20), BABullseye\_73 (A6), BennyP\_80 (A6), BlessJoy\_80 (A6), Candra\_78 (A6), Chupacabra\_65 (A10), DaVinci\_78 (A6), DustyMartin\_69 (A10), Garak\_81 (A6), Goose\_68 (A10), Helmet\_82 (A6), Hoot\_75 (A6), Indra\_83 (A6), Jordennis\_78 (A6), Kazan\_81 (A6), KittenMittens\_64 (A10), Koko\_81 (A6), Kristoff\_66 (A10), Lilbunny\_79 (A6), Neeharika16\_79 (A6), Newrala\_79 (A6), Pmask\_79 (A6), Rebeuca\_68 (A10), Rifter\_80 (A6), Roksolana\_80 (A6), Rowa\_48 (BL), Rowdy\_69 (A10), Severus\_65 (A10), Shapes\_69 (A10), SuperAwesome\_80 (A6), SuperCallie99\_77 (A6), Temprado\_81 (A6), ToneTone\_77 (A6), Tucker\_80 (A6), VohminGhazi\_80 (A6), Wiks\_79 (A6), WunderPhul\_80 (A6),

#### Start 51:

- Found in 25 of 234 ( 10.7% ) of genes in pham
- Manual Annotations of this start: 8 of 193
- Called 36.0% of time when present
- Phage (with cluster) where this start called: Chartreuse\_79 (A6), Cookiedough\_80 (A6), DelvinSonDorr\_76 (A6), Dorothea\_80 (A6), EricB\_79 (A6), GreedyLawyer\_75 (A6), Isiphiwo\_77 (A6), Kipper29\_80 (A6), SmellyB\_80 (A6),

#### Start 53:

- Found in 1 of 234 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lukepolites\_35 (singleton),

#### Start 54:

- Found in 1 of 234 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phrappuccino\_184 (AA),

### Summary by clusters:

There are 23 clusters represented in this pham: FP, FR, BL, BN, singleton, BJ, ED2, ED3, ED1, M1, M3, A10, A12, A6, A9, AA, AK, AZ, A20, CR6, AZ1, AZ3, AZ6,

#### Info for manual annotations of cluster A10:

- Start number 24 was manually annotated 4 times for cluster A10.
- Start number 34 was manually annotated 1 time for cluster A10.
- Start number 50 was manually annotated 6 times for cluster A10.

#### Info for manual annotations of cluster A12:

- Start number 41 was manually annotated 1 time for cluster A12.
- Start number 42 was manually annotated 1 time for cluster A12.

Info for manual annotations of cluster A20:

- Start number 50 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A6:

- Start number 48 was manually annotated 7 times for cluster A6.
- Start number 50 was manually annotated 24 times for cluster A6.
- Start number 51 was manually annotated 8 times for cluster A6.

Info for manual annotations of cluster A9:

- Start number 38 was manually annotated 2 times for cluster A9.
- Start number 40 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster AA:

- Start number 47 was manually annotated 1 time for cluster AA.
- Start number 54 was manually annotated 1 time for cluster AA.

Info for manual annotations of cluster AK:

- Start number 14 was manually annotated 1 time for cluster AK.
- Start number 36 was manually annotated 16 times for cluster AK.
- Start number 37 was manually annotated 7 times for cluster AK.
- Start number 39 was manually annotated 2 times for cluster AK.
- Start number 41 was manually annotated 1 time for cluster AK.
- Start number 44 was manually annotated 18 times for cluster AK.

Info for manual annotations of cluster AZ1:

- Start number 28 was manually annotated 8 times for cluster AZ1.
- Start number 30 was manually annotated 28 times for cluster AZ1.

Info for manual annotations of cluster AZ3:

- Start number 38 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ6:

- Start number 32 was manually annotated 1 time for cluster AZ6.

Info for manual annotations of cluster BJ:

- Start number 43 was manually annotated 1 time for cluster BJ.

Info for manual annotations of cluster BL:

- Start number 28 was manually annotated 1 time for cluster BL.
- Start number 30 was manually annotated 1 time for cluster BL.
- Start number 50 was manually annotated 1 time for cluster BL.

Info for manual annotations of cluster BN:

- Start number 40 was manually annotated 8 times for cluster BN.
- Start number 42 was manually annotated 1 time for cluster BN.

Info for manual annotations of cluster CR6:

- Start number 27 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster ED1:

- Start number 25 was manually annotated 1 time for cluster ED1.

Info for manual annotations of cluster ED2:

- Start number 48 was manually annotated 9 times for cluster ED2.

Info for manual annotations of cluster FP:

- Start number 41 was manually annotated 1 time for cluster FP.

Info for manual annotations of cluster FR:

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

Info for manual annotations of cluster M1:

- Start number 45 was manually annotated 15 times for cluster M1.

Info for manual annotations of cluster M3:

- Start number 45 was manually annotated 1 time for cluster M3.

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

Gene: AEgle\_61 Start: 41138, Stop: 41494, Start Num: 30

Candidate Starts for AEgle\_61:

(Start: 30 @41138 has 29 MA's), (80, 41288), (122, 41441), (133, 41480),

Gene: AGrandiflora\_65 Start: 42034, Stop: 42390, Start Num: 30

Candidate Starts for AGrandiflora\_65:

(Start: 30 @42034 has 29 MA's), (122, 42337), (133, 42376),

Gene: ASegato\_101 Start: 54171, Stop: 53848, Start Num: 48

Candidate Starts for ASegato\_101:

(Start: 48 @54171 has 16 MA's), (55, 54156), (68, 54102), (86, 54030), (88, 54009), (107, 53952), (112, 53931), (117, 53916), (127, 53886), (129, 53874), (131, 53868), (133, 53862),

Gene: AbbeyMikolon\_49 Start: 34450, Stop: 34821, Start Num: 30

Candidate Starts for AbbeyMikolon\_49:

(Start: 30 @34450 has 29 MA's), (62, 34528), (76, 34591), (83, 34615), (89, 34648), (105, 34711), (109, 34720),

Gene: Adolin\_65 Start: 40925, Stop: 41284, Start Num: 28

Candidate Starts for Adolin\_65:

(Start: 28 @40925 has 9 MA's), (57, 40982), (122, 41231), (133, 41270),

Gene: Adumb2043\_62 Start: 41162, Stop: 41518, Start Num: 30

Candidate Starts for Adumb2043\_62:

(Start: 30 @41162 has 29 MA's), (80, 41312), (122, 41465), (133, 41504),

Gene: Amploria\_63 Start: 41342, Stop: 41698, Start Num: 30

Candidate Starts for Amploria\_63:

(Start: 30 @41342 has 29 MA's), (80, 41492), (122, 41645), (133, 41684),

Gene: AnnabelLee\_60 Start: 35355, Stop: 34978, Start Num: 27

Candidate Starts for AnnabelLee\_60:

(Start: 27 @35355 has 10 MA's), (104, 35091), (113, 35058),

Gene: Anthony\_58 Start: 37628, Stop: 37296, Start Num: 50

Candidate Starts for Anthony\_58:

(Start: 50 @37628 has 32 MA's), (96, 37430), (126, 37334), (127, 37331), (129, 37319),

Gene: Apiary\_76 Start: 55270, Stop: 54890, Start Num: 27

Candidate Starts for Apiary\_76:

(2, 55618), (4, 55567), (6, 55504), (9, 55444), (11, 55408), (20, 55306), (Start: 27 @55270 has 10 MA's), (76, 55120),

Gene: AppleCider\_57 Start: 41677, Stop: 42012, Start Num: 44

Candidate Starts for AppleCider\_57:

(Start: 44 @41677 has 18 MA's), (90, 41845), (104, 41905), (112, 41935), (122, 41965), (131, 41998),

Gene: Artemis2UCLA\_79 Start: 44616, Stop: 44272, Start Num: 48

Candidate Starts for Artemis2UCLA\_79:

(Start: 48 @44616 has 16 MA's), (Start: 50 @44613 has 32 MA's), (107, 44376), (112, 44355), (128, 44301),

Gene: Asa16\_63 Start: 41723, Stop: 42079, Start Num: 30

Candidate Starts for Asa16\_63:

(Start: 30 @41723 has 29 MA's), (122, 42026), (133, 42065),

Gene: Ascela\_65 Start: 42214, Stop: 42570, Start Num: 30

Candidate Starts for Ascela\_65:

(Start: 30 @42214 has 29 MA's), (80, 42364), (133, 42556),

Gene: Auspice\_41 Start: 33797, Stop: 33453, Start Num: 45

Candidate Starts for Auspice\_41:

(Start: 45 @33797 has 16 MA's), (76, 33680), (92, 33605), (107, 33551),

Gene: BABullseye\_73 Start: 43259, Stop: 42921, Start Num: 50

Candidate Starts for BABullseye\_73:

(26, 43304), (Start: 50 @43259 has 32 MA's), (Start: 51 @43256 has 8 MA's), (87, 43100), (112, 43001),

Gene: Bennie\_56 Start: 40399, Stop: 40872, Start Num: 14

Candidate Starts for Bennie\_56:

(Start: 14 @40399 has 1 MA's), (23, 40474), (Start: 36 @40522 has 16 MA's), (88, 40699), (90, 40702), (124, 40828),

Gene: BennyP\_80 Start: 44778, Stop: 44437, Start Num: 50

Candidate Starts for BennyP\_80:

(Start: 48 @44781 has 16 MA's), (Start: 50 @44778 has 32 MA's), (107, 44541), (112, 44520), (128, 44466),

Gene: Berrie\_63 Start: 41818, Stop: 42174, Start Num: 28

Candidate Starts for Berrie\_63:

(Start: 28 @41818 has 9 MA's), (104, 42064), (133, 42160),

Gene: BigMack\_56 Start: 40973, Stop: 41317, Start Num: 37

Candidate Starts for BigMack\_56:

(Start: 37 @40973 has 7 MA's), (55, 40997), (85, 41123), (90, 41150), (93, 41168), (104, 41210), (109, 41225), (112, 41240), (120, 41267), (122, 41270),

Gene: BlessJoy\_80 Start: 45134, Stop: 44793, Start Num: 50

Candidate Starts for BlessJoy\_80:

(Start: 48 @45137 has 16 MA's), (Start: 50 @45134 has 32 MA's), (107, 44897), (112, 44876), (128, 44822),

Gene: Blue7\_81 Start: 44835, Stop: 44491, Start Num: 48

Candidate Starts for Blue7\_81:

(Start: 48 @44835 has 16 MA's), (Start: 50 @44832 has 32 MA's), (107, 44595), (112, 44574), (128, 44520),

Gene: Bodacious\_56 Start: 40944, Stop: 41294, Start Num: 36

Candidate Starts for Bodacious\_56:

(Start: 36 @40944 has 16 MA's), (58, 40992), (88, 41121), (90, 41124), (124, 41250),

Gene: Bongo\_41 Start: 33797, Stop: 33453, Start Num: 45

Candidate Starts for Bongo\_41:

(Start: 45 @33797 has 16 MA's), (76, 33680), (92, 33605), (107, 33551),

Gene: Braxoaddie\_76 Start: 55255, Stop: 54875, Start Num: 27

Candidate Starts for Braxoaddie\_76:

(4, 55552), (6, 55489), (9, 55429), (11, 55393), (20, 55291), (Start: 27 @55255 has 10 MA's), (76, 55105),

Gene: Bricole\_41 Start: 33783, Stop: 33439, Start Num: 45

Candidate Starts for Bricole\_41:

(Start: 45 @33783 has 16 MA's), (76, 33666), (92, 33591), (107, 33537),

Gene: CallieOMalley\_58 Start: 41865, Stop: 42200, Start Num: 44

Candidate Starts for CallieOMalley\_58:

(Start: 44 @41865 has 18 MA's), (90, 42033), (104, 42093), (112, 42123), (120, 42150), (122, 42153), (131, 42186),

Gene: Candra\_78 Start: 44954, Stop: 44616, Start Num: 50

Candidate Starts for Candra\_78:

(26, 44999), (Start: 50 @44954 has 32 MA's), (Start: 51 @44951 has 8 MA's), (87, 44795), (112, 44696),

Gene: Canowicakte\_58 Start: 41917, Stop: 42252, Start Num: 44

Candidate Starts for Canowicakte\_58:

(Start: 44 @41917 has 18 MA's), (90, 42085), (104, 42145), (112, 42175), (120, 42202), (122, 42205), (131, 42238),

Gene: CardboardBox\_59 Start: 35358, Stop: 34981, Start Num: 27

Candidate Starts for CardboardBox\_59:

(Start: 27 @35358 has 10 MA's), (104, 35094), (113, 35061),

Gene: Carpal\_57 Start: 41744, Stop: 42079, Start Num: 44

Candidate Starts for Carpal\_57:

(Start: 44 @41744 has 18 MA's), (64, 41801), (70, 41819), (90, 41912), (104, 41972), (109, 41987), (112, 42002), (120, 42029), (122, 42032),

Gene: Celestiallunch\_75 Start: 44883, Stop: 44533, Start Num: 40  
Candidate Starts for Celestiallunch\_75:  
(Start: 40 @44883 has 9 MA's), (74, 44772), (80, 44748), (107, 44634), (115, 44607), (121, 44589),  
(127, 44571), (128, 44562),

Gene: ChamoyPickle\_60 Start: 35898, Stop: 35521, Start Num: 27  
Candidate Starts for ChamoyPickle\_60:  
(Start: 27 @35898 has 10 MA's), (104, 35634), (113, 35601),

Gene: Charm\_74 Start: 44815, Stop: 44462, Start Num: 38  
Candidate Starts for Charm\_74:  
(7, 45040), (Start: 38 @44815 has 4 MA's), (80, 44677), (107, 44563), (115, 44536), (121, 44518),  
(127, 44500), (128, 44491),

Gene: Chartreuse\_79 Start: 44262, Stop: 43927, Start Num: 51  
Candidate Starts for Chartreuse\_79:  
(26, 44310), (Start: 50 @44265 has 32 MA's), (Start: 51 @44262 has 8 MA's), (87, 44106), (112,  
44007),

Gene: ChewChew\_56 Start: 41074, Stop: 41424, Start Num: 36  
Candidate Starts for ChewChew\_56:  
(Start: 36 @41074 has 16 MA's), (58, 41122), (88, 41251), (90, 41254), (124, 41380),

Gene: ChipsNGuac\_59 Start: 35358, Stop: 34981, Start Num: 27  
Candidate Starts for ChipsNGuac\_59:  
(Start: 27 @35358 has 10 MA's), (104, 35094), (113, 35061),

Gene: Christian\_56 Start: 40786, Stop: 41136, Start Num: 36  
Candidate Starts for Christian\_56:  
(Start: 36 @40786 has 16 MA's), (88, 40963), (90, 40966), (124, 41092),

Gene: Chupacabra\_65 Start: 42016, Stop: 41687, Start Num: 50  
Candidate Starts for Chupacabra\_65:  
(Start: 50 @42016 has 32 MA's), (102, 41803), (125, 41728),

Gene: CloudWang3\_80 Start: 45127, Stop: 44783, Start Num: 48  
Candidate Starts for CloudWang3\_80:  
(Start: 32 @45151 has 1 MA's), (Start: 48 @45127 has 16 MA's), (Start: 50 @45124 has 32 MA's),  
(107, 44887), (112, 44866), (128, 44812),

Gene: CoffeeBean\_76 Start: 55213, Stop: 54833, Start Num: 27  
Candidate Starts for CoffeeBean\_76:  
(4, 55510), (6, 55447), (9, 55387), (11, 55351), (20, 55249), (Start: 27 @55213 has 10 MA's), (76,  
55063),

Gene: Community\_63 Start: 42094, Stop: 42450, Start Num: 30  
Candidate Starts for Community\_63:  
(Start: 30 @42094 has 29 MA's), (35, 42106), (107, 42349), (133, 42436),

Gene: Cookiedough\_80 Start: 45569, Stop: 45231, Start Num: 51  
Candidate Starts for Cookiedough\_80:  
(26, 45617), (Start: 50 @45572 has 32 MA's), (Start: 51 @45569 has 8 MA's), (105, 45338),

Gene: Crewmate\_68 Start: 42445, Stop: 42801, Start Num: 30

Candidate Starts for Crewmate\_68:

(Start: 30 @42445 has 29 MA's), (80, 42595), (104, 42691), (124, 42754), (133, 42787),

Gene: CristinaYang\_56 Start: 41071, Stop: 41421, Start Num: 36

Candidate Starts for CristinaYang\_56:

(Start: 36 @41071 has 16 MA's), (58, 41119), (88, 41248), (90, 41251), (124, 41377),

Gene: Cyan\_64 Start: 41775, Stop: 42134, Start Num: 28

Candidate Starts for Cyan\_64:

(Start: 28 @41775 has 9 MA's), (122, 42081), (133, 42120),

Gene: DaVinci\_78 Start: 44319, Stop: 43981, Start Num: 50

Candidate Starts for DaVinci\_78:

(26, 44364), (Start: 50 @44319 has 32 MA's), (Start: 51 @44316 has 8 MA's), (87, 44160), (112, 44061),

Gene: Daiboju\_55 Start: 41677, Stop: 42018, Start Num: 44

Candidate Starts for Daiboju\_55:

(Start: 44 @41677 has 18 MA's), (90, 41848), (94, 41869), (103, 41902), (122, 41965), (126, 41977),

Gene: DelvinSonDorr\_76 Start: 44974, Stop: 44636, Start Num: 51

Candidate Starts for DelvinSonDorr\_76:

(26, 45022), (Start: 50 @44977 has 32 MA's), (Start: 51 @44974 has 8 MA's), (105, 44743),

Gene: Diminimus\_42 Start: 33796, Stop: 33452, Start Num: 45

Candidate Starts for Diminimus\_42:

(Start: 45 @33796 has 16 MA's), (76, 33679), (92, 33604), (107, 33550),

Gene: Dorothea\_80 Start: 45562, Stop: 45227, Start Num: 51

Candidate Starts for Dorothea\_80:

(26, 45610), (Start: 50 @45565 has 32 MA's), (Start: 51 @45562 has 8 MA's), (87, 45406), (112, 45307),

Gene: DrManhattan\_66 Start: 40479, Stop: 40838, Start Num: 28

Candidate Starts for DrManhattan\_66:

(Start: 28 @40479 has 9 MA's), (57, 40536), (122, 40785), (133, 40824),

Gene: DrRobert\_54 Start: 40308, Stop: 40655, Start Num: 39

Candidate Starts for DrRobert\_54:

(Start: 39 @40308 has 2 MA's), (55, 40332), (88, 40482), (90, 40485), (124, 40611),

Gene: DrSierra\_60 Start: 40611, Stop: 40967, Start Num: 30

Candidate Starts for DrSierra\_60:

(Start: 30 @40611 has 29 MA's), (68, 40704), (133, 40953),

Gene: Drake94\_65 Start: 41184, Stop: 40807, Start Num: 24

Candidate Starts for Drake94\_65:

(Start: 24 @41184 has 4 MA's), (Start: 34 @41151 has 1 MA's), (Start: 50 @41133 has 32 MA's), (70, 41061), (102, 40923), (125, 40848), (131, 40824),

Gene: DreamTeam\_55 Start: 40683, Stop: 41033, Start Num: 37

Candidate Starts for DreamTeam\_55:

(Start: 37 @40683 has 7 MA's), (55, 40713), (58, 40734), (64, 40755), (85, 40839), (90, 40866), (104, 40926), (109, 40941), (112, 40956), (120, 40983), (122, 40986),

Gene: DreamTeam1\_74 Start: 44663, Stop: 44310, Start Num: 38

Candidate Starts for DreamTeam1\_74:

(7, 44888), (Start: 38 @44663 has 4 MA's), (80, 44525), (107, 44411), (115, 44384), (121, 44366), (127, 44348), (128, 44339),

Gene: Dryad\_65 Start: 44270, Stop: 43926, Start Num: 40

Candidate Starts for Dryad\_65:

(19, 44351), (Start: 40 @44270 has 9 MA's), (66, 44198), (72, 44177), (76, 44153), (107, 44033), (115, 44006), (121, 43988), (133, 43946),

Gene: Dubu\_29 Start: 22724, Stop: 23071, Start Num: 43

Candidate Starts for Dubu\_29:

(13, 22547), (15, 22595), (19, 22625), (31, 22697), (Start: 43 @22724 has 1 MA's), (46, 22727), (94, 22922), (95, 22925),

Gene: Dulcita\_42 Start: 33797, Stop: 33453, Start Num: 45

Candidate Starts for Dulcita\_42:

(Start: 45 @33797 has 16 MA's), (76, 33680), (92, 33605), (107, 33551),

Gene: DustyMartin\_69 Start: 42169, Stop: 41843, Start Num: 50

Candidate Starts for DustyMartin\_69:

(Start: 24 @42220 has 4 MA's), (Start: 34 @42187 has 1 MA's), (Start: 50 @42169 has 32 MA's), (70, 42097), (102, 41959), (125, 41884),

Gene: Eaglepride\_69 Start: 42138, Stop: 41791, Start Num: 34

Candidate Starts for Eaglepride\_69:

(Start: 24 @42171 has 4 MA's), (Start: 34 @42138 has 1 MA's), (Start: 50 @42120 has 32 MA's), (76, 42009), (125, 41832),

Gene: Elezi\_62 Start: 41480, Stop: 41836, Start Num: 30

Candidate Starts for Elezi\_62:

(Start: 30 @41480 has 29 MA's), (80, 41630), (122, 41783), (133, 41822),

Gene: Elfy\_75 Start: 42768, Stop: 43112, Start Num: 41

Candidate Starts for Elfy\_75:

(Start: 41 @42768 has 3 MA's), (71, 42855), (74, 42879), (84, 42918), (88, 42945), (94, 42969), (97, 42981), (120, 43056),

Gene: Eraser\_63 Start: 41730, Stop: 42086, Start Num: 30

Candidate Starts for Eraser\_63:

(Start: 30 @41730 has 29 MA's), (122, 42033), (133, 42072),

Gene: Erenyeager\_103 Start: 54096, Stop: 53773, Start Num: 48

Candidate Starts for Erenyeager\_103:

(Start: 48 @54096 has 16 MA's), (55, 54081), (68, 54027), (86, 53955), (88, 53934), (107, 53877), (112, 53856), (117, 53841), (127, 53811), (129, 53799), (131, 53793), (133, 53787),

Gene: EricB\_79 Start: 44908, Stop: 44573, Start Num: 51

Candidate Starts for EricB\_79:

(26, 44956), (Start: 50 @44911 has 32 MA's), (Start: 51 @44908 has 8 MA's), (87, 44752), (112, 44653),

Gene: Exile\_58 Start: 42771, Stop: 43118, Start Num: 32

Candidate Starts for Exile\_58:

(Start: 32 @42771 has 1 MA's), (57, 42819), (116, 43050), (132, 43101),

Gene: Ezurina\_58 Start: 36258, Stop: 35881, Start Num: 27

Candidate Starts for Ezurina\_58:

(Start: 27 @36258 has 10 MA's), (35, 36237), (63, 36174), (113, 35961),

Gene: Finch\_218 Start: 126837, Stop: 127232, Start Num: 21

Candidate Starts for Finch\_218:

(Start: 21 @126837 has 1 MA's), (73, 127002), (76, 127017), (106, 127122), (108, 127128), (118, 127167), (120, 127176),

Gene: Fluke\_58 Start: 42001, Stop: 42345, Start Num: 37

Candidate Starts for Fluke\_58:

(Start: 37 @42001 has 7 MA's), (55, 42025), (90, 42178), (104, 42238), (112, 42268), (120, 42295),

Gene: Flutur\_63 Start: 42059, Stop: 42415, Start Num: 30

Candidate Starts for Flutur\_63:

(Start: 30 @42059 has 29 MA's), (122, 42362), (133, 42401),

Gene: Fork\_99 Start: 54049, Stop: 53726, Start Num: 48

Candidate Starts for Fork\_99:

(Start: 48 @54049 has 16 MA's), (55, 54034), (68, 53980), (86, 53908), (88, 53887), (107, 53830), (112, 53809), (117, 53794), (127, 53764), (129, 53752), (131, 53746), (133, 53740),

Gene: FreakyGoo\_42 Start: 33797, Stop: 33453, Start Num: 45

Candidate Starts for FreakyGoo\_42:

(Start: 45 @33797 has 16 MA's), (76, 33680), (92, 33605), (107, 33551),

Gene: Gagieri\_74 Start: 55043, Stop: 54696, Start Num: 27

Candidate Starts for Gagieri\_74:

(Start: 27 @55043 has 10 MA's), (76, 54893), (114, 54776), (120, 54752),

Gene: Garak\_81 Start: 45075, Stop: 44734, Start Num: 50

Candidate Starts for Garak\_81:

(Start: 48 @45078 has 16 MA's), (Start: 50 @45075 has 32 MA's), (107, 44838), (112, 44817), (128, 44763),

Gene: Gerri43\_58 Start: 35358, Stop: 34981, Start Num: 27

Candidate Starts for Gerri43\_58:

(Start: 27 @35358 has 10 MA's), (104, 35094), (113, 35061),

Gene: Gibson\_61 Start: 43510, Stop: 43169, Start Num: 40

Candidate Starts for Gibson\_61:

(Start: 40 @43510 has 9 MA's), (66, 43438), (72, 43417), (121, 43228), (133, 43186),

Gene: Gisselle\_55 Start: 40683, Stop: 41033, Start Num: 37

Candidate Starts for Gisselle\_55:

(Start: 37 @40683 has 7 MA's), (55, 40713), (58, 40734), (64, 40755), (85, 40839), (90, 40866), (104, 40926), (109, 40941), (112, 40956), (120, 40983), (122, 40986),

Gene: Glaske16\_42 Start: 33796, Stop: 33452, Start Num: 45

Candidate Starts for Glaske16\_42:

(Start: 45 @33796 has 16 MA's), (76, 33679), (92, 33604), (107, 33550),

Gene: Glenn\_59 Start: 42462, Stop: 42806, Start Num: 37

Candidate Starts for Glenn\_59:

(Start: 37 @42462 has 7 MA's), (55, 42486), (90, 42639), (104, 42699), (112, 42729), (120, 42756),

Gene: Goose\_68 Start: 41832, Stop: 41503, Start Num: 50

Candidate Starts for Goose\_68:

(Start: 50 @41832 has 32 MA's), (102, 41619), (125, 41544),

Gene: Graynor\_61 Start: 41502, Stop: 41837, Start Num: 44

Candidate Starts for Graynor\_61:

(Start: 44 @41502 has 18 MA's), (90, 41670), (104, 41730), (112, 41760), (120, 41787), (122, 41790),

Gene: GreedyLawyer\_75 Start: 44881, Stop: 44546, Start Num: 51

Candidate Starts for GreedyLawyer\_75:

(26, 44929), (Start: 50 @44884 has 32 MA's), (Start: 51 @44881 has 8 MA's), (87, 44725), (112, 44626),

Gene: Greenbelt\_58 Start: 39592, Stop: 39260, Start Num: 40

Candidate Starts for Greenbelt\_58:

(Start: 40 @39592 has 9 MA's), (95, 39394), (123, 39307), (131, 39277), (133, 39271),

Gene: HeadNerd\_55 Start: 40416, Stop: 40766, Start Num: 36

Candidate Starts for HeadNerd\_55:

(Start: 14 @40293 has 1 MA's), (23, 40368), (Start: 36 @40416 has 16 MA's), (88, 40593), (90, 40596), (124, 40722),

Gene: Helmet\_82 Start: 45075, Stop: 44734, Start Num: 50

Candidate Starts for Helmet\_82:

(Start: 48 @45078 has 16 MA's), (Start: 50 @45075 has 32 MA's), (107, 44838), (112, 44817), (128, 44763),

Gene: Herb\_55 Start: 41676, Stop: 42017, Start Num: 44

Candidate Starts for Herb\_55:

(Start: 44 @41676 has 18 MA's), (90, 41847), (94, 41868), (103, 41901), (122, 41964), (126, 41976),

Gene: Hexamo\_79 Start: 44613, Stop: 44269, Start Num: 48

Candidate Starts for Hexamo\_79:

(Start: 32 @44637 has 1 MA's), (Start: 48 @44613 has 16 MA's), (Start: 50 @44610 has 32 MA's), (107, 44373), (112, 44352), (128, 44298),

Gene: HollowPurple\_104 Start: 54710, Stop: 54387, Start Num: 48

Candidate Starts for HollowPurple\_104:

(Start: 48 @54710 has 16 MA's), (55, 54695), (68, 54641), (86, 54569), (88, 54548), (107, 54491), (112, 54470), (117, 54455), (127, 54425), (129, 54413), (131, 54407), (133, 54401),

Gene: Hoot\_75 Start: 42769, Stop: 42431, Start Num: 50

Candidate Starts for Hoot\_75:

(26, 42814), (Start: 50 @42769 has 32 MA's), (Start: 51 @42766 has 8 MA's), (87, 42610), (112, 42511),

Gene: Huckleberry\_55 Start: 40420, Stop: 40770, Start Num: 36

Candidate Starts for Huckleberry\_55:

(Start: 14 @40297 has 1 MA's), (23, 40372), (Start: 36 @40420 has 16 MA's), (88, 40597), (90, 40600), (124, 40726),

Gene: IPhone7\_41 Start: 33797, Stop: 33453, Start Num: 45

Candidate Starts for IPhone7\_41:

(Start: 45 @33797 has 16 MA's), (76, 33680), (92, 33605), (107, 33551),

Gene: Indra\_83 Start: 45076, Stop: 44735, Start Num: 50

Candidate Starts for Indra\_83:

(Start: 48 @45079 has 16 MA's), (Start: 50 @45076 has 32 MA's), (107, 44839), (112, 44818), (128, 44764),

Gene: Isiphiwo\_77 Start: 44936, Stop: 44598, Start Num: 51

Candidate Starts for Isiphiwo\_77:

(26, 44984), (Start: 50 @44939 has 32 MA's), (Start: 51 @44936 has 8 MA's), (66, 44873), (105, 44705),

Gene: Issa7\_102 Start: 54064, Stop: 53741, Start Num: 48

Candidate Starts for Issa7\_102:

(Start: 48 @54064 has 16 MA's), (55, 54049), (68, 53995), (86, 53923), (88, 53902), (107, 53845), (112, 53824), (117, 53809), (127, 53779), (129, 53767), (131, 53761), (133, 53755),

Gene: Iter\_64 Start: 41985, Stop: 42341, Start Num: 30

Candidate Starts for Iter\_64:

(Start: 30 @41985 has 29 MA's), (80, 42135), (133, 42327),

Gene: IttyBittyPiggy\_64 Start: 40207, Stop: 40560, Start Num: 30

Candidate Starts for IttyBittyPiggy\_64:

(Start: 30 @40207 has 29 MA's), (104, 40450), (122, 40507), (133, 40546),

Gene: Izel\_42 Start: 33796, Stop: 33452, Start Num: 45

Candidate Starts for Izel\_42:

(Start: 45 @33796 has 16 MA's), (76, 33679), (92, 33604), (107, 33550),

Gene: Jacko\_98 Start: 53745, Stop: 53389, Start Num: 25

Candidate Starts for Jacko\_98:

(Start: 25 @53745 has 1 MA's), (Start: 30 @53721 has 29 MA's), (52, 53685), (65, 53631), (69, 53622), (77, 53583), (81, 53571), (84, 53559), (96, 53505), (98, 53499), (107, 53472), (126, 53406),

Gene: Janeemi\_62 Start: 41595, Stop: 41951, Start Num: 30

Candidate Starts for Janeemi\_62:

(Start: 30 @41595 has 29 MA's), (35, 41607), (133, 41937),

Gene: Joemato\_65 Start: 41955, Stop: 42311, Start Num: 30

Candidate Starts for Joemato\_65:

(Start: 30 @41955 has 29 MA's), (104, 42201), (122, 42258), (133, 42297),

Gene: JohnDoe\_64 Start: 41872, Stop: 42228, Start Num: 30  
Candidate Starts for JohnDoe\_64:  
(Start: 30 @41872 has 29 MA's), (104, 42118), (122, 42175), (133, 42214),

Gene: Jordennis\_78 Start: 45151, Stop: 44813, Start Num: 50  
Candidate Starts for Jordennis\_78:  
(26, 45196), (Start: 50 @45151 has 32 MA's), (Start: 51 @45148 has 8 MA's), (60, 45109), (72, 45064),  
(105, 44917),

Gene: Jstan\_64 Start: 41484, Stop: 41840, Start Num: 30  
Candidate Starts for Jstan\_64:  
(Start: 30 @41484 has 29 MA's), (80, 41634), (122, 41787), (133, 41826),

Gene: Kaylissa\_65 Start: 42234, Stop: 42590, Start Num: 30  
Candidate Starts for Kaylissa\_65:  
(Start: 30 @42234 has 29 MA's), (Start: 51 @42264 has 8 MA's), (122, 42537), (133, 42576),

Gene: Kazan\_81 Start: 44924, Stop: 44586, Start Num: 50  
Candidate Starts for Kazan\_81:  
(26, 44969), (Start: 50 @44924 has 32 MA's), (Start: 51 @44921 has 8 MA's), (87, 44765), (112,  
44666),

Gene: KingBob\_55 Start: 41677, Stop: 42018, Start Num: 44  
Candidate Starts for KingBob\_55:  
(Start: 44 @41677 has 18 MA's), (90, 41848), (94, 41869), (103, 41902), (122, 41965), (126, 41977),

Gene: Kipper29\_80 Start: 44934, Stop: 44599, Start Num: 51  
Candidate Starts for Kipper29\_80:  
(26, 44982), (Start: 50 @44937 has 32 MA's), (Start: 51 @44934 has 8 MA's), (87, 44778), (112,  
44679),

Gene: KittenMittens\_64 Start: 41141, Stop: 40815, Start Num: 50  
Candidate Starts for KittenMittens\_64:  
(Start: 24 @41192 has 4 MA's), (Start: 34 @41159 has 1 MA's), (Start: 50 @41141 has 32 MA's), (70,  
41069), (102, 40931), (125, 40856), (131, 40832),

Gene: KleverKiS\_42 Start: 33777, Stop: 33433, Start Num: 45  
Candidate Starts for KleverKiS\_42:  
(Start: 45 @33777 has 16 MA's), (76, 33660), (92, 33585), (107, 33531),

Gene: Klodlith\_75 Start: 44882, Stop: 44529, Start Num: 40  
Candidate Starts for Klodlith\_75:  
(7, 45110), (Start: 40 @44882 has 9 MA's), (80, 44744), (107, 44630), (115, 44603), (121, 44585),  
(127, 44567), (128, 44558),

Gene: Koko\_81 Start: 45465, Stop: 45124, Start Num: 50  
Candidate Starts for Koko\_81:  
(Start: 48 @45468 has 16 MA's), (Start: 50 @45465 has 32 MA's), (107, 45228), (112, 45207), (128,  
45153),

Gene: Korra\_59 Start: 41736, Stop: 42080, Start Num: 37  
Candidate Starts for Korra\_59:  
(Start: 37 @41736 has 7 MA's), (55, 41760), (90, 41913), (104, 41973), (112, 42003), (120, 42030),

Gene: Kristoff\_66 Start: 42458, Stop: 42129, Start Num: 50

Candidate Starts for Kristoff\_66:

(Start: 24 @42509 has 4 MA's), (Start: 34 @42476 has 1 MA's), (Start: 50 @42458 has 32 MA's), (102, 42245), (125, 42170),

Gene: Lasagna\_54 Start: 40307, Stop: 40657, Start Num: 36

Candidate Starts for Lasagna\_54:

(Start: 36 @40307 has 16 MA's), (58, 40355), (88, 40484), (90, 40487), (124, 40613),

Gene: Lego\_63 Start: 41553, Stop: 41909, Start Num: 30

Candidate Starts for Lego\_63:

(Start: 30 @41553 has 29 MA's), (Start: 51 @41583 has 8 MA's), (122, 41856), (133, 41895),

Gene: Lennox\_56 Start: 40792, Stop: 41142, Start Num: 36

Candidate Starts for Lennox\_56:

(Start: 36 @40792 has 16 MA's), (58, 40840), (88, 40969), (90, 40972), (124, 41098),

Gene: LilStuart\_55 Start: 40655, Stop: 41005, Start Num: 36

Candidate Starts for LilStuart\_55:

(Start: 36 @40655 has 16 MA's), (58, 40703), (88, 40832), (90, 40835), (124, 40961),

Gene: Lilbunny\_79 Start: 44707, Stop: 44366, Start Num: 50

Candidate Starts for Lilbunny\_79:

(Start: 48 @44710 has 16 MA's), (Start: 50 @44707 has 32 MA's), (107, 44470), (112, 44449), (128, 44395),

Gene: LilhomieP\_40 Start: 33797, Stop: 33453, Start Num: 45

Candidate Starts for LilhomieP\_40:

(Start: 45 @33797 has 16 MA's), (76, 33680), (92, 33605), (107, 33551),

Gene: Litotes\_57 Start: 41464, Stop: 41799, Start Num: 44

Candidate Starts for Litotes\_57:

(Start: 44 @41464 has 18 MA's), (90, 41632), (104, 41692), (112, 41722), (120, 41749), (122, 41752), (131, 41785),

Gene: Lizalica\_63 Start: 41149, Stop: 41505, Start Num: 30

Candidate Starts for Lizalica\_63:

(Start: 30 @41149 has 29 MA's), (122, 41452), (133, 41491),

Gene: Lizz\_61 Start: 43350, Stop: 43009, Start Num: 40

Candidate Starts for Lizz\_61:

(19, 43431), (Start: 40 @43350 has 9 MA's), (66, 43278), (72, 43257), (107, 43113), (121, 43068), (133, 43026),

Gene: London\_63 Start: 41721, Stop: 42077, Start Num: 30

Candidate Starts for London\_63:

(Start: 30 @41721 has 29 MA's), (122, 42024), (133, 42063),

Gene: Lucy\_55 Start: 40650, Stop: 41000, Start Num: 36

Candidate Starts for Lucy\_55:

(Start: 36 @40650 has 16 MA's), (58, 40698), (88, 40827), (90, 40830), (124, 40956),

Gene: Lukepolites\_35 Start: 27976, Stop: 28326, Start Num: 53

Candidate Starts for Lukepolites\_35:

(1, 27541), (11, 27766), (17, 27841), (Start: 43 @27958 has 1 MA's), (53, 27976), (59, 28003), (78, 28087), (110, 28225), (112, 28231),

Gene: Makoto\_55 Start: 40551, Stop: 40898, Start Num: 39

Candidate Starts for Makoto\_55:

(Start: 39 @40551 has 2 MA's), (55, 40575), (88, 40725), (90, 40728), (124, 40854),

Gene: Maria1952\_54 Start: 41676, Stop: 42017, Start Num: 44

Candidate Starts for Maria1952\_54:

(Start: 44 @41676 has 18 MA's), (90, 41847), (94, 41868), (103, 41901), (122, 41964), (126, 41976),

Gene: Maselop\_76 Start: 55289, Stop: 54909, Start Num: 27

Candidate Starts for Maselop\_76:

(4, 55586), (6, 55523), (9, 55463), (11, 55427), (20, 55325), (Start: 27 @55289 has 10 MA's), (76, 55139),

Gene: Mbo2\_82 Start: 57098, Stop: 56670, Start Num: 27

Candidate Starts for Mbo2\_82:

(10, 57263), (12, 57233), (Start: 27 @57098 has 10 MA's), (65, 56993), (83, 56927), (119, 56777), (133, 56732), (134, 56705),

Gene: MegTheThird\_75 Start: 44883, Stop: 44533, Start Num: 40

Candidate Starts for MegTheThird\_75:

(7, 45111), (Start: 40 @44883 has 9 MA's), (74, 44772), (80, 44748), (107, 44634), (115, 44607), (121, 44589), (127, 44571), (128, 44562),

Gene: MeganNoll\_58 Start: 42247, Stop: 42582, Start Num: 44

Candidate Starts for MeganNoll\_58:

(Start: 44 @42247 has 18 MA's), (64, 42304), (90, 42415), (104, 42475), (112, 42505), (120, 42532),

Gene: Michkear\_67 Start: 44542, Stop: 44877, Start Num: 45

Candidate Starts for Michkear\_67:

(8, 44314), (18, 44443), (Start: 45 @44542 has 16 MA's), (52, 44554), (109, 44782), (130, 44854),

Gene: MissSwiss\_64 Start: 40483, Stop: 40842, Start Num: 28

Candidate Starts for MissSwiss\_64:

(Start: 28 @40483 has 9 MA's), (133, 40828),

Gene: Mistmere\_97 Start: 52832, Stop: 52509, Start Num: 49

Candidate Starts for Mistmere\_97:

(49, 52832), (86, 52691), (104, 52622), (117, 52577), (127, 52547), (133, 52523),

Gene: Moki\_55 Start: 40609, Stop: 40959, Start Num: 36

Candidate Starts for Moki\_55:

(Start: 14 @40486 has 1 MA's), (23, 40561), (Start: 36 @40609 has 16 MA's), (88, 40786), (90, 40789), (124, 40915),

Gene: MrBoss\_60 Start: 41258, Stop: 41593, Start Num: 44

Candidate Starts for MrBoss\_60:

(Start: 44 @41258 has 18 MA's), (90, 41426), (104, 41486), (112, 41516), (120, 41543), (122, 41546), (131, 41579),

Gene: MrGloopy\_58 Start: 41899, Stop: 42234, Start Num: 44  
Candidate Starts for MrGloopy\_58:  
(Start: 44 @41899 has 18 MA's), (64, 41956), (90, 42067), (91, 42070), (104, 42127), (112, 42157),  
(120, 42184),

Gene: Mudpuppy\_62 Start: 41921, Stop: 42277, Start Num: 30  
Candidate Starts for Mudpuppy\_62:  
(Start: 30 @41921 has 29 MA's), (122, 42224), (133, 42263),

Gene: Nancia\_56 Start: 40943, Stop: 41293, Start Num: 36  
Candidate Starts for Nancia\_56:  
(Start: 36 @40943 has 16 MA's), (58, 40991), (88, 41120), (90, 41123), (124, 41249),

Gene: Nanosmite\_47 Start: 34908, Stop: 34564, Start Num: 45  
Candidate Starts for Nanosmite\_47:  
(Start: 45 @34908 has 16 MA's), (56, 34878), (87, 34743), (92, 34716), (107, 34662),

Gene: Necrophoxinus\_105 Start: 54949, Stop: 54626, Start Num: 48  
Candidate Starts for Necrophoxinus\_105:  
(Start: 48 @54949 has 16 MA's), (55, 54934), (68, 54880), (86, 54808), (88, 54787), (107, 54730),  
(112, 54709), (117, 54694), (127, 54664), (129, 54652), (131, 54646), (133, 54640),

Gene: Neeharika16\_79 Start: 45023, Stop: 44682, Start Num: 50  
Candidate Starts for Neeharika16\_79:  
(26, 45068), (Start: 50 @45023 has 32 MA's), (Start: 51 @45020 has 8 MA's), (105, 44789),

Gene: Nesbitt\_47 Start: 34330, Stop: 34704, Start Num: 28  
Candidate Starts for Nesbitt\_47:  
(Start: 28 @34330 has 9 MA's), (83, 34498), (105, 34594), (109, 34603), (115, 34627),

Gene: Neuville\_58 Start: 35358, Stop: 34981, Start Num: 27  
Candidate Starts for Neuville\_58:  
(Start: 27 @35358 has 10 MA's), (104, 35094), (113, 35061),

Gene: Newrala\_79 Start: 45359, Stop: 45021, Start Num: 50  
Candidate Starts for Newrala\_79:  
(26, 45404), (Start: 50 @45359 has 32 MA's), (Start: 51 @45356 has 8 MA's), (66, 45293), (112,  
45101),

Gene: Niobe\_63 Start: 41724, Stop: 42080, Start Num: 30  
Candidate Starts for Niobe\_63:  
(Start: 30 @41724 has 29 MA's), (122, 42027), (133, 42066),

Gene: Nitro\_64 Start: 42421, Stop: 42777, Start Num: 30  
Candidate Starts for Nitro\_64:  
(Start: 30 @42421 has 29 MA's), (104, 42667), (122, 42724), (133, 42763),

Gene: ObiToo\_68 Start: 42061, Stop: 42417, Start Num: 30  
Candidate Starts for ObiToo\_68:  
(Start: 30 @42061 has 29 MA's), (80, 42211), (104, 42307), (124, 42370), (133, 42403),

Gene: OurGirlNessie\_54 Start: 40272, Stop: 40622, Start Num: 36

Candidate Starts for OurGirlNessie\_54:

(Start: 36 @40272 has 16 MA's), (88, 40449), (90, 40452), (122, 40572),

Gene: Oxynfrius\_58 Start: 42154, Stop: 42504, Start Num: 37

Candidate Starts for Oxynfrius\_58:

(Start: 37 @42154 has 7 MA's), (55, 42184), (58, 42205), (85, 42310), (90, 42337), (104, 42397), (109, 42412), (112, 42427), (120, 42454), (122, 42457),

Gene: PHTowN\_61 Start: 43348, Stop: 43007, Start Num: 40

Candidate Starts for PHTowN\_61:

(19, 43429), (Start: 40 @43348 has 9 MA's), (66, 43276), (72, 43255), (107, 43111), (121, 43066), (133, 43024),

Gene: PandaPo\_64 Start: 40490, Stop: 40849, Start Num: 28

Candidate Starts for PandaPo\_64:

(Start: 28 @40490 has 9 MA's), (133, 40835),

Gene: PartyCup\_59 Start: 42112, Stop: 42447, Start Num: 44

Candidate Starts for PartyCup\_59:

(Start: 44 @42112 has 18 MA's), (90, 42280), (104, 42340), (112, 42370), (120, 42397), (122, 42400), (131, 42433),

Gene: PeaceMeal1\_65 Start: 41193, Stop: 40816, Start Num: 24

Candidate Starts for PeaceMeal1\_65:

(Start: 24 @41193 has 4 MA's), (Start: 34 @41160 has 1 MA's), (Start: 50 @41142 has 32 MA's), (70, 41070), (102, 40932), (125, 40857), (131, 40833),

Gene: PegLeg\_41 Start: 33796, Stop: 33452, Start Num: 45

Candidate Starts for PegLeg\_41:

(Start: 45 @33796 has 16 MA's), (76, 33679), (92, 33604), (107, 33550),

Gene: Pharaoh\_73 Start: 45524, Stop: 45174, Start Num: 42

Candidate Starts for Pharaoh\_73:

(Start: 42 @45524 has 2 MA's), (76, 45404), (94, 45323), (96, 45317), (107, 45275), (122, 45227),

Gene: Phives\_64 Start: 42209, Stop: 42565, Start Num: 30

Candidate Starts for Phives\_64:

(Start: 30 @42209 has 29 MA's), (35, 42221), (107, 42464), (133, 42551),

Gene: Phrappuccino\_184 Start: 119829, Stop: 120152, Start Num: 54

Candidate Starts for Phrappuccino\_184:

(16, 119691), (Start: 54 @119829 has 1 MA's), (76, 119928), (87, 119976), (92, 119997), (125, 120105),

Gene: PitaDog\_56 Start: 40668, Stop: 41018, Start Num: 36

Candidate Starts for PitaDog\_56:

(Start: 36 @40668 has 16 MA's), (88, 40845), (90, 40848), (124, 40974),

Gene: Pmask\_79 Start: 45560, Stop: 45219, Start Num: 50

Candidate Starts for Pmask\_79:

(26, 45605), (Start: 50 @45560 has 32 MA's), (Start: 51 @45557 has 8 MA's), (105, 45326),

Gene: Polyuki\_76 Start: 55281, Stop: 54901, Start Num: 27

Candidate Starts for Polyyuki\_76:  
(Start: 27 @55281 has 10 MA's), (76, 55131),

Gene: Poompha\_64 Start: 41191, Stop: 40814, Start Num: 24  
Candidate Starts for Poompha\_64:  
(Start: 24 @41191 has 4 MA's), (Start: 34 @41158 has 1 MA's), (Start: 50 @41140 has 32 MA's), (70, 41068), (102, 40930), (125, 40855), (131, 40831),

Gene: Powerpuff\_65 Start: 42757, Stop: 43113, Start Num: 30  
Candidate Starts for Powerpuff\_65:  
(Start: 30 @42757 has 29 MA's), (122, 43060), (133, 43099),

Gene: Preamble\_57 Start: 40868, Stop: 41209, Start Num: 41  
Candidate Starts for Preamble\_57:  
(Start: 41 @40868 has 3 MA's), (88, 41039), (109, 41114), (120, 41156), (122, 41159),

Gene: Pterodactyl\_56 Start: 40909, Stop: 41259, Start Num: 36  
Candidate Starts for Pterodactyl\_56:  
(Start: 36 @40909 has 16 MA's), (88, 41086), (90, 41089), (124, 41215),

Gene: RAP15\_59 Start: 42248, Stop: 42583, Start Num: 44  
Candidate Starts for RAP15\_59:  
(Start: 44 @42248 has 18 MA's), (64, 42305), (90, 42416), (104, 42476), (112, 42506), (120, 42533),

Gene: Rebeuca\_68 Start: 42459, Stop: 42130, Start Num: 50  
Candidate Starts for Rebeuca\_68:  
(Start: 24 @42510 has 4 MA's), (Start: 34 @42477 has 1 MA's), (Start: 50 @42459 has 32 MA's), (102, 42246), (125, 42171),

Gene: Refuge\_76 Start: 46852, Stop: 46505, Start Num: 41  
Candidate Starts for Refuge\_76:  
(3, 47230), (5, 47179), (Start: 41 @46852 has 3 MA's), (61, 46795), (99, 46639), (102, 46624), (115, 46579), (121, 46561), (133, 46519),

Gene: Reindeer\_42 Start: 34429, Stop: 34085, Start Num: 45  
Candidate Starts for Reindeer\_42:  
(33, 34447), (Start: 45 @34429 has 16 MA's), (92, 34237), (107, 34183),

Gene: Rifter\_80 Start: 44237, Stop: 43896, Start Num: 50  
Candidate Starts for Rifter\_80:  
(Start: 32 @44264 has 1 MA's), (Start: 48 @44240 has 16 MA's), (Start: 50 @44237 has 32 MA's), (107, 44000), (112, 43979), (128, 43925),

Gene: Roberts\_59 Start: 35358, Stop: 34981, Start Num: 27  
Candidate Starts for Roberts\_59:  
(Start: 27 @35358 has 10 MA's), (104, 35094), (113, 35061),

Gene: Roksolana\_80 Start: 44971, Stop: 44630, Start Num: 50  
Candidate Starts for Roksolana\_80:  
(Start: 48 @44974 has 16 MA's), (Start: 50 @44971 has 32 MA's), (107, 44734), (112, 44713), (128, 44659),

Gene: Rooney\_61 Start: 43507, Stop: 43166, Start Num: 40

Candidate Starts for Rooney\_61:

(Start: 40 @43507 has 9 MA's), (66, 43435), (72, 43414), (121, 43225), (133, 43183),

Gene: RoseMarie\_47 Start: 37465, Stop: 37121, Start Num: 45

Candidate Starts for RoseMarie\_47:

(Start: 25 @37519 has 1 MA's), (Start: 45 @37465 has 16 MA's), (92, 37273), (107, 37219),

Gene: Rowa\_48 Start: 34719, Stop: 35042, Start Num: 50

Candidate Starts for Rowa\_48:

(33, 34692), (Start: 50 @34719 has 32 MA's), (56, 34743), (67, 34788), (76, 34830), (82, 34851), (107, 34941), (131, 35022), (133, 35028),

Gene: Rowdy\_69 Start: 42169, Stop: 41843, Start Num: 50

Candidate Starts for Rowdy\_69:

(Start: 24 @42220 has 4 MA's), (Start: 34 @42187 has 1 MA's), (Start: 50 @42169 has 32 MA's), (70, 42097), (102, 41959), (125, 41884),

Gene: SassyC\_66 Start: 44485, Stop: 44150, Start Num: 42

Candidate Starts for SassyC\_66:

(29, 44500), (Start: 40 @44491 has 9 MA's), (Start: 42 @44485 has 2 MA's), (72, 44398), (76, 44374), (107, 44254), (121, 44209), (133, 44167),

Gene: Scuttle\_57 Start: 41927, Stop: 42262, Start Num: 44

Candidate Starts for Scuttle\_57:

(Start: 44 @41927 has 18 MA's), (64, 41984), (70, 42002), (90, 42095), (91, 42098), (104, 42155), (109, 42170), (120, 42212),

Gene: Sergei\_55 Start: 41677, Stop: 42018, Start Num: 44

Candidate Starts for Sergei\_55:

(Start: 44 @41677 has 18 MA's), (90, 41848), (94, 41869), (103, 41902), (122, 41965), (126, 41977),

Gene: Settecandela\_209 Start: 128664, Stop: 128999, Start Num: 47

Candidate Starts for Settecandela\_209:

(Start: 47 @128664 has 1 MA's), (76, 128775), (87, 128823), (92, 128844), (125, 128952),

Gene: Severus\_65 Start: 41140, Stop: 40814, Start Num: 50

Candidate Starts for Severus\_65:

(Start: 24 @41191 has 4 MA's), (Start: 34 @41158 has 1 MA's), (Start: 50 @41140 has 32 MA's), (70, 41068), (102, 40930), (125, 40855), (131, 40831),

Gene: ShakeNBake\_61 Start: 43366, Stop: 43025, Start Num: 40

Candidate Starts for ShakeNBake\_61:

(19, 43447), (Start: 40 @43366 has 9 MA's), (66, 43294), (72, 43273), (107, 43129), (121, 43084), (133, 43042),

Gene: Shapes\_69 Start: 42169, Stop: 41843, Start Num: 50

Candidate Starts for Shapes\_69:

(Start: 24 @42220 has 4 MA's), (Start: 34 @42187 has 1 MA's), (Start: 50 @42169 has 32 MA's), (70, 42097), (102, 41959), (125, 41884),

Gene: SheaKeira\_74 Start: 44691, Stop: 44347, Start Num: 40

Candidate Starts for SheaKeira\_74:

(Start: 40 @44691 has 9 MA's), (102, 44463),

Gene: Shroomer\_108 Start: 54550, Stop: 54227, Start Num: 48  
Candidate Starts for Shroomer\_108:  
(Start: 48 @54550 has 16 MA's), (55, 54535), (68, 54481), (86, 54409), (88, 54388), (105, 54334),  
(112, 54310), (117, 54295), (127, 54265), (131, 54247), (133, 54241),

Gene: Simpson\_69 Start: 41959, Stop: 42315, Start Num: 30  
Candidate Starts for Simpson\_69:  
(Start: 30 @41959 has 29 MA's), (104, 42205), (122, 42262), (133, 42301),

Gene: Skelbel\_64 Start: 41724, Stop: 42080, Start Num: 30  
Candidate Starts for Skelbel\_64:  
(Start: 30 @41724 has 29 MA's), (122, 42027), (133, 42066),

Gene: Skinny\_42 Start: 34226, Stop: 33882, Start Num: 45  
Candidate Starts for Skinny\_42:  
(Start: 45 @34226 has 16 MA's), (76, 34109), (92, 34034), (107, 33980),

Gene: SlimJimmy\_40 Start: 33780, Stop: 33436, Start Num: 45  
Candidate Starts for SlimJimmy\_40:  
(Start: 45 @33780 has 16 MA's), (76, 33663), (92, 33588), (107, 33534),

Gene: SmellyB\_80 Start: 44915, Stop: 44580, Start Num: 51  
Candidate Starts for SmellyB\_80:  
(26, 44963), (Start: 50 @44918 has 32 MA's), (Start: 51 @44915 has 8 MA's), (87, 44759), (112,  
44660),

Gene: Snek\_63 Start: 39170, Stop: 39511, Start Num: 38  
Candidate Starts for Snek\_63:  
(Start: 38 @39170 has 4 MA's), (127, 39473),

Gene: Soondubu\_60 Start: 43780, Stop: 44127, Start Num: 32  
Candidate Starts for Soondubu\_60:  
(Start: 32 @43780 has 1 MA's), (116, 44059), (132, 44110),

Gene: SteakFry\_106 Start: 54710, Stop: 54387, Start Num: 48  
Candidate Starts for SteakFry\_106:  
(Start: 48 @54710 has 16 MA's), (55, 54695), (68, 54641), (86, 54569), (88, 54548), (107, 54491),  
(112, 54470), (117, 54455), (127, 54425), (129, 54413), (131, 54407), (133, 54401),

Gene: StevieWelch\_103 Start: 54233, Stop: 53910, Start Num: 48  
Candidate Starts for StevieWelch\_103:  
(Start: 48 @54233 has 16 MA's), (55, 54218), (68, 54164), (86, 54092), (88, 54071), (107, 54014),  
(112, 53993), (117, 53978), (127, 53948), (129, 53936), (131, 53930), (133, 53924),

Gene: Studio\_60 Start: 36548, Stop: 36171, Start Num: 27  
Candidate Starts for Studio\_60:  
(Start: 27 @36548 has 10 MA's), (71, 36437), (75, 36410), (79, 36392), (84, 36377), (100, 36299),  
(104, 36284), (113, 36251),

Gene: Subaru\_63 Start: 41480, Stop: 41836, Start Num: 30  
Candidate Starts for Subaru\_63:  
(Start: 30 @41480 has 29 MA's), (80, 41630), (122, 41783), (133, 41822),

Gene: Sue2\_61 Start: 40180, Stop: 40542, Start Num: 28

Candidate Starts for Sue2\_61:

(Start: 28 @40180 has 9 MA's), (Start: 51 @40213 has 8 MA's), (104, 40429), (115, 40465),

Gene: SuperAwesome\_80 Start: 45599, Stop: 45258, Start Num: 50

Candidate Starts for SuperAwesome\_80:

(26, 45644), (Start: 50 @45599 has 32 MA's), (Start: 51 @45596 has 8 MA's), (105, 45365),

Gene: SuperCallie99\_77 Start: 45440, Stop: 45102, Start Num: 50

Candidate Starts for SuperCallie99\_77:

(26, 45485), (Start: 50 @45440 has 32 MA's), (Start: 51 @45437 has 8 MA's), (87, 45281), (112, 45182),

Gene: Suppi\_58 Start: 41917, Stop: 42252, Start Num: 44

Candidate Starts for Suppi\_58:

(Start: 44 @41917 has 18 MA's), (90, 42085), (104, 42145), (112, 42175), (120, 42202), (122, 42205), (131, 42238),

Gene: TPA2\_52 Start: 39328, Stop: 38936, Start Num: 22

Candidate Starts for TPA2\_52:

(22, 39328), (73, 39178), (89, 39118), (101, 39067), (115, 39013),

Gene: Tallboi\_63 Start: 41726, Stop: 42082, Start Num: 30

Candidate Starts for Tallboi\_63:

(Start: 30 @41726 has 29 MA's), (104, 41972), (122, 42029), (133, 42068),

Gene: Tbone\_63 Start: 42208, Stop: 42564, Start Num: 30

Candidate Starts for Tbone\_63:

(Start: 30 @42208 has 29 MA's), (122, 42511), (133, 42550),

Gene: Temper16\_55 Start: 41677, Stop: 42018, Start Num: 44

Candidate Starts for Temper16\_55:

(Start: 44 @41677 has 18 MA's), (90, 41848), (94, 41869), (103, 41902), (122, 41965), (126, 41977),

Gene: Temprado\_81 Start: 45075, Stop: 44734, Start Num: 50

Candidate Starts for Temprado\_81:

(Start: 48 @45078 has 16 MA's), (Start: 50 @45075 has 32 MA's), (107, 44838), (112, 44817), (128, 44763),

Gene: ThursdayNight\_67 Start: 43091, Stop: 43429, Start Num: 38

Candidate Starts for ThursdayNight\_67:

(Start: 38 @43091 has 4 MA's), (112, 43349),

Gene: ToneTone\_77 Start: 44635, Stop: 44294, Start Num: 50

Candidate Starts for ToneTone\_77:

(Start: 48 @44638 has 16 MA's), (Start: 50 @44635 has 32 MA's), (107, 44398), (112, 44377), (128, 44323),

Gene: TpudiCK\_43 Start: 33796, Stop: 33452, Start Num: 45

Candidate Starts for TpudiCK\_43:

(Start: 45 @33796 has 16 MA's), (76, 33679), (92, 33604), (107, 33550),

Gene: Trike\_64 Start: 41195, Stop: 40818, Start Num: 24  
Candidate Starts for Trike\_64:  
(Start: 24 @41195 has 4 MA's), (Start: 34 @41162 has 1 MA's), (Start: 50 @41144 has 32 MA's), (70, 41072), (102, 40934), (125, 40859), (131, 40835),

Gene: Tuck\_63 Start: 41997, Stop: 42353, Start Num: 30  
Candidate Starts for Tuck\_63:  
(Start: 30 @41997 has 29 MA's), (35, 42009), (107, 42252), (133, 42339),

Gene: Tucker\_80 Start: 44838, Stop: 44497, Start Num: 50  
Candidate Starts for Tucker\_80:  
(Start: 48 @44841 has 16 MA's), (Start: 50 @44838 has 32 MA's), (107, 44601), (112, 44580), (128, 44526),

Gene: Turab\_62 Start: 41182, Stop: 41538, Start Num: 30  
Candidate Starts for Turab\_62:  
(Start: 30 @41182 has 29 MA's), (80, 41332), (122, 41485), (133, 41524),

Gene: Tutumahutu\_65 Start: 41800, Stop: 42156, Start Num: 30  
Candidate Starts for Tutumahutu\_65:  
(Start: 30 @41800 has 29 MA's), (122, 42103), (133, 42142),

Gene: Tweety19\_64 Start: 39171, Stop: 39512, Start Num: 38  
Candidate Starts for Tweety19\_64:  
(Start: 38 @39171 has 4 MA's), (127, 39474),

Gene: TyDawg\_41 Start: 33797, Stop: 33453, Start Num: 45  
Candidate Starts for TyDawg\_41:  
(Start: 45 @33797 has 16 MA's), (76, 33680), (92, 33605), (107, 33551),

Gene: Urla\_56 Start: 41609, Stop: 41959, Start Num: 36  
Candidate Starts for Urla\_56:  
(Start: 36 @41609 has 16 MA's), (58, 41657), (88, 41786), (90, 41789), (124, 41915),

Gene: VResidence\_64 Start: 39888, Stop: 40247, Start Num: 28  
Candidate Starts for VResidence\_64:  
(Start: 28 @39888 has 9 MA's), (80, 40041),

Gene: Virizion\_66 Start: 43706, Stop: 43365, Start Num: 40  
Candidate Starts for Virizion\_66:  
(Start: 40 @43706 has 9 MA's), (66, 43634), (72, 43613), (113, 43448), (121, 43424), (133, 43382),

Gene: VohminGhazi\_80 Start: 44919, Stop: 44581, Start Num: 50  
Candidate Starts for VohminGhazi\_80:  
(26, 44964), (Start: 50 @44919 has 32 MA's), (Start: 51 @44916 has 8 MA's), (87, 44760), (112, 44661),

Gene: Warda\_64 Start: 41934, Stop: 42290, Start Num: 30  
Candidate Starts for Warda\_64:  
(Start: 30 @41934 has 29 MA's), (122, 42237), (133, 42276),

Gene: Wayne\_60 Start: 42374, Stop: 42709, Start Num: 44  
Candidate Starts for Wayne\_60:

(Start: 44 @42374 has 18 MA's), (90, 42542), (104, 42602), (112, 42632), (120, 42659), (122, 42662), (131, 42695),

Gene: Welcome\_105 Start: 54864, Stop: 54541, Start Num: 48

Candidate Starts for Welcome\_105:

(Start: 48 @54864 has 16 MA's), (55, 54849), (68, 54795), (86, 54723), (88, 54702), (107, 54645), (112, 54624), (117, 54609), (127, 54579), (129, 54567), (131, 54561), (133, 54555),

Gene: Wentworth\_61 Start: 43514, Stop: 43179, Start Num: 42

Candidate Starts for Wentworth\_61:

(29, 43529), (Start: 40 @43520 has 9 MA's), (Start: 42 @43514 has 2 MA's), (72, 43427), (76, 43403), (107, 43283), (115, 43256), (121, 43238), (133, 43196),

Gene: Wiks\_79 Start: 44706, Stop: 44365, Start Num: 50

Candidate Starts for Wiks\_79:

(Start: 48 @44709 has 16 MA's), (Start: 50 @44706 has 32 MA's), (107, 44469), (112, 44448), (128, 44394),

Gene: Wildwest\_59 Start: 41597, Stop: 41956, Start Num: 28

Candidate Starts for Wildwest\_59:

(Start: 28 @41597 has 9 MA's), (Start: 51 @41630 has 8 MA's), (122, 41903), (133, 41942),

Gene: Wilkos\_63 Start: 43658, Stop: 43323, Start Num: 42

Candidate Starts for Wilkos\_63:

(Start: 42 @43658 has 2 MA's), (62, 43601), (66, 43592), (72, 43571), (76, 43547), (96, 43463), (107, 43427), (115, 43400), (123, 43376), (133, 43340),

Gene: WunderPhul\_80 Start: 44704, Stop: 44363, Start Num: 50

Candidate Starts for WunderPhul\_80:

(Start: 48 @44707 has 16 MA's), (Start: 50 @44704 has 32 MA's), (107, 44467), (112, 44446), (128, 44392),

Gene: Yara\_56 Start: 41985, Stop: 41650, Start Num: 40

Candidate Starts for Yara\_56:

(Start: 40 @41985 has 9 MA's), (95, 41787), (107, 41751), (111, 41733), (133, 41664),

Gene: YesChef\_63 Start: 41616, Stop: 41972, Start Num: 30

Candidate Starts for YesChef\_63:

(Start: 30 @41616 has 29 MA's), (122, 41919), (133, 41958),

Gene: Yokurt\_79 Start: 44709, Stop: 44365, Start Num: 48

Candidate Starts for Yokurt\_79:

(Start: 48 @44709 has 16 MA's), (Start: 50 @44706 has 32 MA's), (107, 44469), (112, 44448), (128, 44394),

Gene: Zaka\_80 Start: 44709, Stop: 44365, Start Num: 48

Candidate Starts for Zaka\_80:

(Start: 48 @44709 has 16 MA's), (Start: 50 @44706 has 32 MA's), (107, 44469), (112, 44448), (128, 44394),

Gene: Zulu\_81 Start: 45087, Stop: 44743, Start Num: 48

Candidate Starts for Zulu\_81:

(Start: 48 @45087 has 16 MA's), (Start: 50 @45084 has 32 MA's), (107, 44847), (112, 44826), (128, 44772),