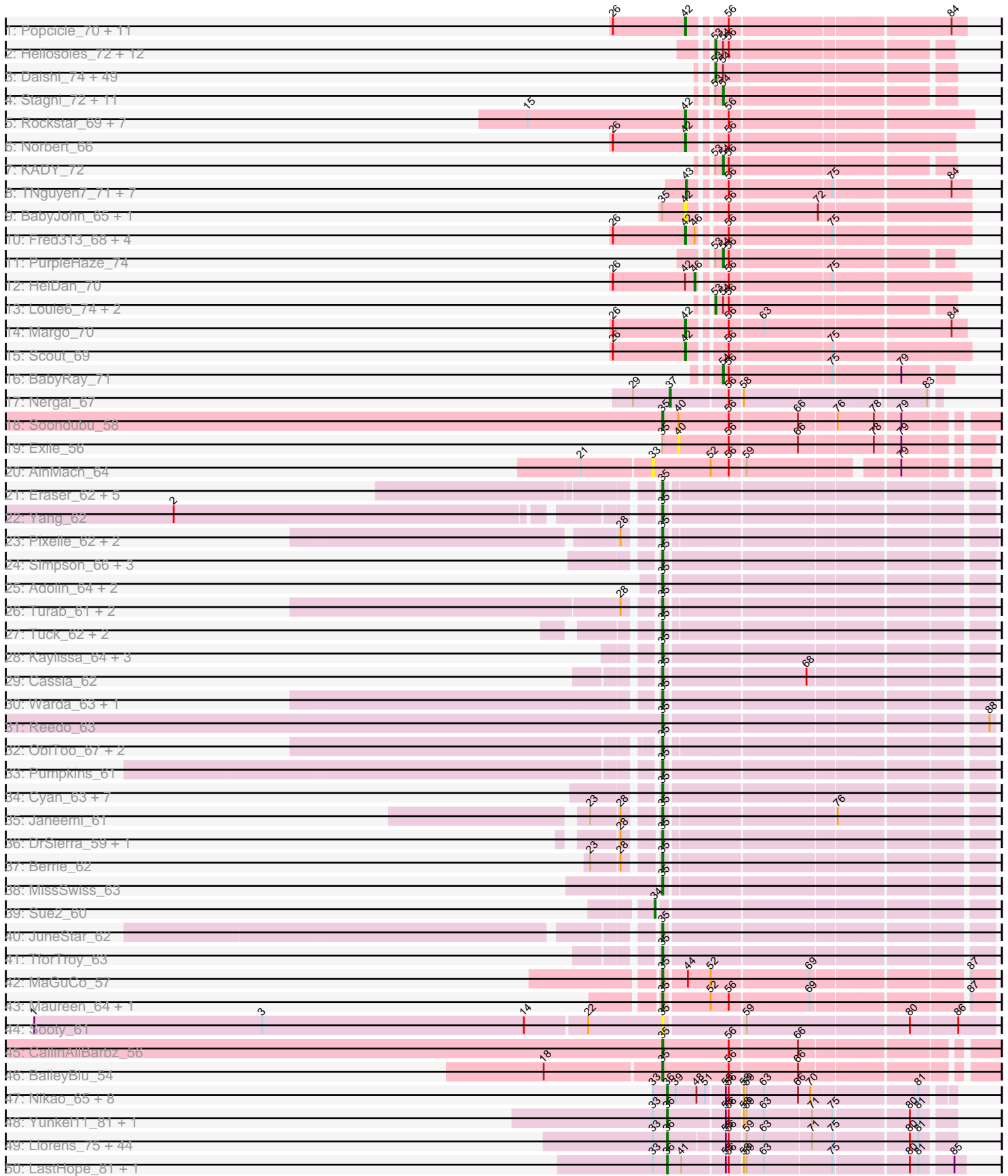
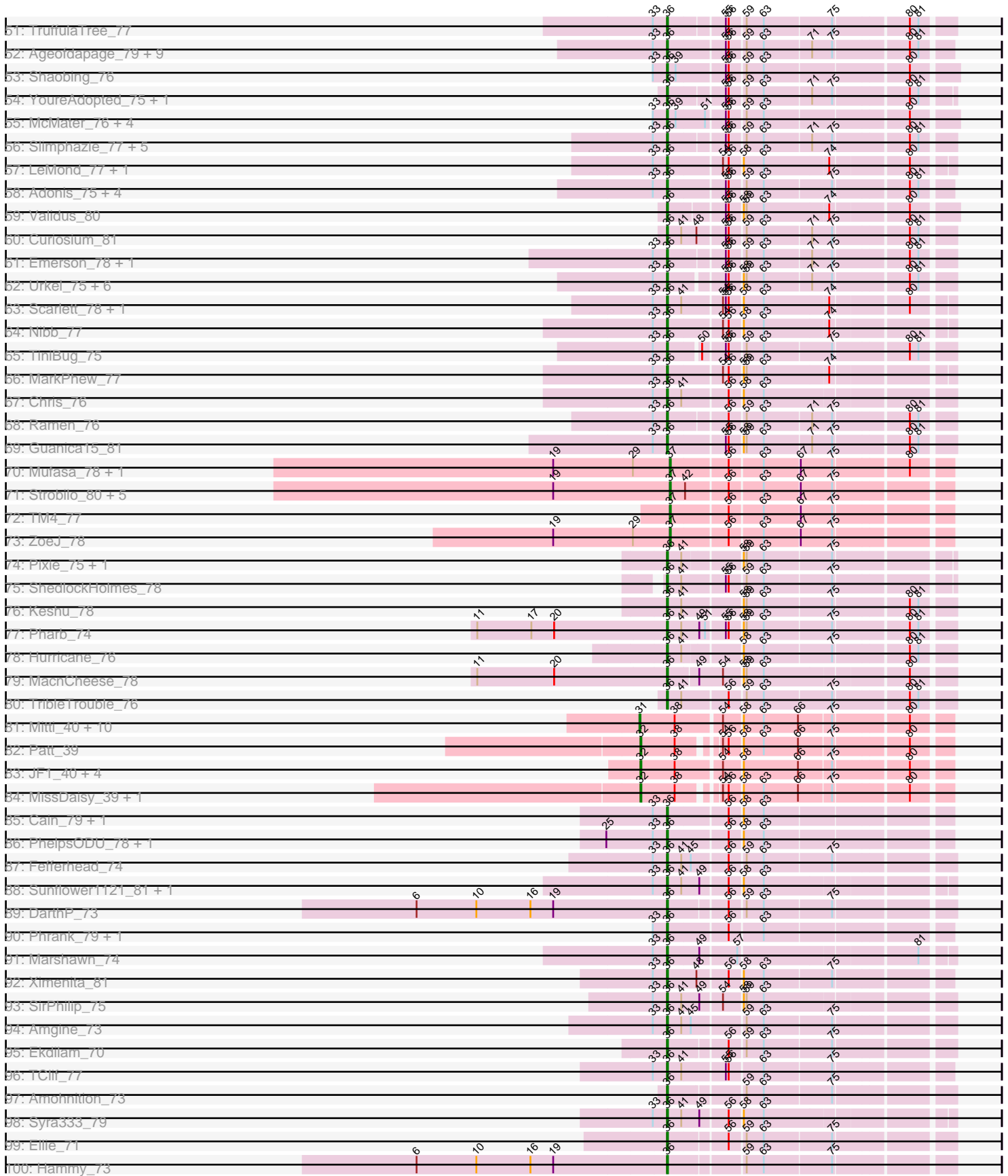


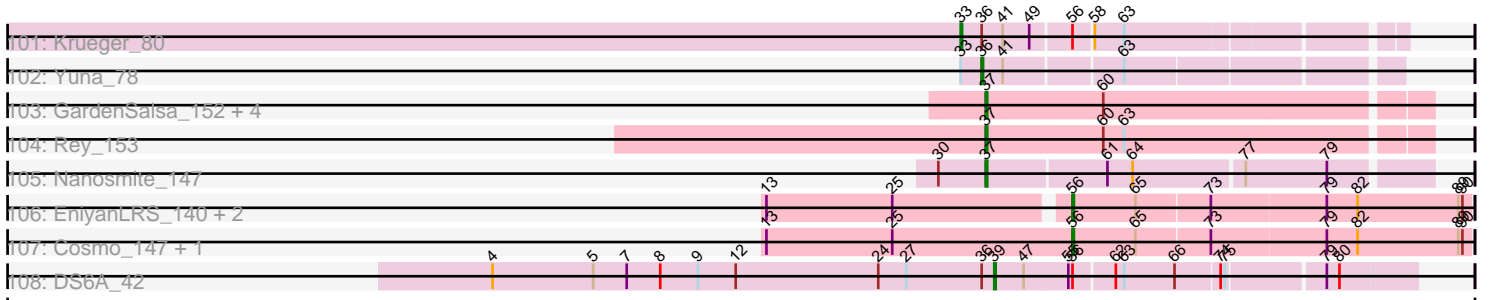
Pham 193655



# Pham 193655



Pham 193655



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 193655 Report

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

Pham number 193655 has 362 members, 27 are drafts.

Phages represented in each track:

- Track 1 : Popcicle\_70, Veracruz\_67, QuinnKiro\_69, Caviar\_70, Panamaxus\_68, Lambert1\_70, Todacoro\_70, Noella\_70, Hookmount\_70, Pocahontas\_69, Texage\_68, ResDef\_68
- Track 2 : Heliosoles\_72, Kalnoky\_75, PhishRPhriends\_71, Kalb97\_75, ACFishhook\_72, JeppNRM\_75, Pawn\_73, Groupthink\_75, Gemma\_72, Marius\_75, HaveUMetTed\_75, OlanP\_73, Manu\_74
- Track 3 : Daishi\_74, Penny1\_75, Grif\_73, EpicPhail\_76, AgronaGT15\_72, Vix\_71, Aglet\_76, Dieselweasel\_75, GingkoMaracino\_75, Grum1\_74, AugsMagnumOpus\_78, Pembroke\_75, Soshari\_77, GtownJaz\_75, Bxz2\_70, MadMarie\_73, Malinsilva\_77, Wooldri\_77, LBerry\_76, Rummer\_74, SoYo\_72, Methuselah\_68, Mainiac\_74, Grub\_73, Cullens\_75, SoilDragon\_74, Beauxregard13\_74, Hercules11\_75, Fernando\_75, Sabia\_73, LugYA\_78, Watson\_74, PGHhamlin\_77, PotatoSplit\_76, Lilith\_73, Zetzy\_72, P28Green\_75, BreSam8\_75, MoneyMay\_74, HashRod\_76, Marie\_73, Ollie\_75, Microwolf\_71, LarryKay\_75, StepMih\_74, Colbster\_71, MuchMore\_78, Farber\_75, DaHudson\_74, Phoebe\_76
- Track 4 : Stagni\_72, MarQuardt\_75, Jobu08\_71, Snickers\_71, Phoxy\_75, Tiffany\_74, Spike509\_75, JenCasNa\_76, Sabinator\_73, Taurus\_76, Anubis\_78, JHC117\_71
- Track 5 : Rockstar\_69, MK4\_70, Isca\_68, B1\_62, MA5\_70, JF4\_68, Phantastic\_72, JF2\_68
- Track 6 : Norbert\_66
- Track 7 : KADY\_72
- Track 8 : TNguyen7\_71, Bugatti\_70, Giroux\_69, Idleandcovert\_71, BlueBird\_73, SaturnRing\_70, Puppy\_71, Pistachio\_70
- Track 9 : BabyJohn\_65, Chiqui\_65
- Track 10 : Fred313\_68, Marchesa\_68, Kachowdy\_68, Heathen\_70, DropBear\_68
- Track 11 : PurpleHaze\_74
- Track 12 : HelDan\_70
- Track 13 : Louie6\_74, BuzzBuzz\_69, Misomonster\_76
- Track 14 : Margo\_70
- Track 15 : Scout\_69
- Track 16 : BabyRay\_71
- Track 17 : Nergal\_67
- Track 18 : Soondubu\_58
- Track 19 : Exile\_56
- Track 20 : AinMach\_64
- Track 21 : Eraser\_62, Asa16\_62, Jstan\_63, London\_62, Niobe\_62, Elezi\_61

- Track 22 : Yang\_62
- Track 23 : Pixelle\_62, Amyev\_62, Tian\_61
- Track 24 : Simpson\_66, Joemato\_63, Tallboi\_62, Nitro\_63
- Track 25 : Adolin\_64, VResidence\_62, DrManhattan\_65
- Track 26 : Turab\_61, Adumb2043\_61, AEgle\_60
- Track 27 : Tuck\_62, Community\_62, Phives\_63
- Track 28 : Kaylissa\_64, Mudpuppy\_60, Lizalica\_61, Lego\_62
- Track 29 : Cassia\_62
- Track 30 : Warda\_63, Tbone\_62
- Track 31 : Reedo\_63
- Track 32 : ObiToo\_67, IttyBittyPiggy\_61, Crewmate\_67
- Track 33 : Pumpkins\_61
- Track 34 : Cyan\_63, Powerpuff\_64, Iter\_63, Tutumahutu\_64, Ascela\_64, YesChef\_62, AGrandiflora\_64, JohnDoe\_63
- Track 35 : Janeemi\_61
- Track 36 : DrSierra\_59, Wildwest\_58
- Track 37 : Berrie\_62
- Track 38 : MissSwiss\_63
- Track 39 : Sue2\_60
- Track 40 : JuneStar\_62
- Track 41 : TforTroy\_63
- Track 42 : MaGuCo\_57
- Track 43 : Maureen\_64, Liebe\_64
- Track 44 : Sooty\_61
- Track 45 : CallinAllBarbz\_56
- Track 46 : BaileyBlu\_54
- Track 47 : Nikao\_65, Nutello\_62, Mdavu\_63, LilPharaoh\_63, Biglebops\_62, Torres\_64, SgtBeansprout\_63, Enkosi\_64, Amelie\_62
- Track 48 : Yunkel11\_81, Efra2\_82
- Track 49 : Llorens\_75, CaseJules\_77, Rapunzel97\_78, Boiiii\_75, Hyperbowlee\_74, Apocalypse\_78, Spock\_75, QuincyRose\_73, BEEST\_75, Asayake\_75, Topper\_75, Dalmuri\_75, Twitch\_75, BarrelRoll\_76, Blizzard\_75, Homura\_74, ShiaSurprise\_76, Joy99\_76, Peel\_75, CREW\_74, Belladonna\_75, Jeckyll\_75, HedwigODU\_75, Atiba\_76, Durfee\_75, Deby\_75, Piatt\_74, Capricorn\_75, Mynx\_77, Tachez\_75, Ganymede\_75, AlishaPH\_74, Zabiza\_71, Jarvi\_75, Rosmarinus\_75, Lunahalos\_75, Adephagia\_74, Zavala\_78, Padfoot\_75, BaghaKamala\_74, Jayhawk\_78, Inky\_75, Geraldini\_79, ActinUp\_76, BGlluviae\_75
- Track 50 : LastHope\_81, TingHuaYa\_78
- Track 51 : TruffulaTree\_77
- Track 52 : Ageofdapage\_79, TaiwanKao\_77, Devera\_83, Sulley\_74, Anaya\_79, Illumine\_81, Angelica\_74, Stinson\_76, Megsy\_77, Dole\_80
- Track 53 : Shaobing\_76
- Track 54 : YoureAdopted\_75, Beezoo\_78
- Track 55 : McMater\_76, Niklas\_77, Richo\_76, Peanam\_77, Dartin\_76
- Track 56 : Slimphazie\_77, Tiri\_75, CheetoDust\_75, Veliki\_76, Pokerus\_76, JAWS\_74
- Track 57 : LeMond\_77, Oscar\_77
- Track 58 : Adonis\_75, MeaningOfLife\_77, Bella96\_76, Murucutumbu\_76, LaterM\_75
- Track 59 : Validus\_80
- Track 60 : Curiosium\_81
- Track 61 : Emerson\_78, Padpat\_79

- Track 62 : Urkel\_75, DrHayes\_75, CrimD\_77, Prithvi\_78, SamuelLPlaqson\_75, LindNT\_74, TreyKay\_78
- Track 63 : Scarlett\_78, KiSi\_78
- Track 64 : Nibb\_77
- Track 65 : TiniBug\_75
- Track 66 : MarkPheW\_77
- Track 67 : Chris\_76
- Track 68 : Ramen\_76
- Track 69 : Guanica15\_81
- Track 70 : Mufasa\_78, BoostSeason\_78
- Track 71 : Strobilo\_80, Marcoliusprime\_78, DismalStressor\_79, Findley\_79, Milly\_79, DismalFunk\_79
- Track 72 : TM4\_77
- Track 73 : ZoeJ\_78
- Track 74 : Pixie\_75, TBond007\_72
- Track 75 : ShedlockHolmes\_78
- Track 76 : Keshu\_78
- Track 77 : Pharb\_74
- Track 78 : Hurricane\_76
- Track 79 : MacnCheese\_78
- Track 80 : TribbleTrouble\_76
- Track 81 : Mitti\_40, Wintermute\_40, Cheetobro\_40, Malthus\_41, Chancellor\_40, Eponine\_42, Slarp\_40, OmniCritical\_39, Taquito\_40, SamScheppers\_39, Fionnbharth\_40
- Track 82 : Patt\_39
- Track 83 : JF1\_40, Y2\_39, Y10\_39, Juliette\_42, Ruthiejr\_41
- Track 84 : MissDaisy\_39, Reptar3000\_40
- Track 85 : Cain\_79, Bryler\_79
- Track 86 : PhelpsODU\_78, Unicorn\_78
- Track 87 : Fefferhead\_74
- Track 88 : Sunflower1121\_81, Shadow1\_80
- Track 89 : DarthP\_73
- Track 90 : Phrank\_79, Tierra\_79
- Track 91 : Marshawn\_74
- Track 92 : Ximenita\_81
- Track 93 : SirPhilip\_75
- Track 94 : Amgine\_73
- Track 95 : Ekdilam\_70
- Track 96 : TClif\_77
- Track 97 : Amohnition\_73
- Track 98 : Syra333\_79
- Track 99 : Ellie\_71
- Track 100 : Hammy\_73
- Track 101 : Krueger\_80
- Track 102 : Yuna\_78
- Track 103 : GardenSalsa\_152, Aziz\_150, Estes\_152, MrMagoo\_154, GenevaB15\_153
- Track 104 : Rey\_153
- Track 105 : Nanosmite\_147
- Track 106 : EniyanLRS\_140, Wildcat\_147, MaryV\_133
- Track 107 : Cosmo\_147, Azrael100\_140
- Track 108 : DS6A\_42

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

The start number called the most often in the published annotations is 36, it was called in 132 of the 335 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_76, Adephagia\_74, Adonis\_75, Ageofdapage\_79, AlishaPH\_74, Amelie\_62, Amgine\_73, Amohnition\_73, Anaya\_79, Angelica\_74, Apocalypse\_78, Asayake\_75, Atiba\_76, BEEST\_75, BGlluviae\_75, BaghaKamala\_74, BarrelRoll\_76, Beezoo\_78, Bella96\_76, Belladonna\_75, Biglebops\_62, Blizzard\_75, Boiiii\_75, Bryler\_79, CREW\_74, Cain\_79, Capricorn\_75, CaseJules\_77, CheetoDust\_75, Chris\_76, CrimD\_77, Curiosium\_81, Dalmuri\_75, DarthP\_73, Dartin\_76, Deby\_75, Devera\_83, Dole\_80, DrHayes\_75, Durfee\_75, Efra2\_82, Ekdilam\_70, Ellie\_71, Emerson\_78, Enkosi\_64, Fefferhead\_74, Ganymede\_75, Geraldini\_79, Guanica15\_81, Hammy\_73, HedwigODU\_75, Homura\_74, Hurricane\_76, Hyperbowlee\_74, Illumine\_81, Inky\_75, JAWS\_74, Jarvi\_75, Jayhawk\_78, Jeckyll\_75, Joy99\_76, Keshu\_78, KiSi\_78, LastHope\_81, LaterM\_75, LeMond\_77, LilPharaoh\_63, LindNT\_74, Llorens\_75, Lunahalos\_75, MacnCheese\_78, MarkPhew\_77, Marshawn\_74, McMater\_76, Mdavu\_63, MeaningOfLife\_77, Megsy\_77, Murucutumbu\_76, Mynx\_77, Nibb\_77, Nikao\_65, Niklas\_77, Nutello\_62, Oscar\_77, Padfoot\_75, Padpat\_79, Peanam\_77, Peel\_75, Pharb\_74, PhelpsODU\_78, Phrank\_79, Piatt\_74, Pixie\_75, Pokerus\_76, Prithvi\_78, QuincyRose\_73, Ramen\_76, Rapunzel97\_78, Richo\_76, Rosmarinus\_75, SamuelLPlaqson\_75, Scarlett\_78, SgtBeansprout\_63, Shadow1\_80, Shaobing\_76, ShedlockHolmes\_78, ShiaSurprise\_76, SirPhilip\_75, Slimphazie\_77, Spock\_75, Stinson\_76, Sulley\_74, Sunflower1121\_81, Syra333\_79, TBond007\_72, TClif\_77, Tachez\_75, TaiwanKao\_77, Tierra\_79, TingHuaYa\_78, TiniBug\_75, Tiri\_75, Topper\_75, Torres\_64, TreyKay\_78, TribbleTrouble\_76, TruffulaTree\_77, Twitch\_75, Unicorn\_78, Urkel\_75, Validus\_80, Veliki\_76, Ximenita\_81, YoureAdopted\_75, Yuna\_78, Yunkel11\_81, Zabiza\_71, Zavala\_78,

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

- DS6A\_42, Krueger\_80,

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

- ACFishhook\_72, AEgle\_60, AGrandiflora\_64, Adolin\_64, Adumb2043\_61, Aglet\_76, AgronaGT15\_72, AinMach\_64, Amyev\_62, Anubis\_78, Asa16\_62, Ascela\_64, AugsMagnumOpus\_78, Aziz\_150, Azrael100\_140, B1\_62, BabyJohn\_65, BabyRay\_71, BaileyBlu\_54, Beauxregard13\_74, Berrie\_62, BlueBird\_73, BoostSeason\_78, BreSam8\_75, Bugatti\_70, BuzzBuzz\_69, Bxz2\_70, CallinAllBarbz\_56, Cassia\_62, Caviar\_70, Chancellor\_40, Cheetobro\_40, Chiqui\_65, Colbster\_71, Community\_62, Cosmo\_147, Crewmate\_67, Cullens\_75, Cyan\_63, DaHudson\_74, Daishi\_74, Dieselweasel\_75, DismalFunk\_79, DismalStressor\_79, DrManhattan\_65, DrSierra\_59, DropBear\_68, Elezi\_61, EniyanLRS\_140, EpicPhail\_76, Eponine\_42, Eraser\_62, Estes\_152, Exile\_56, Farber\_75, Fernando\_75, Findley\_79, Fionnbharth\_40, Fred313\_68, GardenSalsa\_152, Gemma\_72, GenevaB15\_153, GingkoMaracino\_75, Giroux\_69, Grif\_73, Groupthink\_75, Grub\_73, Grum1\_74, GtownJaz\_75, HashRod\_76, HaveUMetTed\_75, Heathen\_70, HelDan\_70, Heliosoles\_72, Hercules11\_75, Hookmount\_70, Idleandcovert\_71, Isca\_68, Iter\_63, IttyBittyPiggy\_61, JF1\_40,

JF2\_68, JF4\_68, JHC117\_71, Janeemi\_61, JenCasNa\_76, JeppNRM\_75, Jobu08\_71, Joemato\_63, JohnDoe\_63, Jstan\_63, Juliette\_42, JuneStar\_62, KADY\_72, Kachowdy\_68, Kalb97\_75, Kalnoky\_75, Kaylissa\_64, LBerry\_76, Lambert1\_70, LarryKay\_75, Lego\_62, Liebe\_64, Lilith\_73, Lizalica\_61, London\_62, Louie6\_74, LugYA\_78, MA5\_70, MK4\_70, MaGuCo\_57, MadMarie\_73, Mainiac\_74, Malinsilva\_77, Malthus\_41, Manu\_74, MarQuardt\_75, Marchesa\_68, Marcoliusprime\_78, Margo\_70, Marie\_73, Marius\_75, MaryV\_133, Maureen\_64, Methuselah\_68, Microwolf\_71, Milly\_79, Misomonster\_76, MissDaisy\_39, MissSwiss\_63, Mitti\_40, MoneyMay\_74, MrMagoo\_154, MuchMore\_78, Mudpuppy\_60, Mufasa\_78, Nanosmite\_147, Nergal\_67, Niobe\_62, Nitro\_63, Noella\_70, Norbert\_66, ObiToo\_67, OlanP\_73, Ollie\_75, OmniCritical\_39, P28Green\_75, PGHhamlin\_77, Panamaxus\_68, Patt\_39, Pawn\_73, Pembroke\_75, Penny1\_75, Phantastic\_72, PhishRPhriends\_71, Phives\_63, Phoebe\_76, Phoxy\_75, Pistachio\_70, Pixelle\_62, Pocahontas\_69, Popcicle\_70, PotatoSplit\_76, Powerpuff\_64, Pumpkins\_61, Puppy\_71, PurpleHaze\_74, QuinnKiro\_69, Reedo\_63, Reptar3000\_40, ResDef\_68, Rey\_153, Rockstar\_69, Rummer\_74, Ruthiejr\_41, Sabia\_73, Sabinator\_73, SamScheppers\_39, SaturnRing\_70, Scout\_69, Simpson\_66, Slarp\_40, Snickers\_71, SoYo\_72, SoilDragon\_74, Soondubu\_58, Sooty\_61, Soshari\_77, Spike509\_75, Stagni\_72, StepMih\_74, Strobilo\_80, Sue2\_60, TM4\_77, TNguyen7\_71, Tallboi\_62, Taquito\_40, Taurus\_76, Tbone\_62, Texage\_68, TforTroy\_63, Tian\_61, Tiffany\_74, Todacoro\_70, Tuck\_62, Turab\_61, Tutumahutu\_64, VResidence\_62, Veracruz\_67, Vix\_71, Warda\_63, Watson\_74, Wildcat\_147, Wildwest\_58, Wintermute\_40, Wooldri\_77, Y10\_39, Y2\_39, Yang\_62, YesChef\_62, Zetty\_72, ZoeJ\_78,

### Summary by start number:

#### Start 31:

- Found in 11 of 362 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 11 of 335
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chancellor\_40 (K4), Cheetobro\_40 (K4), Eponine\_42 (K4), Fionnbharth\_40 (K4), Malthus\_41 (K4), Mitti\_40 (K4), OmniCritical\_39 (K4), SamScheppers\_39 (K4), Slarp\_40 (K4), Taquito\_40 (K4), Wintermute\_40 (K4),

#### Start 32:

- Found in 8 of 362 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 8 of 335
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JF1\_40 (K4), Juliette\_42 (K4), MissDaisy\_39 (K4), Patt\_39 (K4), Reptar3000\_40 (K4), Ruthiejr\_41 (K4), Y10\_39 (K4), Y2\_39 (K4),

#### Start 33:

- Found in 123 of 362 ( 34.0% ) of genes in pham
- Manual Annotations of this start: 1 of 335
- Called 1.6% of time when present
- Phage (with cluster) where this start called: AinMach\_64 (AZ), Krueger\_80 (K6),

#### Start 34:

- Found in 1 of 362 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 335



- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sue2\_60 (AZ1),

#### Start 35:

- Found in 60 of 362 ( 16.6% ) of genes in pham
- Manual Annotations of this start: 48 of 335
- Called 95.0% of time when present
- Phage (with cluster) where this start called: AEgle\_60 (AZ1), AGrandiflora\_64 (AZ1), Adolin\_64 (AZ1), Adumb2043\_61 (AZ1), Amyev\_62 (AZ1), Asa16\_62 (AZ1), Ascela\_64 (AZ1), BaileyBlu\_54 (FP), Berrie\_62 (AZ1), CallinAllBarbz\_56 (FP), Cassia\_62 (AZ1), Community\_62 (AZ1), Crewmate\_67 (AZ1), Cyan\_63 (AZ1), DrManhattan\_65 (AZ1), DrSierra\_59 (AZ1), Elezi\_61 (AZ1), Eraser\_62 (AZ1), Iter\_63 (AZ1), IttyBittyPiggy\_61 (AZ1), Janeemi\_61 (AZ1), Joemato\_63 (AZ1), JohnDoe\_63 (AZ1), Jstan\_63 (AZ1), JuneStar\_62 (AZ1), Kaylissa\_64 (AZ1), Lego\_62 (AZ1), Liebe\_64 (AZ2), Lizalica\_61 (AZ1), London\_62 (AZ1), MaGuCo\_57 (AZ2), Maureen\_64 (AZ2), MissSwiss\_63 (AZ1), Mudpuppy\_60 (AZ1), Niobe\_62 (AZ1), Nitro\_63 (AZ1), ObiToo\_67 (AZ1), Phives\_63 (AZ1), Pixelle\_62 (AZ1), Powerpuff\_64 (AZ1), Pumpkins\_61 (AZ1), Reedo\_63 (AZ1), Simpson\_66 (AZ1), Soondubu\_58 (AZ), Sooty\_61 (AZ5), Tallboi\_62 (AZ1), Tbone\_62 (AZ1), TforTroy\_63 (AZ1), Tian\_61 (AZ1), Tuck\_62 (AZ1), Turab\_61 (AZ1), Tutumahutu\_64 (AZ1), VResidence\_62 (AZ1), Warda\_63 (AZ1), Wildwest\_58 (AZ1), Yang\_62 (AZ1), YesChef\_62 (AZ1),

#### Start 36:

- Found in 140 of 362 ( 38.7% ) of genes in pham
- Manual Annotations of this start: 132 of 335
- Called 98.6% of time when present
- Phage (with cluster) where this start called: ActinUp\_76 (K1), Adephegia\_74 (K1), Adonis\_75 (K1), Ageofdapage\_79 (K1), AlishaPH\_74 (K1), Amelie\_62 (K1), Amgine\_73 (K6), Amohnition\_73 (K6), Anaya\_79 (K1), Angelica\_74 (K1), Apocalypse\_78 (K1), Asayake\_75 (K1), Atiba\_76 (K1), BEEST\_75 (K1), BGIlluvia\_75 (K1), BaghaKamala\_74 (K1), BarrelRoll\_76 (K1), Beezoo\_78 (K1), Bella96\_76 (K1), Belladonna\_75 (K1), Binglebops\_62 (K1), Blizzard\_75 (K1), Boiii\_75 (K1), Bryler\_79 (K6), CREW\_74 (K1), Cain\_79 (K6), Capricorn\_75 (K1), CaseJules\_77 (K1), CheetoDust\_75 (K1), Chris\_76 (K1), CrimD\_77 (K1), Curiosium\_81 (K1), Dalmuri\_75 (K1), DarthP\_73 (K6), Dartin\_76 (K1), Deby\_75 (K1), Devera\_83 (K1), Dole\_80 (K1), DrHayes\_75 (K1), Durfee\_75 (K1), Efra2\_82 (K1), Ekdilam\_70 (K6), Ellie\_71 (K6), Emerson\_78 (K1), Enkosi\_64 (K1), Fefferhead\_74 (K6), Ganymede\_75 (K1), Geraldini\_79 (K1), Guanica15\_81 (K1), Hammy\_73 (K6), HedwigODU\_75 (K1), Homura\_74 (K1), Hurricane\_76 (K3), Hyperbowlee\_74 (K1), Illumine\_81 (K1), Inky\_75 (K1), JAWS\_74 (K1), Jarvi\_75 (K1), Jayhawk\_78 (K1), Jeckyll\_75 (K1), Joy99\_76 (K1), Keshu\_78 (K3), KiSi\_78 (K1), LastHope\_81 (K1), LaterM\_75 (K1), LeMond\_77 (K1), LilPharaoh\_63 (K1), LindNT\_74 (K1), Llorens\_75 (K1), Lunahalos\_75 (K1), MacnCheese\_78 (K3), MarkPhew\_77 (K1), Marshawn\_74 (K6), McMater\_76 (K1), Mdavu\_63 (K1), MeaningOfLife\_77 (K1), Megsy\_77 (K1), Murucutumbu\_76 (K1), Mynx\_77 (K1), Nibb\_77 (K1), Nikao\_65 (K1), Niklas\_77 (K1), Nutello\_62 (K1), Oscar\_77 (K1), Padfoot\_75 (K1), Padpat\_79 (K1), Peanam\_77 (K1), Peel\_75 (K1), Pharb\_74 (K3), PhelpsODU\_78 (K6), Phrank\_79 (K6), Piatt\_74 (K1), Pixie\_75 (K3), Pokerus\_76 (K1), Prithvi\_78 (K1), QuincyRose\_73 (K1), Ramen\_76 (K1), Rapunzel97\_78 (K1), Richo\_76 (K1), Rosmarinus\_75 (K1), SamuelLPlaqson\_75 (K1), Scarlett\_78 (K1), SgtBeansprout\_63 (K1), Shadow1\_80 (K6), Shaobing\_76 (K1), ShedlockHolmes\_78 (K3), ShiaSurprise\_76 (K1), SirPhilip\_75 (K6), Slimphazie\_77 (K1), Spock\_75 (K1), Stinson\_76 (K1), Sulley\_74

(K1), Sunflower1121\_81 (K6), Syra333\_79 (K6), TBond007\_72 (K3), TClif\_77 (K6), Tachez\_75 (K1), TaiwanKao\_77 (K1), Tierra\_79 (K6), TingHuaYa\_78 (K1), TiniBug\_75 (K1), Tiri\_75 (K1), Topper\_75 (K1), Torres\_64 (K1), TreyKay\_78 (K1), TripleTrouble\_76 (K3), TruffulaTree\_77 (K1), Twitch\_75 (K1), Unicorn\_78 (K6), Urkel\_75 (K1), Validus\_80 (K1), Veliki\_76 (K1), Ximenita\_81 (K6), YoureAdopted\_75 (K1), Yuna\_78 (K6), Yunkel11\_81 (K1), Zabiza\_71 (K1), Zavala\_78 (K1),

#### Start 37:

- Found in 18 of 362 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 18 of 335
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aziz\_150 (M2), BoostSeason\_78 (K2), DismalFunk\_79 (K2), DismalStressor\_79 (K2), Estes\_152 (M2), Findley\_79 (K2), GardenSalsa\_152 (M2), GenevaB15\_153 (M2), Marcoliusprime\_78 (K2), Milly\_79 (K2), MrMagoo\_154 (M2), Mufasa\_78 (K2), Nanosmite\_147 (M3), Nergal\_67 (AG), Rey\_153 (M2), Strobilo\_80 (K2), TM4\_77 (K2), ZoeJ\_78 (K2),

#### Start 39:

- Found in 16 of 362 ( 4.4% ) of genes in pham
- Manual Annotations of this start: 1 of 335
- Called 6.2% of time when present
- Phage (with cluster) where this start called: DS6A\_42 (singleton),

#### Start 40:

- Found in 2 of 362 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Exile\_56 (AZ),

#### Start 42:

- Found in 37 of 362 ( 10.2% ) of genes in pham
- Manual Annotations of this start: 25 of 335
- Called 81.1% of time when present
- Phage (with cluster) where this start called: B1\_62 (A3), BabyJohn\_65 (A3), Caviar\_70 (A3), Chiqui\_65 (A3), DropBear\_68 (A3), Fred313\_68 (A3), Heathen\_70 (A3), Hookmount\_70 (A3), Isca\_68 (A3), JF2\_68 (A3), JF4\_68 (A3), Kachowdy\_68 (A3), Lambert1\_70 (A3), MA5\_70 (A3), MK4\_70 (A3), Marchesa\_68 (A3), Margo\_70 (A3), Noella\_70 (A3), Norbert\_66 (A3), Panamaxus\_68 (A3), Phantastic\_72 (A3), Pocahontas\_69 (A3), Popcicle\_70 (A3), QuinnKiro\_69 (A3), ResDef\_68 (A3), Rockstar\_69 (A3), Scout\_69 (A3), Texage\_68 (A3), Todacoro\_70 (A3), Veracruz\_67 (A3),

#### Start 43:

- Found in 8 of 362 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 5 of 335
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueBird\_73 (A3), Bugatti\_70 (A3), Giroux\_69 (A3), Idleandcovert\_71 (A3), Pistachio\_70 (A3), Puppy\_71 (A3), SaturnRing\_70 (A3), TNguyen7\_71 (A3),

#### Start 46:

- Found in 6 of 362 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 335

- Called 16.7% of time when present
- Phage (with cluster) where this start called: HelDan\_70 (A3),

#### Start 53:

- Found in 80 of 362 ( 22.1% ) of genes in pham
- Manual Annotations of this start: 65 of 335
- Called 82.5% of time when present
- Phage (with cluster) where this start called: ACFishhook\_72 (A3), Aglet\_76 (A3), AgronaGT15\_72 (A3), AugsMagnumOpus\_78 (A3), Beauxregard13\_74 (A3), BreSam8\_75 (A3), BuzzBuzz\_69 (A3), Bxz2\_70 (A3), Colbster\_71 (A3), Cullens\_75 (A3), DaHudson\_74 (A3), Daishi\_74 (A3), Dieselweasel\_75 (A3), EpicPhail\_76 (A3), Farber\_75 (A3), Fernando\_75 (A3), Gemma\_72 (A3), GingkoMaracino\_75 (A3), Grif\_73 (A3), Groupthink\_75 (A3), Grub\_73 (A3), Grum1\_74 (A3), GtownJaz\_75 (A3), HashRod\_76 (A3), HaveUMetTed\_75 (A3), Heliosoles\_72 (A3), Hercules11\_75 (A3), JeppNRM\_75 (A3), Kalb97\_75 (A3), Kalnoky\_75 (A3), LBerry\_76 (A3), LarryKay\_75 (A3), Lilith\_73 (A3), Louie6\_74 (A3), LugYA\_78 (A3), MadMarie\_73 (A3), Mainiac\_74 (A3), Malinsilva\_77 (A3), Manu\_74 (A3), Marie\_73 (A3), Marius\_75 (A3), Methuselah\_68 (A3), Microwolf\_71 (A3), Misomonster\_76 (A3), MoneyMay\_74 (A3), MuchMore\_78 (A3), OlanP\_73 (A3), Ollie\_75 (A3), P28Green\_75 (A3), PGHhamlin\_77 (A3), Pawn\_73 (A3), Pembroke\_75 (A3), Penny1\_75 (A3), PhishRPhriends\_71 (A3), Phoebe\_76 (A3), PotatoSplit\_76 (A3), Rummer\_74 (A3), Sabia\_73 (A3), SoYo\_72 (A3), SoilDragon\_74 (A3), Soshari\_77 (A3), StepMih\_74 (A3), Vix\_71 (A3), Watson\_74 (A3), Wooldri\_77 (A3), Zetzy\_72 (A3),

#### Start 54:

- Found in 108 of 362 ( 29.8% ) of genes in pham
- Manual Annotations of this start: 14 of 335
- Called 13.9% of time when present
- Phage (with cluster) where this start called: Anubis\_78 (A3), BabyRay\_71 (A3), JHC117\_71 (A3), JenCasNa\_76 (A3), Jobu08\_71 (A3), KADY\_72 (A3), MarQuardt\_75 (A3), Phoxy\_75 (A3), PurpleHaze\_74 (A3), Sabinator\_73 (A3), Snickers\_71 (A3), Spike509\_75 (A3), Stagni\_72 (A3), Taurus\_76 (A3), Tiffany\_74 (A3),

#### Start 56:

- Found in 213 of 362 ( 58.8% ) of genes in pham
- Manual Annotations of this start: 5 of 335
- Called 2.3% of time when present
- Phage (with cluster) where this start called: Azrael100\_140 (V), Cosmo\_147 (V), EniyanLRS\_140 (V), MaryV\_133 (V), Wildcat\_147 (V),

### Summary by clusters:

There are 16 clusters represented in this pham: FP, singleton, AG, V, A3, K3, K2, K1, K6, M3, K4, AZ1, AZ2, AZ, M2, AZ5,

#### Info for manual annotations of cluster A3:

- Start number 42 was manually annotated 25 times for cluster A3.
- Start number 43 was manually annotated 5 times for cluster A3.
- Start number 46 was manually annotated 1 time for cluster A3.
- Start number 53 was manually annotated 65 times for cluster A3.
- Start number 54 was manually annotated 14 times for cluster A3.

Info for manual annotations of cluster AG:

- Start number 37 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster AZ:

- Start number 35 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:

- Start number 34 was manually annotated 1 time for cluster AZ1.
- Start number 35 was manually annotated 42 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 35 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster FP:

- Start number 35 was manually annotated 2 times for cluster FP.

Info for manual annotations of cluster K1:

- Start number 36 was manually annotated 103 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 37 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 36 was manually annotated 8 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 31 was manually annotated 11 times for cluster K4.
- Start number 32 was manually annotated 8 times for cluster K4.

Info for manual annotations of cluster K6:

- Start number 33 was manually annotated 1 time for cluster K6.
- Start number 36 was manually annotated 21 times for cluster K6.

Info for manual annotations of cluster M2:

- Start number 37 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 37 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster V:

- Start number 56 was manually annotated 5 times for cluster V.

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

Gene: ACFishhook\_72 Start: 42957, Stop: 42733, Start Num: 53

Candidate Starts for ACFishhook\_72:

(Start: 53 @42957 has 65 MA's), (Start: 54 @42951 has 14 MA's), (Start: 56 @42945 has 5 MA's),

Gene: AEgle\_60 Start: 40834, Stop: 41145, Start Num: 35

Candidate Starts for AEgle\_60:

(28, 40807), (Start: 35 @40834 has 48 MA's),

Gene: AGrandiflora\_64 Start: 41727, Stop: 42041, Start Num: 35

Candidate Starts for AGrandiflora\_64:

(Start: 35 @41727 has 48 MA's),

Gene: ActinUp\_76 Start: 50161, Stop: 50433, Start Num: 36

Candidate Starts for ActinUp\_76:

(Start: 33 @50146 has 1 MA's), (Start: 36 @50161 has 132 MA's), (55, 50215), (Start: 56 @50218 has 5 MA's), (59, 50233), (63, 50251), (71, 50299), (75, 50320), (80, 50392), (81, 50401),

Gene: Adephagia\_74 Start: 49998, Stop: 50270, Start Num: 36

Candidate Starts for Adephagia\_74:

(Start: 33 @49983 has 1 MA's), (Start: 36 @49998 has 132 MA's), (55, 50052), (Start: 56 @50055 has 5 MA's), (59, 50070), (63, 50088), (71, 50136), (75, 50157), (80, 50229), (81, 50238),

Gene: Adolin\_64 Start: 40621, Stop: 40935, Start Num: 35

Candidate Starts for Adolin\_64:

(Start: 35 @40621 has 48 MA's),

Gene: Adonis\_75 Start: 50433, Stop: 50705, Start Num: 36

Candidate Starts for Adonis\_75:

(Start: 33 @50418 has 1 MA's), (Start: 36 @50433 has 132 MA's), (55, 50490), (Start: 56 @50493 has 5 MA's), (59, 50508), (63, 50526), (75, 50595), (80, 50667), (81, 50676),

Gene: Adumb2043\_61 Start: 40858, Stop: 41169, Start Num: 35

Candidate Starts for Adumb2043\_61:

(28, 40831), (Start: 35 @40858 has 48 MA's),

Gene: Ageofdapage\_79 Start: 51358, Stop: 51630, Start Num: 36

Candidate Starts for Ageofdapage\_79:

(Start: 33 @51343 has 1 MA's), (Start: 36 @51358 has 132 MA's), (55, 51415), (Start: 56 @51418 has 5 MA's), (59, 51433), (63, 51451), (71, 51499), (75, 51520), (80, 51592), (81, 51601),

Gene: Aglet\_76 Start: 43069, Stop: 42842, Start Num: 53

Candidate Starts for Aglet\_76:

(Start: 53 @43069 has 65 MA's), (Start: 54 @43063 has 14 MA's),

Gene: AgronaGT15\_72 Start: 42917, Stop: 42690, Start Num: 53

Candidate Starts for AgronaGT15\_72:

(Start: 53 @42917 has 65 MA's), (Start: 54 @42911 has 14 MA's),

Gene: AinMach\_64 Start: 40671, Stop: 40973, Start Num: 33

Candidate Starts for AinMach\_64:

(21, 40599), (Start: 33 @40671 has 1 MA's), (52, 40731), (Start: 56 @40749 has 5 MA's), (59, 40764), (79, 40902),

Gene: AlishaPH\_74 Start: 50259, Stop: 50531, Start Num: 36

Candidate Starts for AlishaPH\_74:

(Start: 33 @50244 has 1 MA's), (Start: 36 @50259 has 132 MA's), (55, 50313), (Start: 56 @50316 has 5 MA's), (59, 50331), (63, 50349), (71, 50397), (75, 50418), (80, 50490), (81, 50499),

Gene: Amelie\_62 Start: 47156, Stop: 47428, Start Num: 36

Candidate Starts for Amelie\_62:

(Start: 33 @47141 has 1 MA's), (Start: 36 @47156 has 132 MA's), (Start: 39 @47165 has 1 MA's), (48, 47186), (51, 47195), (55, 47213), (Start: 56 @47216 has 5 MA's), (58, 47228), (59, 47231), (63, 47249), (66, 47285), (70, 47297), (81, 47399),

Gene: Amgine\_73 Start: 50668, Stop: 50943, Start Num: 36

Candidate Starts for Amgine\_73:

(Start: 33 @50653 has 1 MA's), (Start: 36 @50668 has 132 MA's), (41, 50683), (45, 50692), (59, 50743), (63, 50761), (75, 50830),

Gene: Amohnition\_73 Start: 50538, Stop: 50810, Start Num: 36

Candidate Starts for Amohnition\_73:

(Start: 36 @50538 has 132 MA's), (59, 50610), (63, 50628), (75, 50697),

Gene: Amyev\_62 Start: 42418, Stop: 42732, Start Num: 35

Candidate Starts for Amyev\_62:

(28, 42391), (Start: 35 @42418 has 48 MA's),

Gene: Anaya\_79 Start: 51056, Stop: 51328, Start Num: 36

Candidate Starts for Anaya\_79:

(Start: 33 @51041 has 1 MA's), (Start: 36 @51056 has 132 MA's), (55, 51110), (Start: 56 @51113 has 5 MA's), (59, 51128), (63, 51146), (71, 51194), (75, 51215), (80, 51287), (81, 51296),

Gene: Angelica\_74 Start: 50118, Stop: 50390, Start Num: 36

Candidate Starts for Angelica\_74:

(Start: 33 @50103 has 1 MA's), (Start: 36 @50118 has 132 MA's), (55, 50175), (Start: 56 @50178 has 5 MA's), (59, 50193), (63, 50211), (71, 50259), (75, 50280), (80, 50352), (81, 50361),

Gene: Anubis\_78 Start: 42949, Stop: 42728, Start Num: 54

Candidate Starts for Anubis\_78:

(Start: 53 @42955 has 65 MA's), (Start: 54 @42949 has 14 MA's),

Gene: Apocalypse\_78 Start: 50800, Stop: 51072, Start Num: 36

Candidate Starts for Apocalypse\_78:

(Start: 33 @50785 has 1 MA's), (Start: 36 @50800 has 132 MA's), (55, 50854), (Start: 56 @50857 has 5 MA's), (59, 50872), (63, 50890), (71, 50938), (75, 50959), (80, 51031), (81, 51040),

Gene: Asa16\_62 Start: 41419, Stop: 41730, Start Num: 35

Candidate Starts for Asa16\_62:

(Start: 35 @41419 has 48 MA's),

Gene: Asayake\_75 Start: 50313, Stop: 50585, Start Num: 36

Candidate Starts for Asayake\_75:

(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: Ascela\_64 Start: 41907, Stop: 42221, Start Num: 35

Candidate Starts for Ascela\_64:

(Start: 35 @41907 has 48 MA's),

Gene: Atiba\_76 Start: 49961, Stop: 50233, Start Num: 36

Candidate Starts for Atiba\_76:

(Start: 33 @49946 has 1 MA's), (Start: 36 @49961 has 132 MA's), (55, 50015), (Start: 56 @50018 has 5 MA's), (59, 50033), (63, 50051), (71, 50099), (75, 50120), (80, 50192), (81, 50201),

Gene: AugsMagnumOpus\_78 Start: 43060, Stop: 42833, Start Num: 53  
Candidate Starts for AugsMagnumOpus\_78:  
(Start: 53 @43060 has 65 MA's), (Start: 54 @43054 has 14 MA's),

Gene: Aziz\_150 Start: 73022, Stop: 72717, Start Num: 37  
Candidate Starts for Aziz\_150:  
(Start: 37 @73022 has 18 MA's), (60, 72941),

Gene: Azrael100\_140 Start: 68576, Stop: 68298, Start Num: 56  
Candidate Starts for Azrael100\_140:  
(13, 68795), (25, 68705), (Start: 56 @68576 has 5 MA's), (65, 68531), (73, 68480), (79, 68399), (82, 68378), (89, 68306), (90, 68303),

Gene: B1\_62 Start: 41030, Stop: 40761, Start Num: 42  
Candidate Starts for B1\_62:  
(15, 41195), (Start: 42 @41030 has 25 MA's), (Start: 56 @41000 has 5 MA's),

Gene: BEEST\_75 Start: 50313, Stop: 50585, Start Num: 36  
Candidate Starts for BEEST\_75:  
(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: BGlluviae\_75 Start: 50116, Stop: 50388, Start Num: 36  
Candidate Starts for BGlluviae\_75:  
(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: BabyJohn\_65 Start: 42854, Stop: 42588, Start Num: 42  
Candidate Starts for BabyJohn\_65:  
(Start: 35 @42878 has 48 MA's), (Start: 42 @42854 has 25 MA's), (Start: 56 @42824 has 5 MA's), (72, 42734),

Gene: BabyRay\_71 Start: 42787, Stop: 42569, Start Num: 54  
Candidate Starts for BabyRay\_71:  
(Start: 54 @42787 has 14 MA's), (Start: 56 @42781 has 5 MA's), (75, 42679), (79, 42616),

Gene: BaghaKamala\_74 Start: 49547, Stop: 49819, Start Num: 36  
Candidate Starts for BaghaKamala\_74:  
(Start: 33 @49532 has 1 MA's), (Start: 36 @49547 has 132 MA's), (55, 49601), (Start: 56 @49604 has 5 MA's), (59, 49619), (63, 49637), (71, 49685), (75, 49706), (80, 49778), (81, 49787),

Gene: BaileyBlu\_54 Start: 37900, Stop: 38214, Start Num: 35  
Candidate Starts for BaileyBlu\_54:  
(18, 37780), (Start: 35 @37900 has 48 MA's), (Start: 56 @37966 has 5 MA's), (66, 38035),

Gene: BarrelRoll\_76 Start: 50518, Stop: 50790, Start Num: 36  
Candidate Starts for BarrelRoll\_76:  
(Start: 33 @50503 has 1 MA's), (Start: 36 @50518 has 132 MA's), (55, 50572), (Start: 56 @50575 has 5 MA's), (59, 50590), (63, 50608), (71, 50656), (75, 50677), (80, 50749), (81, 50758),

Gene: Beauxregard13\_74 Start: 43072, Stop: 42845, Start Num: 53  
Candidate Starts for Beauxregard13\_74:  
(Start: 53 @43072 has 65 MA's), (Start: 54 @43066 has 14 MA's),

Gene: Beezoo\_78 Start: 51095, Stop: 51364, Start Num: 36  
Candidate Starts for Beezoo\_78:  
(Start: 36 @51095 has 132 MA's), (55, 51149), (Start: 56 @51152 has 5 MA's), (59, 51167), (63, 51185), (71, 51233), (75, 51254), (80, 51326), (81, 51335),

Gene: Bella96\_76 Start: 50379, Stop: 50648, Start Num: 36  
Candidate Starts for Bella96\_76:  
(Start: 33 @50364 has 1 MA's), (Start: 36 @50379 has 132 MA's), (55, 50430), (Start: 56 @50433 has 5 MA's), (59, 50448), (63, 50466), (75, 50535), (80, 50607), (81, 50616),

Gene: Belladonna\_75 Start: 50116, Stop: 50388, Start Num: 36  
Candidate Starts for Belladonna\_75:  
(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: Berrie\_62 Start: 41517, Stop: 41828, Start Num: 35  
Candidate Starts for Berrie\_62:  
(23, 41463), (28, 41490), (Start: 35 @41517 has 48 MA's),

Gene: Biglebops\_62 Start: 47171, Stop: 47443, Start Num: 36  
Candidate Starts for Biglebops\_62:  
(Start: 33 @47156 has 1 MA's), (Start: 36 @47171 has 132 MA's), (Start: 39 @47180 has 1 MA's), (48, 47201), (51, 47210), (55, 47228), (Start: 56 @47231 has 5 MA's), (58, 47243), (59, 47246), (63, 47264), (66, 47300), (70, 47312), (81, 47414),

Gene: Blizzard\_75 Start: 50313, Stop: 50585, Start Num: 36  
Candidate Starts for Blizzard\_75:  
(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: BlueBird\_73 Start: 42858, Stop: 42592, Start Num: 43  
Candidate Starts for BlueBird\_73:  
(Start: 43 @42858 has 5 MA's), (Start: 56 @42828 has 5 MA's), (75, 42726), (84, 42612),

Gene: Boiiii\_75 Start: 50315, Stop: 50587, Start Num: 36  
Candidate Starts for Boiiii\_75:  
(Start: 33 @50300 has 1 MA's), (Start: 36 @50315 has 132 MA's), (55, 50369), (Start: 56 @50372 has 5 MA's), (59, 50387), (63, 50405), (71, 50453), (75, 50474), (80, 50546), (81, 50555),

Gene: BoostSeason\_78 Start: 51944, Stop: 52213, Start Num: 37  
Candidate Starts for BoostSeason\_78:  
(19, 51821), (29, 51905), (Start: 37 @51944 has 18 MA's), (Start: 56 @52001 has 5 MA's), (63, 52034), (67, 52070), (75, 52103), (80, 52175),

Gene: BreSam8\_75 Start: 43062, Stop: 42835, Start Num: 53  
Candidate Starts for BreSam8\_75:  
(Start: 53 @43062 has 65 MA's), (Start: 54 @43056 has 14 MA's),

Gene: Bryler\_79 Start: 49944, Stop: 50216, Start Num: 36



Candidate Starts for Bryler\_79:

(Start: 33 @49929 has 1 MA's), (Start: 36 @49944 has 132 MA's), (Start: 56 @50004 has 5 MA's), (58, 50016), (63, 50037),

Gene: Bugatti\_70 Start: 42858, Stop: 42592, Start Num: 43

Candidate Starts for Bugatti\_70:

(Start: 43 @42858 has 5 MA's), (Start: 56 @42828 has 5 MA's), (75, 42726), (84, 42612),

Gene: BuzzBuzz\_69 Start: 43096, Stop: 42869, Start Num: 53

Candidate Starts for BuzzBuzz\_69:

(Start: 53 @43096 has 65 MA's), (Start: 54 @43090 has 14 MA's), (Start: 56 @43084 has 5 MA's),

Gene: Bxz2\_70 Start: 43103, Stop: 42876, Start Num: 53

Candidate Starts for Bxz2\_70:

(Start: 53 @43103 has 65 MA's), (Start: 54 @43097 has 14 MA's),

Gene: CREW\_74 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for CREW\_74:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: Cain\_79 Start: 49932, Stop: 50204, Start Num: 36

Candidate Starts for Cain\_79:

(Start: 33 @49917 has 1 MA's), (Start: 36 @49932 has 132 MA's), (Start: 56 @49992 has 5 MA's), (58, 50004), (63, 50025),

Gene: CallinAllBarbz\_56 Start: 38887, Stop: 39201, Start Num: 35

Candidate Starts for CallinAllBarbz\_56:

(Start: 35 @38887 has 48 MA's), (Start: 56 @38953 has 5 MA's), (66, 39022),

Gene: Capricorn\_75 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for Capricorn\_75:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: CaseJules\_77 Start: 50313, Stop: 50585, Start Num: 36

Candidate Starts for CaseJules\_77:

(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: Cassia\_62 Start: 41532, Stop: 41846, Start Num: 35

Candidate Starts for Cassia\_62:

(Start: 35 @41532 has 48 MA's), (68, 41673),

Gene: Caviar\_70 Start: 42817, Stop: 42557, Start Num: 42

Candidate Starts for Caviar\_70:

(26, 42892), (Start: 42 @42817 has 25 MA's), (Start: 56 @42787 has 5 MA's), (84, 42571),

Gene: Chancellor\_40 Start: 31427, Stop: 31726, Start Num: 31

Candidate Starts for Chancellor\_40:

(Start: 31 @31427 has 11 MA's), (38, 31463), (Start: 54 @31508 has 14 MA's), (58, 31526), (63, 31547), (66, 31583), (75, 31616), (80, 31688),

Gene: CheetoDust\_75 Start: 49713, Stop: 49985, Start Num: 36

Candidate Starts for CheetoDust\_75:

(Start: 33 @49698 has 1 MA's), (Start: 36 @49713 has 132 MA's), (55, 49767), (Start: 56 @49770 has 5 MA's), (59, 49785), (63, 49803), (71, 49851), (75, 49872), (80, 49944), (81, 49953),

Gene: Cheetobro\_40 Start: 31424, Stop: 31723, Start Num: 31

Candidate Starts for Cheetobro\_40:

(Start: 31 @31424 has 11 MA's), (38, 31460), (Start: 54 @31505 has 14 MA's), (58, 31523), (63, 31544), (66, 31580), (75, 31613), (80, 31685),

Gene: Chiqui\_65 Start: 42863, Stop: 42597, Start Num: 42

Candidate Starts for Chiqui\_65:

(Start: 35 @42887 has 48 MA's), (Start: 42 @42863 has 25 MA's), (Start: 56 @42833 has 5 MA's), (72, 42743),

Gene: Chris\_76 Start: 50718, Stop: 50993, Start Num: 36

Candidate Starts for Chris\_76:

(Start: 33 @50703 has 1 MA's), (Start: 36 @50718 has 132 MA's), (41, 50733), (Start: 56 @50778 has 5 MA's), (58, 50790), (63, 50811),

Gene: Colbster\_71 Start: 43072, Stop: 42845, Start Num: 53

Candidate Starts for Colbster\_71:

(Start: 53 @43072 has 65 MA's), (Start: 54 @43066 has 14 MA's),

Gene: Community\_62 Start: 41790, Stop: 42101, Start Num: 35

Candidate Starts for Community\_62:

(Start: 35 @41790 has 48 MA's),

Gene: Cosmo\_147 Start: 68740, Stop: 68462, Start Num: 56

Candidate Starts for Cosmo\_147:

(13, 68959), (25, 68869), (Start: 56 @68740 has 5 MA's), (65, 68695), (73, 68644), (79, 68563), (82, 68542), (89, 68470), (90, 68467),

Gene: Crewmate\_67 Start: 42141, Stop: 42452, Start Num: 35

Candidate Starts for Crewmate\_67:

(Start: 35 @42141 has 48 MA's),

Gene: CrimD\_77 Start: 51114, Stop: 51386, Start Num: 36

Candidate Starts for CrimD\_77:

(Start: 33 @51099 has 1 MA's), (Start: 36 @51114 has 132 MA's), (55, 51171), (Start: 56 @51174 has 5 MA's), (58, 51186), (59, 51189), (63, 51207), (71, 51255), (75, 51276), (80, 51348), (81, 51357),

Gene: Cullens\_75 Start: 43068, Stop: 42841, Start Num: 53

Candidate Starts for Cullens\_75:

(Start: 53 @43068 has 65 MA's), (Start: 54 @43062 has 14 MA's),

Gene: Curiosium\_81 Start: 50080, Stop: 50355, Start Num: 36

Candidate Starts for Curiosium\_81:

(Start: 36 @50080 has 132 MA's), (41, 50095), (48, 50110), (55, 50137), (Start: 56 @50140 has 5 MA's), (59, 50155), (63, 50173), (71, 50221), (75, 50242), (80, 50314), (81, 50323),

Gene: Cyan\_63 Start: 41471, Stop: 41785, Start Num: 35

Candidate Starts for Cyan\_63:

(Start: 35 @41471 has 48 MA's),

Gene: DS6A\_42 Start: 32699, Stop: 32980, Start Num: 39

Candidate Starts for DS6A\_42:

(4, 32342), (5, 32414), (7, 32438), (8, 32462), (9, 32489), (12, 32516), (24, 32618), (27, 32636), (Start: 36 @32690 has 132 MA's), (Start: 39 @32699 has 1 MA's), (47, 32720), (55, 32750), (Start: 56 @32753 has 5 MA's), (62, 32780), (63, 32786), (66, 32822), (74, 32852), (75, 32855), (79, 32918), (80, 32927),

Gene: DaHudson\_74 Start: 43061, Stop: 42834, Start Num: 53

Candidate Starts for DaHudson\_74:

(Start: 53 @43061 has 65 MA's), (Start: 54 @43055 has 14 MA's),

Gene: Daishi\_74 Start: 41936, Stop: 41709, Start Num: 53

Candidate Starts for Daishi\_74:

(Start: 53 @41936 has 65 MA's), (Start: 54 @41930 has 14 MA's),

Gene: Dalmuri\_75 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for Dalmuri\_75:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: DarthP\_73 Start: 50395, Stop: 50667, Start Num: 36

Candidate Starts for DarthP\_73:

(6, 50134), (10, 50197), (16, 50254), (19, 50278), (Start: 36 @50395 has 132 MA's), (Start: 56 @50452 has 5 MA's), (59, 50467), (63, 50485), (75, 50554),

Gene: Dartin\_76 Start: 50287, Stop: 50565, Start Num: 36

Candidate Starts for Dartin\_76:

(Start: 33 @50272 has 1 MA's), (Start: 36 @50287 has 132 MA's), (Start: 39 @50296 has 1 MA's), (51, 50326), (55, 50344), (Start: 56 @50347 has 5 MA's), (59, 50362), (63, 50380), (80, 50521),

Gene: Deby\_75 Start: 50485, Stop: 50757, Start Num: 36

Candidate Starts for Deby\_75:

(Start: 33 @50470 has 1 MA's), (Start: 36 @50485 has 132 MA's), (55, 50539), (Start: 56 @50542 has 5 MA's), (59, 50557), (63, 50575), (71, 50623), (75, 50644), (80, 50716), (81, 50725),

Gene: Devera\_83 Start: 51910, Stop: 52182, Start Num: 36

Candidate Starts for Devera\_83:

(Start: 33 @51895 has 1 MA's), (Start: 36 @51910 has 132 MA's), (55, 51967), (Start: 56 @51970 has 5 MA's), (59, 51985), (63, 52003), (71, 52051), (75, 52072), (80, 52144), (81, 52153),

Gene: Dieselweasel\_75 Start: 43070, Stop: 42843, Start Num: 53

Candidate Starts for Dieselweasel\_75:

(Start: 53 @43070 has 65 MA's), (Start: 54 @43064 has 14 MA's),

Gene: DismalFunk\_79 Start: 52473, Stop: 52742, Start Num: 37

Candidate Starts for DismalFunk\_79:

(19, 52350), (Start: 37 @52473 has 18 MA's), (Start: 42 @52488 has 25 MA's), (Start: 56 @52530 has 5 MA's), (63, 52563), (67, 52599), (75, 52632),

Gene: DismalStressor\_79 Start: 52473, Stop: 52742, Start Num: 37

Candidate Starts for DismalStressor\_79:

(19, 52350), (Start: 37 @52473 has 18 MA's), (Start: 42 @52488 has 25 MA's), (Start: 56 @52530 has 5 MA's), (63, 52563), (67, 52599), (75, 52632),

Gene: Dole\_80 Start: 51913, Stop: 52185, Start Num: 36

Candidate Starts for Dole\_80:

(Start: 33 @51898 has 1 MA's), (Start: 36 @51913 has 132 MA's), (55, 51970), (Start: 56 @51973 has 5 MA's), (59, 51988), (63, 52006), (71, 52054), (75, 52075), (80, 52147), (81, 52156),

Gene: DrHayes\_75 Start: 50512, Stop: 50781, Start Num: 36

Candidate Starts for DrHayes\_75:

(Start: 33 @50497 has 1 MA's), (Start: 36 @50512 has 132 MA's), (55, 50563), (Start: 56 @50566 has 5 MA's), (58, 50578), (59, 50581), (63, 50599), (71, 50647), (75, 50668), (80, 50740), (81, 50749),

Gene: DrManhattan\_65 Start: 40175, Stop: 40489, Start Num: 35

Candidate Starts for DrManhattan\_65:

(Start: 35 @40175 has 48 MA's),

Gene: DrSierra\_59 Start: 40307, Stop: 40618, Start Num: 35

Candidate Starts for DrSierra\_59:

(28, 40280), (Start: 35 @40307 has 48 MA's),

Gene: DropBear\_68 Start: 42778, Stop: 42512, Start Num: 42

Candidate Starts for DropBear\_68:

(26, 42853), (Start: 42 @42778 has 25 MA's), (Start: 46 @42769 has 1 MA's), (Start: 56 @42748 has 5 MA's), (75, 42646),

Gene: Durfee\_75 Start: 50313, Stop: 50585, Start Num: 36

Candidate Starts for Durfee\_75:

(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: Efra2\_82 Start: 50946, Stop: 51221, Start Num: 36

Candidate Starts for Efra2\_82:

(Start: 33 @50931 has 1 MA's), (Start: 36 @50946 has 132 MA's), (55, 51003), (Start: 56 @51006 has 5 MA's), (58, 51018), (59, 51021), (63, 51039), (71, 51087), (75, 51108), (80, 51180), (81, 51189),

Gene: Ekdilam\_70 Start: 50603, Stop: 50875, Start Num: 36

Candidate Starts for Ekdilam\_70:

(Start: 36 @50603 has 132 MA's), (Start: 56 @50660 has 5 MA's), (59, 50675), (63, 50693), (75, 50762),

Gene: Elezi\_61 Start: 41176, Stop: 41487, Start Num: 35

Candidate Starts for Elezi\_61:

(Start: 35 @41176 has 48 MA's),

Gene: Ellie\_71 Start: 49839, Stop: 50111, Start Num: 36

Candidate Starts for Ellie\_71:

(Start: 36 @49839 has 132 MA's), (Start: 56 @49896 has 5 MA's), (59, 49911), (63, 49929), (75, 49998),

Gene: Emerson\_78 Start: 50552, Stop: 50824, Start Num: 36

Candidate Starts for Emerson\_78:

(Start: 33 @50537 has 1 MA's), (Start: 36 @50552 has 132 MA's), (55, 50606), (Start: 56 @50609 has 5 MA's), (59, 50624), (63, 50642), (71, 50690), (75, 50711), (80, 50783), (81, 50792),

Gene: EniyanLRS\_140 Start: 69081, Stop: 68803, Start Num: 56

Candidate Starts for EniyanLRS\_140:

(13, 69288), (25, 69198), (Start: 56 @69081 has 5 MA's), (65, 69036), (73, 68985), (79, 68904), (82, 68883), (89, 68811), (90, 68808),

Gene: Enkosi\_64 Start: 49769, Stop: 50041, Start Num: 36

Candidate Starts for Enkosi\_64:

(Start: 33 @49754 has 1 MA's), (Start: 36 @49769 has 132 MA's), (Start: 39 @49778 has 1 MA's), (48, 49799), (51, 49808), (55, 49826), (Start: 56 @49829 has 5 MA's), (58, 49841), (59, 49844), (63, 49862), (66, 49898), (70, 49910), (81, 50012),

Gene: EpicPhail\_76 Start: 43072, Stop: 42845, Start Num: 53

Candidate Starts for EpicPhail\_76:

(Start: 53 @43072 has 65 MA's), (Start: 54 @43066 has 14 MA's),

Gene: Eponine\_42 Start: 32180, Stop: 32479, Start Num: 31

Candidate Starts for Eponine\_42:

(Start: 31 @32180 has 11 MA's), (38, 32216), (Start: 54 @32261 has 14 MA's), (58, 32279), (63, 32300), (66, 32336), (75, 32369), (80, 32441),

Gene: Eraser\_62 Start: 41426, Stop: 41737, Start Num: 35

Candidate Starts for Eraser\_62:

(Start: 35 @41426 has 48 MA's),

Gene: Estes\_152 Start: 73391, Stop: 73086, Start Num: 37

Candidate Starts for Estes\_152:

(Start: 37 @73391 has 18 MA's), (60, 73310),

Gene: Exile\_56 Start: 42346, Stop: 42639, Start Num: 40

Candidate Starts for Exile\_56:

(Start: 35 @42331 has 48 MA's), (40, 42346), (Start: 56 @42397 has 5 MA's), (66, 42466), (78, 42538), (79, 42562),

Gene: Farber\_75 Start: 43058, Stop: 42831, Start Num: 53

Candidate Starts for Farber\_75:

(Start: 53 @43058 has 65 MA's), (Start: 54 @43052 has 14 MA's),

Gene: Fefferhead\_74 Start: 49897, Stop: 50172, Start Num: 36

Candidate Starts for Fefferhead\_74:

(Start: 33 @49882 has 1 MA's), (Start: 36 @49897 has 132 MA's), (41, 49912), (45, 49921), (Start: 56 @49957 has 5 MA's), (59, 49972), (63, 49990), (75, 50059),

Gene: Fernando\_75 Start: 43068, Stop: 42841, Start Num: 53

Candidate Starts for Fernando\_75:

(Start: 53 @43068 has 65 MA's), (Start: 54 @43062 has 14 MA's),

Gene: Findley\_79 Start: 52491, Stop: 52760, Start Num: 37

Candidate Starts for Findley\_79:

(19, 52368), (Start: 37 @52491 has 18 MA's), (Start: 42 @52506 has 25 MA's), (Start: 56 @52548 has 5 MA's), (63, 52581), (67, 52617), (75, 52650),

Gene: Fionnbharth\_40 Start: 31415, Stop: 31714, Start Num: 31

Candidate Starts for Fionnbharth\_40:

(Start: 31 @31415 has 11 MA's), (38, 31451), (Start: 54 @31496 has 14 MA's), (58, 31514), (63, 31535), (66, 31571), (75, 31604), (80, 31676),

Gene: Fred313\_68 Start: 42472, Stop: 42206, Start Num: 42

Candidate Starts for Fred313\_68:

(26, 42547), (Start: 42 @42472 has 25 MA's), (Start: 46 @42463 has 1 MA's), (Start: 56 @42442 has 5 MA's), (75, 42340),

Gene: Ganymede\_75 Start: 50523, Stop: 50792, Start Num: 36

Candidate Starts for Ganymede\_75:

(Start: 33 @50508 has 1 MA's), (Start: 36 @50523 has 132 MA's), (55, 50577), (Start: 56 @50580 has 5 MA's), (59, 50595), (63, 50613), (71, 50661), (75, 50682), (80, 50754), (81, 50763),

Gene: GardenSalsa\_152 Start: 73558, Stop: 73253, Start Num: 37

Candidate Starts for GardenSalsa\_152:

(Start: 37 @73558 has 18 MA's), (60, 73477),

Gene: Gemma\_72 Start: 42881, Stop: 42657, Start Num: 53

Candidate Starts for Gemma\_72:

(Start: 53 @42881 has 65 MA's), (Start: 54 @42875 has 14 MA's), (Start: 56 @42869 has 5 MA's),

Gene: GenevaB15\_153 Start: 73022, Stop: 72717, Start Num: 37

Candidate Starts for GenevaB15\_153:

(Start: 37 @73022 has 18 MA's), (60, 72941),

Gene: Geraldini\_79 Start: 51113, Stop: 51382, Start Num: 36

Candidate Starts for Geraldini\_79:

(Start: 33 @51098 has 1 MA's), (Start: 36 @51113 has 132 MA's), (55, 51167), (Start: 56 @51170 has 5 MA's), (59, 51185), (63, 51203), (71, 51251), (75, 51272), (80, 51344), (81, 51353),

Gene: GingkoMaracino\_75 Start: 42954, Stop: 42727, Start Num: 53

Candidate Starts for GingkoMaracino\_75:

(Start: 53 @42954 has 65 MA's), (Start: 54 @42948 has 14 MA's),

Gene: Giroux\_69 Start: 42857, Stop: 42591, Start Num: 43

Candidate Starts for Giroux\_69:

(Start: 43 @42857 has 5 MA's), (Start: 56 @42827 has 5 MA's), (75, 42725), (84, 42611),

Gene: Grif\_73 Start: 43142, Stop: 42915, Start Num: 53

Candidate Starts for Grif\_73:

(Start: 53 @43142 has 65 MA's), (Start: 54 @43136 has 14 MA's),

Gene: Groupthink\_75 Start: 42885, Stop: 42661, Start Num: 53

Candidate Starts for Groupthink\_75:

(Start: 53 @42885 has 65 MA's), (Start: 54 @42879 has 14 MA's), (Start: 56 @42873 has 5 MA's),

Gene: Grub\_73 Start: 43060, Stop: 42833, Start Num: 53

Candidate Starts for Grub\_73:

(Start: 53 @43060 has 65 MA's), (Start: 54 @43054 has 14 MA's),

Gene: Grum1\_74 Start: 43068, Stop: 42841, Start Num: 53  
Candidate Starts for Grum1\_74:  
(Start: 53 @43068 has 65 MA's), (Start: 54 @43062 has 14 MA's),

Gene: GtownJaz\_75 Start: 43069, Stop: 42842, Start Num: 53  
Candidate Starts for GtownJaz\_75:  
(Start: 53 @43069 has 65 MA's), (Start: 54 @43063 has 14 MA's),

Gene: Guanica15\_81 Start: 50692, Stop: 50967, Start Num: 36  
Candidate Starts for Guanica15\_81:  
(Start: 33 @50677 has 1 MA's), (Start: 36 @50692 has 132 MA's), (55, 50749), (Start: 56 @50752 has 5 MA's), (58, 50764), (59, 50767), (63, 50785), (71, 50833), (75, 50854), (80, 50926), (81, 50935),

Gene: Hammy\_73 Start: 50380, Stop: 50652, Start Num: 36  
Candidate Starts for Hammy\_73:  
(6, 50119), (10, 50182), (16, 50239), (19, 50263), (Start: 36 @50380 has 132 MA's), (59, 50452), (63, 50470), (75, 50539),

Gene: HashRod\_76 Start: 43096, Stop: 42869, Start Num: 53  
Candidate Starts for HashRod\_76:  
(Start: 53 @43096 has 65 MA's), (Start: 54 @43090 has 14 MA's),

Gene: HaveUMetTed\_75 Start: 42870, Stop: 42646, Start Num: 53  
Candidate Starts for HaveUMetTed\_75:  
(Start: 53 @42870 has 65 MA's), (Start: 54 @42864 has 14 MA's), (Start: 56 @42858 has 5 MA's),

Gene: Heathen\_70 Start: 42567, Stop: 42301, Start Num: 42  
Candidate Starts for Heathen\_70:  
(26, 42642), (Start: 42 @42567 has 25 MA's), (Start: 46 @42558 has 1 MA's), (Start: 56 @42537 has 5 MA's), (75, 42435),

Gene: HedwigODU\_75 Start: 50161, Stop: 50433, Start Num: 36  
Candidate Starts for HedwigODU\_75:  
(Start: 33 @50146 has 1 MA's), (Start: 36 @50161 has 132 MA's), (55, 50215), (Start: 56 @50218 has 5 MA's), (59, 50233), (63, 50251), (71, 50299), (75, 50320), (80, 50392), (81, 50401),

Gene: HelDan\_70 Start: 42774, Stop: 42517, Start Num: 46  
Candidate Starts for HelDan\_70:  
(26, 42858), (Start: 42 @42783 has 25 MA's), (Start: 46 @42774 has 1 MA's), (Start: 56 @42753 has 5 MA's), (75, 42651),

Gene: Heliosoles\_72 Start: 42888, Stop: 42664, Start Num: 53  
Candidate Starts for Heliosoles\_72:  
(Start: 53 @42888 has 65 MA's), (Start: 54 @42882 has 14 MA's), (Start: 56 @42876 has 5 MA's),

Gene: Hercules11\_75 Start: 43077, Stop: 42850, Start Num: 53  
Candidate Starts for Hercules11\_75:  
(Start: 53 @43077 has 65 MA's), (Start: 54 @43071 has 14 MA's),

Gene: Homura\_74 Start: 50116, Stop: 50388, Start Num: 36  
Candidate Starts for Homura\_74:  
(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: Hookmount\_70 Start: 42818, Stop: 42558, Start Num: 42

Candidate Starts for Hookmount\_70:

(26, 42893), (Start: 42 @42818 has 25 MA's), (Start: 56 @42788 has 5 MA's), (84, 42572),

Gene: Hurricane\_76 Start: 50335, Stop: 50607, Start Num: 36

Candidate Starts for Hurricane\_76:

(Start: 36 @50335 has 132 MA's), (41, 50350), (58, 50404), (63, 50425), (75, 50494), (80, 50566), (81, 50575),

Gene: Hyperbowlee\_74 Start: 50313, Stop: 50585, Start Num: 36

Candidate Starts for Hyperbowlee\_74:

(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: Idleandcovert\_71 Start: 42858, Stop: 42592, Start Num: 43

Candidate Starts for Idleandcovert\_71:

(Start: 43 @42858 has 5 MA's), (Start: 56 @42828 has 5 MA's), (75, 42726), (84, 42612),

Gene: Illumine\_81 Start: 51912, Stop: 52184, Start Num: 36

Candidate Starts for Illumine\_81:

(Start: 33 @51897 has 1 MA's), (Start: 36 @51912 has 132 MA's), (55, 51969), (Start: 56 @51972 has 5 MA's), (59, 51987), (63, 52005), (71, 52053), (75, 52074), (80, 52146), (81, 52155),

Gene: Inky\_75 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for Inky\_75:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: Isca\_68 Start: 42335, Stop: 42066, Start Num: 42

Candidate Starts for Isca\_68:

(15, 42500), (Start: 42 @42335 has 25 MA's), (Start: 56 @42305 has 5 MA's),

Gene: Iter\_63 Start: 41678, Stop: 41992, Start Num: 35

Candidate Starts for Iter\_63:

(Start: 35 @41678 has 48 MA's),

Gene: IttyBittyPiggy\_61 Start: 39776, Stop: 40090, Start Num: 35

Candidate Starts for IttyBittyPiggy\_61:

(Start: 35 @39776 has 48 MA's),

Gene: JAWS\_74 Start: 50078, Stop: 50350, Start Num: 36

Candidate Starts for JAWS\_74:

(Start: 33 @50063 has 1 MA's), (Start: 36 @50078 has 132 MA's), (55, 50132), (Start: 56 @50135 has 5 MA's), (59, 50150), (63, 50168), (71, 50216), (75, 50237), (80, 50309), (81, 50318),

Gene: JF1\_40 Start: 31413, Stop: 31712, Start Num: 32

Candidate Starts for JF1\_40:

(Start: 32 @31413 has 8 MA's), (38, 31449), (Start: 54 @31494 has 14 MA's), (58, 31512), (66, 31569), (75, 31602), (80, 31674),

Gene: JF2\_68 Start: 41030, Stop: 40761, Start Num: 42

Candidate Starts for JF2\_68:



(15, 41195), (Start: 42 @41030 has 25 MA's), (Start: 56 @41000 has 5 MA's),

Gene: JF4\_68 Start: 41030, Stop: 40761, Start Num: 42

Candidate Starts for JF4\_68:

(15, 41195), (Start: 42 @41030 has 25 MA's), (Start: 56 @41000 has 5 MA's),

Gene: JHC117\_71 Start: 43060, Stop: 42839, Start Num: 54

Candidate Starts for JHC117\_71:

(Start: 53 @43066 has 65 MA's), (Start: 54 @43060 has 14 MA's),

Gene: Janeemi\_61 Start: 41291, Stop: 41602, Start Num: 35

Candidate Starts for Janeemi\_61:

(23, 41237), (28, 41264), (Start: 35 @41291 has 48 MA's), (76, 41456),

Gene: Jarvi\_75 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for Jarvi\_75:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: Jayhawk\_78 Start: 50578, Stop: 50850, Start Num: 36

Candidate Starts for Jayhawk\_78:

(Start: 33 @50563 has 1 MA's), (Start: 36 @50578 has 132 MA's), (55, 50632), (Start: 56 @50635 has 5 MA's), (59, 50650), (63, 50668), (71, 50716), (75, 50737), (80, 50809), (81, 50818),

Gene: Jeckyll\_75 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for Jeckyll\_75:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: JenCasNa\_76 Start: 43062, Stop: 42841, Start Num: 54

Candidate Starts for JenCasNa\_76:

(Start: 53 @43068 has 65 MA's), (Start: 54 @43062 has 14 MA's),

Gene: JeppNRM\_75 Start: 42886, Stop: 42662, Start Num: 53

Candidate Starts for JeppNRM\_75:

(Start: 53 @42886 has 65 MA's), (Start: 54 @42880 has 14 MA's), (Start: 56 @42874 has 5 MA's),

Gene: Jobu08\_71 Start: 42894, Stop: 42673, Start Num: 54

Candidate Starts for Jobu08\_71:

(Start: 53 @42900 has 65 MA's), (Start: 54 @42894 has 14 MA's),

Gene: Joemato\_63 Start: 41527, Stop: 41841, Start Num: 35

Candidate Starts for Joemato\_63:

(Start: 35 @41527 has 48 MA's),

Gene: JohnDoe\_63 Start: 41565, Stop: 41879, Start Num: 35

Candidate Starts for JohnDoe\_63:

(Start: 35 @41565 has 48 MA's),

Gene: Joy99\_76 Start: 50245, Stop: 50517, Start Num: 36

Candidate Starts for Joy99\_76:

(Start: 33 @50230 has 1 MA's), (Start: 36 @50245 has 132 MA's), (55, 50299), (Start: 56 @50302 has 5 MA's), (59, 50317), (63, 50335), (71, 50383), (75, 50404), (80, 50476), (81, 50485),

Gene: Jstan\_63 Start: 41180, Stop: 41491, Start Num: 35

Candidate Starts for Jstan\_63:  
(Start: 35 @41180 has 48 MA's),

Gene: Juliette\_42 Start: 31572, Stop: 31871, Start Num: 32

Candidate Starts for Juliette\_42:  
(Start: 32 @31572 has 8 MA's), (38, 31608), (Start: 54 @31653 has 14 MA's), (58, 31671), (66, 31728), (75, 31761), (80, 31833),

Gene: JuneStar\_62 Start: 42627, Stop: 42941, Start Num: 35

Candidate Starts for JuneStar\_62:  
(Start: 35 @42627 has 48 MA's),

Gene: KADY\_72 Start: 43090, Stop: 42869, Start Num: 54

Candidate Starts for KADY\_72:  
(Start: 53 @43096 has 65 MA's), (Start: 54 @43090 has 14 MA's), (Start: 56 @43084 has 5 MA's),

Gene: Kachowdy\_68 Start: 42819, Stop: 42553, Start Num: 42

Candidate Starts for Kachowdy\_68:  
(26, 42894), (Start: 42 @42819 has 25 MA's), (Start: 46 @42810 has 1 MA's), (Start: 56 @42789 has 5 MA's), (75, 42687),

Gene: Kalb97\_75 Start: 42884, Stop: 42660, Start Num: 53

Candidate Starts for Kalb97\_75:  
(Start: 53 @42884 has 65 MA's), (Start: 54 @42878 has 14 MA's), (Start: 56 @42872 has 5 MA's),

Gene: Kalnoky\_75 Start: 42882, Stop: 42658, Start Num: 53

Candidate Starts for Kalnoky\_75:  
(Start: 53 @42882 has 65 MA's), (Start: 54 @42876 has 14 MA's), (Start: 56 @42870 has 5 MA's),

Gene: Kaylissa\_64 Start: 41927, Stop: 42241, Start Num: 35

Candidate Starts for Kaylissa\_64:  
(Start: 35 @41927 has 48 MA's),

Gene: Keshu\_78 Start: 50490, Stop: 50765, Start Num: 36

Candidate Starts for Keshu\_78:  
(Start: 36 @50490 has 132 MA's), (41, 50505), (58, 50562), (59, 50565), (63, 50583), (75, 50652), (80, 50724), (81, 50733),

Gene: KiSi\_78 Start: 50706, Stop: 50978, Start Num: 36

Candidate Starts for KiSi\_78:  
(Start: 33 @50691 has 1 MA's), (Start: 36 @50706 has 132 MA's), (41, 50721), (Start: 54 @50760 has 14 MA's), (55, 50763), (Start: 56 @50766 has 5 MA's), (58, 50778), (63, 50799), (74, 50865), (80, 50940),

Gene: Krueger\_80 Start: 50443, Stop: 50730, Start Num: 33

Candidate Starts for Krueger\_80:  
(Start: 33 @50443 has 1 MA's), (Start: 36 @50458 has 132 MA's), (41, 50473), (49, 50491), (Start: 56 @50518 has 5 MA's), (58, 50530), (63, 50551),

Gene: LBerry\_76 Start: 43072, Stop: 42845, Start Num: 53

Candidate Starts for LBerry\_76:

(Start: 53 @43072 has 65 MA's), (Start: 54 @43066 has 14 MA's),

Gene: Lambert1\_70 Start: 42817, Stop: 42557, Start Num: 42

Candidate Starts for Lambert1\_70:

(26, 42892), (Start: 42 @42817 has 25 MA's), (Start: 56 @42787 has 5 MA's), (84, 42571),

Gene: LarryKay\_75 Start: 43097, Stop: 42870, Start Num: 53

Candidate Starts for LarryKay\_75:

(Start: 53 @43097 has 65 MA's), (Start: 54 @43091 has 14 MA's),

Gene: LastHope\_81 Start: 49802, Stop: 50086, Start Num: 36

Candidate Starts for LastHope\_81:

(Start: 33 @49787 has 1 MA's), (Start: 36 @49802 has 132 MA's), (41, 49817), (55, 49859), (Start: 56 @49862 has 5 MA's), (58, 49874), (59, 49877), (63, 49895), (75, 49964), (80, 50036), (81, 50045), (85, 50075),

Gene: LaterM\_75 Start: 50776, Stop: 51048, Start Num: 36

Candidate Starts for LaterM\_75:

(Start: 33 @50761 has 1 MA's), (Start: 36 @50776 has 132 MA's), (55, 50833), (Start: 56 @50836 has 5 MA's), (59, 50851), (63, 50869), (75, 50938), (80, 51010), (81, 51019),

Gene: LeMond\_77 Start: 50310, Stop: 50582, Start Num: 36

Candidate Starts for LeMond\_77:

(Start: 33 @50295 has 1 MA's), (Start: 36 @50310 has 132 MA's), (Start: 54 @50364 has 14 MA's), (Start: 56 @50370 has 5 MA's), (58, 50382), (63, 50403), (74, 50469), (80, 50544),

Gene: Lego\_62 Start: 41246, Stop: 41560, Start Num: 35

Candidate Starts for Lego\_62:

(Start: 35 @41246 has 48 MA's),

Gene: Liebe\_64 Start: 43443, Stop: 43757, Start Num: 35

Candidate Starts for Liebe\_64:

(Start: 35 @43443 has 48 MA's), (52, 43488), (Start: 56 @43506 has 5 MA's), (69, 43587), (87, 43734),

Gene: LilPharaoh\_63 Start: 46884, Stop: 47156, Start Num: 36

Candidate Starts for LilPharaoh\_63:

(Start: 33 @46869 has 1 MA's), (Start: 36 @46884 has 132 MA's), (Start: 39 @46893 has 1 MA's), (48, 46914), (51, 46923), (55, 46941), (Start: 56 @46944 has 5 MA's), (58, 46956), (59, 46959), (63, 46977), (66, 47013), (70, 47025), (81, 47127),

Gene: Lilit\_73 Start: 43061, Stop: 42834, Start Num: 53

Candidate Starts for Lilit\_73:

(Start: 53 @43061 has 65 MA's), (Start: 54 @43055 has 14 MA's),

Gene: LindNT\_74 Start: 50578, Stop: 50853, Start Num: 36

Candidate Starts for LindNT\_74:

(Start: 33 @50563 has 1 MA's), (Start: 36 @50578 has 132 MA's), (55, 50635), (Start: 56 @50638 has 5 MA's), (58, 50650), (59, 50653), (63, 50671), (71, 50719), (75, 50740), (80, 50812), (81, 50821),

Gene: Lizalica\_61 Start: 40721, Stop: 41032, Start Num: 35

Candidate Starts for Lizalica\_61:

(Start: 35 @40721 has 48 MA's),

Gene: Llorens\_75 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for Llorens\_75:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: London\_62 Start: 41417, Stop: 41728, Start Num: 35

Candidate Starts for London\_62:

(Start: 35 @41417 has 48 MA's),

Gene: Louie6\_74 Start: 43098, Stop: 42871, Start Num: 53

Candidate Starts for Louie6\_74:

(Start: 53 @43098 has 65 MA's), (Start: 54 @43092 has 14 MA's), (Start: 56 @43086 has 5 MA's),

Gene: LugYA\_78 Start: 43069, Stop: 42842, Start Num: 53

Candidate Starts for LugYA\_78:

(Start: 53 @43069 has 65 MA's), (Start: 54 @43063 has 14 MA's),

Gene: Lunahalos\_75 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for Lunahalos\_75:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: MA5\_70 Start: 42239, Stop: 41970, Start Num: 42

Candidate Starts for MA5\_70:

(15, 42404), (Start: 42 @42239 has 25 MA's), (Start: 56 @42209 has 5 MA's),

Gene: MK4\_70 Start: 42314, Stop: 42045, Start Num: 42

Candidate Starts for MK4\_70:

(15, 42479), (Start: 42 @42314 has 25 MA's), (Start: 56 @42284 has 5 MA's),

Gene: MaGuCo\_57 Start: 41443, Stop: 41757, Start Num: 35

Candidate Starts for MaGuCo\_57:

(Start: 35 @41443 has 48 MA's), (44, 41464), (52, 41488), (69, 41587), (87, 41734),

Gene: MacnCheese\_78 Start: 50941, Stop: 51216, Start Num: 36

Candidate Starts for MacnCheese\_78:

(11, 50743), (20, 50824), (Start: 36 @50941 has 132 MA's), (49, 50971), (Start: 54 @50995 has 14 MA's), (58, 51013), (59, 51016), (63, 51034), (80, 51175),

Gene: MadMarie\_73 Start: 43069, Stop: 42842, Start Num: 53

Candidate Starts for MadMarie\_73:

(Start: 53 @43069 has 65 MA's), (Start: 54 @43063 has 14 MA's),

Gene: Mainiac\_74 Start: 43061, Stop: 42834, Start Num: 53

Candidate Starts for Mainiac\_74:

(Start: 53 @43061 has 65 MA's), (Start: 54 @43055 has 14 MA's),

Gene: Malinsilva\_77 Start: 43060, Stop: 42833, Start Num: 53

Candidate Starts for Malinsilva\_77:

(Start: 53 @43060 has 65 MA's), (Start: 54 @43054 has 14 MA's),

Gene: Malthus\_41 Start: 31339, Stop: 31638, Start Num: 31

Candidate Starts for Malthus\_41:

(Start: 31 @31339 has 11 MA's), (38, 31375), (Start: 54 @31420 has 14 MA's), (58, 31438), (63, 31459), (66, 31495), (75, 31528), (80, 31600),

Gene: Manu\_74 Start: 42885, Stop: 42661, Start Num: 53

Candidate Starts for Manu\_74:

(Start: 53 @42885 has 65 MA's), (Start: 54 @42879 has 14 MA's), (Start: 56 @42873 has 5 MA's),

Gene: MarQuardt\_75 Start: 43064, Stop: 42843, Start Num: 54

Candidate Starts for MarQuardt\_75:

(Start: 53 @43070 has 65 MA's), (Start: 54 @43064 has 14 MA's),

Gene: Marchesa\_68 Start: 42769, Stop: 42503, Start Num: 42

Candidate Starts for Marchesa\_68:

(26, 42844), (Start: 42 @42769 has 25 MA's), (Start: 46 @42760 has 1 MA's), (Start: 56 @42739 has 5 MA's), (75, 42637),

Gene: Marcoliusprime\_78 Start: 52473, Stop: 52742, Start Num: 37

Candidate Starts for Marcoliusprime\_78:

(19, 52350), (Start: 37 @52473 has 18 MA's), (Start: 42 @52488 has 25 MA's), (Start: 56 @52530 has 5 MA's), (63, 52563), (67, 52599), (75, 52632),

Gene: Margo\_70 Start: 42843, Stop: 42583, Start Num: 42

Candidate Starts for Margo\_70:

(26, 42918), (Start: 42 @42843 has 25 MA's), (Start: 56 @42813 has 5 MA's), (63, 42780), (84, 42597),

Gene: Marie\_73 Start: 43068, Stop: 42841, Start Num: 53

Candidate Starts for Marie\_73:

(Start: 53 @43068 has 65 MA's), (Start: 54 @43062 has 14 MA's),

Gene: Marius\_75 Start: 42882, Stop: 42658, Start Num: 53

Candidate Starts for Marius\_75:

(Start: 53 @42882 has 65 MA's), (Start: 54 @42876 has 14 MA's), (Start: 56 @42870 has 5 MA's),

Gene: MarkPhew\_77 Start: 50195, Stop: 50467, Start Num: 36

Candidate Starts for MarkPhew\_77:

(Start: 33 @50180 has 1 MA's), (Start: 36 @50195 has 132 MA's), (Start: 54 @50249 has 14 MA's), (Start: 56 @50255 has 5 MA's), (58, 50267), (59, 50270), (63, 50288), (74, 50354),

Gene: Marshawn\_74 Start: 50588, Stop: 50860, Start Num: 36

Candidate Starts for Marshawn\_74:

(Start: 33 @50573 has 1 MA's), (Start: 36 @50588 has 132 MA's), (49, 50621), (57, 50657), (81, 50831),

Gene: MaryV\_133 Start: 66927, Stop: 66649, Start Num: 56

Candidate Starts for MaryV\_133:

(13, 67134), (25, 67044), (Start: 56 @66927 has 5 MA's), (65, 66882), (73, 66831), (79, 66750), (82, 66729), (89, 66657), (90, 66654),

Gene: Maureen\_64 Start: 43442, Stop: 43756, Start Num: 35

Candidate Starts for Maureen\_64:

(Start: 35 @43442 has 48 MA's), (52, 43487), (Start: 56 @43505 has 5 MA's), (69, 43586), (87, 43733),

Gene: McMater\_76 Start: 50287, Stop: 50565, Start Num: 36

Candidate Starts for McMater\_76:

(Start: 33 @50272 has 1 MA's), (Start: 36 @50287 has 132 MA's), (Start: 39 @50296 has 1 MA's), (51, 50326), (55, 50344), (Start: 56 @50347 has 5 MA's), (59, 50362), (63, 50380), (80, 50521),

Gene: Mdavu\_63 Start: 47160, Stop: 47432, Start Num: 36

Candidate Starts for Mdavu\_63:

(Start: 33 @47145 has 1 MA's), (Start: 36 @47160 has 132 MA's), (Start: 39 @47169 has 1 MA's), (48, 47190), (51, 47199), (55, 47217), (Start: 56 @47220 has 5 MA's), (58, 47232), (59, 47235), (63, 47253), (66, 47289), (70, 47301), (81, 47403),

Gene: MeaningOfLife\_77 Start: 51068, Stop: 51340, Start Num: 36

Candidate Starts for MeaningOfLife\_77:

(Start: 33 @51053 has 1 MA's), (Start: 36 @51068 has 132 MA's), (55, 51125), (Start: 56 @51128 has 5 MA's), (59, 51143), (63, 51161), (75, 51230), (80, 51302), (81, 51311),

Gene: Megsy\_77 Start: 50206, Stop: 50481, Start Num: 36

Candidate Starts for Megsy\_77:

(Start: 33 @50191 has 1 MA's), (Start: 36 @50206 has 132 MA's), (55, 50263), (Start: 56 @50266 has 5 MA's), (59, 50281), (63, 50299), (71, 50347), (75, 50368), (80, 50440), (81, 50449),

Gene: Methuselah\_68 Start: 43092, Stop: 42865, Start Num: 53

Candidate Starts for Methuselah\_68:

(Start: 53 @43092 has 65 MA's), (Start: 54 @43086 has 14 MA's),

Gene: Microwolf\_71 Start: 43084, Stop: 42857, Start Num: 53

Candidate Starts for Microwolf\_71:

(Start: 53 @43084 has 65 MA's), (Start: 54 @43078 has 14 MA's),

Gene: Milly\_79 Start: 52464, Stop: 52733, Start Num: 37

Candidate Starts for Milly\_79:

(19, 52341), (Start: 37 @52464 has 18 MA's), (Start: 42 @52479 has 25 MA's), (Start: 56 @52521 has 5 MA's), (63, 52554), (67, 52590), (75, 52623),

Gene: Misomonster\_76 Start: 43095, Stop: 42868, Start Num: 53

Candidate Starts for Misomonster\_76:

(Start: 53 @43095 has 65 MA's), (Start: 54 @43089 has 14 MA's), (Start: 56 @43083 has 5 MA's),

Gene: MissDaisy\_39 Start: 31179, Stop: 31466, Start Num: 32

Candidate Starts for MissDaisy\_39:

(Start: 32 @31179 has 8 MA's), (38, 31215), (Start: 54 @31248 has 14 MA's), (Start: 56 @31254 has 5 MA's), (58, 31266), (63, 31287), (66, 31323), (75, 31356), (80, 31428),

Gene: MissSwiss\_63 Start: 40182, Stop: 40493, Start Num: 35

Candidate Starts for MissSwiss\_63:

(Start: 35 @40182 has 48 MA's),

Gene: Mitti\_40 Start: 31340, Stop: 31639, Start Num: 31

Candidate Starts for Mitti\_40:

(Start: 31 @31340 has 11 MA's), (38, 31376), (Start: 54 @31421 has 14 MA's), (58, 31439), (63, 31460), (66, 31496), (75, 31529), (80, 31601),

Gene: MoneyMay\_74 Start: 43068, Stop: 42841, Start Num: 53  
Candidate Starts for MoneyMay\_74:  
(Start: 53 @43068 has 65 MA's), (Start: 54 @43062 has 14 MA's),

Gene: MrMagoo\_154 Start: 73559, Stop: 73254, Start Num: 37  
Candidate Starts for MrMagoo\_154:  
(Start: 37 @73559 has 18 MA's), (60, 73478),

Gene: MuchMore\_78 Start: 43060, Stop: 42833, Start Num: 53  
Candidate Starts for MuchMore\_78:  
(Start: 53 @43060 has 65 MA's), (Start: 54 @43054 has 14 MA's),

Gene: Mudpuppy\_60 Start: 41493, Stop: 41807, Start Num: 35  
Candidate Starts for Mudpuppy\_60:  
(Start: 35 @41493 has 48 MA's),

Gene: Mufasa\_78 Start: 51931, Stop: 52200, Start Num: 37  
Candidate Starts for Mufasa\_78:  
(19, 51808), (29, 51892), (Start: 37 @51931 has 18 MA's), (Start: 56 @51988 has 5 MA's), (63, 52021), (67, 52057), (75, 52090), (80, 52162),

Gene: Murucutumbu\_76 Start: 51352, Stop: 51627, Start Num: 36  
Candidate Starts for Murucutumbu\_76:  
(Start: 33 @51337 has 1 MA's), (Start: 36 @51352 has 132 MA's), (55, 51409), (Start: 56 @51412 has 5 MA's), (59, 51427), (63, 51445), (75, 51514), (80, 51586), (81, 51595),

Gene: Mynx\_77 Start: 50847, Stop: 51119, Start Num: 36  
Candidate Starts for Mynx\_77:  
(Start: 33 @50832 has 1 MA's), (Start: 36 @50847 has 132 MA's), (55, 50901), (Start: 56 @50904 has 5 MA's), (59, 50919), (63, 50937), (71, 50985), (75, 51006), (80, 51078), (81, 51087),

Gene: Nanosmite\_147 Start: 72834, Stop: 72535, Start Num: 37  
Candidate Starts for Nanosmite\_147:  
(30, 72867), (Start: 37 @72834 has 18 MA's), (61, 72753), (64, 72735), (77, 72660), (79, 72603),

Gene: Nergal\_67 Start: 46690, Stop: 46941, Start Num: 37  
Candidate Starts for Nergal\_67:  
(29, 46651), (Start: 37 @46690 has 18 MA's), (Start: 56 @46747 has 5 MA's), (58, 46759), (83, 46933),

Gene: Nibb\_77 Start: 50011, Stop: 50283, Start Num: 36  
Candidate Starts for Nibb\_77:  
(Start: 33 @49996 has 1 MA's), (Start: 36 @50011 has 132 MA's), (Start: 54 @50065 has 14 MA's), (Start: 56 @50071 has 5 MA's), (58, 50083), (63, 50104), (74, 50170),

Gene: Nikao\_65 Start: 49769, Stop: 50041, Start Num: 36  
Candidate Starts for Nikao\_65:  
(Start: 33 @49754 has 1 MA's), (Start: 36 @49769 has 132 MA's), (Start: 39 @49778 has 1 MA's), (48, 49799), (51, 49808), (55, 49826), (Start: 56 @49829 has 5 MA's), (58, 49841), (59, 49844), (63, 49862), (66, 49898), (70, 49910), (81, 50012),

Gene: Niklas\_77 Start: 50348, Stop: 50626, Start Num: 36

Candidate Starts for Niklas\_77:

(Start: 33 @50333 has 1 MA's), (Start: 36 @50348 has 132 MA's), (Start: 39 @50357 has 1 MA's), (51, 50387), (55, 50405), (Start: 56 @50408 has 5 MA's), (59, 50423), (63, 50441), (80, 50582),

Gene: Niobe\_62 Start: 41420, Stop: 41731, Start Num: 35

Candidate Starts for Niobe\_62:

(Start: 35 @41420 has 48 MA's),

Gene: Nitro\_63 Start: 42114, Stop: 42428, Start Num: 35

Candidate Starts for Nitro\_63:

(Start: 35 @42114 has 48 MA's),

Gene: Noella\_70 Start: 42818, Stop: 42558, Start Num: 42

Candidate Starts for Noella\_70:

(26, 42893), (Start: 42 @42818 has 25 MA's), (Start: 56 @42788 has 5 MA's), (84, 42572),

Gene: Norbert\_66 Start: 42816, Stop: 42568, Start Num: 42

Candidate Starts for Norbert\_66:

(26, 42891), (Start: 42 @42816 has 25 MA's), (Start: 56 @42786 has 5 MA's),

Gene: Nutello\_62 Start: 47156, Stop: 47428, Start Num: 36

Candidate Starts for Nutello\_62:

(Start: 33 @47141 has 1 MA's), (Start: 36 @47156 has 132 MA's), (Start: 39 @47165 has 1 MA's), (48, 47186), (51, 47195), (55, 47213), (Start: 56 @47216 has 5 MA's), (58, 47228), (59, 47231), (63, 47249), (66, 47285), (70, 47297), (81, 47399),

Gene: ObiToo\_67 Start: 41757, Stop: 42068, Start Num: 35

Candidate Starts for ObiToo\_67:

(Start: 35 @41757 has 48 MA's),

Gene: OlanP\_73 Start: 43058, Stop: 42834, Start Num: 53

Candidate Starts for OlanP\_73:

(Start: 53 @43058 has 65 MA's), (Start: 54 @43052 has 14 MA's), (Start: 56 @43046 has 5 MA's),

Gene: Ollie\_75 Start: 42939, Stop: 42712, Start Num: 53

Candidate Starts for Ollie\_75:

(Start: 53 @42939 has 65 MA's), (Start: 54 @42933 has 14 MA's),

Gene: OmniCritical\_39 Start: 31324, Stop: 31623, Start Num: 31

Candidate Starts for OmniCritical\_39:

(Start: 31 @31324 has 11 MA's), (38, 31360), (Start: 54 @31405 has 14 MA's), (58, 31423), (63, 31444), (66, 31480), (75, 31513), (80, 31585),

Gene: Oscar\_77 Start: 50230, Stop: 50502, Start Num: 36

Candidate Starts for Oscar\_77:

(Start: 33 @50215 has 1 MA's), (Start: 36 @50230 has 132 MA's), (Start: 54 @50284 has 14 MA's), (Start: 56 @50290 has 5 MA's), (58, 50302), (63, 50323), (74, 50389), (80, 50464),

Gene: P28Green\_75 Start: 43071, Stop: 42844, Start Num: 53

Candidate Starts for P28Green\_75:

(Start: 53 @43071 has 65 MA's), (Start: 54 @43065 has 14 MA's),



Gene: PGHhamlin\_77 Start: 43060, Stop: 42833, Start Num: 53  
Candidate Starts for PGHhamlin\_77:  
(Start: 53 @43060 has 65 MA's), (Start: 54 @43054 has 14 MA's),

Gene: Padfoot\_75 Start: 50313, Stop: 50585, Start Num: 36  
Candidate Starts for Padfoot\_75:  
(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: Padpat\_79 Start: 50552, Stop: 50824, Start Num: 36  
Candidate Starts for Padpat\_79:  
(Start: 33 @50537 has 1 MA's), (Start: 36 @50552 has 132 MA's), (55, 50606), (Start: 56 @50609 has 5 MA's), (59, 50624), (63, 50642), (71, 50690), (75, 50711), (80, 50783), (81, 50792),

Gene: Panamaxus\_68 Start: 42817, Stop: 42557, Start Num: 42  
Candidate Starts for Panamaxus\_68:  
(26, 42892), (Start: 42 @42817 has 25 MA's), (Start: 56 @42787 has 5 MA's), (84, 42571),

Gene: Patt\_39 Start: 31155, Stop: 31442, Start Num: 32  
Candidate Starts for Patt\_39:  
(Start: 32 @31155 has 8 MA's), (38, 31191), (Start: 54 @31224 has 14 MA's), (Start: 56 @31230 has 5 MA's), (58, 31242), (63, 31263), (66, 31299), (75, 31332), (80, 31404),

Gene: Pawn\_73 Start: 42889, Stop: 42665, Start Num: 53  
Candidate Starts for Pawn\_73:  
(Start: 53 @42889 has 65 MA's), (Start: 54 @42883 has 14 MA's), (Start: 56 @42877 has 5 MA's),

Gene: Peanam\_77 Start: 50306, Stop: 50584, Start Num: 36  
Candidate Starts for Peanam\_77:  
(Start: 33 @50291 has 1 MA's), (Start: 36 @50306 has 132 MA's), (Start: 39 @50315 has 1 MA's), (51, 50345), (55, 50363), (Start: 56 @50366 has 5 MA's), (59, 50381), (63, 50399), (80, 50540),

Gene: Peel\_75 Start: 50118, Stop: 50390, Start Num: 36  
Candidate Starts for Peel\_75:  
(Start: 33 @50103 has 1 MA's), (Start: 36 @50118 has 132 MA's), (55, 50172), (Start: 56 @50175 has 5 MA's), (59, 50190), (63, 50208), (71, 50256), (75, 50277), (80, 50349), (81, 50358),

Gene: Pembroke\_75 Start: 43069, Stop: 42842, Start Num: 53  
Candidate Starts for Pembroke\_75:  
(Start: 53 @43069 has 65 MA's), (Start: 54 @43063 has 14 MA's),

Gene: Penny1\_75 Start: 43072, Stop: 42845, Start Num: 53  
Candidate Starts for Penny1\_75:  
(Start: 53 @43072 has 65 MA's), (Start: 54 @43066 has 14 MA's),

Gene: Phantastic\_72 Start: 42500, Stop: 42231, Start Num: 42  
Candidate Starts for Phantastic\_72:  
(15, 42665), (Start: 42 @42500 has 25 MA's), (Start: 56 @42470 has 5 MA's),

Gene: Pharb\_74 Start: 49614, Stop: 49889, Start Num: 36  
Candidate Starts for Pharb\_74:

(11, 49416), (17, 49473), (20, 49497), (Start: 36 @49614 has 132 MA's), (41, 49629), (49, 49647), (51, 49653), (55, 49671), (Start: 56 @49674 has 5 MA's), (58, 49686), (59, 49689), (63, 49707), (75, 49776), (80, 49848), (81, 49857),

Gene: PhelpsODU\_78 Start: 50059, Stop: 50331, Start Num: 36

Candidate Starts for PhelpsODU\_78:

(25, 49996), (Start: 33 @50044 has 1 MA's), (Start: 36 @50059 has 132 MA's), (Start: 56 @50119 has 5 MA's), (58, 50131), (63, 50152),

Gene: PhishRPhriends\_71 Start: 42066, Stop: 41842, Start Num: 53

Candidate Starts for PhishRPhriends\_71:

(Start: 53 @42066 has 65 MA's), (Start: 54 @42060 has 14 MA's), (Start: 56 @42054 has 5 MA's),

Gene: Phives\_63 Start: 41905, Stop: 42216, Start Num: 35

Candidate Starts for Phives\_63:

(Start: 35 @41905 has 48 MA's),

Gene: Phoebe\_76 Start: 43061, Stop: 42834, Start Num: 53

Candidate Starts for Phoebe\_76:

(Start: 53 @43061 has 65 MA's), (Start: 54 @43055 has 14 MA's),

Gene: Phoxy\_75 Start: 43087, Stop: 42866, Start Num: 54

Candidate Starts for Phoxy\_75:

(Start: 53 @43093 has 65 MA's), (Start: 54 @43087 has 14 MA's),

Gene: Phrank\_79 Start: 49919, Stop: 50191, Start Num: 36

Candidate Starts for Phrank\_79:

(Start: 33 @49904 has 1 MA's), (Start: 36 @49919 has 132 MA's), (Start: 56 @49979 has 5 MA's), (63, 50012),

Gene: Piatt\_74 Start: 50313, Stop: 50585, Start Num: 36

Candidate Starts for Piatt\_74:

(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: Pistachio\_70 Start: 42405, Stop: 42139, Start Num: 43

Candidate Starts for Pistachio\_70:

(Start: 43 @42405 has 5 MA's), (Start: 56 @42375 has 5 MA's), (75, 42273), (84, 42159),

Gene: Pixelle\_62 Start: 42519, Stop: 42833, Start Num: 35

Candidate Starts for Pixelle\_62:

(28, 42492), (Start: 35 @42519 has 48 MA's),

Gene: Pixie\_75 Start: 49917, Stop: 50186, Start Num: 36

Candidate Starts for Pixie\_75:

(Start: 36 @49917 has 132 MA's), (41, 49932), (58, 49986), (59, 49989), (63, 50007), (75, 50076),

Gene: Pocahontas\_69 Start: 42814, Stop: 42554, Start Num: 42

Candidate Starts for Pocahontas\_69:

(26, 42889), (Start: 42 @42814 has 25 MA's), (Start: 56 @42784 has 5 MA's), (84, 42568),

Gene: Pokerus\_76 Start: 50561, Stop: 50833, Start Num: 36

Candidate Starts for Pokerus\_76:

(Start: 33 @50546 has 1 MA's), (Start: 36 @50561 has 132 MA's), (55, 50615), (Start: 56 @50618 has 5 MA's), (59, 50633), (63, 50651), (71, 50699), (75, 50720), (80, 50792), (81, 50801),

Gene: Popcicle\_70 Start: 42814, Stop: 42554, Start Num: 42

Candidate Starts for Popcicle\_70:

(26, 42889), (Start: 42 @42814 has 25 MA's), (Start: 56 @42784 has 5 MA's), (84, 42568),

Gene: PotatoSplit\_76 Start: 43072, Stop: 42845, Start Num: 53

Candidate Starts for PotatoSplit\_76:

(Start: 53 @43072 has 65 MA's), (Start: 54 @43066 has 14 MA's),

Gene: Powerpuff\_64 Start: 42450, Stop: 42764, Start Num: 35

Candidate Starts for Powerpuff\_64:

(Start: 35 @42450 has 48 MA's),

Gene: Prithvi\_78 Start: 50578, Stop: 50853, Start Num: 36

Candidate Starts for Prithvi\_78:

(Start: 33 @50563 has 1 MA's), (Start: 36 @50578 has 132 MA's), (55, 50635), (Start: 56 @50638 has 5 MA's), (58, 50650), (59, 50653), (63, 50671), (71, 50719), (75, 50740), (80, 50812), (81, 50821),

Gene: Pumpkins\_61 Start: 42050, Stop: 42364, Start Num: 35

Candidate Starts for Pumpkins\_61:

(Start: 35 @42050 has 48 MA's),

Gene: Puppy\_71 Start: 42477, Stop: 42211, Start Num: 43

Candidate Starts for Puppy\_71:

(Start: 43 @42477 has 5 MA's), (Start: 56 @42447 has 5 MA's), (75, 42345), (84, 42231),

Gene: PurpleHaze\_74 Start: 42878, Stop: 42660, Start Num: 54

Candidate Starts for PurpleHaze\_74:

(Start: 53 @42884 has 65 MA's), (Start: 54 @42878 has 14 MA's), (Start: 56 @42872 has 5 MA's),

Gene: QuincyRose\_73 Start: 50523, Stop: 50792, Start Num: 36

Candidate Starts for QuincyRose\_73:

(Start: 33 @50508 has 1 MA's), (Start: 36 @50523 has 132 MA's), (55, 50577), (Start: 56 @50580 has 5 MA's), (59, 50595), (63, 50613), (71, 50661), (75, 50682), (80, 50754), (81, 50763),

Gene: QuinnKiro\_69 Start: 42817, Stop: 42557, Start Num: 42

Candidate Starts for QuinnKiro\_69:

(26, 42892), (Start: 42 @42817 has 25 MA's), (Start: 56 @42787 has 5 MA's), (84, 42571),

Gene: Ramen\_76 Start: 49882, Stop: 50154, Start Num: 36

Candidate Starts for Ramen\_76:

(Start: 33 @49867 has 1 MA's), (Start: 36 @49882 has 132 MA's), (Start: 56 @49939 has 5 MA's), (59, 49954), (63, 49972), (71, 50020), (75, 50041), (80, 50113), (81, 50122),

Gene: Rapunzel97\_78 Start: 50533, Stop: 50805, Start Num: 36

Candidate Starts for Rapunzel97\_78:

(Start: 33 @50518 has 1 MA's), (Start: 36 @50533 has 132 MA's), (55, 50587), (Start: 56 @50590 has 5 MA's), (59, 50605), (63, 50623), (71, 50671), (75, 50692), (80, 50764), (81, 50773),

Gene: Reedo\_63 Start: 40030, Stop: 40344, Start Num: 35

Candidate Starts for Reedo\_63:

(Start: 35 @40030 has 48 MA's), (88, 40339),

Gene: Reptar3000\_40 Start: 31146, Stop: 31433, Start Num: 32

Candidate Starts for Reptar3000\_40:

(Start: 32 @31146 has 8 MA's), (38, 31182), (Start: 54 @31215 has 14 MA's), (Start: 56 @31221 has 5 MA's), (58, 31233), (63, 31254), (66, 31290), (75, 31323), (80, 31395),

Gene: ResDef\_68 Start: 42817, Stop: 42557, Start Num: 42

Candidate Starts for ResDef\_68:

(26, 42892), (Start: 42 @42817 has 25 MA's), (Start: 56 @42787 has 5 MA's), (84, 42571),

Gene: Rey\_153 Start: 72809, Stop: 72504, Start Num: 37

Candidate Starts for Rey\_153:

(Start: 37 @72809 has 18 MA's), (60, 72728), (63, 72713),

Gene: Richo\_76 Start: 50287, Stop: 50565, Start Num: 36

Candidate Starts for Richo\_76:

(Start: 33 @50272 has 1 MA's), (Start: 36 @50287 has 132 MA's), (Start: 39 @50296 has 1 MA's), (51, 50326), (55, 50344), (Start: 56 @50347 has 5 MA's), (59, 50362), (63, 50380), (80, 50521),

Gene: Rockstar\_69 Start: 42323, Stop: 42054, Start Num: 42

Candidate Starts for Rockstar\_69:

(15, 42488), (Start: 42 @42323 has 25 MA's), (Start: 56 @42293 has 5 MA's),

Gene: Rosmarinus\_75 Start: 50104, Stop: 50376, Start Num: 36

Candidate Starts for Rosmarinus\_75:

(Start: 33 @50089 has 1 MA's), (Start: 36 @50104 has 132 MA's), (55, 50158), (Start: 56 @50161 has 5 MA's), (59, 50176), (63, 50194), (71, 50242), (75, 50263), (80, 50335), (81, 50344),

Gene: Rummer\_74 Start: 43096, Stop: 42869, Start Num: 53

Candidate Starts for Rummer\_74:

(Start: 53 @43096 has 65 MA's), (Start: 54 @43090 has 14 MA's),

Gene: Ruthiejr\_41 Start: 31304, Stop: 31603, Start Num: 32

Candidate Starts for Ruthiejr\_41:

(Start: 32 @31304 has 8 MA's), (38, 31340), (Start: 54 @31385 has 14 MA's), (58, 31403), (66, 31460), (75, 31493), (80, 31565),

Gene: Sabia\_73 Start: 43076, Stop: 42849, Start Num: 53

Candidate Starts for Sabia\_73:

(Start: 53 @43076 has 65 MA's), (Start: 54 @43070 has 14 MA's),

Gene: Sabinator\_73 Start: 43061, Stop: 42840, Start Num: 54

Candidate Starts for Sabinator\_73:

(Start: 53 @43067 has 65 MA's), (Start: 54 @43061 has 14 MA's),

Gene: SamScheppers\_39 Start: 31818, Stop: 32117, Start Num: 31

Candidate Starts for SamScheppers\_39:

(Start: 31 @31818 has 11 MA's), (38, 31854), (Start: 54 @31899 has 14 MA's), (58, 31917), (63, 31938), (66, 31974), (75, 32007), (80, 32079),

Gene: SamuelLPlaqson\_75 Start: 50512, Stop: 50781, Start Num: 36

Candidate Starts for SamuelLPlaqson\_75:

(Start: 33 @50497 has 1 MA's), (Start: 36 @50512 has 132 MA's), (55, 50563), (Start: 56 @50566 has 5 MA's), (58, 50578), (59, 50581), (63, 50599), (71, 50647), (75, 50668), (80, 50740), (81, 50749),

Gene: SaturnRing\_70 Start: 42858, Stop: 42592, Start Num: 43

Candidate Starts for SaturnRing\_70:

(Start: 43 @42858 has 5 MA's), (Start: 56 @42828 has 5 MA's), (75, 42726), (84, 42612),

Gene: Scarlett\_78 Start: 50566, Stop: 50838, Start Num: 36

Candidate Starts for Scarlett\_78:

(Start: 33 @50551 has 1 MA's), (Start: 36 @50566 has 132 MA's), (41, 50581), (Start: 54 @50620 has 14 MA's), (55, 50623), (Start: 56 @50626 has 5 MA's), (58, 50638), (63, 50659), (74, 50725), (80, 50800),

Gene: Scout\_69 Start: 42030, Stop: 41764, Start Num: 42

Candidate Starts for Scout\_69:

(26, 42105), (Start: 42 @42030 has 25 MA's), (Start: 56 @42000 has 5 MA's), (75, 41898),

Gene: SgtBeansprout\_63 Start: 47156, Stop: 47428, Start Num: 36

Candidate Starts for SgtBeansprout\_63:

(Start: 33 @47141 has 1 MA's), (Start: 36 @47156 has 132 MA's), (Start: 39 @47165 has 1 MA's), (48, 47186), (51, 47195), (55, 47213), (Start: 56 @47216 has 5 MA's), (58, 47228), (59, 47231), (63, 47249), (66, 47285), (70, 47297), (81, 47399),

Gene: Shadow1\_80 Start: 50598, Stop: 50870, Start Num: 36

Candidate Starts for Shadow1\_80:

(Start: 33 @50583 has 1 MA's), (Start: 36 @50598 has 132 MA's), (41, 50613), (49, 50631), (Start: 56 @50658 has 5 MA's), (58, 50670), (63, 50691),

Gene: Shaobing\_76 Start: 50323, Stop: 50601, Start Num: 36

Candidate Starts for Shaobing\_76:

(Start: 33 @50308 has 1 MA's), (Start: 36 @50323 has 132 MA's), (Start: 39 @50332 has 1 MA's), (55, 50380), (Start: 56 @50383 has 5 MA's), (59, 50398), (63, 50416), (80, 50557),

Gene: ShedlockHolmes\_78 Start: 50418, Stop: 50690, Start Num: 36

Candidate Starts for ShedlockHolmes\_78:

(Start: 36 @50418 has 132 MA's), (41, 50433), (55, 50475), (Start: 56 @50478 has 5 MA's), (59, 50493), (63, 50511), (75, 50580),

Gene: ShiaSurprise\_76 Start: 50313, Stop: 50585, Start Num: 36

Candidate Starts for ShiaSurprise\_76:

(Start: 33 @50298 has 1 MA's), (Start: 36 @50313 has 132 MA's), (55, 50367), (Start: 56 @50370 has 5 MA's), (59, 50385), (63, 50403), (71, 50451), (75, 50472), (80, 50544), (81, 50553),

Gene: Simpson\_66 Start: 41531, Stop: 41845, Start Num: 35

Candidate Starts for Simpson\_66:

(Start: 35 @41531 has 48 MA's),

Gene: SirPhilip\_75 Start: 50824, Stop: 51099, Start Num: 36

Candidate Starts for SirPhilip\_75:

(Start: 33 @50809 has 1 MA's), (Start: 36 @50824 has 132 MA's), (41, 50839), (49, 50857), (Start: 54 @50878 has 14 MA's), (58, 50896), (59, 50899), (63, 50917),

Gene: Slarp\_40 Start: 31427, Stop: 31726, Start Num: 31

Candidate Starts for Slarp\_40:

(Start: 31 @31427 has 11 MA's), (38, 31463), (Start: 54 @31508 has 14 MA's), (58, 31526), (63, 31547), (66, 31583), (75, 31616), (80, 31688),

Gene: Slimphazie\_77 Start: 50533, Stop: 50805, Start Num: 36

Candidate Starts for Slimphazie\_77:

(Start: 33 @50518 has 1 MA's), (Start: 36 @50533 has 132 MA's), (55, 50587), (Start: 56 @50590 has 5 MA's), (59, 50605), (63, 50623), (71, 50671), (75, 50692), (80, 50764), (81, 50773),

Gene: Snickers\_71 Start: 43035, Stop: 42814, Start Num: 54

Candidate Starts for Snickers\_71:

(Start: 53 @43041 has 65 MA's), (Start: 54 @43035 has 14 MA's),

Gene: SoYo\_72 Start: 42980, Stop: 42753, Start Num: 53

Candidate Starts for SoYo\_72:

(Start: 53 @42980 has 65 MA's), (Start: 54 @42974 has 14 MA's),

Gene: SoilDragon\_74 Start: 42516, Stop: 42289, Start Num: 53

Candidate Starts for SoilDragon\_74:

(Start: 53 @42516 has 65 MA's), (Start: 54 @42510 has 14 MA's),

Gene: Soondubu\_58 Start: 42991, Stop: 43305, Start Num: 35

Candidate Starts for Soondubu\_58:

(Start: 35 @42991 has 48 MA's), (40, 43006), (Start: 56 @43057 has 5 MA's), (66, 43126), (76, 43162), (78, 43198), (79, 43222),

Gene: Sooty\_61 Start: 37931, Stop: 38257, Start Num: 35

Candidate Starts for Sooty\_61:

(1, 37274), (3, 37514), (14, 37790), (22, 37853), (Start: 35 @37931 has 48 MA's), (59, 38009), (80, 38171), (86, 38219),

Gene: Soshari\_77 Start: 43092, Stop: 42865, Start Num: 53

Candidate Starts for Soshari\_77:

(Start: 53 @43092 has 65 MA's), (Start: 54 @43086 has 14 MA's),

Gene: Spike509\_75 Start: 43087, Stop: 42866, Start Num: 54

Candidate Starts for Spike509\_75:

(Start: 53 @43093 has 65 MA's), (Start: 54 @43087 has 14 MA's),

Gene: Spock\_75 Start: 50117, Stop: 50389, Start Num: 36

Candidate Starts for Spock\_75:

(Start: 33 @50102 has 1 MA's), (Start: 36 @50117 has 132 MA's), (55, 50171), (Start: 56 @50174 has 5 MA's), (59, 50189), (63, 50207), (71, 50255), (75, 50276), (80, 50348), (81, 50357),

Gene: Stagni\_72 Start: 43065, Stop: 42844, Start Num: 54

Candidate Starts for Stagni\_72:

(Start: 53 @43071 has 65 MA's), (Start: 54 @43065 has 14 MA's),

Gene: StepMih\_74 Start: 43062, Stop: 42835, Start Num: 53

Candidate Starts for StepMih\_74:

(Start: 53 @43062 has 65 MA's), (Start: 54 @43056 has 14 MA's),

Gene: Stinson\_76 Start: 50711, Stop: 50983, Start Num: 36

Candidate Starts for Stinson\_76:

(Start: 33 @50696 has 1 MA's), (Start: 36 @50711 has 132 MA's), (55, 50768), (Start: 56 @50771 has 5 MA's), (59, 50786), (63, 50804), (71, 50852), (75, 50873), (80, 50945), (81, 50954),

Gene: Strobilo\_80 Start: 52470, Stop: 52739, Start Num: 37

Candidate Starts for Strobilo\_80:

(19, 52347), (Start: 37 @52470 has 18 MA's), (Start: 42 @52485 has 25 MA's), (Start: 56 @52527 has 5 MA's), (63, 52560), (67, 52596), (75, 52629),

Gene: Sue2\_60 Start: 39873, Stop: 40190, Start Num: 34

Candidate Starts for Sue2\_60:

(Start: 34 @39873 has 1 MA's),

Gene: Sulley\_74 Start: 50144, Stop: 50416, Start Num: 36

Candidate Starts for Sulley\_74:

(Start: 33 @50129 has 1 MA's), (Start: 36 @50144 has 132 MA's), (55, 50201), (Start: 56 @50204 has 5 MA's), (59, 50219), (63, 50237), (71, 50285), (75, 50306), (80, 50378), (81, 50387),

Gene: Sunflower1121\_81 Start: 50744, Stop: 51016, Start Num: 36

Candidate Starts for Sunflower1121\_81:

(Start: 33 @50729 has 1 MA's), (Start: 36 @50744 has 132 MA's), (41, 50759), (49, 50777), (Start: 56 @50804 has 5 MA's), (58, 50816), (63, 50837),

Gene: Syra333\_79 Start: 50472, Stop: 50744, Start Num: 36

Candidate Starts for Syra333\_79:

(Start: 33 @50457 has 1 MA's), (Start: 36 @50472 has 132 MA's), (41, 50487), (49, 50505), (Start: 56 @50532 has 5 MA's), (58, 50544), (63, 50565),

Gene: TBond007\_72 Start: 49916, Stop: 50185, Start Num: 36

Candidate Starts for TBond007\_72:

(Start: 36 @49916 has 132 MA's), (41, 49931), (58, 49985), (59, 49988), (63, 50006), (75, 50075),

Gene: TClif\_77 Start: 50210, Stop: 50482, Start Num: 36

Candidate Starts for TClif\_77:

(Start: 33 @50195 has 1 MA's), (Start: 36 @50210 has 132 MA's), (41, 50225), (55, 50267), (Start: 56 @50270 has 5 MA's), (63, 50303), (75, 50372),

Gene: TM4\_77 Start: 46904, Stop: 47173, Start Num: 37

Candidate Starts for TM4\_77:

(Start: 37 @46904 has 18 MA's), (Start: 56 @46961 has 5 MA's), (63, 46994), (67, 47030), (75, 47063),

Gene: TNguyen7\_71 Start: 42818, Stop: 42552, Start Num: 43

Candidate Starts for TNguyen7\_71:

(Start: 43 @42818 has 5 MA's), (Start: 56 @42788 has 5 MA's), (75, 42686), (84, 42572),

Gene: Tachez\_75 Start: 49961, Stop: 50233, Start Num: 36

Candidate Starts for Tachez\_75:

(Start: 33 @49946 has 1 MA's), (Start: 36 @49961 has 132 MA's), (55, 50015), (Start: 56 @50018 has 5 MA's), (59, 50033), (63, 50051), (71, 50099), (75, 50120), (80, 50192), (81, 50201),

Gene: TaiwanKao\_77 Start: 50636, Stop: 50908, Start Num: 36

Candidate Starts for TaiwanKao\_77:

(Start: 33 @50621 has 1 MA's), (Start: 36 @50636 has 132 MA's), (55, 50693), (Start: 56 @50696 has 5 MA's), (59, 50711), (63, 50729), (71, 50777), (75, 50798), (80, 50870), (81, 50879),

Gene: Tallboi\_62 Start: 41422, Stop: 41733, Start Num: 35

Candidate Starts for Tallboi\_62:

(Start: 35 @41422 has 48 MA's),

Gene: Taquito\_40 Start: 31813, Stop: 32112, Start Num: 31

Candidate Starts for Taquito\_40:

(Start: 31 @31813 has 11 MA's), (38, 31849), (Start: 54 @31894 has 14 MA's), (58, 31912), (63, 31933), (66, 31969), (75, 32002), (80, 32074),

Gene: Taurus\_76 Start: 43062, Stop: 42841, Start Num: 54

Candidate Starts for Taurus\_76:

(Start: 53 @43068 has 65 MA's), (Start: 54 @43062 has 14 MA's),

Gene: Tbone\_62 Start: 41901, Stop: 42215, Start Num: 35

Candidate Starts for Tbone\_62:

(Start: 35 @41901 has 48 MA's),

Gene: Texage\_68 Start: 42818, Stop: 42558, Start Num: 42

Candidate Starts for Texage\_68:

(26, 42893), (Start: 42 @42818 has 25 MA's), (Start: 56 @42788 has 5 MA's), (84, 42572),

Gene: TforTroy\_63 Start: 41704, Stop: 42018, Start Num: 35

Candidate Starts for TforTroy\_63:

(Start: 35 @41704 has 48 MA's),

Gene: Tian\_61 Start: 42417, Stop: 42731, Start Num: 35

Candidate Starts for Tian\_61:

(28, 42390), (Start: 35 @42417 has 48 MA's),

Gene: Tierra\_79 Start: 50730, Stop: 51002, Start Num: 36

Candidate Starts for Tierra\_79:

(Start: 33 @50715 has 1 MA's), (Start: 36 @50730 has 132 MA's), (Start: 56 @50790 has 5 MA's), (63, 50823),

Gene: Tiffany\_74 Start: 42947, Stop: 42726, Start Num: 54

Candidate Starts for Tiffany\_74:

(Start: 53 @42953 has 65 MA's), (Start: 54 @42947 has 14 MA's),

Gene: TingHuaYa\_78 Start: 49873, Stop: 50157, Start Num: 36

Candidate Starts for TingHuaYa\_78:

(Start: 33 @49858 has 1 MA's), (Start: 36 @49873 has 132 MA's), (41, 49888), (55, 49930), (Start: 56 @49933 has 5 MA's), (58, 49945), (59, 49948), (63, 49966), (75, 50035), (80, 50107), (81, 50116), (85, 50146),

Gene: TiniBug\_75 Start: 50512, Stop: 50781, Start Num: 36

Candidate Starts for TiniBug\_75:

(Start: 33 @50497 has 1 MA's), (Start: 36 @50512 has 132 MA's), (50, 50542), (55, 50563), (Start: 56 @50566 has 5 MA's), (59, 50581), (63, 50599), (75, 50668), (80, 50740), (81, 50749),

Gene: Tiri\_75 Start: 50017, Stop: 50286, Start Num: 36



Candidate Starts for Tiri\_75:

(Start: 33 @50002 has 1 MA's), (Start: 36 @50017 has 132 MA's), (55, 50071), (Start: 56 @50074 has 5 MA's), (59, 50089), (63, 50107), (71, 50155), (75, 50176), (80, 50248), (81, 50257),

Gene: Todacoro\_70 Start: 42817, Stop: 42557, Start Num: 42

Candidate Starts for Todacoro\_70:

(26, 42892), (Start: 42 @42817 has 25 MA's), (Start: 56 @42787 has 5 MA's), (84, 42571),

Gene: Topper\_75 Start: 50116, Stop: 50388, Start Num: 36

Candidate Starts for Topper\_75:

(Start: 33 @50101 has 1 MA's), (Start: 36 @50116 has 132 MA's), (55, 50170), (Start: 56 @50173 has 5 MA's), (59, 50188), (63, 50206), (71, 50254), (75, 50275), (80, 50347), (81, 50356),

Gene: Torres\_64 Start: 49770, Stop: 50042, Start Num: 36

Candidate Starts for Torres\_64:

(Start: 33 @49755 has 1 MA's), (Start: 36 @49770 has 132 MA's), (Start: 39 @49779 has 1 MA's), (48, 49800), (51, 49809), (55, 49827), (Start: 56 @49830 has 5 MA's), (58, 49842), (59, 49845), (63, 49863), (66, 49899), (70, 49911), (81, 50013),

Gene: TreyKay\_78 Start: 50578, Stop: 50853, Start Num: 36

Candidate Starts for TreyKay\_78:

(Start: 33 @50563 has 1 MA's), (Start: 36 @50578 has 132 MA's), (55, 50635), (Start: 56 @50638 has 5 MA's), (58, 50650), (59, 50653), (63, 50671), (71, 50719), (75, 50740), (80, 50812), (81, 50821),

Gene: TribelTrouble\_76 Start: 50522, Stop: 50797, Start Num: 36

Candidate Starts for TribelTrouble\_76:

(Start: 36 @50522 has 132 MA's), (41, 50537), (Start: 56 @50582 has 5 MA's), (59, 50597), (63, 50615), (75, 50684), (80, 50756), (81, 50765),

Gene: TruffulaTree\_77 Start: 50529, Stop: 50801, Start Num: 36

Candidate Starts for TruffulaTree\_77:

(Start: 33 @50514 has 1 MA's), (Start: 36 @50529 has 132 MA's), (55, 50583), (Start: 56 @50586 has 5 MA's), (59, 50601), (63, 50619), (75, 50688), (80, 50760), (81, 50769),

Gene: Tuck\_62 Start: 41693, Stop: 42004, Start Num: 35

Candidate Starts for Tuck\_62:

(Start: 35 @41693 has 48 MA's),

Gene: Turab\_61 Start: 40878, Stop: 41189, Start Num: 35

Candidate Starts for Turab\_61:

(28, 40851), (Start: 35 @40878 has 48 MA's),

Gene: Tutumahutu\_64 Start: 41493, Stop: 41807, Start Num: 35

Candidate Starts for Tutumahutu\_64:

(Start: 35 @41493 has 48 MA's),

Gene: Twitch\_75 Start: 50118, Stop: 50390, Start Num: 36

Candidate Starts for Twitch\_75:

(Start: 33 @50103 has 1 MA's), (Start: 36 @50118 has 132 MA's), (55, 50172), (Start: 56 @50175 has 5 MA's), (59, 50190), (63, 50208), (71, 50256), (75, 50277), (80, 50349), (81, 50358),

Gene: Unicorn\_78 Start: 50059, Stop: 50331, Start Num: 36

Candidate Starts for Unicorn\_78:

(25, 49996), (Start: 33 @50044 has 1 MA's), (Start: 36 @50059 has 132 MA's), (Start: 56 @50119 has 5 MA's), (58, 50131), (63, 50152),

Gene: Urkel\_75 Start: 50512, Stop: 50781, Start Num: 36

Candidate Starts for Urkel\_75:

(Start: 33 @50497 has 1 MA's), (Start: 36 @50512 has 132 MA's), (55, 50563), (Start: 56 @50566 has 5 MA's), (58, 50578), (59, 50581), (63, 50599), (71, 50647), (75, 50668), (80, 50740), (81, 50749),

Gene: VResidence\_62 Start: 39424, Stop: 39738, Start Num: 35

Candidate Starts for VResidence\_62:

(Start: 35 @39424 has 48 MA's),

Gene: Validus\_80 Start: 50873, Stop: 51148, Start Num: 36

Candidate Starts for Validus\_80:

(Start: 36 @50873 has 132 MA's), (55, 50927), (Start: 56 @50930 has 5 MA's), (58, 50942), (59, 50945), (63, 50963), (74, 51029), (80, 51104),

Gene: Veliki\_76 Start: 50069, Stop: 50341, Start Num: 36

Candidate Starts for Veliki\_76:

(Start: 33 @50054 has 1 MA's), (Start: 36 @50069 has 132 MA's), (55, 50123), (Start: 56 @50126 has 5 MA's), (59, 50141), (63, 50159), (71, 50207), (75, 50228), (80, 50300), (81, 50309),

Gene: Veracruz\_67 Start: 42817, Stop: 42557, Start Num: 42

Candidate Starts for Veracruz\_67:

(26, 42892), (Start: 42 @42817 has 25 MA's), (Start: 56 @42787 has 5 MA's), (84, 42571),

Gene: Vix\_71 Start: 43151, Stop: 42924, Start Num: 53

Candidate Starts for Vix\_71:

(Start: 53 @43151 has 65 MA's), (Start: 54 @43145 has 14 MA's),

Gene: Warda\_63 Start: 41627, Stop: 41941, Start Num: 35

Candidate Starts for Warda\_63:

(Start: 35 @41627 has 48 MA's),

Gene: Watson\_74 Start: 43060, Stop: 42833, Start Num: 53

Candidate Starts for Watson\_74:

(Start: 53 @43060 has 65 MA's), (Start: 54 @43054 has 14 MA's),

Gene: Wildcat\_147 Start: 68820, Stop: 68542, Start Num: 56

Candidate Starts for Wildcat\_147:

(13, 69027), (25, 68937), (Start: 56 @68820 has 5 MA's), (65, 68775), (73, 68724), (79, 68643), (82, 68622), (89, 68550), (90, 68547),

Gene: Wildwest\_58 Start: 41296, Stop: 41607, Start Num: 35

Candidate Starts for Wildwest\_58:

(28, 41269), (Start: 35 @41296 has 48 MA's),

Gene: Wintermute\_40 Start: 31413, Stop: 31712, Start Num: 31

Candidate Starts for Wintermute\_40:

(Start: 31 @31413 has 11 MA's), (38, 31449), (Start: 54 @31494 has 14 MA's), (58, 31512), (63, 31533), (66, 31569), (75, 31602), (80, 31674),

Gene: Wooldri\_77 Start: 42980, Stop: 42753, Start Num: 53

Candidate Starts for Wooldri\_77:

(Start: 53 @42980 has 65 MA's), (Start: 54 @42974 has 14 MA's),

Gene: Ximenita\_81 Start: 50796, Stop: 51068, Start Num: 36

Candidate Starts for Ximenita\_81:

(Start: 33 @50781 has 1 MA's), (Start: 36 @50796 has 132 MA's), (48, 50826), (Start: 56 @50856 has 5 MA's), (58, 50868), (63, 50889), (75, 50958),

Gene: Y10\_39 Start: 31413, Stop: 31712, Start Num: 32

Candidate Starts for Y10\_39:

(Start: 32 @31413 has 8 MA's), (38, 31449), (Start: 54 @31494 has 14 MA's), (58, 31512), (66, 31569), (75, 31602), (80, 31674),

Gene: Y2\_39 Start: 31413, Stop: 31712, Start Num: 32

Candidate Starts for Y2\_39:

(Start: 32 @31413 has 8 MA's), (38, 31449), (Start: 54 @31494 has 14 MA's), (58, 31512), (66, 31569), (75, 31602), (80, 31674),

Gene: Yang\_62 Start: 41347, Stop: 41661, Start Num: 35

Candidate Starts for Yang\_62:

(2, 40882), (Start: 35 @41347 has 48 MA's),

Gene: YesChef\_62 Start: 41309, Stop: 41623, Start Num: 35

Candidate Starts for YesChef\_62:

(Start: 35 @41309 has 48 MA's),

Gene: YoureAdopted\_75 Start: 50480, Stop: 50749, Start Num: 36

Candidate Starts for YoureAdopted\_75:

(Start: 36 @50480 has 132 MA's), (55, 50534), (Start: 56 @50537 has 5 MA's), (59, 50552), (63, 50570), (71, 50618), (75, 50639), (80, 50711), (81, 50720),

Gene: Yuna\_78 Start: 51558, Stop: 51830, Start Num: 36

Candidate Starts for Yuna\_78:

(Start: 33 @51543 has 1 MA's), (Start: 36 @51558 has 132 MA's), (41, 51573), (63, 51651),

Gene: Yunkel11\_81 Start: 50697, Stop: 50972, Start Num: 36

Candidate Starts for Yunkel11\_81:

(Start: 33 @50682 has 1 MA's), (Start: 36 @50697 has 132 MA's), (55, 50754), (Start: 56 @50757 has 5 MA's), (58, 50769), (59, 50772), (63, 50790), (71, 50838), (75, 50859), (80, 50931), (81, 50940),

Gene: Zabiza\_71 Start: 46466, Stop: 46738, Start Num: 36

Candidate Starts for Zabiza\_71:

(Start: 33 @46451 has 1 MA's), (Start: 36 @46466 has 132 MA's), (55, 46520), (Start: 56 @46523 has 5 MA's), (59, 46538), (63, 46556), (71, 46604), (75, 46625), (80, 46697), (81, 46706),

Gene: Zavala\_78 Start: 50607, Stop: 50879, Start Num: 36

Candidate Starts for Zavala\_78:

(Start: 33 @50592 has 1 MA's), (Start: 36 @50607 has 132 MA's), (55, 50661), (Start: 56 @50664 has 5 MA's), (59, 50679), (63, 50697), (71, 50745), (75, 50766), (80, 50838), (81, 50847),

Gene: Zetzy\_72 Start: 42631, Stop: 42404, Start Num: 53

Candidate Starts for Zetzy\_72:

(Start: 53 @42631 has 65 MA's), (Start: 54 @42625 has 14 MA's),

Gene: ZoeJ\_78 Start: 51905, Stop: 52174, Start Num: 37

Candidate Starts for ZoeJ\_78:

(19, 51782), (29, 51866), (Start: 37 @51905 has 18 MA's), (Start: 56 @51962 has 5 MA's), (63, 51995), (67, 52031), (75, 52064),