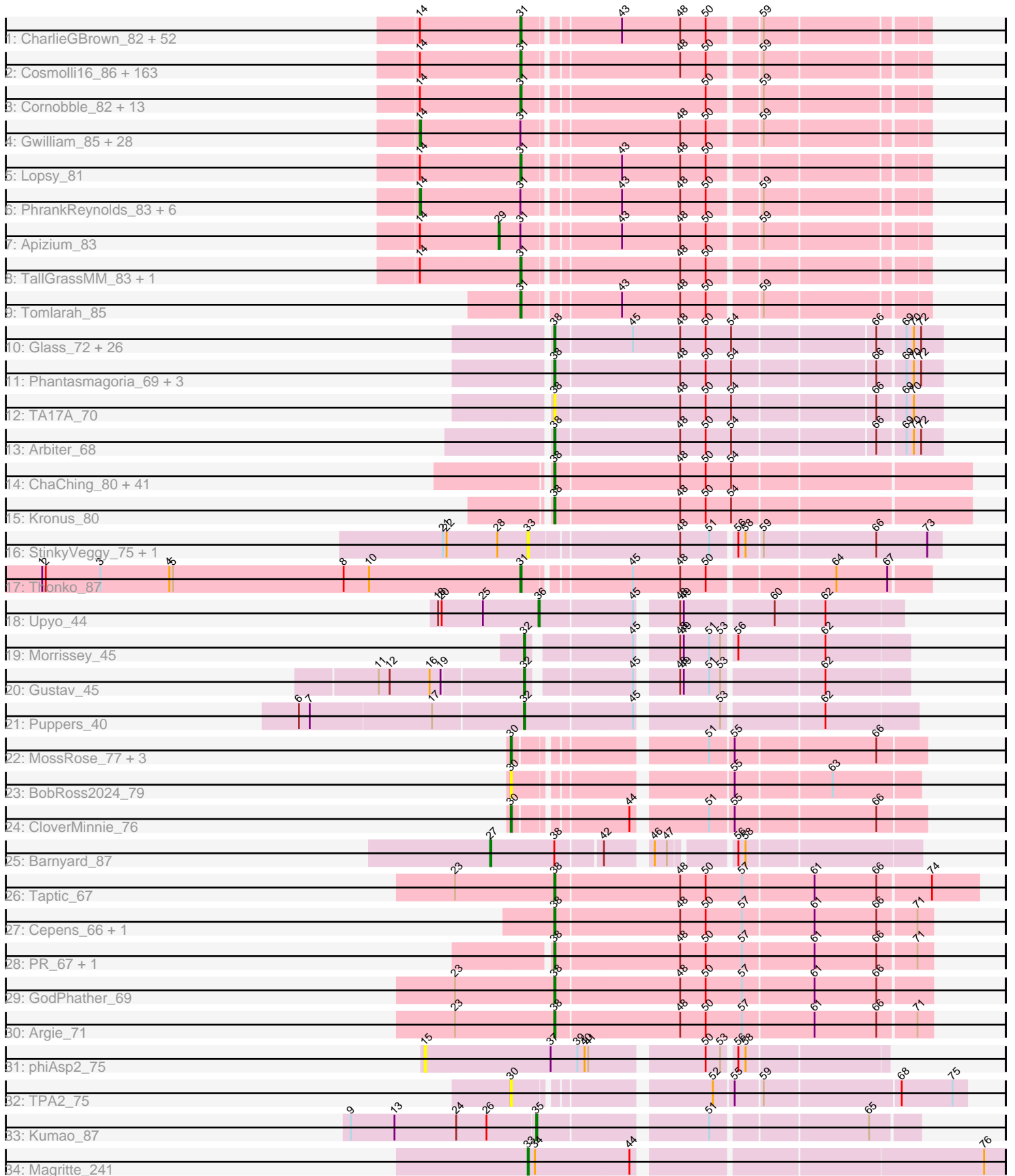


# Pham 192236



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 192236 Report

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

Pham number 192236 has 373 members, 21 are drafts.

Phages represented in each track:

- Track 1 : CharlieGBrown\_82, MelsMeow\_83, Dione\_82, Vivaldi\_84, Iridoclysis\_83, Phenghiskhan\_84, Chute\_84, Giraffe\_84, Megatron\_85, BatteryCK\_82, Omniscient\_85, Lego3393\_82, Pherdinand\_85, BlackStallion\_83, Phleuron\_82, EmpTee\_83, Longacauda\_85, Nicole21\_85, Coletti\_86, DonSanchon\_80, Legolas\_85, Megamind20\_84, Veritas\_83, Antonia\_83, LasagnaCat\_85, Katniss\_86, Schueller\_83, Phergie\_84, FluffyNinja\_85, JacAttac\_84, Kwksand96\_85, Mag7\_82, Beaglebox\_81, Samaymay\_84, Kwadwo\_83, Tooj\_81, FugateOSU\_84, Chaelin\_85, Keitherie\_87, CamL\_84, ImtiyazSitla\_85, Ashraf\_85, QueenBeane\_84, Telesworld\_82, Aelin\_83, Vista\_83, Banjo\_81, Maskar\_85, Inchworm\_85, Jiminy\_84, MichaelPhcott\_82, Kailash\_82, Riggan\_85
- Track 2 : Cosmolli16\_86, HenryJackson\_85, Pinkman\_84, Squiggle\_83, YouGoGlencoco\_84, Scrick\_83, Carthage\_85, Mcshane\_83, Podrick\_83, Yoshand\_85, Cannibal\_85, SDcharge11\_83, Etaye\_83, HSavage\_82, MitKao\_84, Boehler\_83, Thunderbird\_84, Zaider\_85, JDog\_83, Vaishali24\_85, JangoPhett\_82, Squid\_83, Gareth\_84, Plmatters\_82, Sheila\_80, Roscoe\_84, LuckyMarjie\_81, Hamish\_81, JakeO\_85, Melc17\_81, LostAndPhound\_83, Schadenfreude\_84, Vaticameos\_81, Thora\_83, Freya\_81, KingTut\_75, Mutante\_85, Kimbrough\_85, DelRivs\_82, ThreeOh3D2\_86, Windsor\_84, DirtJuice\_84, Serpentine\_0085, Swish\_85, Cobra\_84, Maru\_84, Rimu\_88, PhatLouie\_86, IsaacEli\_86, Lumine\_85, Oosterbaan\_84, Placalicious\_83, Oline\_83, Chorkpop\_85, Dingo\_81, Slatt\_84, Jillium\_85, Labeouficaum\_84, KLucky39\_82, Roliet\_81, Frankicide\_83, Quisquilliae\_86, Selr12\_85, Cher\_84, Buckeye\_84, Adriana\_84, Orwigg\_84, Virapocalypse\_85, Ricotta\_84, Usavi\_85, Pipsqueak\_81, Swiphy\_88, Nyala\_83, Horchata\_81, Mana\_82, Magic8\_83, Gyarad\_0083, Gophee\_84, Duggie\_84, UAch1\_85, LeiMonet\_86, Skippy\_85, Timmi\_83, Virgeve\_82, Wallhey\_85, TyrionL\_84, Phipps\_83, Numberten\_83, Hocus\_82, Durga\_86, Andre\_86, Struggle\_84, OliverWalter\_84, TomBombadil\_84, ShiVal\_82, Daffy\_83, Phamished\_84, Orfeu\_83, Robyn\_86, Soto\_81, PhrodoBaggins\_86, Spartan300\_83, Mecca\_84, Manad\_83, Waterdiva\_85, Fringe\_88, AltPhacts\_82, Grand2040\_82, Bluephacebaby\_83, ABU\_83, KlimbOn\_83, Piglet\_0084, Morty\_85, Scoot17C\_85, Pacifista\_83, BlueHusk\_85, Dati\_81, Potter\_80, ProfessorX\_82, CampRoach\_85, Lulwa\_81, Emiris\_86, Charles1\_85, Weher20\_81, SassyCat97\_82, Anderson\_86, Harvey\_81, Kikipoo\_86, Olive\_82, Held\_82, Surely\_84, Childish\_84, Inverness\_82, RedMaple\_84, Matalotodo\_83, Badfish\_85, Hetaeria\_84, Basato\_83, DaddyDaniels\_87, GeneCoco\_85, Haimas\_82, Phareon\_82, Zelda\_84, Burr\_84, Fozzie\_82, MiniBoss\_81, Soile\_85, DoesntMatter\_81, MRabcd\_84, MrPhizzler\_83, HighStump\_85, Kahve\_85, Mulan\_83, Eugenia\_86, True\_82, AbsoluteMadLad\_83,

Dice\_83, Valjean\_83, KingVeVeVe\_82, Simielle\_83, Craff\_86, Kloppinator\_84, Mikota\_81, Brilliant\_87

- Track 3 : Cornobble\_82, Olak\_83, OSmaximus\_85, Bishoperium\_84, Sophia\_82, Haleema\_83, Altwerkus\_82, LemonSlice\_84, Prickles\_85, Phunky\_82, Lasso\_83, PinheadLarry\_83, Daka\_86, Colbert\_82
- Track 4 : Gwilliam\_85, Toni\_84, FriarPreacher\_82, Suffolk\_81, CheetO\_81, Nacho\_0087, Mosaic\_82, PG1\_83, Vortex\_83, Orion\_83, Murdoc\_81, Chunky\_84, Derpp\_84, Pops\_82, Trypo\_85, Puhltonio\_81, Eremos\_83, Zonia\_85, Newman\_82, Roy17\_82, Serendipity\_84, Lulumae\_81, UncleHowie\_81, Xavier\_84, LeeLot\_83, Jiraiya\_88, Hertubise\_84, Morgushi\_82, Mesh1\_85
- Track 5 : Lopsy\_81
- Track 6 : PhrankReynolds\_83, SilverBell\_85, Doddsville\_82, Hartsy\_83, DuchessDung\_82, Sigman\_84, PhatCats2014\_84
- Track 7 : Apizium\_83
- Track 8 : TallGrassMM\_83, Solosis\_82
- Track 9 : Tomlarah\_85
- Track 10 : Glass\_72, Vic9\_73, Hedgerow\_70, Tres\_70, Godines\_71, Lars\_71, Opia\_71, Allegro\_70, Kheth\_70, Eaglehorse\_70, Boyle\_70, LizLemon\_70, Rosebush\_69, Blocker23\_70, Bananafish\_71, MasterPo\_71, FrenchFry\_71, Calamitous\_71, Holeinone\_70, ItsyBitsy1\_69, Coffee\_70, Tinciduntsum\_71, Lephleur\_70, Brownie5\_70, Rhinoforte\_70, Kaleb\_71, West99\_70
- Track 11 : Phantasmagoria\_69, Sabella\_70, Faze9\_69, Ares\_70
- Track 12 : TA17A\_70
- Track 13 : Arbiter\_68
- Track 14 : ChaChing\_80, Athena\_82, Tydolla\_76, GlenHope\_81, Casbah\_80, Pipefish\_82, Neos5\_80, LestyG\_78, Jackstina\_75, Heathcliff\_80, Akoma\_80, Yahalom\_78, Phayeta\_83, MmasiCarm\_81, Gadjet\_81, Deenasa\_80, Yinz\_80, Audrey\_80, SynergyX\_80, Daisy\_79, Baloo\_79, Rita1961\_81, Mortcellus\_80, Kamiyu\_80, Phaedrus\_75, RagingRooster\_79, Bernardo\_81, HarveySr\_79, Corofin\_80, Marley1013\_81, Phlyer\_80, Philly\_79, Chandler\_80, SlippinJimmy\_83, Nozo\_80, Briakila\_80, Halfpint\_79, Abingghost\_80, Obutu\_82, Morty007\_79, RomaT\_80, Gervas\_81
- Track 15 : Kronus\_80
- Track 16 : StinkyVeggy\_75, KarasumaRum\_75
- Track 17 : Thonko\_87
- Track 18 : Upyo\_44
- Track 19 : Morrissey\_45
- Track 20 : Gustav\_45
- Track 21 : Puppies\_40
- Track 22 : MossRose\_77, AnarQue\_79, CaiB\_78, MakoManhole\_74
- Track 23 : BobRoss2024\_79
- Track 24 : CloverMinnie\_76
- Track 25 : Barnyard\_87
- Track 26 : Taptic\_67
- Track 27 : Cepens\_66, Megabear\_66
- Track 28 : PR\_67, D12\_66
- Track 29 : GodPhather\_69
- Track 30 : Argie\_71
- Track 31 : phiAsp2\_75
- Track 32 : TPA2\_75
- Track 33 : Kumao\_87
- Track 34 : Magritte\_241

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

The start number called the most often in the published annotations is 31, it was called in 227 of the 352 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABU\_83, AbsoluteMadLad\_83, Adriana\_84, Aelin\_83, AltPhacts\_82, Altwerkus\_82, Anderson\_86, Andre\_86, Antonia\_83, Ashraf\_85, Badfish\_85, Banjo\_81, Basato\_83, BatteryCK\_82, Beaglebox\_81, Bishoperium\_84, BlackStallion\_83, BlueHusk\_85, Bluephacebaby\_83, Boehler\_83, Brilliant\_87, Buckeye\_84, Burr\_84, CamL\_84, CampRoach\_85, Cannibal\_85, Carthage\_85, Chaelin\_85, Charles1\_85, CharlieGBrown\_82, Cher\_84, Childish\_84, Chorkpop\_85, Chute\_84, Cobra\_84, Colbert\_82, Coletti\_86, Cornobble\_82, Cosmolli16\_86, Craff\_86, DaddyDaniels\_87, Daffy\_83, Daka\_86, Dati\_81, DelRivs\_82, Dice\_83, Dingo\_81, Dione\_82, DirtJuice\_84, DoesntMatter\_81, DonSanchon\_80, Duggie\_84, Durga\_86, Emiris\_86, EmpTee\_83, Etaye\_83, Eugenia\_86, FluffyNinja\_85, Fozzie\_82, Frankicide\_83, Freya\_81, Fringe\_88, FugateOSU\_84, Gareth\_84, GeneCoco\_85, Giraffe\_84, Gophee\_84, Grand2040\_82, Gyarad\_0083, HSavage\_82, Haimas\_82, Haleema\_83, Hamish\_81, Harvey\_81, Held\_82, HenryJackson\_85, Hetaeria\_84, HighStump\_85, Hocus\_82, Horchata\_81, ImtiyazSitla\_85, Inchworm\_85, Inverness\_82, Iridoclysis\_83, IsaacEli\_86, JDog\_83, JacAttac\_84, JakeO\_85, JangoPhett\_82, Jillium\_85, Jiminy\_84, KLucky39\_82, Kahve\_85, Kailash\_82, Katniss\_86, Keitherie\_87, Kikipoo\_86, Kimbrough\_85, KingTut\_75, KingVeVeVe\_82, KlimbOn\_83, Kloppinator\_84, Kwadwo\_83, Kwksand96\_85, Labeouficaum\_84, LasagnaCat\_85, Lasso\_83, Lego3393\_82, Legolas\_85, LeiMonet\_86, LemonSlice\_84, Longacauda\_85, Lopsy\_81, LostAndPhound\_83, LuckyMarjie\_81, Lulwa\_81, Lumine\_85, MRabcd\_84, Mag7\_82, Magic8\_83, Mana\_82, Manad\_83, Maru\_84, Maskar\_85, Matalotodo\_83, Mcshane\_83, Mecca\_84, Megamind20\_84, Megatron\_85, Melc17\_81, MelsMeow\_83, MichaelPhcott\_82, Mikota\_81, MiniBoss\_81, MitKao\_84, Morty\_85, MrPhizzler\_83, Mulan\_83, Mutante\_85, Nicole21\_85, Numberten\_83, Nyala\_83, OSmaximus\_85, Olak\_83, Oline\_83, Olive\_82, OliverWalter\_84, Omniscient\_85, Oosterbaan\_84, Orfeu\_83, Orwigg\_84, Pacifista\_83, Phamished\_84, Phareon\_82, PhatLouie\_86, PhenghisKhan\_84, Pherdinand\_85, Phergie\_84, Phipps\_83, Phleuron\_82, PhrodoBaggins\_86, Phunky\_82, Piglet\_0084, PinheadLarry\_83, Pinkman\_84, Pipsqueak\_81, Placalicious\_83, Plmatters\_82, Podrick\_83, Potter\_80, Prickles\_85, ProfessorX\_82, QueenBeane\_84, Quisquiliae\_86, RedMaple\_84, Ricotta\_84, Riggan\_85, Rimu\_88, Robyn\_86, Roliet\_81, Roscoe\_84, SDcharge11\_83, Samaymay\_84, SassyCat97\_82, Schadenfreude\_84, Schueller\_83, Scoot17C\_85, Scrick\_83, Selr12\_85, Serpentine\_0085, Sheila\_80, ShiVal\_82, Simielle\_83, Skippy\_85, Slatt\_84, Soile\_85, Solosis\_82, Sophia\_82, Soto\_81, Spartan300\_83, Squid\_83, Squiggle\_83, Struggle\_84, Surely\_84, Swiphy\_88, Swish\_85, TallGrassMM\_83, Telesworld\_82, Thonko\_87, Thora\_83, ThreeOh3D2\_86, Thunderbird\_84, Timmi\_83, TomBombadil\_84, Tomlarah\_85, Tooj\_81, True\_82, TyrionL\_84, UAch1\_85, Usavi\_85, Vaishali24\_85, Valjean\_83, Vaticameos\_81, Veritas\_83, Virapocalypse\_85, Virgeve\_82, Vista\_83, Vivaldi\_84, Wallhey\_85, Waterdiva\_85, Weher20\_81, Windsor\_84, Yoshand\_85, YouGoGlencoco\_84, Zaider\_85, Zelda\_84,

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

- Apizium\_83, CheetO\_81, Chunky\_84, Derpp\_84, Doddsville\_82, DuchessDung\_82, Eremos\_83, FriarPreacher\_82, Gwilliam\_85, Hartsy\_83, Hertubise\_84, Jiraiya\_88, LeeLot\_83, Lulumae\_81, Mesh1\_85, Morgushi\_82, Mosaic\_82, Murdoc\_81, Nacho\_0087, Newman\_82, Orion\_83, PG1\_83, PhatCats2014\_84, PhrankReynolds\_83, Pops\_82, Puhltonio\_81, Roy17\_82, Serendipity\_84, Sigman\_84, SilverBell\_85, Suffolk\_81, Toni\_84, Trypo\_85, UncleHowie\_81, Vortex\_83, Xavier\_84, Zonia\_85,

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

- Abinghost\_80, Akoma\_80, Allegro\_70, AnarQue\_79, Arbiter\_68, Ares\_70, Argie\_71, Athena\_82, Audrey\_80, Baloo\_79, Bananafish\_71, Barnyard\_87, Bernardo\_81, Blocker23\_70, BobRoss2024\_79, Boyle\_70, Briakila\_80, Brownie5\_70, CaiB\_78, Calamitous\_71, Casbah\_80, Cepens\_66, ChaChing\_80, Chandler\_80, CloverMinnie\_76, Coffee\_70, Corofin\_80, D12\_66, Daisy\_79, Deenasa\_80, Eaglehorse\_70, Faze9\_69, FrenchFry\_71, Gadget\_81, Gervas\_81, Glass\_72, GlenHope\_81, GodPhather\_69, Godines\_71, Gustav\_45, Halfpint\_79, HarveySr\_79, Heathcliff\_80, Hedgerow\_70, Holeinone\_70, ItsyBitsy1\_69, Jackstina\_75, Kaleb\_71, Kamiyu\_80, KarasumaRum\_75, Kheth\_70, Kronus\_80, Kumao\_87, Lars\_71, Lephleur\_70, LestyG\_78, LizLemon\_70, Magritte\_241, MakoManhole\_74, Marley1013\_81, MasterPo\_71, Megabear\_66, MmasiCarm\_81, Morrissey\_45, Mortcellus\_80, Morty007\_79, MossRose\_77, Neos5\_80, Nozo\_80, Obutu\_82, Opia\_71, PR\_67, Phaedrus\_75, Phantasmagoria\_69, Phayeta\_83, Philly\_79, Phlyer\_80, Pipefish\_82, Puppies\_40, RagingRooster\_79, Rhinoforte\_70, Rita1961\_81, RomaT\_80, Rosebush\_69, Sabella\_70, SlippinJimmy\_83, StinkyVeggy\_75, SynergyX\_80, TA17A\_70, TPA2\_75, Taptic\_67, Tinciduntolum\_71, Tres\_70, Tydolla\_76, Upyo\_44, Vic9\_73, West99\_70, Yahalom\_78, Yinz\_80, phiAsp2\_75,

### Summary by start number:

Start 14:

- Found in 271 of 373 ( 72.7% ) of genes in pham
- Manual Annotations of this start: 33 of 352
- Called 13.3% of time when present
- Phage (with cluster) where this start called: CheetO\_81 (B1), Chunky\_84 (B1), Derpp\_84 (B1), Doddsville\_82 (B1), DuchessDung\_82 (B1), Eremos\_83 (B1), FriarPreacher\_82 (B1), Gwilliam\_85 (B1), Hartsy\_83 (B1), Hertubise\_84 (B1), Jiraiya\_88 (B1), LeeLot\_83 (B1), Lulumae\_81 (B1), Mesh1\_85 (B1), Morgushi\_82 (B1), Mosaic\_82 (B1), Murdoc\_81 (B1), Nacho\_0087 (B1), Newman\_82 (B1), Orion\_83 (B1), PG1\_83 (B1), PhatCats2014\_84 (B1), PhrankReynolds\_83 (B1), Pops\_82 (B1), Puhltonio\_81 (B1), Roy17\_82 (B1), Serendipity\_84 (B1), Sigman\_84 (B1), SilverBell\_85 (B1), Suffolk\_81 (B1), Toni\_84 (B1), Trypo\_85 (B1), UncleHowie\_81 (B1), Vortex\_83 (B1), Xavier\_84 (B1), Zonia\_85 (B1),

Start 15:

- Found in 1 of 373 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: phiAsp2\_75 (singleton),

Start 27:

- Found in 1 of 373 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 352

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barnyard\_87 (H2),

#### Start 29:

- Found in 1 of 373 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apizium\_83 (B1),

#### Start 30:

- Found in 7 of 373 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 5 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnarQue\_79 (DR), BobRoss2024\_79 (DR), CaiB\_78 (DR), CloverMinnie\_76 (DR), MakoManhole\_74 (DR), MossRose\_77 (DR), TPA2\_75 (singleton),

#### Start 31:

- Found in 273 of 373 ( 73.2% ) of genes in pham
- Manual Annotations of this start: 227 of 352
- Called 86.4% of time when present
- Phage (with cluster) where this start called: ABU\_83 (B1), AbsoluteMadLad\_83 (B1), Adriana\_84 (B1), Aelin\_83 (B1), AltPhacts\_82 (B1), Altwerkus\_82 (B1), Anderson\_86 (B1), Andre\_86 (B1), Antonia\_83 (B1), Ashraf\_85 (B1), Badfish\_85 (B1), Banjo\_81 (B1), Basato\_83 (B1), BatteryCK\_82 (B1), Beaglebox\_81 (B1), Bishoperium\_84 (B1), BlackStallion\_83 (B1), BlueHusk\_85 (B1), Bluephacebaby\_83 (B1), Boehler\_83 (B1), Brilliant\_87 (B1), Buckeye\_84 (B1), Burr\_84 (B1), CamL\_84 (B1), CampRoach\_85 (B1), Cannibal\_85 (B1), Carthage\_85 (B1), Chaelin\_85 (B1), Charles1\_85 (B1), CharlieGBrown\_82 (B1), Cher\_84 (B1), Childish\_84 (B1), Chorkpop\_85 (B1), Chute\_84 (B1), Cobra\_84 (B1), Colbert\_82 (B1), Coletti\_86 (B1), Cornobble\_82 (B1), Cosmolli16\_86 (B1), Craff\_86 (B1), DaddyDaniels\_87 (B1), Daffy\_83 (B1), Daka\_86 (B1), Dati\_81 (B1), DelRivs\_82 (B1), Dice\_83 (B1), Dingo\_81 (B1), Dione\_82 (B1), DirtJuice\_84 (B1), DoesntMatter\_81 (B1), DonSanchon\_80 (B1), Duggie\_84 (B1), Durga\_86 (B1), Emiris\_86 (B1), EmpTee\_83 (B1), Etaye\_83 (B1), Eugenia\_86 (B1), FluffyNinja\_85 (B1), Fozzie\_82 (B1), Frankicide\_83 (B1), Freya\_81 (B1), Fringe\_88 (B1), FugateOSU\_84 (B1), Gareth\_84 (B1), GeneCoco\_85 (B1), Giraffe\_84 (B1), Gophee\_84 (B1), Grand2040\_82 (B1), Gyarad\_0083 (B1), HSavage\_82 (B1), Haimas\_82 (B1), Haleema\_83 (B1), Hamish\_81 (B1), Harvey\_81 (B1), Held\_82 (B1), HenryJackson\_85 (B1), Hetaeria\_84 (B1), HighStump\_85 (B1), Hocus\_82 (B1), Horchata\_81 (B1), ImtiyazSitla\_85 (B1), Inchworm\_85 (B1), Inverness\_82 (B1), Iridoclysis\_83 (B1), IsaacEli\_86 (B1), JDog\_83 (B1), JacAttac\_84 (B1), JakeO\_85 (B1), JangoPhett\_82 (B1), Jillium\_85 (B1), Jiminy\_84 (B1), KLucky39\_82 (B1), Kahve\_85 (B1), Kailash\_82 (B1), Katniss\_86 (B1), Keitherie\_87 (B1), Kikipoo\_86 (B1), Kimbrough\_85 (B1), KingTut\_75 (B1), KingVeVeVe\_82 (B1), KlimbOn\_83 (B1), Kloppinator\_84 (B1), Kwadwo\_83 (B1), Kwksand96\_85 (B1), Labeouficaum\_84 (B1), LasagnaCat\_85 (B1), Lasso\_83 (B1), Lego3393\_82 (B1), Legolas\_85 (B1), LeiMonet\_86 (B1), LemonSlice\_84 (B1), Longacauda\_85 (B1), Lopsy\_81 (B1), LostAndPhound\_83 (B1), LuckyMarjie\_81 (B1), Lulwa\_81 (B1), Lumine\_85 (B1), MRabcd\_84 (B1), Mag7\_82 (B1), Magic8\_83 (B1), Mana\_82 (B1), Manad\_83 (B1), Maru\_84 (B1), Maskar\_85 (B1), Matalotodo\_83 (B1), Mcshane\_83 (B1), Mecca\_84 (B1), Megamind20\_84 (B1), Megatron\_85 (B1), Melc17\_81 (B1), MelsMeow\_83 (B1), MichaelPhcott\_82 (B1), Mikota\_81 (B1), MiniBoss\_81 (B1), MitKao\_84 (B1), Morty\_85 (B1), MrPhizzler\_83

(B1), Mulan\_83 (B1), Mutante\_85 (B1), Nicole21\_85 (B1), Numberten\_83 (B1), Nyala\_83 (B1), OSmaximus\_85 (B1), Olak\_83 (B1), Oline\_83 (B1), Olive\_82 (B1), OliverWalter\_84 (B1), Omniscient\_85 (B1), Oosterbaan\_84 (B1), Orfeu\_83 (B1), Orwigg\_84 (B1), Pacifista\_83 (B1), Phamished\_84 (B1), Phareon\_82 (B1), PhatLouie\_86 (B1), Phenghiskhan\_84 (B1), Pherdinand\_85 (B1), Phergie\_84 (B1), Phipps\_83 (B1), Phleuron\_82 (B1), PhrodoBaggins\_86 (B1), Phunky\_82 (B1), Piglet\_0084 (B1), PinheadLarry\_83 (B1), Pinkman\_84 (B1), Pipsqueak\_81 (B1), Placalicious\_83 (B1), Plmatters\_82 (B1), Podrick\_83 (B1), Potter\_80 (B1), Prickles\_85 (B1), ProfessorX\_82 (B1), QueenBeane\_84 (B1), Quisquiliae\_86 (B1), RedMaple\_84 (B1), Ricotta\_84 (B1), Riggan\_85 (B1), Rimu\_88 (B1), Robyn\_86 (B1), Roliet\_81 (B1), Roscoe\_84 (B1), SDcharge11\_83 (B1), Samaymay\_84 (B1), SassyCat97\_82 (B1), Schadenfreude\_84 (B1), Schueller\_83 (B1), Scoot17C\_85 (B1), Scrick\_83 (B1), Selr12\_85 (B1), Serpentine\_0085 (B1), Sheila\_80 (B1), ShiVal\_82 (B1), Simielle\_83 (B1), Skippy\_85 (B1), Slatt\_84 (B1), Soile\_85 (B1), Solosis\_82 (B1), Sophia\_82 (B1), Soto\_81 (B1), Spartan300\_83 (B1), Squid\_83 (B1), Squiggle\_83 (B1), Struggle\_84 (B1), Surely\_84 (B1), Swiphy\_88 (B1), Swish\_85 (B1), TallGrassMM\_83 (B1), Telesworld\_82 (B1), Thonko\_87 (B8), Thora\_83 (B1), ThreeOh3D2\_86 (B1), Thunderbird\_84 (B1), Timmi\_83 (B1), TomBombadil\_84 (B1), Tomlarah\_85 (B1), Tooj\_81 (B1), True\_82 (B1), TyrionL\_84 (B1), UAch1\_85 (B1), Usavi\_85 (B1), Vaishali24\_85 (B1), Valjean\_83 (B1), Vaticameos\_81 (B1), Veritas\_83 (B1), Virapocalypse\_85 (B1), Virgeve\_82 (B1), Vista\_83 (B1), Vivaldi\_84 (B1), Wallhey\_85 (B1), Waterdiva\_85 (B1), Weher20\_81 (B1), Windsor\_84 (B1), Yoshand\_85 (B1), YouGoGlencoco\_84 (B1), Zaider\_85 (B1), Zelda\_84 (B1),

#### Start 32:

- Found in 3 of 373 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 3 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gustav\_45 (CD), Morrissey\_45 (CD), Poppers\_40 (CD),

#### Start 33:

- Found in 3 of 373 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KarasumaRum\_75 (B5), Magritte\_241 (singleton), StinkyVeggy\_75 (B5),

#### Start 35:

- Found in 1 of 373 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao\_87 (singleton),

#### Start 36:

- Found in 1 of 373 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 352
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Upyo\_44 (CD),

#### Start 38:

- Found in 84 of 373 ( 22.5% ) of genes in pham
- Manual Annotations of this start: 79 of 352

- Called 98.8% of time when present
- Phage (with cluster) where this start called: Abinghost\_80 (B3), Akoma\_80 (B3), Allegro\_70 (B2), Arbiter\_68 (B2), Ares\_70 (B2), Argie\_71 (W), Athena\_82 (B3), Audrey\_80 (B3), Baloo\_79 (B3), Bananafish\_71 (B2), Bernardo\_81 (B3), Blocker23\_70 (B2), Boyle\_70 (B2), Briakila\_80 (B3), Brownie5\_70 (B2), Calamitous\_71 (B2), Casbah\_80 (B3), Cepens\_66 (W), ChaChing\_80 (B3), Chandler\_80 (B3), Coffee\_70 (B2), Corofin\_80 (B3), D12\_66 (W), Daisy\_79 (B3), Deenasa\_80 (B3), Eaglehorse\_70 (B2), Faze9\_69 (B2), FrenchFry\_71 (B2), Gadget\_81 (B3), Gervas\_81 (B3), Glass\_72 (B2), GlenHope\_81 (B3), GodPhather\_69 (W), Godines\_71 (B2), Halfpint\_79 (B3), HarveySr\_79 (B3), Heathcliff\_80 (B3), Hedgerow\_70 (B2), Holeinone\_70 (B2), ItsyBitsy1\_69 (B2), Jackstina\_75 (B3), Kaleb\_71 (B2), Kamiyu\_80 (B3), Kheth\_70 (B2), Kronus\_80 (B3), Lars\_71 (B2), Lephleur\_70 (B2), LestyG\_78 (B3), LizLemon\_70 (B2), Marley1013\_81 (B3), MasterPo\_71 (B2), Megabear\_66 (W), MmasiCarm\_81 (B3), Mortcellus\_80 (B3), Morty007\_79 (B3), Neos5\_80 (B3), Nozo\_80 (B3), Obutu\_82 (B3), Opia\_71 (B2), PR\_67 (W), Phaedrus\_75 (B3), Phantasmagoria\_69 (B2), Phayeta\_83 (B3), Philly\_79 (B3), Phlyer\_80 (B3), Pipefish\_82 (B3), RagingRooster\_79 (B3), Rhinoforte\_70 (B2), Rita1961\_81 (B3), RomaT\_80 (B3), Rosebush\_69 (B2), Sabella\_70 (B2), SlippinJimmy\_83 (B3), SynergyX\_80 (B3), TA17A\_70 (B2), Taptic\_67 (W), Tinciduntolum\_71 (B2), Tres\_70 (B2), Tydolla\_76 (B3), Vic9\_73 (B2), West99\_70 (B2), Yahalom\_78 (B3), Yinz\_80 (B3),

### Summary by clusters:

There are 10 clusters represented in this pham: singleton, W, H2, B8, CD, B5, B1, B2, B3, DR,

Info for manual annotations of cluster B1:

- Start number 14 was manually annotated 33 times for cluster B1.
- Start number 29 was manually annotated 1 time for cluster B1.
- Start number 31 was manually annotated 226 times for cluster B1.

Info for manual annotations of cluster B2:

- Start number 38 was manually annotated 30 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 38 was manually annotated 42 times for cluster B3.

Info for manual annotations of cluster B8:

- Start number 31 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster CD:

- Start number 32 was manually annotated 3 times for cluster CD.
- Start number 36 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster DR:

- Start number 30 was manually annotated 5 times for cluster DR.

Info for manual annotations of cluster H2:

- Start number 27 was manually annotated 1 time for cluster H2.

Info for manual annotations of cluster W:



- Start number 38 was manually annotated 7 times for cluster W.

**Gene Information:**

Gene: ABU\_83 Start: 63381, Stop: 63079, Start Num: 31

Candidate Starts for ABU\_83:

(Start: 14 @63462 has 33 MA's), (Start: 31 @63381 has 227 MA's), (48, 63264), (50, 63243), (59, 63204),

Gene: Abinghost\_80 Start: 61235, Stop: 60906, Start Num: 38

Candidate Starts for Abinghost\_80:

(Start: 38 @61235 has 79 MA's), (48, 61136), (50, 61115), (54, 61094),

Gene: AbsoluteMadLad\_83 Start: 63335, Stop: 63033, Start Num: 31

Candidate Starts for AbsoluteMadLad\_83:

(Start: 14 @63416 has 33 MA's), (Start: 31 @63335 has 227 MA's), (48, 63218), (50, 63197), (59, 63158),

Gene: Adriana\_84 Start: 63897, Stop: 63595, Start Num: 31

Candidate Starts for Adriana\_84:

(Start: 14 @63978 has 33 MA's), (Start: 31 @63897 has 227 MA's), (48, 63780), (50, 63759), (59, 63720),

Gene: Aelin\_83 Start: 62839, Stop: 62537, Start Num: 31

Candidate Starts for Aelin\_83:

(Start: 14 @62920 has 33 MA's), (Start: 31 @62839 has 227 MA's), (43, 62770), (48, 62722), (50, 62701), (59, 62662),

Gene: Akoma\_80 Start: 61275, Stop: 60946, Start Num: 38

Candidate Starts for Akoma\_80:

(Start: 38 @61275 has 79 MA's), (48, 61176), (50, 61155), (54, 61134),

Gene: Allegro\_70 Start: 59019, Stop: 58717, Start Num: 38

Candidate Starts for Allegro\_70:

(Start: 38 @59019 has 79 MA's), (45, 58959), (48, 58920), (50, 58899), (54, 58878), (66, 58767), (69, 58746), (70, 58740), (72, 58734),

Gene: AltPhacts\_82 Start: 62600, Stop: 62298, Start Num: 31

Candidate Starts for AltPhacts\_82:

(Start: 14 @62681 has 33 MA's), (Start: 31 @62600 has 227 MA's), (48, 62483), (50, 62462), (59, 62423),

Gene: Altwerkus\_82 Start: 62711, Stop: 62409, Start Num: 31

Candidate Starts for Altwerkus\_82:

(Start: 14 @62792 has 33 MA's), (Start: 31 @62711 has 227 MA's), (50, 62573), (59, 62534),

Gene: AnarQue\_79 Start: 58361, Stop: 58062, Start Num: 30

Candidate Starts for AnarQue\_79:

(Start: 30 @58361 has 5 MA's), (51, 58229), (55, 58211), (66, 58100),

Gene: Anderson\_86 Start: 63257, Stop: 62955, Start Num: 31

Candidate Starts for Anderson\_86:

(Start: 14 @63338 has 33 MA's), (Start: 31 @63257 has 227 MA's), (48, 63140), (50, 63119), (59, 63080),

Gene: Andre\_86 Start: 63279, Stop: 62977, Start Num: 31

Candidate Starts for Andre\_86:

(Start: 14 @63360 has 33 MA's), (Start: 31 @63279 has 227 MA's), (48, 63162), (50, 63141), (59, 63102),

Gene: Antonia\_83 Start: 62883, Stop: 62581, Start Num: 31

Candidate Starts for Antonia\_83:

(Start: 14 @62964 has 33 MA's), (Start: 31 @62883 has 227 MA's), (43, 62814), (48, 62766), (50, 62745), (59, 62706),

Gene: Apizium\_83 Start: 62557, Stop: 62237, Start Num: 29

Candidate Starts for Apizium\_83:

(Start: 14 @62620 has 33 MA's), (Start: 29 @62557 has 1 MA's), (Start: 31 @62539 has 227 MA's), (43, 62470), (48, 62422), (50, 62401), (59, 62362),

Gene: Arbiter\_68 Start: 59054, Stop: 58752, Start Num: 38

Candidate Starts for Arbiter\_68:

(Start: 38 @59054 has 79 MA's), (48, 58955), (50, 58934), (54, 58913), (66, 58802), (69, 58781), (70, 58775), (72, 58769),

Gene: Ares\_70 Start: 59025, Stop: 58723, Start Num: 38

Candidate Starts for Ares\_70:

(Start: 38 @59025 has 79 MA's), (48, 58926), (50, 58905), (54, 58884), (66, 58773), (69, 58752), (70, 58746), (72, 58740),

Gene: Argie\_71 Start: 51295, Stop: 51594, Start Num: 38

Candidate Starts for Argie\_71:

(23, 51214), (Start: 38 @51295 has 79 MA's), (48, 51394), (50, 51415), (57, 51445), (61, 51502), (66, 51553), (71, 51583),

Gene: Ashraf\_85 Start: 63370, Stop: 63068, Start Num: 31

Candidate Starts for Ashraf\_85:

(Start: 14 @63451 has 33 MA's), (Start: 31 @63370 has 227 MA's), (43, 63301), (48, 63253), (50, 63232), (59, 63193),

Gene: Athena\_82 Start: 62010, Stop: 61681, Start Num: 38

Candidate Starts for Athena\_82:

(Start: 38 @62010 has 79 MA's), (48, 61911), (50, 61890), (54, 61869),

Gene: Audrey\_80 Start: 61264, Stop: 60935, Start Num: 38

Candidate Starts for Audrey\_80:

(Start: 38 @61264 has 79 MA's), (48, 61165), (50, 61144), (54, 61123),

Gene: Badfish\_85 Start: 63561, Stop: 63259, Start Num: 31

Candidate Starts for Badfish\_85:

(Start: 14 @63642 has 33 MA's), (Start: 31 @63561 has 227 MA's), (48, 63444), (50, 63423), (59, 63384),

Gene: Baloo\_79 Start: 61116, Stop: 60787, Start Num: 38

Candidate Starts for Baloo\_79:

(Start: 38 @61116 has 79 MA's), (48, 61017), (50, 60996), (54, 60975),

Gene: Bananafish\_71 Start: 58955, Stop: 58653, Start Num: 38

Candidate Starts for Bananafish\_71:

(Start: 38 @58955 has 79 MA's), (45, 58895), (48, 58856), (50, 58835), (54, 58814), (66, 58703), (69, 58682), (70, 58676), (72, 58670),

Gene: Banjo\_81 Start: 62827, Stop: 62525, Start Num: 31

Candidate Starts for Banjo\_81:

(Start: 14 @62908 has 33 MA's), (Start: 31 @62827 has 227 MA's), (43, 62758), (48, 62710), (50, 62689), (59, 62650),

Gene: Barnyard\_87 Start: 60478, Stop: 60789, Start Num: 27

Candidate Starts for Barnyard\_87:

(Start: 27 @60478 has 1 MA's), (Start: 38 @60529 has 79 MA's), (42, 60562), (46, 60592), (47, 60601), (56, 60646), (58, 60652),

Gene: Basato\_83 Start: 63292, Stop: 62990, Start Num: 31

Candidate Starts for Basato\_83:

(Start: 14 @63373 has 33 MA's), (Start: 31 @63292 has 227 MA's), (48, 63175), (50, 63154), (59, 63115),

Gene: BatteryCK\_82 Start: 62818, Stop: 62516, Start Num: 31

Candidate Starts for BatteryCK\_82:

(Start: 14 @62899 has 33 MA's), (Start: 31 @62818 has 227 MA's), (43, 62749), (48, 62701), (50, 62680), (59, 62641),

Gene: Beaglebox\_81 Start: 62950, Stop: 62648, Start Num: 31

Candidate Starts for Beaglebox\_81:

(Start: 14 @63031 has 33 MA's), (Start: 31 @62950 has 227 MA's), (43, 62881), (48, 62833), (50, 62812), (59, 62773),

Gene: Bernardo\_81 Start: 61454, Stop: 61125, Start Num: 38

Candidate Starts for Bernardo\_81:

(Start: 38 @61454 has 79 MA's), (48, 61355), (50, 61334), (54, 61313),

Gene: Bishoperium\_84 Start: 63397, Stop: 63095, Start Num: 31

Candidate Starts for Bishoperium\_84:

(Start: 14 @63478 has 33 MA's), (Start: 31 @63397 has 227 MA's), (50, 63259), (59, 63220),

Gene: BlackStallion\_83 Start: 63247, Stop: 62945, Start Num: 31

Candidate Starts for BlackStallion\_83:

(Start: 14 @63328 has 33 MA's), (Start: 31 @63247 has 227 MA's), (43, 63178), (48, 63130), (50, 63109), (59, 63070),

Gene: Blocker23\_70 Start: 59020, Stop: 58718, Start Num: 38

Candidate Starts for Blocker23\_70:

(Start: 38 @59020 has 79 MA's), (45, 58960), (48, 58921), (50, 58900), (54, 58879), (66, 58768), (69, 58747), (70, 58741), (72, 58735),

Gene: BlueHusk\_85 Start: 63070, Stop: 62768, Start Num: 31

Candidate Starts for BlueHusk\_85:

(Start: 14 @63151 has 33 MA's), (Start: 31 @63070 has 227 MA's), (48, 62953), (50, 62932), (59, 62893),

Gene: Bluephacebaby\_83 Start: 63430, Stop: 63128, Start Num: 31

Candidate Starts for Bluephacebaby\_83:

(Start: 14 @63511 has 33 MA's), (Start: 31 @63430 has 227 MA's), (48, 63313), (50, 63292), (59, 63253),

Gene: BobRoss2024\_79 Start: 57680, Stop: 57384, Start Num: 30

Candidate Starts for BobRoss2024\_79:

(Start: 30 @57680 has 5 MA's), (55, 57527), (63, 57452),

Gene: Boehler\_83 Start: 63221, Stop: 62919, Start Num: 31

Candidate Starts for Boehler\_83:

(Start: 14 @63302 has 33 MA's), (Start: 31 @63221 has 227 MA's), (48, 63104), (50, 63083), (59, 63044),

Gene: Boyle\_70 Start: 59064, Stop: 58762, Start Num: 38

Candidate Starts for Boyle\_70:

(Start: 38 @59064 has 79 MA's), (45, 59004), (48, 58965), (50, 58944), (54, 58923), (66, 58812), (69, 58791), (70, 58785), (72, 58779),

Gene: Briakila\_80 Start: 61462, Stop: 61133, Start Num: 38

Candidate Starts for Briakila\_80:

(Start: 38 @61462 has 79 MA's), (48, 61363), (50, 61342), (54, 61321),

Gene: Brilliant\_87 Start: 63410, Stop: 63108, Start Num: 31

Candidate Starts for Brilliant\_87:

(Start: 14 @63491 has 33 MA's), (Start: 31 @63410 has 227 MA's), (48, 63293), (50, 63272), (59, 63233),

Gene: Brownie5\_70 Start: 59065, Stop: 58763, Start Num: 38

Candidate Starts for Brownie5\_70:

(Start: 38 @59065 has 79 MA's), (45, 59005), (48, 58966), (50, 58945), (54, 58924), (66, 58813), (69, 58792), (70, 58786), (72, 58780),

Gene: Buckeye\_84 Start: 63948, Stop: 63646, Start Num: 31

Candidate Starts for Buckeye\_84:

(Start: 14 @64029 has 33 MA's), (Start: 31 @63948 has 227 MA's), (48, 63831), (50, 63810), (59, 63771),

Gene: Burr\_84 Start: 62882, Stop: 62580, Start Num: 31

Candidate Starts for Burr\_84:

(Start: 14 @62963 has 33 MA's), (Start: 31 @62882 has 227 MA's), (48, 62765), (50, 62744), (59, 62705),

Gene: CaiB\_78 Start: 58156, Stop: 57857, Start Num: 30

Candidate Starts for CaiB\_78:

(Start: 30 @58156 has 5 MA's), (51, 58024), (55, 58006), (66, 57895),

Gene: Calamitous\_71 Start: 58954, Stop: 58652, Start Num: 38

Candidate Starts for Calamitous\_71:

(Start: 38 @58954 has 79 MA's), (45, 58894), (48, 58855), (50, 58834), (54, 58813), (66, 58702), (69, 58681), (70, 58675), (72, 58669),

Gene: CamL\_84 Start: 63182, Stop: 62880, Start Num: 31

Candidate Starts for CamL\_84:

(Start: 14 @63263 has 33 MA's), (Start: 31 @63182 has 227 MA's), (43, 63113), (48, 63065), (50, 63044), (59, 63005),

Gene: CampRoach\_85 Start: 63278, Stop: 62976, Start Num: 31

Candidate Starts for CampRoach\_85:

(Start: 14 @63359 has 33 MA's), (Start: 31 @63278 has 227 MA's), (48, 63161), (50, 63140), (59, 63101),

Gene: Cannibal\_85 Start: 63284, Stop: 62982, Start Num: 31

Candidate Starts for Cannibal\_85:

(Start: 14 @63365 has 33 MA's), (Start: 31 @63284 has 227 MA's), (48, 63167), (50, 63146), (59, 63107),

Gene: Carthage\_85 Start: 62952, Stop: 62650, Start Num: 31

Candidate Starts for Carthage\_85:

(Start: 14 @63033 has 33 MA's), (Start: 31 @62952 has 227 MA's), (48, 62835), (50, 62814), (59, 62775),

Gene: Casbah\_80 Start: 61575, Stop: 61246, Start Num: 38

Candidate Starts for Casbah\_80:

(Start: 38 @61575 has 79 MA's), (48, 61476), (50, 61455), (54, 61434),

Gene: Cepens\_66 Start: 49145, Stop: 49444, Start Num: 38

Candidate Starts for Cepens\_66:

(Start: 38 @49145 has 79 MA's), (48, 49244), (50, 49265), (57, 49295), (61, 49352), (66, 49403), (71, 49433),

Gene: ChaChing\_80 Start: 61280, Stop: 60951, Start Num: 38

Candidate Starts for ChaChing\_80:

(Start: 38 @61280 has 79 MA's), (48, 61181), (50, 61160), (54, 61139),

Gene: Chaelin\_85 Start: 63412, Stop: 63110, Start Num: 31

Candidate Starts for Chaelin\_85:

(Start: 14 @63493 has 33 MA's), (Start: 31 @63412 has 227 MA's), (43, 63343), (48, 63295), (50, 63274), (59, 63235),

Gene: Chandler\_80 Start: 62051, Stop: 61722, Start Num: 38

Candidate Starts for Chandler\_80:

(Start: 38 @62051 has 79 MA's), (48, 61952), (50, 61931), (54, 61910),

Gene: Charles1\_85 Start: 63190, Stop: 62888, Start Num: 31

Candidate Starts for Charles1\_85:

(Start: 14 @63271 has 33 MA's), (Start: 31 @63190 has 227 MA's), (48, 63073), (50, 63052), (59, 63013),

Gene: CharlieGBrown\_82 Start: 62913, Stop: 62611, Start Num: 31

Candidate Starts for CharlieGBrown\_82:

(Start: 14 @62994 has 33 MA's), (Start: 31 @62913 has 227 MA's), (43, 62844), (48, 62796), (50, 62775), (59, 62736),

Gene: CheetO\_81 Start: 63368, Stop: 62985, Start Num: 14

Candidate Starts for CheetO\_81:

(Start: 14 @63368 has 33 MA's), (Start: 31 @63287 has 227 MA's), (48, 63170), (50, 63149), (59, 63110),

Gene: Cher\_84 Start: 63384, Stop: 63082, Start Num: 31

Candidate Starts for Cher\_84:

(Start: 14 @63465 has 33 MA's), (Start: 31 @63384 has 227 MA's), (48, 63267), (50, 63246), (59, 63207),

Gene: Childish\_84 Start: 63575, Stop: 63273, Start Num: 31

Candidate Starts for Childish\_84:

(Start: 14 @63656 has 33 MA's), (Start: 31 @63575 has 227 MA's), (48, 63458), (50, 63437), (59, 63398),

Gene: Chorkpop\_85 Start: 63038, Stop: 62736, Start Num: 31

Candidate Starts for Chorkpop\_85:

(Start: 14 @63119 has 33 MA's), (Start: 31 @63038 has 227 MA's), (48, 62921), (50, 62900), (59, 62861),

Gene: Chunky\_84 Start: 62964, Stop: 62581, Start Num: 14

Candidate Starts for Chunky\_84:

(Start: 14 @62964 has 33 MA's), (Start: 31 @62883 has 227 MA's), (48, 62766), (50, 62745), (59, 62706),

Gene: Chute\_84 Start: 63577, Stop: 63275, Start Num: 31

Candidate Starts for Chute\_84:

(Start: 14 @63658 has 33 MA's), (Start: 31 @63577 has 227 MA's), (43, 63508), (48, 63460), (50, 63439), (59, 63400),

Gene: CloverMinnie\_76 Start: 57325, Stop: 57026, Start Num: 30

Candidate Starts for CloverMinnie\_76:

(Start: 30 @57325 has 5 MA's), (44, 57247), (51, 57193), (55, 57175), (66, 57064),

Gene: Cobra\_84 Start: 63408, Stop: 63106, Start Num: 31

Candidate Starts for Cobra\_84:

(Start: 14 @63489 has 33 MA's), (Start: 31 @63408 has 227 MA's), (48, 63291), (50, 63270), (59, 63231),

Gene: Coffee\_70 Start: 59058, Stop: 58756, Start Num: 38

Candidate Starts for Coffee\_70:

(Start: 38 @59058 has 79 MA's), (45, 58998), (48, 58959), (50, 58938), (54, 58917), (66, 58806), (69, 58785), (70, 58779), (72, 58773),

Gene: Colbert\_82 Start: 62306, Stop: 62004, Start Num: 31

Candidate Starts for Colbert\_82:

(Start: 14 @62387 has 33 MA's), (Start: 31 @62306 has 227 MA's), (50, 62168), (59, 62129),

Gene: Coletti\_86 Start: 63933, Stop: 63631, Start Num: 31

Candidate Starts for Coletti\_86:

(Start: 14 @64014 has 33 MA's), (Start: 31 @63933 has 227 MA's), (43, 63864), (48, 63816), (50, 63795), (59, 63756),

Gene: Cornobble\_82 Start: 62876, Stop: 62574, Start Num: 31

Candidate Starts for Cornobble\_82:

(Start: 14 @62957 has 33 MA's), (Start: 31 @62876 has 227 MA's), (50, 62738), (59, 62699),

Gene: Corofin\_80 Start: 61286, Stop: 60957, Start Num: 38

Candidate Starts for Corofin\_80:

(Start: 38 @61286 has 79 MA's), (48, 61187), (50, 61166), (54, 61145),

Gene: Cosmolli16\_86 Start: 63753, Stop: 63451, Start Num: 31

Candidate Starts for Cosmolli16\_86:

(Start: 14 @63834 has 33 MA's), (Start: 31 @63753 has 227 MA's), (48, 63636), (50, 63615), (59, 63576),

Gene: Craff\_86 Start: 63796, Stop: 63494, Start Num: 31

Candidate Starts for Craff\_86:

(Start: 14 @63877 has 33 MA's), (Start: 31 @63796 has 227 MA's), (48, 63679), (50, 63658), (59, 63619),

Gene: D12\_66 Start: 49780, Stop: 50079, Start Num: 38

Candidate Starts for D12\_66:

(Start: 38 @49780 has 79 MA's), (48, 49879), (50, 49900), (57, 49930), (61, 49987), (66, 50038), (71, 50068),

Gene: DaddyDaniels\_87 Start: 63529, Stop: 63227, Start Num: 31

Candidate Starts for DaddyDaniels\_87:

(Start: 14 @63610 has 33 MA's), (Start: 31 @63529 has 227 MA's), (48, 63412), (50, 63391), (59, 63352),

Gene: Daffy\_83 Start: 63023, Stop: 62721, Start Num: 31

Candidate Starts for Daffy\_83:

(Start: 14 @63104 has 33 MA's), (Start: 31 @63023 has 227 MA's), (48, 62906), (50, 62885), (59, 62846),

Gene: Daisy\_79 Start: 60837, Stop: 60508, Start Num: 38

Candidate Starts for Daisy\_79:

(Start: 38 @60837 has 79 MA's), (48, 60738), (50, 60717), (54, 60696),

Gene: Daka\_86 Start: 63229, Stop: 62927, Start Num: 31

Candidate Starts for Daka\_86:

(Start: 14 @63310 has 33 MA's), (Start: 31 @63229 has 227 MA's), (50, 63091), (59, 63052),

Gene: Dati\_81 Start: 63207, Stop: 62905, Start Num: 31

Candidate Starts for Dati\_81:

(Start: 14 @63288 has 33 MA's), (Start: 31 @63207 has 227 MA's), (48, 63090), (50, 63069), (59, 63030),

Gene: Deenasa\_80 Start: 62186, Stop: 61857, Start Num: 38

Candidate Starts for Deenasa\_80:

(Start: 38 @62186 has 79 MA's), (48, 62087), (50, 62066), (54, 62045),

Gene: DelRivs\_82 Start: 62836, Stop: 62534, Start Num: 31  
Candidate Starts for DelRivs\_82:  
(Start: 14 @62917 has 33 MA's), (Start: 31 @62836 has 227 MA's), (48, 62719), (50, 62698), (59, 62659),

Gene: Derpp\_84 Start: 63027, Stop: 62644, Start Num: 14  
Candidate Starts for Derpp\_84:  
(Start: 14 @63027 has 33 MA's), (Start: 31 @62946 has 227 MA's), (48, 62829), (50, 62808), (59, 62769),

Gene: Dice\_83 Start: 62868, Stop: 62566, Start Num: 31  
Candidate Starts for Dice\_83:  
(Start: 14 @62949 has 33 MA's), (Start: 31 @62868 has 227 MA's), (48, 62751), (50, 62730), (59, 62691),

Gene: Dingo\_81 Start: 62589, Stop: 62287, Start Num: 31  
Candidate Starts for Dingo\_81:  
(Start: 14 @62670 has 33 MA's), (Start: 31 @62589 has 227 MA's), (48, 62472), (50, 62451), (59, 62412),

Gene: Dione\_82 Start: 62588, Stop: 62286, Start Num: 31  
Candidate Starts for Dione\_82:  
(Start: 14 @62669 has 33 MA's), (Start: 31 @62588 has 227 MA's), (43, 62519), (48, 62471), (50, 62450), (59, 62411),

Gene: DirtJuice\_84 Start: 63328, Stop: 63026, Start Num: 31  
Candidate Starts for DirtJuice\_84:  
(Start: 14 @63409 has 33 MA's), (Start: 31 @63328 has 227 MA's), (48, 63211), (50, 63190), (59, 63151),

Gene: Doddsville\_82 Start: 63109, Stop: 62726, Start Num: 14  
Candidate Starts for Doddsville\_82:  
(Start: 14 @63109 has 33 MA's), (Start: 31 @63028 has 227 MA's), (43, 62959), (48, 62911), (50, 62890), (59, 62851),

Gene: DoesntMatter\_81 Start: 62864, Stop: 62562, Start Num: 31  
Candidate Starts for DoesntMatter\_81:  
(Start: 14 @62945 has 33 MA's), (Start: 31 @62864 has 227 MA's), (48, 62747), (50, 62726), (59, 62687),

Gene: DonSanchon\_80 Start: 62546, Stop: 62244, Start Num: 31  
Candidate Starts for DonSanchon\_80:  
(Start: 14 @62627 has 33 MA's), (Start: 31 @62546 has 227 MA's), (43, 62477), (48, 62429), (50, 62408), (59, 62369),

Gene: DuchessDung\_82 Start: 62625, Stop: 62242, Start Num: 14  
Candidate Starts for DuchessDung\_82:  
(Start: 14 @62625 has 33 MA's), (Start: 31 @62544 has 227 MA's), (43, 62475), (48, 62427), (50, 62406), (59, 62367),

Gene: Duggie\_84 Start: 63170, Stop: 62868, Start Num: 31  
Candidate Starts for Duggie\_84:



(Start: 14 @63251 has 33 MA's), (Start: 31 @63170 has 227 MA's), (48, 63053), (50, 63032), (59, 62993),

Gene: Durga\_86 Start: 63652, Stop: 63350, Start Num: 31

Candidate Starts for Durga\_86:

(Start: 14 @63733 has 33 MA's), (Start: 31 @63652 has 227 MA's), (48, 63535), (50, 63514), (59, 63475),

Gene: Eaglehorse\_70 Start: 58944, Stop: 58642, Start Num: 38

Candidate Starts for Eaglehorse\_70:

(Start: 38 @58944 has 79 MA's), (45, 58884), (48, 58845), (50, 58824), (54, 58803), (66, 58692), (69, 58671), (70, 58665), (72, 58659),

Gene: Emiris\_86 Start: 63558, Stop: 63256, Start Num: 31

Candidate Starts for Emiris\_86:

(Start: 14 @63639 has 33 MA's), (Start: 31 @63558 has 227 MA's), (48, 63441), (50, 63420), (59, 63381),

Gene: EmpTee\_83 Start: 62960, Stop: 62658, Start Num: 31

Candidate Starts for EmpTee\_83:

(Start: 14 @63041 has 33 MA's), (Start: 31 @62960 has 227 MA's), (43, 62891), (48, 62843), (50, 62822), (59, 62783),

Gene: Eremos\_83 Start: 63331, Stop: 62948, Start Num: 14

Candidate Starts for Eremos\_83:

(Start: 14 @63331 has 33 MA's), (Start: 31 @63250 has 227 MA's), (48, 63133), (50, 63112), (59, 63073),

Gene: Etaye\_83 Start: 63736, Stop: 63434, Start Num: 31

Candidate Starts for Etaye\_83:

(Start: 14 @63817 has 33 MA's), (Start: 31 @63736 has 227 MA's), (48, 63619), (50, 63598), (59, 63559),

Gene: Eugenia\_86 Start: 63671, Stop: 63369, Start Num: 31

Candidate Starts for Eugenia\_86:

(Start: 14 @63752 has 33 MA's), (Start: 31 @63671 has 227 MA's), (48, 63554), (50, 63533), (59, 63494),

Gene: Faze9\_69 Start: 59082, Stop: 58780, Start Num: 38

Candidate Starts for Faze9\_69:

(Start: 38 @59082 has 79 MA's), (48, 58983), (50, 58962), (54, 58941), (66, 58830), (69, 58809), (70, 58803), (72, 58797),

Gene: FluffyNinja\_85 Start: 63249, Stop: 62947, Start Num: 31

Candidate Starts for FluffyNinja\_85:

(Start: 14 @63330 has 33 MA's), (Start: 31 @63249 has 227 MA's), (43, 63180), (48, 63132), (50, 63111), (59, 63072),

Gene: Fozzie\_82 Start: 63575, Stop: 63273, Start Num: 31

Candidate Starts for Fozzie\_82:

(Start: 14 @63656 has 33 MA's), (Start: 31 @63575 has 227 MA's), (48, 63458), (50, 63437), (59, 63398),

Gene: Frankicide\_83 Start: 63074, Stop: 62772, Start Num: 31

Candidate Starts for Frankicide\_83:

(Start: 14 @63155 has 33 MA's), (Start: 31 @63074 has 227 MA's), (48, 62957), (50, 62936), (59, 62897),

Gene: FrenchFry\_71 Start: 59069, Stop: 58767, Start Num: 38

Candidate Starts for FrenchFry\_71:

(Start: 38 @59069 has 79 MA's), (45, 59009), (48, 58970), (50, 58949), (54, 58928), (66, 58817), (69, 58796), (70, 58790), (72, 58784),

Gene: Freya\_81 Start: 62566, Stop: 62264, Start Num: 31

Candidate Starts for Freya\_81:

(Start: 14 @62647 has 33 MA's), (Start: 31 @62566 has 227 MA's), (48, 62449), (50, 62428), (59, 62389),

Gene: FriarPreacher\_82 Start: 63028, Stop: 62645, Start Num: 14

Candidate Starts for FriarPreacher\_82:

(Start: 14 @63028 has 33 MA's), (Start: 31 @62947 has 227 MA's), (48, 62830), (50, 62809), (59, 62770),

Gene: Fringe\_88 Start: 63724, Stop: 63422, Start Num: 31

Candidate Starts for Fringe\_88:

(Start: 14 @63805 has 33 MA's), (Start: 31 @63724 has 227 MA's), (48, 63607), (50, 63586), (59, 63547),

Gene: FugateOSU\_84 Start: 64008, Stop: 63706, Start Num: 31

Candidate Starts for FugateOSU\_84:

(Start: 14 @64089 has 33 MA's), (Start: 31 @64008 has 227 MA's), (43, 63939), (48, 63891), (50, 63870), (59, 63831),

Gene: Gadget\_81 Start: 61637, Stop: 61308, Start Num: 38

Candidate Starts for Gadget\_81:

(Start: 38 @61637 has 79 MA's), (48, 61538), (50, 61517), (54, 61496),

Gene: Gareth\_84 Start: 63396, Stop: 63094, Start Num: 31

Candidate Starts for Gareth\_84:

(Start: 14 @63477 has 33 MA's), (Start: 31 @63396 has 227 MA's), (48, 63279), (50, 63258), (59, 63219),

Gene: GeneCoco\_85 Start: 63576, Stop: 63274, Start Num: 31

Candidate Starts for GeneCoco\_85:

(Start: 14 @63657 has 33 MA's), (Start: 31 @63576 has 227 MA's), (48, 63459), (50, 63438), (59, 63399),

Gene: Gervas\_81 Start: 61731, Stop: 61402, Start Num: 38

Candidate Starts for Gervas\_81:

(Start: 38 @61731 has 79 MA's), (48, 61632), (50, 61611), (54, 61590),

Gene: Giraffe\_84 Start: 63401, Stop: 63099, Start Num: 31

Candidate Starts for Giraffe\_84:

(Start: 14 @63482 has 33 MA's), (Start: 31 @63401 has 227 MA's), (43, 63332), (48, 63284), (50, 63263), (59, 63224),

Gene: Glass\_72 Start: 59070, Stop: 58768, Start Num: 38  
Candidate Starts for Glass\_72:  
(Start: 38 @59070 has 79 MA's), (45, 59010), (48, 58971), (50, 58950), (54, 58929), (66, 58818), (69, 58797), (70, 58791), (72, 58785),

Gene: GlenHope\_81 Start: 61310, Stop: 60981, Start Num: 38  
Candidate Starts for GlenHope\_81:  
(Start: 38 @61310 has 79 MA's), (48, 61211), (50, 61190), (54, 61169),

Gene: GodPhather\_69 Start: 50749, Stop: 51048, Start Num: 38  
Candidate Starts for GodPhather\_69:  
(23, 50668), (Start: 38 @50749 has 79 MA's), (48, 50848), (50, 50869), (57, 50899), (61, 50956), (66, 51007),

Gene: Godines\_71 Start: 59323, Stop: 59021, Start Num: 38  
Candidate Starts for Godines\_71:  
(Start: 38 @59323 has 79 MA's), (45, 59263), (48, 59224), (50, 59203), (54, 59182), (66, 59071), (69, 59050), (70, 59044), (72, 59038),

Gene: Gophee\_84 Start: 63387, Stop: 63085, Start Num: 31  
Candidate Starts for Gophee\_84:  
(Start: 14 @63468 has 33 MA's), (Start: 31 @63387 has 227 MA's), (48, 63270), (50, 63249), (59, 63210),

Gene: Grand2040\_82 Start: 63365, Stop: 63063, Start Num: 31  
Candidate Starts for Grand2040\_82:  
(Start: 14 @63446 has 33 MA's), (Start: 31 @63365 has 227 MA's), (48, 63248), (50, 63227), (59, 63188),

Gene: Gustav\_45 Start: 33684, Stop: 33406, Start Num: 32  
Candidate Starts for Gustav\_45:  
(11, 33798), (12, 33789), (16, 33756), (19, 33747), (Start: 32 @33684 has 3 MA's), (45, 33609), (48, 33582), (49, 33579), (51, 33558), (53, 33549), (62, 33471),

Gene: Gwilliam\_85 Start: 64012, Stop: 63629, Start Num: 14  
Candidate Starts for Gwilliam\_85:  
(Start: 14 @64012 has 33 MA's), (Start: 31 @63931 has 227 MA's), (48, 63814), (50, 63793), (59, 63754),

Gene: Gyarad\_0083 Start: 62885, Stop: 62583, Start Num: 31  
Candidate Starts for Gyarad\_0083:  
(Start: 14 @62966 has 33 MA's), (Start: 31 @62885 has 227 MA's), (48, 62768), (50, 62747), (59, 62708),

Gene: HSavage\_82 Start: 62902, Stop: 62600, Start Num: 31  
Candidate Starts for HSavage\_82:  
(Start: 14 @62983 has 33 MA's), (Start: 31 @62902 has 227 MA's), (48, 62785), (50, 62764), (59, 62725),

Gene: Haimas\_82 Start: 62827, Stop: 62525, Start Num: 31  
Candidate Starts for Haimas\_82:  
(Start: 14 @62908 has 33 MA's), (Start: 31 @62827 has 227 MA's), (48, 62710), (50, 62689), (59, 62650),

Gene: Haleema\_83 Start: 62947, Stop: 62645, Start Num: 31

Candidate Starts for Haleema\_83:

(Start: 14 @63028 has 33 MA's), (Start: 31 @62947 has 227 MA's), (50, 62809), (59, 62770),

Gene: Halfpint\_79 Start: 61052, Stop: 60723, Start Num: 38

Candidate Starts for Halfpint\_79:

(Start: 38 @61052 has 79 MA's), (48, 60953), (50, 60932), (54, 60911),

Gene: Hamish\_81 Start: 63116, Stop: 62814, Start Num: 31

Candidate Starts for Hamish\_81:

(Start: 14 @63197 has 33 MA's), (Start: 31 @63116 has 227 MA's), (48, 62999), (50, 62978), (59, 62939),

Gene: Hartsy\_83 Start: 63145, Stop: 62762, Start Num: 14

Candidate Starts for Hartsy\_83:

(Start: 14 @63145 has 33 MA's), (Start: 31 @63064 has 227 MA's), (43, 62995), (48, 62947), (50, 62926), (59, 62887),

Gene: Harvey\_81 Start: 62724, Stop: 62422, Start Num: 31

Candidate Starts for Harvey\_81:

(Start: 14 @62805 has 33 MA's), (Start: 31 @62724 has 227 MA's), (48, 62607), (50, 62586), (59, 62547),

Gene: HarveySr\_79 Start: 60821, Stop: 60492, Start Num: 38

Candidate Starts for HarveySr\_79:

(Start: 38 @60821 has 79 MA's), (48, 60722), (50, 60701), (54, 60680),

Gene: Heathcliff\_80 Start: 61231, Stop: 60902, Start Num: 38

Candidate Starts for Heathcliff\_80:

(Start: 38 @61231 has 79 MA's), (48, 61132), (50, 61111), (54, 61090),

Gene: Hedgerow\_70 Start: 59020, Stop: 58718, Start Num: 38

Candidate Starts for Hedgerow\_70:

(Start: 38 @59020 has 79 MA's), (45, 58960), (48, 58921), (50, 58900), (54, 58879), (66, 58768), (69, 58747), (70, 58741), (72, 58735),

Gene: Held\_82 Start: 62845, Stop: 62543, Start Num: 31

Candidate Starts for Held\_82:

(Start: 14 @62926 has 33 MA's), (Start: 31 @62845 has 227 MA's), (48, 62728), (50, 62707), (59, 62668),

Gene: HenryJackson\_85 Start: 63564, Stop: 63262, Start Num: 31

Candidate Starts for HenryJackson\_85:

(Start: 14 @63645 has 33 MA's), (Start: 31 @63564 has 227 MA's), (48, 63447), (50, 63426), (59, 63387),

Gene: Hertubise\_84 Start: 63287, Stop: 62904, Start Num: 14

Candidate Starts for Hertubise\_84:

(Start: 14 @63287 has 33 MA's), (Start: 31 @63206 has 227 MA's), (48, 63089), (50, 63068), (59, 63029),

Gene: Hetaeria\_84 Start: 63213, Stop: 62911, Start Num: 31

Candidate Starts for Hetaeria\_84:

(Start: 14 @63294 has 33 MA's), (Start: 31 @63213 has 227 MA's), (48, 63096), (50, 63075), (59, 63036),

Gene: HighStump\_85 Start: 63351, Stop: 63049, Start Num: 31

Candidate Starts for HighStump\_85:

(Start: 14 @63432 has 33 MA's), (Start: 31 @63351 has 227 MA's), (48, 63234), (50, 63213), (59, 63174),

Gene: Hocus\_82 Start: 62865, Stop: 62563, Start Num: 31

Candidate Starts for Hocus\_82:

(Start: 14 @62946 has 33 MA's), (Start: 31 @62865 has 227 MA's), (48, 62748), (50, 62727), (59, 62688),

Gene: Holeinone\_70 Start: 58925, Stop: 58623, Start Num: 38

Candidate Starts for Holeinone\_70:

(Start: 38 @58925 has 79 MA's), (45, 58865), (48, 58826), (50, 58805), (54, 58784), (66, 58673), (69, 58652), (70, 58646), (72, 58640),

Gene: Horchata\_81 Start: 63042, Stop: 62740, Start Num: 31

Candidate Starts for Horchata\_81:

(Start: 14 @63123 has 33 MA's), (Start: 31 @63042 has 227 MA's), (48, 62925), (50, 62904), (59, 62865),

Gene: ImtiyazSitla\_85 Start: 63370, Stop: 63068, Start Num: 31

Candidate Starts for ImtiyazSitla\_85:

(Start: 14 @63451 has 33 MA's), (Start: 31 @63370 has 227 MA's), (43, 63301), (48, 63253), (50, 63232), (59, 63193),

Gene: Inchworm\_85 Start: 63238, Stop: 62936, Start Num: 31

Candidate Starts for Inchworm\_85:

(Start: 14 @63319 has 33 MA's), (Start: 31 @63238 has 227 MA's), (43, 63169), (48, 63121), (50, 63100), (59, 63061),

Gene: Inverness\_82 Start: 63039, Stop: 62737, Start Num: 31

Candidate Starts for Inverness\_82:

(Start: 14 @63120 has 33 MA's), (Start: 31 @63039 has 227 MA's), (48, 62922), (50, 62901), (59, 62862),

Gene: Iridoclysis\_83 Start: 63129, Stop: 62827, Start Num: 31

Candidate Starts for Iridoclysis\_83:

(Start: 14 @63210 has 33 MA's), (Start: 31 @63129 has 227 MA's), (43, 63060), (48, 63012), (50, 62991), (59, 62952),

Gene: IsaacEli\_86 Start: 63369, Stop: 63067, Start Num: 31

Candidate Starts for IsaacEli\_86:

(Start: 14 @63450 has 33 MA's), (Start: 31 @63369 has 227 MA's), (48, 63252), (50, 63231), (59, 63192),

Gene: ItsyBitsy1\_69 Start: 59161, Stop: 58859, Start Num: 38

Candidate Starts for ItsyBitsy1\_69:

(Start: 38 @59161 has 79 MA's), (45, 59101), (48, 59062), (50, 59041), (54, 59020), (66, 58909), (69, 58888), (70, 58882), (72, 58876),

Gene: JDog\_83 Start: 63399, Stop: 63097, Start Num: 31

Candidate Starts for JDog\_83:

(Start: 14 @63480 has 33 MA's), (Start: 31 @63399 has 227 MA's), (48, 63282), (50, 63261), (59, 63222),

Gene: JacAttac\_84 Start: 62843, Stop: 62541, Start Num: 31

Candidate Starts for JacAttac\_84:

(Start: 14 @62924 has 33 MA's), (Start: 31 @62843 has 227 MA's), (43, 62774), (48, 62726), (50, 62705), (59, 62666),

Gene: Jackstina\_75 Start: 61145, Stop: 60816, Start Num: 38

Candidate Starts for Jackstina\_75:

(Start: 38 @61145 has 79 MA's), (48, 61046), (50, 61025), (54, 61004),

Gene: JakeO\_85 Start: 63127, Stop: 62825, Start Num: 31

Candidate Starts for JakeO\_85:

(Start: 14 @63208 has 33 MA's), (Start: 31 @63127 has 227 MA's), (48, 63010), (50, 62989), (59, 62950),

Gene: JangoPhett\_82 Start: 63203, Stop: 62901, Start Num: 31

Candidate Starts for JangoPhett\_82:

(Start: 14 @63284 has 33 MA's), (Start: 31 @63203 has 227 MA's), (48, 63086), (50, 63065), (59, 63026),

Gene: Jillium\_85 Start: 63559, Stop: 63257, Start Num: 31

Candidate Starts for Jillium\_85:

(Start: 14 @63640 has 33 MA's), (Start: 31 @63559 has 227 MA's), (48, 63442), (50, 63421), (59, 63382),

Gene: Jiminy\_84 Start: 63063, Stop: 62761, Start Num: 31

Candidate Starts for Jiminy\_84:

(Start: 14 @63144 has 33 MA's), (Start: 31 @63063 has 227 MA's), (43, 62994), (48, 62946), (50, 62925), (59, 62886),

Gene: Jiraiya\_88 Start: 63228, Stop: 62845, Start Num: 14

Candidate Starts for Jiraiya\_88:

(Start: 14 @63228 has 33 MA's), (Start: 31 @63147 has 227 MA's), (48, 63030), (50, 63009), (59, 62970),

Gene: KLucky39\_82 Start: 62922, Stop: 62620, Start Num: 31

Candidate Starts for KLucky39\_82:

(Start: 14 @63003 has 33 MA's), (Start: 31 @62922 has 227 MA's), (48, 62805), (50, 62784), (59, 62745),

Gene: Kahve\_85 Start: 63562, Stop: 63260, Start Num: 31

Candidate Starts for Kahve\_85:

(Start: 14 @63643 has 33 MA's), (Start: 31 @63562 has 227 MA's), (48, 63445), (50, 63424), (59, 63385),

Gene: Kailash\_82 Start: 63262, Stop: 62960, Start Num: 31

Candidate Starts for Kailash\_82:

(Start: 14 @63343 has 33 MA's), (Start: 31 @63262 has 227 MA's), (43, 63193), (48, 63145), (50, 63124), (59, 63085),

Gene: Kaleb\_71 Start: 59076, Stop: 58774, Start Num: 38

Candidate Starts for Kaleb\_71:

(Start: 38 @59076 has 79 MA's), (45, 59016), (48, 58977), (50, 58956), (54, 58935), (66, 58824), (69, 58803), (70, 58797), (72, 58791),

Gene: Kamiyu\_80 Start: 61234, Stop: 60905, Start Num: 38

Candidate Starts for Kamiyu\_80:

(Start: 38 @61234 has 79 MA's), (48, 61135), (50, 61114), (54, 61093),

Gene: KarasumaRum\_75 Start: 62138, Stop: 61818, Start Num: 33

Candidate Starts for KarasumaRum\_75:

(21, 62207), (22, 62204), (28, 62162), (Start: 33 @62138 has 1 MA's), (48, 62021), (51, 61997), (56, 61979), (58, 61973), (59, 61961), (66, 61871), (73, 61829),

Gene: Katniss\_86 Start: 62978, Stop: 62676, Start Num: 31

Candidate Starts for Katniss\_86:

(Start: 14 @63059 has 33 MA's), (Start: 31 @62978 has 227 MA's), (43, 62909), (48, 62861), (50, 62840), (59, 62801),

Gene: Keitherie\_87 Start: 63620, Stop: 63318, Start Num: 31

Candidate Starts for Keitherie\_87:

(Start: 14 @63701 has 33 MA's), (Start: 31 @63620 has 227 MA's), (43, 63551), (48, 63503), (50, 63482), (59, 63443),

Gene: Kheth\_70 Start: 58987, Stop: 58685, Start Num: 38

Candidate Starts for Kheth\_70:

(Start: 38 @58987 has 79 MA's), (45, 58927), (48, 58888), (50, 58867), (54, 58846), (66, 58735), (69, 58714), (70, 58708), (72, 58702),

Gene: Kikipoo\_86 Start: 63369, Stop: 63067, Start Num: 31

Candidate Starts for Kikipoo\_86:

(Start: 14 @63450 has 33 MA's), (Start: 31 @63369 has 227 MA's), (48, 63252), (50, 63231), (59, 63192),

Gene: Kimbrough\_85 Start: 63441, Stop: 63139, Start Num: 31

Candidate Starts for Kimbrough\_85:

(Start: 14 @63522 has 33 MA's), (Start: 31 @63441 has 227 MA's), (48, 63324), (50, 63303), (59, 63264),

Gene: KingTut\_75 Start: 59601, Stop: 59299, Start Num: 31

Candidate Starts for KingTut\_75:

(Start: 14 @59682 has 33 MA's), (Start: 31 @59601 has 227 MA's), (48, 59484), (50, 59463), (59, 59424),

Gene: KingVeVeVe\_82 Start: 62576, Stop: 62274, Start Num: 31

Candidate Starts for KingVeVeVe\_82:

(Start: 14 @62657 has 33 MA's), (Start: 31 @62576 has 227 MA's), (48, 62459), (50, 62438), (59, 62399),

Gene: KlimbOn\_83 Start: 62881, Stop: 62579, Start Num: 31

Candidate Starts for KlimbOn\_83:

(Start: 14 @62962 has 33 MA's), (Start: 31 @62881 has 227 MA's), (48, 62764), (50, 62743), (59, 62704),

Gene: Kloppinator\_84 Start: 63012, Stop: 62710, Start Num: 31

Candidate Starts for Kloppinator\_84:

(Start: 14 @63093 has 33 MA's), (Start: 31 @63012 has 227 MA's), (48, 62895), (50, 62874), (59, 62835),

Gene: Kronus\_80 Start: 62318, Stop: 61989, Start Num: 38

Candidate Starts for Kronus\_80:

(Start: 38 @62318 has 79 MA's), (48, 62219), (50, 62198), (54, 62177),

Gene: Kumao\_87 Start: 55246, Stop: 55530, Start Num: 35

Candidate Starts for Kumao\_87:

(9, 55096), (13, 55132), (24, 55183), (26, 55207), (Start: 35 @55246 has 1 MA's), (51, 55372), (65, 55492),

Gene: Kwadwo\_83 Start: 62867, Stop: 62565, Start Num: 31

Candidate Starts for Kwadwo\_83:

(Start: 14 @62948 has 33 MA's), (Start: 31 @62867 has 227 MA's), (43, 62798), (48, 62750), (50, 62729), (59, 62690),

Gene: Kwksand96\_85 Start: 63133, Stop: 62831, Start Num: 31

Candidate Starts for Kwksand96\_85:

(Start: 14 @63214 has 33 MA's), (Start: 31 @63133 has 227 MA's), (43, 63064), (48, 63016), (50, 62995), (59, 62956),

Gene: Labeouficaum\_84 Start: 62946, Stop: 62644, Start Num: 31

Candidate Starts for Labeouficaum\_84:

(Start: 14 @63027 has 33 MA's), (Start: 31 @62946 has 227 MA's), (48, 62829), (50, 62808), (59, 62769),

Gene: Lars\_71 Start: 59048, Stop: 58746, Start Num: 38

Candidate Starts for Lars\_71:

(Start: 38 @59048 has 79 MA's), (45, 58988), (48, 58949), (50, 58928), (54, 58907), (66, 58796), (69, 58775), (70, 58769), (72, 58763),

Gene: LasagnaCat\_85 Start: 63248, Stop: 62946, Start Num: 31

Candidate Starts for LasagnaCat\_85:

(Start: 14 @63329 has 33 MA's), (Start: 31 @63248 has 227 MA's), (43, 63179), (48, 63131), (50, 63110), (59, 63071),

Gene: Lasso\_83 Start: 63108, Stop: 62806, Start Num: 31

Candidate Starts for Lasso\_83:

(Start: 14 @63189 has 33 MA's), (Start: 31 @63108 has 227 MA's), (50, 62970), (59, 62931),

Gene: LeeLot\_83 Start: 63532, Stop: 63149, Start Num: 14

Candidate Starts for LeeLot\_83:

(Start: 14 @63532 has 33 MA's), (Start: 31 @63451 has 227 MA's), (48, 63334), (50, 63313), (59, 63274),

Gene: Lego3393\_82 Start: 63569, Stop: 63267, Start Num: 31



Candidate Starts for Lego3393\_82:

(Start: 14 @63650 has 33 MA's), (Start: 31 @63569 has 227 MA's), (43, 63500), (48, 63452), (50, 63431), (59, 63392),

Gene: Legolas\_85 Start: 63195, Stop: 62893, Start Num: 31

Candidate Starts for Legolas\_85:

(Start: 14 @63276 has 33 MA's), (Start: 31 @63195 has 227 MA's), (43, 63126), (48, 63078), (50, 63057), (59, 63018),

Gene: LeiMonet\_86 Start: 63329, Stop: 63027, Start Num: 31

Candidate Starts for LeiMonet\_86:

(Start: 14 @63410 has 33 MA's), (Start: 31 @63329 has 227 MA's), (48, 63212), (50, 63191), (59, 63152),

Gene: LemonSlice\_84 Start: 62854, Stop: 62552, Start Num: 31

Candidate Starts for LemonSlice\_84:

(Start: 14 @62935 has 33 MA's), (Start: 31 @62854 has 227 MA's), (50, 62716), (59, 62677),

Gene: Lephleur\_70 Start: 58910, Stop: 58608, Start Num: 38

Candidate Starts for Lephleur\_70:

(Start: 38 @58910 has 79 MA's), (45, 58850), (48, 58811), (50, 58790), (54, 58769), (66, 58658), (69, 58637), (70, 58631), (72, 58625),

Gene: LestyG\_78 Start: 60804, Stop: 60475, Start Num: 38

Candidate Starts for LestyG\_78:

(Start: 38 @60804 has 79 MA's), (48, 60705), (50, 60684), (54, 60663),

Gene: LizLemon\_70 Start: 59075, Stop: 58773, Start Num: 38

Candidate Starts for LizLemon\_70:

(Start: 38 @59075 has 79 MA's), (45, 59015), (48, 58976), (50, 58955), (54, 58934), (66, 58823), (69, 58802), (70, 58796), (72, 58790),

Gene: Longacauda\_85 Start: 63348, Stop: 63046, Start Num: 31

Candidate Starts for Longacauda\_85:

(Start: 14 @63429 has 33 MA's), (Start: 31 @63348 has 227 MA's), (43, 63279), (48, 63231), (50, 63210), (59, 63171),

Gene: Lopsy\_81 Start: 62535, Stop: 62233, Start Num: 31

Candidate Starts for Lopsy\_81:

(Start: 14 @62616 has 33 MA's), (Start: 31 @62535 has 227 MA's), (43, 62466), (48, 62418), (50, 62397),

Gene: LostAndPhound\_83 Start: 63397, Stop: 63095, Start Num: 31

Candidate Starts for LostAndPhound\_83:

(Start: 14 @63478 has 33 MA's), (Start: 31 @63397 has 227 MA's), (48, 63280), (50, 63259), (59, 63220),

Gene: LuckyMarjie\_81 Start: 62606, Stop: 62304, Start Num: 31

Candidate Starts for LuckyMarjie\_81:

(Start: 14 @62687 has 33 MA's), (Start: 31 @62606 has 227 MA's), (48, 62489), (50, 62468), (59, 62429),

Gene: Lulumae\_81 Start: 62668, Stop: 62285, Start Num: 14

Candidate Starts for Lulumae\_81:

(Start: 14 @62668 has 33 MA's), (Start: 31 @62587 has 227 MA's), (48, 62470), (50, 62449), (59, 62410),

Gene: Lulwa\_81 Start: 62220, Stop: 61918, Start Num: 31

Candidate Starts for Lulwa\_81:

(Start: 14 @62301 has 33 MA's), (Start: 31 @62220 has 227 MA's), (48, 62103), (50, 62082), (59, 62043),

Gene: Lumine\_85 Start: 63045, Stop: 62743, Start Num: 31

Candidate Starts for Lumine\_85:

(Start: 14 @63126 has 33 MA's), (Start: 31 @63045 has 227 MA's), (48, 62928), (50, 62907), (59, 62868),

Gene: MRabcd\_84 Start: 63322, Stop: 63020, Start Num: 31

Candidate Starts for MRabcd\_84:

(Start: 14 @63403 has 33 MA's), (Start: 31 @63322 has 227 MA's), (48, 63205), (50, 63184), (59, 63145),

Gene: Mag7\_82 Start: 62806, Stop: 62504, Start Num: 31

Candidate Starts for Mag7\_82:

(Start: 14 @62887 has 33 MA's), (Start: 31 @62806 has 227 MA's), (43, 62737), (48, 62689), (50, 62668), (59, 62629),

Gene: Magic8\_83 Start: 63174, Stop: 62872, Start Num: 31

Candidate Starts for Magic8\_83:

(Start: 14 @63255 has 33 MA's), (Start: 31 @63174 has 227 MA's), (48, 63057), (50, 63036), (59, 62997),

Gene: Magritte\_241 Start: 125100, Stop: 125468, Start Num: 33

Candidate Starts for Magritte\_241:

(Start: 33 @125100 has 1 MA's), (34, 125106), (44, 125181), (76, 125451),

Gene: MakoManhole\_74 Start: 56700, Stop: 56401, Start Num: 30

Candidate Starts for MakoManhole\_74:

(Start: 30 @56700 has 5 MA's), (51, 56568), (55, 56550), (66, 56439),

Gene: Mana\_82 Start: 63010, Stop: 62708, Start Num: 31

Candidate Starts for Mana\_82:

(Start: 14 @63091 has 33 MA's), (Start: 31 @63010 has 227 MA's), (48, 62893), (50, 62872), (59, 62833),

Gene: Manad\_83 Start: 63120, Stop: 62818, Start Num: 31

Candidate Starts for Manad\_83:

(Start: 14 @63201 has 33 MA's), (Start: 31 @63120 has 227 MA's), (48, 63003), (50, 62982), (59, 62943),

Gene: Marley1013\_81 Start: 62170, Stop: 61841, Start Num: 38

Candidate Starts for Marley1013\_81:

(Start: 38 @62170 has 79 MA's), (48, 62071), (50, 62050), (54, 62029),

Gene: Maru\_84 Start: 63458, Stop: 63156, Start Num: 31

Candidate Starts for Maru\_84:

(Start: 14 @63539 has 33 MA's), (Start: 31 @63458 has 227 MA's), (48, 63341), (50, 63320), (59, 63281),

Gene: Maskar\_85 Start: 63370, Stop: 63068, Start Num: 31

Candidate Starts for Maskar\_85:

(Start: 14 @63451 has 33 MA's), (Start: 31 @63370 has 227 MA's), (43, 63301), (48, 63253), (50, 63232), (59, 63193),

Gene: MasterPo\_71 Start: 58942, Stop: 58640, Start Num: 38

Candidate Starts for MasterPo\_71:

(Start: 38 @58942 has 79 MA's), (45, 58882), (48, 58843), (50, 58822), (54, 58801), (66, 58690), (69, 58669), (70, 58663), (72, 58657),

Gene: Matalotodo\_83 Start: 63854, Stop: 63552, Start Num: 31

Candidate Starts for Matalotodo\_83:

(Start: 14 @63935 has 33 MA's), (Start: 31 @63854 has 227 MA's), (48, 63737), (50, 63716), (59, 63677),

Gene: Mcshane\_83 Start: 62868, Stop: 62566, Start Num: 31

Candidate Starts for Mcshane\_83:

(Start: 14 @62949 has 33 MA's), (Start: 31 @62868 has 227 MA's), (48, 62751), (50, 62730), (59, 62691),

Gene: Mecca\_84 Start: 63422, Stop: 63120, Start Num: 31

Candidate Starts for Mecca\_84:

(Start: 14 @63503 has 33 MA's), (Start: 31 @63422 has 227 MA's), (48, 63305), (50, 63284), (59, 63245),

Gene: Megabear\_66 Start: 49066, Stop: 49365, Start Num: 38

Candidate Starts for Megabear\_66:

(Start: 38 @49066 has 79 MA's), (48, 49165), (50, 49186), (57, 49216), (61, 49273), (66, 49324), (71, 49354),

Gene: Megamind20\_84 Start: 62832, Stop: 62530, Start Num: 31

Candidate Starts for Megamind20\_84:

(Start: 14 @62913 has 33 MA's), (Start: 31 @62832 has 227 MA's), (43, 62763), (48, 62715), (50, 62694), (59, 62655),

Gene: Megatron\_85 Start: 63540, Stop: 63238, Start Num: 31

Candidate Starts for Megatron\_85:

(Start: 14 @63621 has 33 MA's), (Start: 31 @63540 has 227 MA's), (43, 63471), (48, 63423), (50, 63402), (59, 63363),

Gene: Melc17\_81 Start: 63490, Stop: 63188, Start Num: 31

Candidate Starts for Melc17\_81:

(Start: 14 @63571 has 33 MA's), (Start: 31 @63490 has 227 MA's), (48, 63373), (50, 63352), (59, 63313),

Gene: MelsMeow\_83 Start: 63130, Stop: 62828, Start Num: 31

Candidate Starts for MelsMeow\_83:

(Start: 14 @63211 has 33 MA's), (Start: 31 @63130 has 227 MA's), (43, 63061), (48, 63013), (50, 62992), (59, 62953),

Gene: Mesh1\_85 Start: 63667, Stop: 63284, Start Num: 14  
Candidate Starts for Mesh1\_85:  
(Start: 14 @63667 has 33 MA's), (Start: 31 @63586 has 227 MA's), (48, 63469), (50, 63448), (59, 63409),

Gene: MichaelPhcott\_82 Start: 62803, Stop: 62501, Start Num: 31  
Candidate Starts for MichaelPhcott\_82:  
(Start: 14 @62884 has 33 MA's), (Start: 31 @62803 has 227 MA's), (43, 62734), (48, 62686), (50, 62665), (59, 62626),

Gene: Mikota\_81 Start: 62574, Stop: 62272, Start Num: 31  
Candidate Starts for Mikota\_81:  
(Start: 14 @62655 has 33 MA's), (Start: 31 @62574 has 227 MA's), (48, 62457), (50, 62436), (59, 62397),

Gene: MiniBoss\_81 Start: 62175, Stop: 61873, Start Num: 31  
Candidate Starts for MiniBoss\_81:  
(Start: 14 @62256 has 33 MA's), (Start: 31 @62175 has 227 MA's), (48, 62058), (50, 62037), (59, 61998),

Gene: MitKao\_84 Start: 63024, Stop: 62722, Start Num: 31  
Candidate Starts for MitKao\_84:  
(Start: 14 @63105 has 33 MA's), (Start: 31 @63024 has 227 MA's), (48, 62907), (50, 62886), (59, 62847),

Gene: MmasiCarm\_81 Start: 61673, Stop: 61344, Start Num: 38  
Candidate Starts for MmasiCarm\_81:  
(Start: 38 @61673 has 79 MA's), (48, 61574), (50, 61553), (54, 61532),

Gene: Morgushi\_82 Start: 62919, Stop: 62536, Start Num: 14  
Candidate Starts for Morgushi\_82:  
(Start: 14 @62919 has 33 MA's), (Start: 31 @62838 has 227 MA's), (48, 62721), (50, 62700), (59, 62661),

Gene: Morrissey\_45 Start: 34634, Stop: 34356, Start Num: 32  
Candidate Starts for Morrissey\_45:  
(Start: 32 @34634 has 3 MA's), (45, 34559), (48, 34532), (49, 34529), (51, 34508), (53, 34499), (56, 34490), (62, 34421),

Gene: Mortcellus\_80 Start: 62399, Stop: 62070, Start Num: 38  
Candidate Starts for Mortcellus\_80:  
(Start: 38 @62399 has 79 MA's), (48, 62300), (50, 62279), (54, 62258),

Gene: Morty\_85 Start: 63410, Stop: 63108, Start Num: 31  
Candidate Starts for Morty\_85:  
(Start: 14 @63491 has 33 MA's), (Start: 31 @63410 has 227 MA's), (48, 63293), (50, 63272), (59, 63233),

Gene: Morty007\_79 Start: 62170, Stop: 61841, Start Num: 38  
Candidate Starts for Morty007\_79:  
(Start: 38 @62170 has 79 MA's), (48, 62071), (50, 62050), (54, 62029),

Gene: Mosaic\_82 Start: 63101, Stop: 62718, Start Num: 14

Candidate Starts for Mosaic\_82:

(Start: 14 @63101 has 33 MA's), (Start: 31 @63020 has 227 MA's), (48, 62903), (50, 62882), (59, 62843),

Gene: MossRose\_77 Start: 57611, Stop: 57312, Start Num: 30

Candidate Starts for MossRose\_77:

(Start: 30 @57611 has 5 MA's), (51, 57479), (55, 57461), (66, 57350),

Gene: MrPhizzler\_83 Start: 63318, Stop: 63016, Start Num: 31

Candidate Starts for MrPhizzler\_83:

(Start: 14 @63399 has 33 MA's), (Start: 31 @63318 has 227 MA's), (48, 63201), (50, 63180), (59, 63141),

Gene: Mulan\_83 Start: 63053, Stop: 62751, Start Num: 31

Candidate Starts for Mulan\_83:

(Start: 14 @63134 has 33 MA's), (Start: 31 @63053 has 227 MA's), (48, 62936), (50, 62915), (59, 62876),

Gene: Murdoc\_81 Start: 63212, Stop: 62829, Start Num: 14

Candidate Starts for Murdoc\_81:

(Start: 14 @63212 has 33 MA's), (Start: 31 @63131 has 227 MA's), (48, 63014), (50, 62993), (59, 62954),

Gene: Mutante\_85 Start: 63025, Stop: 62723, Start Num: 31

Candidate Starts for Mutante\_85:

(Start: 14 @63106 has 33 MA's), (Start: 31 @63025 has 227 MA's), (48, 62908), (50, 62887), (59, 62848),

Gene: Nacho\_0087 Start: 64177, Stop: 63794, Start Num: 14

Candidate Starts for Nacho\_0087:

(Start: 14 @64177 has 33 MA's), (Start: 31 @64096 has 227 MA's), (48, 63979), (50, 63958), (59, 63919),

Gene: Neos5\_80 Start: 61632, Stop: 61303, Start Num: 38

Candidate Starts for Neos5\_80:

(Start: 38 @61632 has 79 MA's), (48, 61533), (50, 61512), (54, 61491),

Gene: Newman\_82 Start: 63454, Stop: 63071, Start Num: 14

Candidate Starts for Newman\_82:

(Start: 14 @63454 has 33 MA's), (Start: 31 @63373 has 227 MA's), (48, 63256), (50, 63235), (59, 63196),

Gene: Nicole21\_85 Start: 63159, Stop: 62857, Start Num: 31

Candidate Starts for Nicole21\_85:

(Start: 14 @63240 has 33 MA's), (Start: 31 @63159 has 227 MA's), (43, 63090), (48, 63042), (50, 63021), (59, 62982),

Gene: Nozo\_80 Start: 62041, Stop: 61712, Start Num: 38

Candidate Starts for Nozo\_80:

(Start: 38 @62041 has 79 MA's), (48, 61942), (50, 61921), (54, 61900),

Gene: Numberten\_83 Start: 63140, Stop: 62838, Start Num: 31

Candidate Starts for Numberten\_83:

(Start: 14 @63221 has 33 MA's), (Start: 31 @63140 has 227 MA's), (48, 63023), (50, 63002), (59, 62963),

Gene: Nyala\_83 Start: 62875, Stop: 62573, Start Num: 31

Candidate Starts for Nyala\_83:

(Start: 14 @62956 has 33 MA's), (Start: 31 @62875 has 227 MA's), (48, 62758), (50, 62737), (59, 62698),

Gene: OSmaximus\_85 Start: 63706, Stop: 63404, Start Num: 31

Candidate Starts for OSmaximus\_85:

(Start: 14 @63787 has 33 MA's), (Start: 31 @63706 has 227 MA's), (50, 63568), (59, 63529),

Gene: Obutu\_82 Start: 61844, Stop: 61515, Start Num: 38

Candidate Starts for Obutu\_82:

(Start: 38 @61844 has 79 MA's), (48, 61745), (50, 61724), (54, 61703),

Gene: Olak\_83 Start: 63039, Stop: 62737, Start Num: 31

Candidate Starts for Olak\_83:

(Start: 14 @63120 has 33 MA's), (Start: 31 @63039 has 227 MA's), (50, 62901), (59, 62862),

Gene: Oline\_83 Start: 63029, Stop: 62727, Start Num: 31

Candidate Starts for Oline\_83:

(Start: 14 @63110 has 33 MA's), (Start: 31 @63029 has 227 MA's), (48, 62912), (50, 62891), (59, 62852),

Gene: Olive\_82 Start: 63270, Stop: 62968, Start Num: 31

Candidate Starts for Olive\_82:

(Start: 14 @63351 has 33 MA's), (Start: 31 @63270 has 227 MA's), (48, 63153), (50, 63132), (59, 63093),

Gene: OliverWalter\_84 Start: 63326, Stop: 63024, Start Num: 31

Candidate Starts for OliverWalter\_84:

(Start: 14 @63407 has 33 MA's), (Start: 31 @63326 has 227 MA's), (48, 63209), (50, 63188), (59, 63149),

Gene: Omniscient\_85 Start: 63729, Stop: 63427, Start Num: 31

Candidate Starts for Omniscient\_85:

(Start: 14 @63810 has 33 MA's), (Start: 31 @63729 has 227 MA's), (43, 63660), (48, 63612), (50, 63591), (59, 63552),

Gene: Oosterbaan\_84 Start: 63266, Stop: 62964, Start Num: 31

Candidate Starts for Oosterbaan\_84:

(Start: 14 @63347 has 33 MA's), (Start: 31 @63266 has 227 MA's), (48, 63149), (50, 63128), (59, 63089),

Gene: Opia\_71 Start: 58968, Stop: 58666, Start Num: 38

Candidate Starts for Opia\_71:

(Start: 38 @58968 has 79 MA's), (45, 58908), (48, 58869), (50, 58848), (54, 58827), (66, 58716), (69, 58695), (70, 58689), (72, 58683),

Gene: Orfeu\_83 Start: 63388, Stop: 63086, Start Num: 31

Candidate Starts for Orfeu\_83:

(Start: 14 @63469 has 33 MA's), (Start: 31 @63388 has 227 MA's), (48, 63271), (50, 63250), (59, 63211),

Gene: Orion\_83 Start: 63039, Stop: 62656, Start Num: 14

Candidate Starts for Orion\_83:

(Start: 14 @63039 has 33 MA's), (Start: 31 @62958 has 227 MA's), (48, 62841), (50, 62820), (59, 62781),

Gene: Orwigg\_84 Start: 62794, Stop: 62492, Start Num: 31

Candidate Starts for Orwigg\_84:

(Start: 14 @62875 has 33 MA's), (Start: 31 @62794 has 227 MA's), (48, 62677), (50, 62656), (59, 62617),

Gene: PG1\_83 Start: 63611, Stop: 63228, Start Num: 14

Candidate Starts for PG1\_83:

(Start: 14 @63611 has 33 MA's), (Start: 31 @63530 has 227 MA's), (48, 63413), (50, 63392), (59, 63353),

Gene: PR\_67 Start: 49757, Stop: 50056, Start Num: 38

Candidate Starts for PR\_67:

(Start: 38 @49757 has 79 MA's), (48, 49856), (50, 49877), (57, 49907), (61, 49964), (66, 50015), (71, 50045),

Gene: Pacifista\_83 Start: 62879, Stop: 62577, Start Num: 31

Candidate Starts for Pacifista\_83:

(Start: 14 @62960 has 33 MA's), (Start: 31 @62879 has 227 MA's), (48, 62762), (50, 62741), (59, 62702),

Gene: Phaedrus\_75 Start: 60692, Stop: 60363, Start Num: 38

Candidate Starts for Phaedrus\_75:

(Start: 38 @60692 has 79 MA's), (48, 60593), (50, 60572), (54, 60551),

Gene: Phamished\_84 Start: 63046, Stop: 62744, Start Num: 31

Candidate Starts for Phamished\_84:

(Start: 14 @63127 has 33 MA's), (Start: 31 @63046 has 227 MA's), (48, 62929), (50, 62908), (59, 62869),

Gene: Phantasmagoria\_69 Start: 58957, Stop: 58655, Start Num: 38

Candidate Starts for Phantasmagoria\_69:

(Start: 38 @58957 has 79 MA's), (48, 58858), (50, 58837), (54, 58816), (66, 58705), (69, 58684), (70, 58678), (72, 58672),

Gene: Phareon\_82 Start: 62571, Stop: 62269, Start Num: 31

Candidate Starts for Phareon\_82:

(Start: 14 @62652 has 33 MA's), (Start: 31 @62571 has 227 MA's), (48, 62454), (50, 62433), (59, 62394),

Gene: PhatCats2014\_84 Start: 63611, Stop: 63228, Start Num: 14

Candidate Starts for PhatCats2014\_84:

(Start: 14 @63611 has 33 MA's), (Start: 31 @63530 has 227 MA's), (43, 63461), (48, 63413), (50, 63392), (59, 63353),

Gene: PhatLouie\_86 Start: 63405, Stop: 63103, Start Num: 31

Candidate Starts for PhatLouie\_86:

(Start: 14 @63486 has 33 MA's), (Start: 31 @63405 has 227 MA's), (48, 63288), (50, 63267), (59, 63228),

Gene: Phayeta\_83 Start: 61761, Stop: 61432, Start Num: 38

Candidate Starts for Phayeta\_83:

(Start: 38 @61761 has 79 MA's), (48, 61662), (50, 61641), (54, 61620),

Gene: PhenghisKhan\_84 Start: 63035, Stop: 62733, Start Num: 31

Candidate Starts for PhenghisKhan\_84:

(Start: 14 @63116 has 33 MA's), (Start: 31 @63035 has 227 MA's), (43, 62966), (48, 62918), (50, 62897), (59, 62858),

Gene: Pherdinand\_85 Start: 63251, Stop: 62949, Start Num: 31

Candidate Starts for Pherdinand\_85:

(Start: 14 @63332 has 33 MA's), (Start: 31 @63251 has 227 MA's), (43, 63182), (48, 63134), (50, 63113), (59, 63074),

Gene: Phergie\_84 Start: 63024, Stop: 62722, Start Num: 31

Candidate Starts for Phergie\_84:

(Start: 14 @63105 has 33 MA's), (Start: 31 @63024 has 227 MA's), (43, 62955), (48, 62907), (50, 62886), (59, 62847),

Gene: Philly\_79 Start: 61124, Stop: 60795, Start Num: 38

Candidate Starts for Philly\_79:

(Start: 38 @61124 has 79 MA's), (48, 61025), (50, 61004), (54, 60983),

Gene: Phipps\_83 Start: 63102, Stop: 62800, Start Num: 31

Candidate Starts for Phipps\_83:

(Start: 14 @63183 has 33 MA's), (Start: 31 @63102 has 227 MA's), (48, 62985), (50, 62964), (59, 62925),

Gene: Phleuron\_82 Start: 62836, Stop: 62534, Start Num: 31

Candidate Starts for Phleuron\_82:

(Start: 14 @62917 has 33 MA's), (Start: 31 @62836 has 227 MA's), (43, 62767), (48, 62719), (50, 62698), (59, 62659),

Gene: Phlyer\_80 Start: 61987, Stop: 61658, Start Num: 38

Candidate Starts for Phlyer\_80:

(Start: 38 @61987 has 79 MA's), (48, 61888), (50, 61867), (54, 61846),

Gene: PhrankReynolds\_83 Start: 63110, Stop: 62727, Start Num: 14

Candidate Starts for PhrankReynolds\_83:

(Start: 14 @63110 has 33 MA's), (Start: 31 @63029 has 227 MA's), (43, 62960), (48, 62912), (50, 62891), (59, 62852),

Gene: PhrodoBaggins\_86 Start: 63405, Stop: 63103, Start Num: 31

Candidate Starts for PhrodoBaggins\_86:

(Start: 14 @63486 has 33 MA's), (Start: 31 @63405 has 227 MA's), (48, 63288), (50, 63267), (59, 63228),

Gene: Phunky\_82 Start: 62909, Stop: 62607, Start Num: 31

Candidate Starts for Phunky\_82:



(Start: 14 @62990 has 33 MA's), (Start: 31 @62909 has 227 MA's), (50, 62771), (59, 62732),

Gene: Piglet\_0084 Start: 63524, Stop: 63222, Start Num: 31

Candidate Starts for Piglet\_0084:

(Start: 14 @63605 has 33 MA's), (Start: 31 @63524 has 227 MA's), (48, 63407), (50, 63386), (59, 63347),

Gene: PinheadLarry\_83 Start: 63175, Stop: 62873, Start Num: 31

Candidate Starts for PinheadLarry\_83:

(Start: 14 @63256 has 33 MA's), (Start: 31 @63175 has 227 MA's), (50, 63037), (59, 62998),

Gene: Pinkman\_84 Start: 63248, Stop: 62946, Start Num: 31

Candidate Starts for Pinkman\_84:

(Start: 14 @63329 has 33 MA's), (Start: 31 @63248 has 227 MA's), (48, 63131), (50, 63110), (59, 63071),

Gene: Pipefish\_82 Start: 62383, Stop: 62054, Start Num: 38

Candidate Starts for Pipefish\_82:

(Start: 38 @62383 has 79 MA's), (48, 62284), (50, 62263), (54, 62242),

Gene: Pipsqueak\_81 Start: 62861, Stop: 62559, Start Num: 31

Candidate Starts for Pipsqueak\_81:

(Start: 14 @62942 has 33 MA's), (Start: 31 @62861 has 227 MA's), (48, 62744), (50, 62723), (59, 62684),

Gene: Placalicious\_83 Start: 63894, Stop: 63592, Start Num: 31

Candidate Starts for Placalicious\_83:

(Start: 14 @63975 has 33 MA's), (Start: 31 @63894 has 227 MA's), (48, 63777), (50, 63756), (59, 63717),

Gene: Plmatters\_82 Start: 62849, Stop: 62547, Start Num: 31

Candidate Starts for Plmatters\_82:

(Start: 14 @62930 has 33 MA's), (Start: 31 @62849 has 227 MA's), (48, 62732), (50, 62711), (59, 62672),

Gene: Podrick\_83 Start: 62937, Stop: 62635, Start Num: 31

Candidate Starts for Podrick\_83:

(Start: 14 @63018 has 33 MA's), (Start: 31 @62937 has 227 MA's), (48, 62820), (50, 62799), (59, 62760),

Gene: Pops\_82 Start: 63120, Stop: 62737, Start Num: 14

Candidate Starts for Pops\_82:

(Start: 14 @63120 has 33 MA's), (Start: 31 @63039 has 227 MA's), (48, 62922), (50, 62901), (59, 62862),

Gene: Potter\_80 Start: 62858, Stop: 62556, Start Num: 31

Candidate Starts for Potter\_80:

(Start: 14 @62939 has 33 MA's), (Start: 31 @62858 has 227 MA's), (48, 62741), (50, 62720), (59, 62681),

Gene: Prickles\_85 Start: 63228, Stop: 62926, Start Num: 31

Candidate Starts for Prickles\_85:

(Start: 14 @63309 has 33 MA's), (Start: 31 @63228 has 227 MA's), (50, 63090), (59, 63051),

Gene: ProfessorX\_82 Start: 62895, Stop: 62593, Start Num: 31

Candidate Starts for ProfessorX\_82:

(Start: 14 @62976 has 33 MA's), (Start: 31 @62895 has 227 MA's), (48, 62778), (50, 62757), (59, 62718),

Gene: Puhltonio\_81 Start: 63213, Stop: 62830, Start Num: 14

Candidate Starts for Puhltonio\_81:

(Start: 14 @63213 has 33 MA's), (Start: 31 @63132 has 227 MA's), (48, 63015), (50, 62994), (59, 62955),

Gene: Puppies\_40 Start: 32033, Stop: 31737, Start Num: 32

Candidate Starts for Puppies\_40:

(6, 32213), (7, 32204), (17, 32105), (Start: 32 @32033 has 3 MA's), (45, 31949), (53, 31889), (62, 31811),

Gene: QueenBeane\_84 Start: 63182, Stop: 62880, Start Num: 31

Candidate Starts for QueenBeane\_84:

(Start: 14 @63263 has 33 MA's), (Start: 31 @63182 has 227 MA's), (43, 63113), (48, 63065), (50, 63044), (59, 63005),

Gene: Quisquilliae\_86 Start: 63192, Stop: 62890, Start Num: 31

Candidate Starts for Quisquilliae\_86:

(Start: 14 @63273 has 33 MA's), (Start: 31 @63192 has 227 MA's), (48, 63075), (50, 63054), (59, 63015),

Gene: RagingRooster\_79 Start: 60967, Stop: 60638, Start Num: 38

Candidate Starts for RagingRooster\_79:

(Start: 38 @60967 has 79 MA's), (48, 60868), (50, 60847), (54, 60826),

Gene: RedMaple\_84 Start: 63795, Stop: 63493, Start Num: 31

Candidate Starts for RedMaple\_84:

(Start: 14 @63876 has 33 MA's), (Start: 31 @63795 has 227 MA's), (48, 63678), (50, 63657), (59, 63618),

Gene: Rhinoforte\_70 Start: 58995, Stop: 58693, Start Num: 38

Candidate Starts for Rhinoforte\_70:

(Start: 38 @58995 has 79 MA's), (45, 58935), (48, 58896), (50, 58875), (54, 58854), (66, 58743), (69, 58722), (70, 58716), (72, 58710),

Gene: Ricotta\_84 Start: 62877, Stop: 62575, Start Num: 31

Candidate Starts for Ricotta\_84:

(Start: 14 @62958 has 33 MA's), (Start: 31 @62877 has 227 MA's), (48, 62760), (50, 62739), (59, 62700),

Gene: Riggan\_85 Start: 63363, Stop: 63061, Start Num: 31

Candidate Starts for Riggan\_85:

(Start: 14 @63444 has 33 MA's), (Start: 31 @63363 has 227 MA's), (43, 63294), (48, 63246), (50, 63225), (59, 63186),

Gene: Rimu\_88 Start: 63341, Stop: 63039, Start Num: 31

Candidate Starts for Rimu\_88:

(Start: 14 @63422 has 33 MA's), (Start: 31 @63341 has 227 MA's), (48, 63224), (50, 63203), (59, 63164),

Gene: Rita1961\_81 Start: 61621, Stop: 61292, Start Num: 38

Candidate Starts for Rita1961\_81:

(Start: 38 @61621 has 79 MA's), (48, 61522), (50, 61501), (54, 61480),

Gene: Robyn\_86 Start: 63620, Stop: 63318, Start Num: 31

Candidate Starts for Robyn\_86:

(Start: 14 @63701 has 33 MA's), (Start: 31 @63620 has 227 MA's), (48, 63503), (50, 63482), (59, 63443),

Gene: Roliet\_81 Start: 62222, Stop: 61920, Start Num: 31

Candidate Starts for Roliet\_81:

(Start: 14 @62303 has 33 MA's), (Start: 31 @62222 has 227 MA's), (48, 62105), (50, 62084), (59, 62045),

Gene: RomaT\_80 Start: 61841, Stop: 61512, Start Num: 38

Candidate Starts for RomaT\_80:

(Start: 38 @61841 has 79 MA's), (48, 61742), (50, 61721), (54, 61700),

Gene: Roscoe\_84 Start: 63482, Stop: 63180, Start Num: 31

Candidate Starts for Roscoe\_84:

(Start: 14 @63563 has 33 MA's), (Start: 31 @63482 has 227 MA's), (48, 63365), (50, 63344), (59, 63305),

Gene: Rosebush\_69 Start: 59062, Stop: 58760, Start Num: 38

Candidate Starts for Rosebush\_69:

(Start: 38 @59062 has 79 MA's), (45, 59002), (48, 58963), (50, 58942), (54, 58921), (66, 58810), (69, 58789), (70, 58783), (72, 58777),

Gene: Roy17\_82 Start: 62668, Stop: 62285, Start Num: 14

Candidate Starts for Roy17\_82:

(Start: 14 @62668 has 33 MA's), (Start: 31 @62587 has 227 MA's), (48, 62470), (50, 62449), (59, 62410),

Gene: SDcharge11\_83 Start: 62515, Stop: 62213, Start Num: 31

Candidate Starts for SDcharge11\_83:

(Start: 14 @62596 has 33 MA's), (Start: 31 @62515 has 227 MA's), (48, 62398), (50, 62377), (59, 62338),

Gene: Sabella\_70 Start: 58897, Stop: 58595, Start Num: 38

Candidate Starts for Sabella\_70:

(Start: 38 @58897 has 79 MA's), (48, 58798), (50, 58777), (54, 58756), (66, 58645), (69, 58624), (70, 58618), (72, 58612),

Gene: Samaymay\_84 Start: 63182, Stop: 62880, Start Num: 31

Candidate Starts for Samaymay\_84:

(Start: 14 @63263 has 33 MA's), (Start: 31 @63182 has 227 MA's), (43, 63113), (48, 63065), (50, 63044), (59, 63005),

Gene: SassyCat97\_82 Start: 62849, Stop: 62547, Start Num: 31

Candidate Starts for SassyCat97\_82:

(Start: 14 @62930 has 33 MA's), (Start: 31 @62849 has 227 MA's), (48, 62732), (50, 62711), (59, 62672),

Gene: Schadenfreude\_84 Start: 62740, Stop: 62438, Start Num: 31

Candidate Starts for Schadenfreude\_84:

(Start: 14 @62821 has 33 MA's), (Start: 31 @62740 has 227 MA's), (48, 62623), (50, 62602), (59, 62563),

Gene: Schueller\_83 Start: 63123, Stop: 62821, Start Num: 31

Candidate Starts for Schueller\_83:

(Start: 14 @63204 has 33 MA's), (Start: 31 @63123 has 227 MA's), (43, 63054), (48, 63006), (50, 62985), (59, 62946),

Gene: Scoot17C\_85 Start: 62962, Stop: 62660, Start Num: 31

Candidate Starts for Scoot17C\_85:

(Start: 14 @63043 has 33 MA's), (Start: 31 @62962 has 227 MA's), (48, 62845), (50, 62824), (59, 62785),

Gene: Scrick\_83 Start: 62863, Stop: 62561, Start Num: 31

Candidate Starts for Scrick\_83:

(Start: 14 @62944 has 33 MA's), (Start: 31 @62863 has 227 MA's), (48, 62746), (50, 62725), (59, 62686),

Gene: Selr12\_85 Start: 62905, Stop: 62603, Start Num: 31

Candidate Starts for Selr12\_85:

(Start: 14 @62986 has 33 MA's), (Start: 31 @62905 has 227 MA's), (48, 62788), (50, 62767), (59, 62728),

Gene: Serendipity\_84 Start: 63416, Stop: 63033, Start Num: 14

Candidate Starts for Serendipity\_84:

(Start: 14 @63416 has 33 MA's), (Start: 31 @63335 has 227 MA's), (48, 63218), (50, 63197), (59, 63158),

Gene: Serpentine\_0085 Start: 63416, Stop: 63114, Start Num: 31

Candidate Starts for Serpentine\_0085:

(Start: 14 @63497 has 33 MA's), (Start: 31 @63416 has 227 MA's), (48, 63299), (50, 63278), (59, 63239),

Gene: Sheila\_80 Start: 62428, Stop: 62126, Start Num: 31

Candidate Starts for Sheila\_80:

(Start: 14 @62509 has 33 MA's), (Start: 31 @62428 has 227 MA's), (48, 62311), (50, 62290), (59, 62251),

Gene: ShiVal\_82 Start: 62887, Stop: 62585, Start Num: 31

Candidate Starts for ShiVal\_82:

(Start: 14 @62968 has 33 MA's), (Start: 31 @62887 has 227 MA's), (48, 62770), (50, 62749), (59, 62710),

Gene: Sigman\_84 Start: 62924, Stop: 62541, Start Num: 14

Candidate Starts for Sigman\_84:

(Start: 14 @62924 has 33 MA's), (Start: 31 @62843 has 227 MA's), (43, 62774), (48, 62726), (50, 62705), (59, 62666),

Gene: SilverBell\_85 Start: 63378, Stop: 62995, Start Num: 14

Candidate Starts for SilverBell\_85:

(Start: 14 @63378 has 33 MA's), (Start: 31 @63297 has 227 MA's), (43, 63228), (48, 63180), (50, 63159), (59, 63120),

Gene: Simielle\_83 Start: 62829, Stop: 62527, Start Num: 31

Candidate Starts for Simielle\_83:

(Start: 14 @62910 has 33 MA's), (Start: 31 @62829 has 227 MA's), (48, 62712), (50, 62691), (59, 62652),

Gene: Skippy\_85 Start: 63257, Stop: 62955, Start Num: 31

Candidate Starts for Skippy\_85:

(Start: 14 @63338 has 33 MA's), (Start: 31 @63257 has 227 MA's), (48, 63140), (50, 63119), (59, 63080),

Gene: Slatt\_84 Start: 63144, Stop: 62842, Start Num: 31

Candidate Starts for Slatt\_84:

(Start: 14 @63225 has 33 MA's), (Start: 31 @63144 has 227 MA's), (48, 63027), (50, 63006), (59, 62967),

Gene: SlippinJimmy\_83 Start: 62651, Stop: 62322, Start Num: 38

Candidate Starts for SlippinJimmy\_83:

(Start: 38 @62651 has 79 MA's), (48, 62552), (50, 62531), (54, 62510),

Gene: Soile\_85 Start: 63382, Stop: 63080, Start Num: 31

Candidate Starts for Soile\_85:

(Start: 14 @63463 has 33 MA's), (Start: 31 @63382 has 227 MA's), (48, 63265), (50, 63244), (59, 63205),

Gene: Solosis\_82 Start: 62850, Stop: 62548, Start Num: 31

Candidate Starts for Solosis\_82:

(Start: 14 @62931 has 33 MA's), (Start: 31 @62850 has 227 MA's), (48, 62733), (50, 62712),

Gene: Sophia\_82 Start: 62839, Stop: 62537, Start Num: 31

Candidate Starts for Sophia\_82:

(Start: 14 @62920 has 33 MA's), (Start: 31 @62839 has 227 MA's), (50, 62701), (59, 62662),

Gene: Soto\_81 Start: 62555, Stop: 62253, Start Num: 31

Candidate Starts for Soto\_81:

(Start: 14 @62636 has 33 MA's), (Start: 31 @62555 has 227 MA's), (48, 62438), (50, 62417), (59, 62378),

Gene: Spartan300\_83 Start: 63100, Stop: 62798, Start Num: 31

Candidate Starts for Spartan300\_83:

(Start: 14 @63181 has 33 MA's), (Start: 31 @63100 has 227 MA's), (48, 62983), (50, 62962), (59, 62923),

Gene: Squid\_83 Start: 63129, Stop: 62827, Start Num: 31

Candidate Starts for Squid\_83:

(Start: 14 @63210 has 33 MA's), (Start: 31 @63129 has 227 MA's), (48, 63012), (50, 62991), (59, 62952),

Gene: Squiggle\_83 Start: 62857, Stop: 62555, Start Num: 31

Candidate Starts for Squiggle\_83:

(Start: 14 @62938 has 33 MA's), (Start: 31 @62857 has 227 MA's), (48, 62740), (50, 62719), (59, 62680),

Gene: StinkyVeggy\_75 Start: 62138, Stop: 61818, Start Num: 33

Candidate Starts for StinkyVeggy\_75:

(21, 62207), (22, 62204), (28, 62162), (Start: 33 @62138 has 1 MA's), (48, 62021), (51, 61997), (56, 61979), (58, 61973), (59, 61961), (66, 61871), (73, 61829),

Gene: Struggle\_84 Start: 62955, Stop: 62653, Start Num: 31

Candidate Starts for Struggle\_84:

(Start: 14 @63036 has 33 MA's), (Start: 31 @62955 has 227 MA's), (48, 62838), (50, 62817), (59, 62778),

Gene: Suffolk\_81 Start: 62932, Stop: 62549, Start Num: 14

Candidate Starts for Suffolk\_81:

(Start: 14 @62932 has 33 MA's), (Start: 31 @62851 has 227 MA's), (48, 62734), (50, 62713), (59, 62674),

Gene: Surely\_84 Start: 63420, Stop: 63118, Start Num: 31

Candidate Starts for Surely\_84:

(Start: 14 @63501 has 33 MA's), (Start: 31 @63420 has 227 MA's), (48, 63303), (50, 63282), (59, 63243),

Gene: Swiphy\_88 Start: 63405, Stop: 63103, Start Num: 31

Candidate Starts for Swiphy\_88:

(Start: 14 @63486 has 33 MA's), (Start: 31 @63405 has 227 MA's), (48, 63288), (50, 63267), (59, 63228),

Gene: Swish\_85 Start: 63266, Stop: 62964, Start Num: 31

Candidate Starts for Swish\_85:

(Start: 14 @63347 has 33 MA's), (Start: 31 @63266 has 227 MA's), (48, 63149), (50, 63128), (59, 63089),

Gene: SynergyX\_80 Start: 61278, Stop: 60949, Start Num: 38

Candidate Starts for SynergyX\_80:

(Start: 38 @61278 has 79 MA's), (48, 61179), (50, 61158), (54, 61137),

Gene: TA17A\_70 Start: 58905, Stop: 58603, Start Num: 38

Candidate Starts for TA17A\_70:

(Start: 38 @58905 has 79 MA's), (48, 58806), (50, 58785), (54, 58764), (66, 58653), (69, 58632), (70, 58626),

Gene: TPA2\_75 Start: 59427, Stop: 59762, Start Num: 30

Candidate Starts for TPA2\_75:

(Start: 30 @59427 has 5 MA's), (52, 59565), (55, 59580), (59, 59601), (68, 59709), (75, 59751),

Gene: TallGrassMM\_83 Start: 62915, Stop: 62613, Start Num: 31

Candidate Starts for TallGrassMM\_83:

(Start: 14 @62996 has 33 MA's), (Start: 31 @62915 has 227 MA's), (48, 62798), (50, 62777),

Gene: Taptic\_67 Start: 49153, Stop: 49491, Start Num: 38

Candidate Starts for Taptic\_67:

(23, 49072), (Start: 38 @49153 has 79 MA's), (48, 49252), (50, 49273), (57, 49303), (61, 49360), (66, 49411), (74, 49453),

Gene: Telesworld\_82 Start: 62993, Stop: 62691, Start Num: 31

Candidate Starts for Telesworld\_82:

(Start: 14 @63074 has 33 MA's), (Start: 31 @62993 has 227 MA's), (43, 62924), (48, 62876), (50, 62855), (59, 62816),

Gene: Thonko\_87 Start: 63460, Stop: 63152, Start Num: 31

Candidate Starts for Thonko\_87:

(1, 63853), (2, 63850), (3, 63805), (4, 63748), (5, 63745), (8, 63604), (10, 63583), (Start: 31 @63460 has 227 MA's), (45, 63382), (48, 63343), (50, 63322), (64, 63226), (67, 63184),

Gene: Thora\_83 Start: 63370, Stop: 63068, Start Num: 31

Candidate Starts for Thora\_83:

(Start: 14 @63451 has 33 MA's), (Start: 31 @63370 has 227 MA's), (48, 63253), (50, 63232), (59, 63193),

Gene: ThreeOh3D2\_86 Start: 63523, Stop: 63221, Start Num: 31

Candidate Starts for ThreeOh3D2\_86:

(Start: 14 @63604 has 33 MA's), (Start: 31 @63523 has 227 MA's), (48, 63406), (50, 63385), (59, 63346),

Gene: Thunderbird\_84 Start: 63112, Stop: 62810, Start Num: 31

Candidate Starts for Thunderbird\_84:

(Start: 14 @63193 has 33 MA's), (Start: 31 @63112 has 227 MA's), (48, 62995), (50, 62974), (59, 62935),

Gene: Timmi\_83 Start: 62886, Stop: 62584, Start Num: 31

Candidate Starts for Timmi\_83:

(Start: 14 @62967 has 33 MA's), (Start: 31 @62886 has 227 MA's), (48, 62769), (50, 62748), (59, 62709),

Gene: Tinciduntolum\_71 Start: 59064, Stop: 58762, Start Num: 38

Candidate Starts for Tinciduntolum\_71:

(Start: 38 @59064 has 79 MA's), (45, 59004), (48, 58965), (50, 58944), (54, 58923), (66, 58812), (69, 58791), (70, 58785), (72, 58779),

Gene: TomBombadil\_84 Start: 63413, Stop: 63111, Start Num: 31

Candidate Starts for TomBombadil\_84:

(Start: 14 @63494 has 33 MA's), (Start: 31 @63413 has 227 MA's), (48, 63296), (50, 63275), (59, 63236),

Gene: Tomlarah\_85 Start: 63720, Stop: 63418, Start Num: 31

Candidate Starts for Tomlarah\_85:

(Start: 31 @63720 has 227 MA's), (43, 63651), (48, 63603), (50, 63582), (59, 63543),

Gene: Toni\_84 Start: 63397, Stop: 63014, Start Num: 14

Candidate Starts for Toni\_84:

(Start: 14 @63397 has 33 MA's), (Start: 31 @63316 has 227 MA's), (48, 63199), (50, 63178), (59, 63139),

Gene: Tooj\_81 Start: 62529, Stop: 62227, Start Num: 31

Candidate Starts for Tooj\_81:

(Start: 14 @62610 has 33 MA's), (Start: 31 @62529 has 227 MA's), (43, 62460), (48, 62412), (50, 62391), (59, 62352),

Gene: Tres\_70 Start: 58918, Stop: 58616, Start Num: 38

Candidate Starts for Tres\_70:

(Start: 38 @58918 has 79 MA's), (45, 58858), (48, 58819), (50, 58798), (54, 58777), (66, 58666), (69, 58645), (70, 58639), (72, 58633),

Gene: True\_82 Start: 62862, Stop: 62560, Start Num: 31

Candidate Starts for True\_82:

(Start: 14 @62943 has 33 MA's), (Start: 31 @62862 has 227 MA's), (48, 62745), (50, 62724), (59, 62685),

Gene: Trypo\_85 Start: 63665, Stop: 63282, Start Num: 14

Candidate Starts for Trypo\_85:

(Start: 14 @63665 has 33 MA's), (Start: 31 @63584 has 227 MA's), (48, 63467), (50, 63446), (59, 63407),

Gene: Tydolla\_76 Start: 61257, Stop: 60928, Start Num: 38

Candidate Starts for Tydolla\_76:

(Start: 38 @61257 has 79 MA's), (48, 61158), (50, 61137), (54, 61116),

Gene: TyrionL\_84 Start: 62946, Stop: 62644, Start Num: 31

Candidate Starts for TyrionL\_84:

(Start: 14 @63027 has 33 MA's), (Start: 31 @62946 has 227 MA's), (48, 62829), (50, 62808), (59, 62769),

Gene: UAch1\_85 Start: 63213, Stop: 62911, Start Num: 31

Candidate Starts for UAch1\_85:

(Start: 14 @63294 has 33 MA's), (Start: 31 @63213 has 227 MA's), (48, 63096), (50, 63075), (59, 63036),

Gene: UncleHowie\_81 Start: 62631, Stop: 62248, Start Num: 14

Candidate Starts for UncleHowie\_81:

(Start: 14 @62631 has 33 MA's), (Start: 31 @62550 has 227 MA's), (48, 62433), (50, 62412), (59, 62373),

Gene: Upyo\_44 Start: 33729, Stop: 33457, Start Num: 36

Candidate Starts for Upyo\_44:

(18, 33810), (20, 33807), (25, 33774), (Start: 36 @33729 has 1 MA's), (45, 33657), (48, 33630), (49, 33627), (60, 33558), (62, 33519),

Gene: Usavi\_85 Start: 63710, Stop: 63408, Start Num: 31

Candidate Starts for Usavi\_85:

(Start: 14 @63791 has 33 MA's), (Start: 31 @63710 has 227 MA's), (48, 63593), (50, 63572), (59, 63533),

Gene: Vaishali24\_85 Start: 63319, Stop: 63017, Start Num: 31

Candidate Starts for Vaishali24\_85:

(Start: 14 @63400 has 33 MA's), (Start: 31 @63319 has 227 MA's), (48, 63202), (50, 63181), (59, 63142),



Gene: Valjean\_83 Start: 63104, Stop: 62802, Start Num: 31  
Candidate Starts for Valjean\_83:  
(Start: 14 @63185 has 33 MA's), (Start: 31 @63104 has 227 MA's), (48, 62987), (50, 62966), (59, 62927),

Gene: Vaticameos\_81 Start: 61419, Stop: 61117, Start Num: 31  
Candidate Starts for Vaticameos\_81:  
(Start: 14 @61500 has 33 MA's), (Start: 31 @61419 has 227 MA's), (48, 61302), (50, 61281), (59, 61242),

Gene: Veritas\_83 Start: 63027, Stop: 62725, Start Num: 31  
Candidate Starts for Veritas\_83:  
(Start: 14 @63108 has 33 MA's), (Start: 31 @63027 has 227 MA's), (43, 62958), (48, 62910), (50, 62889), (59, 62850),

Gene: Vic9\_73 Start: 59761, Stop: 59459, Start Num: 38  
Candidate Starts for Vic9\_73:  
(Start: 38 @59761 has 79 MA's), (45, 59701), (48, 59662), (50, 59641), (54, 59620), (66, 59509), (69, 59488), (70, 59482), (72, 59476),

Gene: Virapocalypse\_85 Start: 63212, Stop: 62910, Start Num: 31  
Candidate Starts for Virapocalypse\_85:  
(Start: 14 @63293 has 33 MA's), (Start: 31 @63212 has 227 MA's), (48, 63095), (50, 63074), (59, 63035),

Gene: Virgeve\_82 Start: 62832, Stop: 62530, Start Num: 31  
Candidate Starts for Virgeve\_82:  
(Start: 14 @62913 has 33 MA's), (Start: 31 @62832 has 227 MA's), (48, 62715), (50, 62694), (59, 62655),

Gene: Vista\_83 Start: 63026, Stop: 62724, Start Num: 31  
Candidate Starts for Vista\_83:  
(Start: 14 @63107 has 33 MA's), (Start: 31 @63026 has 227 MA's), (43, 62957), (48, 62909), (50, 62888), (59, 62849),

Gene: Vivaldi\_84 Start: 63291, Stop: 62989, Start Num: 31  
Candidate Starts for Vivaldi\_84:  
(Start: 14 @63372 has 33 MA's), (Start: 31 @63291 has 227 MA's), (43, 63222), (48, 63174), (50, 63153), (59, 63114),

Gene: Vortex\_83 Start: 63213, Stop: 62830, Start Num: 14  
Candidate Starts for Vortex\_83:  
(Start: 14 @63213 has 33 MA's), (Start: 31 @63132 has 227 MA's), (48, 63015), (50, 62994), (59, 62955),

Gene: Wallhey\_85 Start: 63133, Stop: 62831, Start Num: 31  
Candidate Starts for Wallhey\_85:  
(Start: 14 @63214 has 33 MA's), (Start: 31 @63133 has 227 MA's), (48, 63016), (50, 62995), (59, 62956),

Gene: Waterdiva\_85 Start: 63400, Stop: 63098, Start Num: 31  
Candidate Starts for Waterdiva\_85:

(Start: 14 @63481 has 33 MA's), (Start: 31 @63400 has 227 MA's), (48, 63283), (50, 63262), (59, 63223),

Gene: Weher20\_81 Start: 63470, Stop: 63168, Start Num: 31

Candidate Starts for Weher20\_81:

(Start: 14 @63551 has 33 MA's), (Start: 31 @63470 has 227 MA's), (48, 63353), (50, 63332), (59, 63293),

Gene: West99\_70 Start: 59095, Stop: 58793, Start Num: 38

Candidate Starts for West99\_70:

(Start: 38 @59095 has 79 MA's), (45, 59035), (48, 58996), (50, 58975), (54, 58954), (66, 58843), (69, 58822), (70, 58816), (72, 58810),

Gene: Windsor\_84 Start: 63415, Stop: 63113, Start Num: 31

Candidate Starts for Windsor\_84:

(Start: 14 @63496 has 33 MA's), (Start: 31 @63415 has 227 MA's), (48, 63298), (50, 63277), (59, 63238),

Gene: Xavier\_84 Start: 63105, Stop: 62722, Start Num: 14

Candidate Starts for Xavier\_84:

(Start: 14 @63105 has 33 MA's), (Start: 31 @63024 has 227 MA's), (48, 62907), (50, 62886), (59, 62847),

Gene: Yahalom\_78 Start: 61084, Stop: 60755, Start Num: 38

Candidate Starts for Yahalom\_78:

(Start: 38 @61084 has 79 MA's), (48, 60985), (50, 60964), (54, 60943),

Gene: Yinz\_80 Start: 61149, Stop: 60820, Start Num: 38

Candidate Starts for Yinz\_80:

(Start: 38 @61149 has 79 MA's), (48, 61050), (50, 61029), (54, 61008),

Gene: Yoshand\_85 Start: 63250, Stop: 62948, Start Num: 31

Candidate Starts for Yoshand\_85:

(Start: 14 @63331 has 33 MA's), (Start: 31 @63250 has 227 MA's), (48, 63133), (50, 63112), (59, 63073),

Gene: YouGoGlencoco\_84 Start: 63140, Stop: 62838, Start Num: 31

Candidate Starts for YouGoGlencoco\_84:

(Start: 14 @63221 has 33 MA's), (Start: 31 @63140 has 227 MA's), (48, 63023), (50, 63002), (59, 62963),

Gene: Zaider\_85 Start: 63514, Stop: 63212, Start Num: 31

Candidate Starts for Zaider\_85:

(Start: 14 @63595 has 33 MA's), (Start: 31 @63514 has 227 MA's), (48, 63397), (50, 63376), (59, 63337),

Gene: Zelda\_84 Start: 63471, Stop: 63169, Start Num: 31

Candidate Starts for Zelda\_84:

(Start: 14 @63552 has 33 MA's), (Start: 31 @63471 has 227 MA's), (48, 63354), (50, 63333), (59, 63294),

Gene: Zonia\_85 Start: 63662, Stop: 63279, Start Num: 14

Candidate Starts for Zonia\_85:

(Start: 14 @63662 has 33 MA's), (Start: 31 @63581 has 227 MA's), (48, 63464), (50, 63443), (59, 63404),

Gene: phiAsp2\_75 Start: 57707, Stop: 58057, Start Num: 15

Candidate Starts for phiAsp2\_75:

(15, 57707), (37, 57806), (39, 57827), (40, 57833), (41, 57836), (50, 57920), (53, 57932), (56, 57941), (58, 57947),