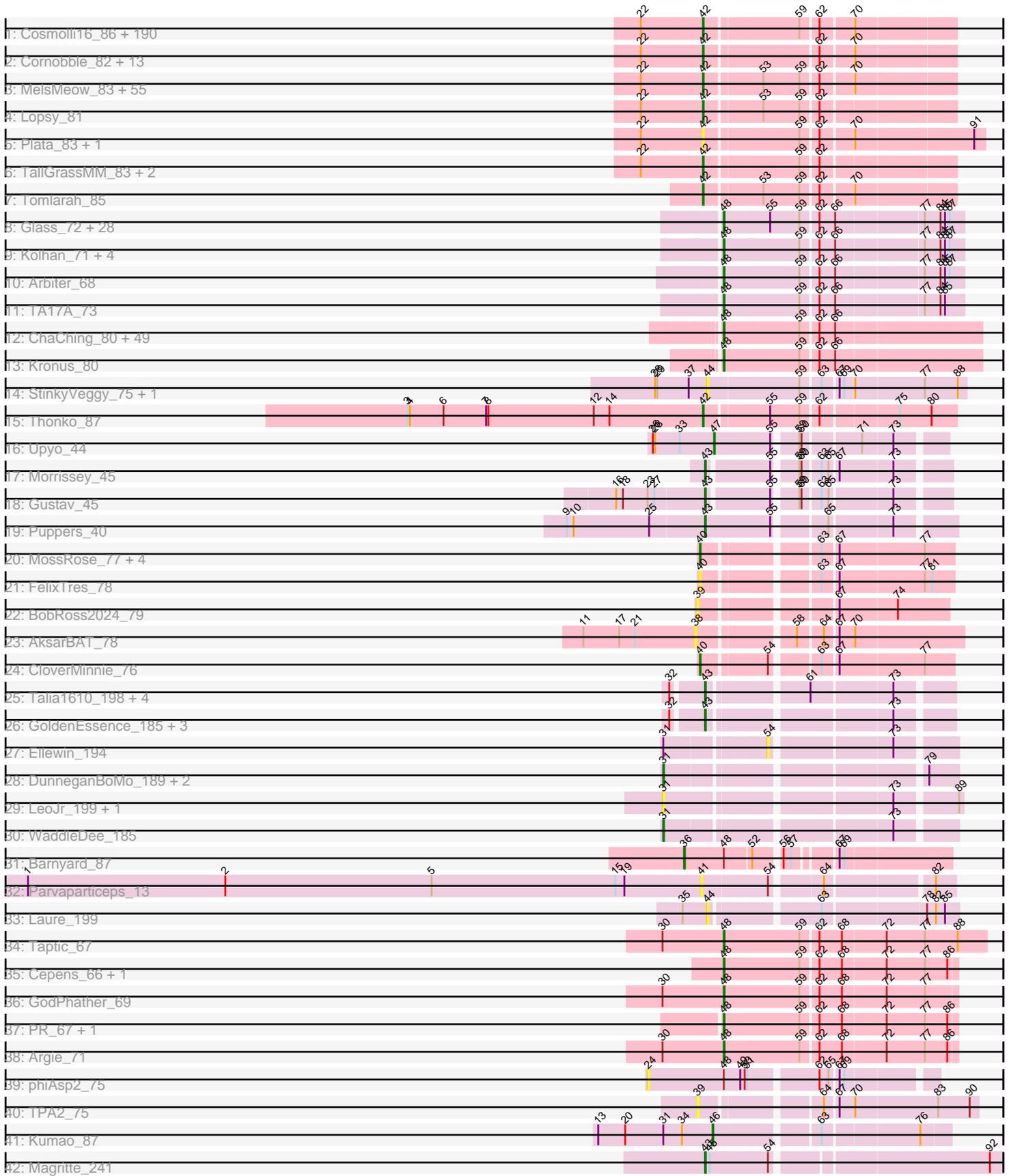


Pham 283385



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 283385 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283385 has 401 members, 51 are drafts.

Phages represented in each track:

- Track 1 : Cosmolli16\_86, HenryJackson\_85, Pinkman\_84, Squiggle\_83, AngelCake\_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, Squid\_83, Khan1\_84, Gareth\_84, Plmatters\_82, Sheila\_80, Roscoe\_84, Hamish\_81, RedMaple\_84, Karn\_84, JakeO\_85, Thora\_83, Melc17\_81, LostAndPhound\_83, Schadenfreude\_84, Vaticameos\_81, Cornbread\_83, ShadowBud\_85, Freya\_81, KingTut\_75, Mutante\_85, FremontTroll\_82, Kimbrough\_85, DolOn\_88, DelRivs\_82, ThreeOh3D2\_86, Windsor\_84, Phareon\_82, Serpentine\_0085, Cobra\_84, Maru\_84, Rimu\_84, PhatLouie\_86, IsaacEli\_86, HogWash\_85, ElvisPhasley\_85, Lumine\_85, Placalicious\_83, Oline\_83, Chorkpop\_85, Dingo\_81, Slatt\_84, Labeouficaum\_84, Fozzie\_82, Roliet\_81, Frankicide\_83, Quisquiliae\_86, Selr12\_85, Cher\_84, Buckeye\_84, Adriana\_84, Orwigg\_83, Virapocalypse\_85, Ricotta\_84, Usavi\_85, Pipsqueak\_81, Swiphy\_86, Chipette\_83, Nyala\_83, Horchata\_81, Nathan\_85, Aleia\_83, Mana\_82, Magic8\_83, Gophee\_84, Duggie\_84, JangoPhett\_82, UAch1\_85, Swish\_85, LeiMonet\_86, Skippy\_85, Timmi\_83, Virgeve\_82, Wallhey\_85, Lehmann\_87, TyrionL\_84, Phipps\_83, Numberten\_83, Hocus\_82, Durga\_86, Andre\_86, Struggle\_84, OliverWalter\_84, TomBombadil\_84, ShiVal\_82, GreenChile\_83, 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, PallasAthena\_85, Bluephacebaby\_83, TooFast2Furius\_86, Mesmerelda\_83, ABU\_83, KlimbOn\_83, Piglet\_0084, Morty\_85, Scoot17C\_85, Oosterbaan\_84, Pacifista\_83, SallyH\_87, Dati\_81, Gyarad\_0083, Jillium\_85, BoogieWoogie\_83, Potter\_80, Jesabah\_86, ProfessorX\_82, CampRoach\_85, Lulwa\_81, Emiris\_86, Charles1\_85, BlacksBerry\_84, Weher20\_81, SassyCat97\_82, Anderson\_86, Gwennie1\_83, Aonishiki\_86, Harvey\_81, Kikipoo\_86, Triad\_86, Olive\_82, Held\_82, Childish\_84, Inverness\_82, Jiraiya\_85, Badfish\_85, Hetaeria\_84, LuckyMarjie\_81, Basato\_83, DaddyDaniels\_87, Surely\_84, GeneCoco\_85, Haimas\_82, DirtJuice\_84, Zelda\_84, Burr\_84, KLucky39\_82, MiniBoss\_81, Soile\_85, DoesntMatter\_81, MRabcd\_84, MrPhizzler\_87, HighStump\_85, Iridessa\_86, Kahve\_85, Mulan\_83, Eugenia\_86, True\_82, AbsoluteMadLad\_83, Dice\_83, Valjean\_83, Riverton\_83, KingVeVeVe\_82, BlueHusk\_85, Simielle\_83, Craff\_86, Kloppinator\_84, Matalotodo\_83, Mikota\_81, Brilliant\_87
- Track 2 : Cornobble\_82, Olak\_83, OSmaximus\_85, Bishoperium\_84, Sophia\_82, Haleema\_83, Altwerkus\_82, LemonSlice\_84, Phunky\_82, PinheadLarry\_83, Prickles\_85, Lasso\_83, Daka\_86, Colbert\_82

- Track 3 : 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\_87, DonSanchon\_80, Legolas\_85, Megamind20\_84, Veritas\_83, FleetyMac\_87, Antonia\_83, LasagnaCat\_85, Katniss\_86, Schueller\_82, Phergie\_84, QueenBeane\_84, FluffyNinja\_85, JacAttac\_84, Kwksand96\_85, Mag7\_82, Aelin\_83, Beaglebox\_81, Samaymay\_84, Kwadwo\_83, Tooj\_81, FugateOSU\_84, Chaelin\_85, Keitherie\_87, Chuni\_85, ImtiyazSitla\_85, Ashraf\_85, Telesworld\_82, CamL\_84, Vista\_83, Banjo\_81, SirBeauregard\_85, CharlieGBrown\_82, Maskar\_85, Inchworm\_85, Jiminy\_84, MichaelPhcott\_82, Kailash\_82, Riggan\_85
- Track 4 : Lopsy\_81
- Track 5 : Plata\_83, Happabalu\_82
- Track 6 : TallGrassMM\_83, Solosis\_82, Caspiboi\_83
- Track 7 : Tomlarah\_85
- Track 8 : Glass\_72, Vic9\_00070, Hedgerow\_70, Tres\_70, Godines\_71, Lars\_71, Brownie5\_70, Opia\_71, Boyle\_70, PrinceCharming\_71, Allegro\_70, Kheth\_70, Eaglehorse\_70, LizLemon\_70, Rosebush\_69, LilSmirk\_70, Blocker23\_70, Bananafish\_71, MasterPo\_71, FrenchFry\_71, Calamitous\_71, Holeinone\_70, ItsyBitsy1\_69, Coffee\_70, Tinciduntolum\_71, Lephleur\_70, Rhinoforte\_70, Kaleb\_71, West99\_70
- Track 9 : Kolhan\_71, Phantasmagoria\_69, Sabella\_70, Faze9\_69, Ares\_70
- Track 10 : Arbiter\_68
- Track 11 : TA17A\_73
- Track 12 : ChaChing\_80, Athena\_82, Tydolla\_76, GlenHope\_81, Phaedrus\_75, Chentzyk\_82, Glubnar\_81, Casbah\_80, Pipefish\_82, HarveySr\_79, Neos5\_80, LestyG\_78, Nozo\_80, Jackstina\_75, Heathcliff\_80, Akoma\_80, Yahalom\_78, Phayeta\_83, MmasiCarm\_81, Gadget\_81, Deenasa\_80, Yinz\_80, Audrey\_80, SynergyX\_80, Baloo\_79, Rita1961\_81, Mortcellus\_80, Shenandoah\_79, Kamiyu\_80, RagingRooster\_79, Bernardo\_81, Marlia\_81, Daisy\_79, TinyTerror\_81, Ben11\_80, Corofin\_80, Marley1013\_81, Phlyer\_80, Philly\_79, Chalmers\_79, Chandler\_80, SlippinJimmy\_83, Briakila\_80, Halfpint\_79, Abinghost\_80, Obutu\_82, Morty007\_79, SwainyDoc\_81, RomaT\_80, Gervas\_81
- Track 13 : Kronus\_80
- Track 14 : StinkyVeggy\_75, KarasumaRum\_75
- Track 15 : Thonko\_87
- Track 16 : Upyo\_44
- Track 17 : Morrissey\_45
- Track 18 : Gustav\_45
- Track 19 : Puppies\_40
- Track 20 : MossRose\_77, AnarQue\_79, Yeshua\_78, CaiB\_78, MakoManhole\_74
- Track 21 : FelixTres\_78
- Track 22 : BobRoss2024\_79
- Track 23 : AksarBAT\_78
- Track 24 : CloverMinnie\_76
- Track 25 : Talia1610\_198, Bloom\_201, Racecar\_198, Mimi\_197, FrostedClock\_200
- Track 26 : GoldenEssence\_185, Phrampa\_191, FloraSnap32\_196, Patbob\_197
- Track 27 : Ellewin\_194
- Track 28 : DunneganBoMo\_189, Emmetator\_192, BooTeria\_197
- Track 29 : LeoJr\_199, ReginaGlobina\_203
- Track 30 : WaddleDee\_185
- Track 31 : Barnyard\_87
- Track 32 : Parvaparticeps\_13
- Track 33 : Laure\_199

- Track 34 : Taptic\_67
- Track 35 : Cepens\_66, Megabear\_66
- Track 36 : GodPhather\_69
- Track 37 : PR\_67, D12\_66
- Track 38 : Argie\_71
- Track 39 : phiAsp2\_75
- Track 40 : TPA2\_75
- Track 41 : Kumao\_87
- Track 42 : 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 42, it was called in 243 of the 350 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABU\_83, AbsoluteMadLad\_83, Adriana\_84, Aelin\_83, Aleia\_83, AltPhacts\_82, Altwerkus\_82, Anderson\_86, Andre\_86, AngelCake\_83, Antonia\_83, Aonishiki\_86, Ashraf\_85, Badfish\_85, Banjo\_81, Basato\_83, BatteryCK\_82, Beaglebox\_81, Bishoperium\_84, BlackStallion\_83, BlacksBerry\_84, BlueHusk\_85, Bluephacebaby\_83, Boehler\_83, BoogieWoogie\_83, Brilliant\_87, Buckeye\_84, Burr\_84, CamL\_84, CampRoach\_85, Cannibal\_85, Carthage\_85, CaspiBoi\_83, Chaelin\_85, Charles1\_85, CharlieGBrown\_82, Cher\_84, Childish\_84, Chipette\_83, Chorkpop\_85, Chuni\_85, Chute\_84, Cobra\_84, Colbert\_82, Coletti\_87, Cornbread\_83, 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, DolOn\_88, DonSancho\_80, Duggie\_84, Durga\_86, ElvisPhasley\_85, Emiris\_86, EmpTee\_83, Etaye\_83, Eugenia\_86, FleetyMac\_87, FluffyNinja\_85, Fozzie\_82, Frankicide\_83, FremontTroll\_82, Freya\_81, Fringe\_88, FugateOSU\_84, Gareth\_84, GeneCoco\_85, Giraffe\_84, Gophee\_84, Grand2040\_82, GreenChile\_83, Gwennie1\_83, Gyarad\_0083, HSavage\_82, Haimas\_82, Haleema\_83, Hamish\_81, Happabalu\_82, Harvey\_81, Held\_82, HenryJackson\_85, Hetaeria\_84, HighStump\_85, Hocus\_82, HogWash\_85, Horchata\_81, ImtiyazSitla\_85, Inchworm\_85, Inverness\_82, Iridessa\_86, Iridoclysis\_83, IsaacEli\_86, JDog\_83, JacAttac\_84, JakeO\_85, JangoPhett\_82, Jesabah\_86, Jillium\_85, Jiminy\_84, Jiraiya\_85, KLucky39\_82, Kahve\_85, Kailash\_82, Karn\_84, Katniss\_86, Keitherie\_87, Khan1\_84, Kikipoo\_86, Kimbrough\_85, KingTut\_75, KingVeVeVe\_82, KlimbOn\_83, Kloppinator\_84, Kwadwo\_83, Kwksand96\_85, Labeoufcaum\_84, LasagnaCat\_85, Lasso\_83, Lego3393\_82, Legolas\_85, Lehmann\_87, 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, Mesmerelda\_83, MichaelPhcott\_82, Mikota\_81, MiniBoss\_81, MitKao\_84, Morty\_85, MrPhizzler\_87, Mulan\_83, Mutante\_85, Nathan\_85, Nicole21\_85, Numberten\_83, Nyala\_83, OSmaximus\_85, Olak\_83, Oline\_83, Olive\_82, OliverWalter\_84, Omniscient\_85, Oosterbaan\_84, Orfeu\_83, Orwigg\_83, Pacifista\_83, PallasAthena\_85, 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, Plata\_83, Plmatters\_82, Podrick\_83, Potter\_80, Prickles\_85, ProfessorX\_82, QueenBeane\_84, Quisquiliae\_86, RedMaple\_84, Ricotta\_84, Riggan\_85, Rimu\_84, Riverton\_83, Robyn\_86, Roliet\_81, Roscoe\_84, SDcharge11\_83, SallyH\_87, Samaymay\_84, SassyCat97\_82, Schadenfreude\_84, Schueller\_82, Scoot17C\_85, Scrick\_83, Selr12\_85, Serpentine\_0085, ShadowBud\_85, Sheila\_80, ShiVal\_82, Simielle\_83, SirBeauregard\_85, Skippy\_85, Slatt\_84, Soile\_85, Solosis\_82, Sophia\_82, Soto\_81, Spartan300\_83, Squid\_83, Squiggle\_83, Struggle\_84, Surely\_84, Swiphy\_86, Swish\_85, TallGrassMM\_83, Telesworld\_82, Thonko\_87, Thora\_83, ThreeOh3D2\_86, Thunderbird\_84, Timmi\_83, TomBombadil\_84, Tomlarah\_85, TooFast2Furius\_86, Tooj\_81, Triad\_86, 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:

- 

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

- Abinghost\_80, Akoma\_80, AksarBAT\_78, Allegro\_70, AnarQue\_79, Arbiter\_68, Ares\_70, Argie\_71, Athena\_82, Audrey\_80, Baloo\_79, Bananafish\_71, Barnyard\_87, Ben11\_80, Bernardo\_81, Blocker23\_70, Bloom\_201, BobRoss2024\_79, BooTeria\_197, Boyle\_70, Briakila\_80, Brownie5\_70, CaiB\_78, Calamitous\_71, Casbah\_80, Cepens\_66, ChaChing\_80, Chalmers\_79, Chandler\_80, Chentzyk\_82, CloverMinnie\_76, Coffee\_70, Corofin\_80, D12\_66, Daisy\_79, Deenasa\_80, DunneganBoMo\_189, Eaglehorse\_70, Ellewin\_194, Emmetator\_192, Faze9\_69, FelixTres\_78, FloraSnap32\_196, FrenchFry\_71, FrostedClock\_200, Gadget\_81, Gervas\_81, Glass\_72, GlenHope\_81, Glubnar\_81, GodPhather\_69, Godines\_71, GoldenEssence\_185, Gustav\_45, Halfpint\_79, HarveySr\_79, Heathcliff\_80, Hedgerow\_70, Holeinone\_70, ItsyBitsy1\_69, Jackstina\_75, Kaleb\_71, Kamiyu\_80, KarasumaRum\_75, Kheth\_70, Kolhan\_71, Kronus\_80, Kumao\_87, Lars\_71, Laure\_199, LeoJr\_199, Lephleur\_70, LestyG\_78, LilSmirk\_70, LizLemon\_70, Magritte\_241, MakoManhole\_74, Marley1013\_81, Marlia\_81, MasterPo\_71, Megabear\_66, Mimi\_197, MmasiCarm\_81, Morrissey\_45, Mortcellus\_80, Morty007\_79, MossRose\_77, Neos5\_80, Nozo\_80, Obutu\_82, Opia\_71, PR\_67, Parvapaticeps\_13, Patbob\_197, Phaedrus\_75, Phantasmagoria\_69, Phayeta\_83, Philly\_79, Phlyer\_80, Phrampa\_191, Pipefish\_82, PrinceCharming\_71, Puppies\_40, Racecar\_198, RagingRooster\_79, ReginaGlobina\_203, Rhinoforte\_70, Rita1961\_81, RomaT\_80, Rosebush\_69, Sabella\_70, Shenandoah\_79, SlippinJimmy\_83, StinkyVeggy\_75, SwainyDoc\_81, SynergyX\_80, TA17A\_73, TPA2\_75, Talia1610\_198, Taptic\_67, Tinciduntolum\_71, TinyTerror\_81, Tres\_70, Tydolla\_76, Upyo\_44, Vic9\_00070, WaddleDee\_185, West99\_70, Yahalom\_78, Yeshua\_78, Yinz\_80, phiAsp2\_75,

### Summary by start number:

Start 24:

- Found in 1 of 401 ( 0.2% ) 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 31:

- Found in 8 of 401 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 2 of 350
- Called 75.0% of time when present
- Phage (with cluster) where this start called: BooTeria\_197 (FC), DunneganBoMo\_189 (FC), Emmetator\_192 (FC), LeoJr\_199 (FC), ReginaGlobina\_203 (FC), WaddleDee\_185 (FC),

#### Start 36:

- Found in 1 of 401 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 350
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barnyard\_87 (H2),

#### Start 38:

- Found in 1 of 401 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AksarBAT\_78 (DR),

#### Start 39:

- Found in 2 of 401 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BobRoss2024\_79 (DR), TPA2\_75 (singleton),

#### Start 40:

- Found in 7 of 401 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 6 of 350
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnarQue\_79 (DR), CaiB\_78 (DR), CloverMinnie\_76 (DR), FelixTres\_78 (DR), MakoManhole\_74 (DR), MossRose\_77 (DR), Yeshua\_78 (DR),

#### Start 41:

- Found in 1 of 401 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Parvaparticeps\_13 (UNK),

#### Start 42:

- Found in 269 of 401 ( 67.1% ) of genes in pham
- Manual Annotations of this start: 243 of 350
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ABU\_83 (B1), AbsoluteMadLad\_83 (B1), Adriana\_84 (B1), Aelin\_83 (B1), Aleia\_83 (B1), AltPhacts\_82 (B1), Altwerkus\_82 (B1), Anderson\_86 (B1), Andre\_86 (B1), AngelCake\_83 (B1), Antonia\_83 (B1), Aonishiki\_86 (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), BlacksBerry\_84 (B1), BlueHusk\_85 (B1), Bluephacebaby\_83 (B1), Boehler\_83 (B1), BoogieWoogie\_83 (B1), Brilliant\_87 (B1), Buckeye\_84 (B1), Burr\_84 (B1), CamL\_84 (B1), CampRoach\_85 (B1), Cannibal\_85 (B1), Carthage\_85 (B1), CaspiBoi\_83 (B1), Chaelin\_85 (B1), Charles1\_85 (B1), CharlieGBrown\_82 (B1), Cher\_84 (B1),

Childish\_84 (B1), Chipette\_83 (B1), Chorkpop\_85 (B1), Chuni\_85 (B1), Chute\_84 (B1), Cobra\_84 (B1), Colbert\_82 (B1), Coletti\_87 (B1), Cornbread\_83 (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), DoIOn\_88 (B1), DonSanchon\_80 (B1), Duggie\_84 (B1), Durga\_86 (B1), ElvisPhasley\_85 (B1), Emiris\_86 (B1), EmpTee\_83 (B1), Etaye\_83 (B1), Eugenia\_86 (B1), FleetyMac\_87 (B1), FluffyNinja\_85 (B1), Fozzie\_82 (B1), Frankicide\_83 (B1), FremontTroll\_82 (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), GreenChile\_83 (B1), Gwennie1\_83 (B1), Gyarad\_0083 (B1), HSavage\_82 (B1), Haimas\_82 (B1), Haleema\_83 (B1), Hamish\_81 (B1), Happabalu\_82 (B1), Harvey\_81 (B1), Held\_82 (B1), HenryJackson\_85 (B1), Hetaeria\_84 (B1), HighStump\_85 (B1), Hocus\_82 (B1), HogWash\_85 (B1), Horchata\_81 (B1), ImtiyazSittla\_85 (B1), Inchworm\_85 (B1), Inverness\_82 (B1), Iridessa\_86 (B1), Iridoclysis\_83 (B1), IsaacEli\_86 (B1), JDog\_83 (B1), JacAttac\_84 (B1), JakeO\_85 (B1), JangoPhett\_82 (B1), Jesabah\_86 (B1), Jillium\_85 (B1), Jiminy\_84 (B1), Jiraiya\_85 (B1), KLucky39\_82 (B1), Kahve\_85 (B1), Kailash\_82 (B1), Karn\_84 (B1), Katniss\_86 (B1), Keitherie\_87 (B1), Khan1\_84 (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), Lehmann\_87 (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), Mesmerelda\_83 (B1), MichaelPhcott\_82 (B1), Mikota\_81 (B1), MiniBoss\_81 (B1), MitKao\_84 (B1), Morty\_85 (B1), MrPhizzler\_87 (B1), Mulan\_83 (B1), Mutante\_85 (B1), Nathan\_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\_83 (B1), Pacifista\_83 (B1), PallasAthena\_85 (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), Plata\_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\_84 (B1), Riverton\_83 (B1), Robyn\_86 (B1), Roliet\_81 (B1), Roscoe\_84 (B1), SDcharge11\_83 (B1), SallyH\_87 (B1), Samaymay\_84 (B1), SassyCat97\_82 (B1), Schadenfreude\_84 (B1), Schueller\_82 (B1), Scoot17C\_85 (B1), Scrick\_83 (B1), Selr12\_85 (B1), Serpentine\_0085 (B1), ShadowBud\_85 (B1), Sheila\_80 (B1), ShiVal\_82 (B1), Simielle\_83 (B1), SirBeauregard\_85 (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\_86 (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), TooFast2Furius\_86 (B1), Tooj\_81 (B1), Triad\_86 (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 43:

- Found in 13 of 401 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 8 of 350
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bloom\_201 (FC), FloraSnap32\_196 (FC), FrostedClock\_200 (FC), GoldenEssence\_185 (FC), Gustav\_45 (CD), Magritte\_241 (singleton), Mimi\_197 (FC), Morrissey\_45 (CD), Patbob\_197 (FC), Phrampa\_191 (FC), Puppies\_40 (CD), Racecar\_198 (FC), Talia1610\_198 (FC),

Start 44:

- Found in 3 of 401 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KarasumaRum\_75 (B5), Laure\_199 (UNK), StinkyVeggy\_75 (B5),

Start 46:

- Found in 1 of 401 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 350
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao\_87 (singleton),

Start 47:

- Found in 1 of 401 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 350
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Upyo\_44 (CD),

Start 48:

- Found in 96 of 401 ( 23.9% ) of genes in pham
- Manual Annotations of this start: 88 of 350
- Called 97.9% of time when present
- Phage (with cluster) where this start called: Abinghost\_80 (B3), Akoma\_80 (B3), Allegro\_70 (B2), Arbitrator\_68 (B2), Ares\_70 (B2), Argie\_71 (W), Athena\_82 (B3), Audrey\_80 (B3), Baloo\_79 (B3), Bananafish\_71 (B2), Ben11\_80 (B3), 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), Chalmers\_79 (B3), Chandler\_80 (B3), Chentzyk\_82 (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), Glubnar\_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), Kolhan\_71 (B2), Kronus\_80 (B3), Lars\_71 (B2), Lephleur\_70 (B2), LestyG\_78 (B3), LilSmirk\_70 (B2), LizLemon\_70 (B2), Marley1013\_81 (B3), Marlia\_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), PrinceCharming\_71 (B2), RagingRooster\_79 (B3), Rhinoforte\_70 (B2), Rita1961\_81 (B3), RomaT\_80 (B3), Rosebush\_69 (B2), Sabella\_70 (B2), Shenandoah\_79 (B3), SlippinJimmy\_83 (B3), SwainyDoc\_81 (B3), SynergyX\_80 (B3), TA17A\_73 (B2),

Taptic\_67 (W), Tinciduntolum\_71 (B2), TinyTerror\_81 (B3), Tres\_70 (B2), Tydolla\_76 (B3), Vic9\_00070 (B2), West99\_70 (B2), Yahalom\_78 (B3), Yinz\_80 (B3),

Start 54:

- Found in 4 of 401 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Ellewin\_194 (FC),

### **Summary by clusters:**

There are 12 clusters represented in this pham: singleton, W, H2, B8, CD, B5, FC, B1, B2, B3, UNK, DR,

Info for manual annotations of cluster B1:

- Start number 42 was manually annotated 242 times for cluster B1.

Info for manual annotations of cluster B2:

- Start number 48 was manually annotated 34 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 48 was manually annotated 47 times for cluster B3.

Info for manual annotations of cluster B8:

- Start number 42 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster CD:

- Start number 43 was manually annotated 3 times for cluster CD.
- Start number 47 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster DR:

- Start number 40 was manually annotated 6 times for cluster DR.

Info for manual annotations of cluster FC:

- Start number 31 was manually annotated 2 times for cluster FC.
- Start number 43 was manually annotated 4 times for cluster FC.

Info for manual annotations of cluster H2:

- Start number 36 was manually annotated 1 time for cluster H2.

Info for manual annotations of cluster W:

- Start number 48 was manually annotated 7 times for cluster W.

### **Gene Information:**

Gene: ABU\_83 Start: 63381, Stop: 63079, Start Num: 42

Candidate Starts for ABU\_83:

(22, 63462), (Start: 42 @63381 has 243 MA's), (59, 63264), (62, 63243), (70, 63204),

Gene: Abinghost\_80 Start: 61235, Stop: 60906, Start Num: 48  
Candidate Starts for Abinghost\_80:  
(Start: 48 @61235 has 88 MA's), (59, 61136), (62, 61115), (66, 61094),

Gene: AbsoluteMadLad\_83 Start: 63335, Stop: 63033, Start Num: 42  
Candidate Starts for AbsoluteMadLad\_83:  
(22, 63416), (Start: 42 @63335 has 243 MA's), (59, 63218), (62, 63197), (70, 63158),

Gene: Adriana\_84 Start: 63897, Stop: 63595, Start Num: 42  
Candidate Starts for Adriana\_84:  
(22, 63978), (Start: 42 @63897 has 243 MA's), (59, 63780), (62, 63759), (70, 63720),

Gene: Aelin\_83 Start: 62839, Stop: 62537, Start Num: 42  
Candidate Starts for Aelin\_83:  
(22, 62920), (Start: 42 @62839 has 243 MA's), (53, 62770), (59, 62722), (62, 62701), (70, 62662),

Gene: Akoma\_80 Start: 61275, Stop: 60946, Start Num: 48  
Candidate Starts for Akoma\_80:  
(Start: 48 @61275 has 88 MA's), (59, 61176), (62, 61155), (66, 61134),

Gene: AksarBAT\_78 Start: 57238, Stop: 56921, Start Num: 38  
Candidate Starts for AksarBAT\_78:  
(11, 57388), (17, 57340), (21, 57319), (38, 57238), (58, 57127), (64, 57097), (67, 57082), (70, 57061),

Gene: Aleia\_83 Start: 63024, Stop: 62722, Start Num: 42  
Candidate Starts for Aleia\_83:  
(22, 63105), (Start: 42 @63024 has 243 MA's), (59, 62907), (62, 62886), (70, 62847),

Gene: Allegro\_70 Start: 59019, Stop: 58717, Start Num: 48  
Candidate Starts for Allegro\_70:  
(Start: 48 @59019 has 88 MA's), (55, 58959), (59, 58920), (62, 58899), (66, 58878), (77, 58767), (84, 58746), (85, 58740), (87, 58734),

Gene: AltPhacts\_82 Start: 62600, Stop: 62298, Start Num: 42  
Candidate Starts for AltPhacts\_82:  
(22, 62681), (Start: 42 @62600 has 243 MA's), (59, 62483), (62, 62462), (70, 62423),

Gene: Altwerkus\_82 Start: 62711, Stop: 62409, Start Num: 42  
Candidate Starts for Altwerkus\_82:  
(22, 62792), (Start: 42 @62711 has 243 MA's), (62, 62573), (70, 62534),

Gene: AnarQue\_79 Start: 58361, Stop: 58062, Start Num: 40  
Candidate Starts for AnarQue\_79:  
(Start: 40 @58361 has 6 MA's), (63, 58229), (67, 58211), (77, 58100),

Gene: Anderson\_86 Start: 63257, Stop: 62955, Start Num: 42  
Candidate Starts for Anderson\_86:  
(22, 63338), (Start: 42 @63257 has 243 MA's), (59, 63140), (62, 63119), (70, 63080),

Gene: Andre\_86 Start: 63279, Stop: 62977, Start Num: 42  
Candidate Starts for Andre\_86:  
(22, 63360), (Start: 42 @63279 has 243 MA's), (59, 63162), (62, 63141), (70, 63102),

Gene: AngelCake\_83 Start: 63006, Stop: 62704, Start Num: 42  
Candidate Starts for AngelCake\_83:  
(22, 63087), (Start: 42 @63006 has 243 MA's), (59, 62889), (62, 62868), (70, 62829),

Gene: Antonia\_83 Start: 62883, Stop: 62581, Start Num: 42  
Candidate Starts for Antonia\_83:  
(22, 62964), (Start: 42 @62883 has 243 MA's), (53, 62814), (59, 62766), (62, 62745), (70, 62706),

Gene: Aonishiki\_86 Start: 63192, Stop: 62890, Start Num: 42  
Candidate Starts for Aonishiki\_86:  
(22, 63273), (Start: 42 @63192 has 243 MA's), (59, 63075), (62, 63054), (70, 63015),

Gene: Arbiter\_68 Start: 59054, Stop: 58752, Start Num: 48  
Candidate Starts for Arbiter\_68:  
(Start: 48 @59054 has 88 MA's), (59, 58955), (62, 58934), (66, 58913), (77, 58802), (84, 58781), (85, 58775), (87, 58769),

Gene: Ares\_70 Start: 59025, Stop: 58723, Start Num: 48  
Candidate Starts for Ares\_70:  
(Start: 48 @59025 has 88 MA's), (59, 58926), (62, 58905), (66, 58884), (77, 58773), (84, 58752), (85, 58746), (87, 58740),

Gene: Argie\_71 Start: 51295, Stop: 51594, Start Num: 48  
Candidate Starts for Argie\_71:  
(30, 51214), (Start: 48 @51295 has 88 MA's), (59, 51394), (62, 51415), (68, 51445), (72, 51502), (77, 51553), (86, 51583),

Gene: Ashraf\_85 Start: 63370, Stop: 63068, Start Num: 42  
Candidate Starts for Ashraf\_85:  
(22, 63451), (Start: 42 @63370 has 243 MA's), (53, 63301), (59, 63253), (62, 63232), (70, 63193),

Gene: Athena\_82 Start: 62010, Stop: 61681, Start Num: 48  
Candidate Starts for Athena\_82:  
(Start: 48 @62010 has 88 MA's), (59, 61911), (62, 61890), (66, 61869),

Gene: Audrey\_80 Start: 61264, Stop: 60935, Start Num: 48  
Candidate Starts for Audrey\_80:  
(Start: 48 @61264 has 88 MA's), (59, 61165), (62, 61144), (66, 61123),

Gene: Badfish\_85 Start: 63561, Stop: 63259, Start Num: 42  
Candidate Starts for Badfish\_85:  
(22, 63642), (Start: 42 @63561 has 243 MA's), (59, 63444), (62, 63423), (70, 63384),

Gene: Baloo\_79 Start: 61116, Stop: 60787, Start Num: 48  
Candidate Starts for Baloo\_79:  
(Start: 48 @61116 has 88 MA's), (59, 61017), (62, 60996), (66, 60975),

Gene: Bananafish\_71 Start: 58955, Stop: 58653, Start Num: 48  
Candidate Starts for Bananafish\_71:  
(Start: 48 @58955 has 88 MA's), (55, 58895), (59, 58856), (62, 58835), (66, 58814), (77, 58703), (84, 58682), (85, 58676), (87, 58670),

Gene: Banjo\_81 Start: 62827, Stop: 62525, Start Num: 42

Candidate Starts for Banjo\_81:

(22, 62908), (Start: 42 @62827 has 243 MA's), (53, 62758), (59, 62710), (62, 62689), (70, 62650),

Gene: Barnyard\_87 Start: 60478, Stop: 60789, Start Num: 36

Candidate Starts for Barnyard\_87:

(Start: 36 @60478 has 1 MA's), (Start: 48 @60529 has 88 MA's), (52, 60562), (56, 60592), (57, 60601), (67, 60646), (69, 60652),

Gene: Basato\_83 Start: 63292, Stop: 62990, Start Num: 42

Candidate Starts for Basato\_83:

(22, 63373), (Start: 42 @63292 has 243 MA's), (59, 63175), (62, 63154), (70, 63115),

Gene: BatteryCK\_82 Start: 62818, Stop: 62516, Start Num: 42

Candidate Starts for BatteryCK\_82:

(22, 62899), (Start: 42 @62818 has 243 MA's), (53, 62749), (59, 62701), (62, 62680), (70, 62641),

Gene: Beaglebox\_81 Start: 62950, Stop: 62648, Start Num: 42

Candidate Starts for Beaglebox\_81:

(22, 63031), (Start: 42 @62950 has 243 MA's), (53, 62881), (59, 62833), (62, 62812), (70, 62773),

Gene: Ben11\_80 Start: 61491, Stop: 61162, Start Num: 48

Candidate Starts for Ben11\_80:

(Start: 48 @61491 has 88 MA's), (59, 61392), (62, 61371), (66, 61350),

Gene: Bernardo\_81 Start: 61454, Stop: 61125, Start Num: 48

Candidate Starts for Bernardo\_81:

(Start: 48 @61454 has 88 MA's), (59, 61355), (62, 61334), (66, 61313),

Gene: Bishoperium\_84 Start: 63397, Stop: 63095, Start Num: 42

Candidate Starts for Bishoperium\_84:

(22, 63478), (Start: 42 @63397 has 243 MA's), (62, 63259), (70, 63220),

Gene: BlackStallion\_83 Start: 63247, Stop: 62945, Start Num: 42

Candidate Starts for BlackStallion\_83:

(22, 63328), (Start: 42 @63247 has 243 MA's), (53, 63178), (59, 63130), (62, 63109), (70, 63070),

Gene: BlacksBerry\_84 Start: 62772, Stop: 62470, Start Num: 42

Candidate Starts for BlacksBerry\_84:

(22, 62853), (Start: 42 @62772 has 243 MA's), (59, 62655), (62, 62634), (70, 62595),

Gene: Blocker23\_70 Start: 59020, Stop: 58718, Start Num: 48

Candidate Starts for Blocker23\_70:

(Start: 48 @59020 has 88 MA's), (55, 58960), (59, 58921), (62, 58900), (66, 58879), (77, 58768), (84, 58747), (85, 58741), (87, 58735),

Gene: Bloom\_201 Start: 137606, Stop: 137896, Start Num: 43

Candidate Starts for Bloom\_201:

(32, 137570), (Start: 43 @137606 has 8 MA's), (61, 137723), (73, 137825),

Gene: BlueHusk\_85 Start: 63070, Stop: 62768, Start Num: 42

Candidate Starts for BlueHusk\_85:

(22, 63151), (Start: 42 @63070 has 243 MA's), (59, 62953), (62, 62932), (70, 62893),

Gene: Bluephacebaby\_83 Start: 63430, Stop: 63128, Start Num: 42  
Candidate Starts for Bluephacebaby\_83:  
(22, 63511), (Start: 42 @63430 has 243 MA's), (59, 63313), (62, 63292), (70, 63253),

Gene: BobRoss2024\_79 Start: 57680, Stop: 57384, Start Num: 39  
Candidate Starts for BobRoss2024\_79:  
(39, 57680), (67, 57527), (74, 57452),

Gene: Boehler\_83 Start: 63221, Stop: 62919, Start Num: 42  
Candidate Starts for Boehler\_83:  
(22, 63302), (Start: 42 @63221 has 243 MA's), (59, 63104), (62, 63083), (70, 63044),

Gene: BooTeria\_197 Start: 141572, Stop: 141916, Start Num: 31  
Candidate Starts for BooTeria\_197:  
(Start: 31 @141572 has 2 MA's), (79, 141878),

Gene: BoogieWoogie\_83 Start: 62842, Stop: 62540, Start Num: 42  
Candidate Starts for BoogieWoogie\_83:  
(22, 62923), (Start: 42 @62842 has 243 MA's), (59, 62725), (62, 62704), (70, 62665),

Gene: Boyle\_70 Start: 59064, Stop: 58762, Start Num: 48  
Candidate Starts for Boyle\_70:  
(Start: 48 @59064 has 88 MA's), (55, 59004), (59, 58965), (62, 58944), (66, 58923), (77, 58812), (84, 58791), (85, 58785), (87, 58779),

Gene: Briakila\_80 Start: 61462, Stop: 61133, Start Num: 48  
Candidate Starts for Briakila\_80:  
(Start: 48 @61462 has 88 MA's), (59, 61363), (62, 61342), (66, 61321),

Gene: Brilliant\_87 Start: 63410, Stop: 63108, Start Num: 42  
Candidate Starts for Brilliant\_87:  
(22, 63491), (Start: 42 @63410 has 243 MA's), (59, 63293), (62, 63272), (70, 63233),

Gene: Brownie5\_70 Start: 59065, Stop: 58763, Start Num: 48  
Candidate Starts for Brownie5\_70:  
(Start: 48 @59065 has 88 MA's), (55, 59005), (59, 58966), (62, 58945), (66, 58924), (77, 58813), (84, 58792), (85, 58786), (87, 58780),

Gene: Buckeye\_84 Start: 63948, Stop: 63646, Start Num: 42  
Candidate Starts for Buckeye\_84:  
(22, 64029), (Start: 42 @63948 has 243 MA's), (59, 63831), (62, 63810), (70, 63771),

Gene: Burr\_84 Start: 62882, Stop: 62580, Start Num: 42  
Candidate Starts for Burr\_84:  
(22, 62963), (Start: 42 @62882 has 243 MA's), (59, 62765), (62, 62744), (70, 62705),

Gene: CaiB\_78 Start: 58156, Stop: 57857, Start Num: 40  
Candidate Starts for CaiB\_78:  
(Start: 40 @58156 has 6 MA's), (63, 58024), (67, 58006), (77, 57895),

Gene: Calamitous\_71 Start: 58954, Stop: 58652, Start Num: 48  
Candidate Starts for Calamitous\_71:

(Start: 48 @58954 has 88 MA's), (55, 58894), (59, 58855), (62, 58834), (66, 58813), (77, 58702), (84, 58681), (85, 58675), (87, 58669),

Gene: CamL\_84 Start: 63182, Stop: 62880, Start Num: 42

Candidate Starts for CamL\_84:

(22, 63263), (Start: 42 @63182 has 243 MA's), (53, 63113), (59, 63065), (62, 63044), (70, 63005),

Gene: CampRoach\_85 Start: 63278, Stop: 62976, Start Num: 42

Candidate Starts for CampRoach\_85:

(22, 63359), (Start: 42 @63278 has 243 MA's), (59, 63161), (62, 63140), (70, 63101),

Gene: Cannibal\_85 Start: 63284, Stop: 62982, Start Num: 42

Candidate Starts for Cannibal\_85:

(22, 63365), (Start: 42 @63284 has 243 MA's), (59, 63167), (62, 63146), (70, 63107),

Gene: Carthage\_85 Start: 62952, Stop: 62650, Start Num: 42

Candidate Starts for Carthage\_85:

(22, 63033), (Start: 42 @62952 has 243 MA's), (59, 62835), (62, 62814), (70, 62775),

Gene: Casbah\_80 Start: 61575, Stop: 61246, Start Num: 48

Candidate Starts for Casbah\_80:

(Start: 48 @61575 has 88 MA's), (59, 61476), (62, 61455), (66, 61434),

Gene: Caspiboi\_83 Start: 63117, Stop: 62815, Start Num: 42

Candidate Starts for Caspiboi\_83:

(22, 63198), (Start: 42 @63117 has 243 MA's), (59, 63000), (62, 62979),

Gene: Cepens\_66 Start: 49145, Stop: 49444, Start Num: 48

Candidate Starts for Cepens\_66:

(Start: 48 @49145 has 88 MA's), (59, 49244), (62, 49265), (68, 49295), (72, 49352), (77, 49403), (86, 49433),

Gene: ChaChing\_80 Start: 61280, Stop: 60951, Start Num: 48

Candidate Starts for ChaChing\_80:

(Start: 48 @61280 has 88 MA's), (59, 61181), (62, 61160), (66, 61139),

Gene: Chaelin\_85 Start: 63412, Stop: 63110, Start Num: 42

Candidate Starts for Chaelin\_85:

(22, 63493), (Start: 42 @63412 has 243 MA's), (53, 63343), (59, 63295), (62, 63274), (70, 63235),

Gene: Chalmers\_79 Start: 61710, Stop: 61381, Start Num: 48

Candidate Starts for Chalmers\_79:

(Start: 48 @61710 has 88 MA's), (59, 61611), (62, 61590), (66, 61569),

Gene: Chandler\_80 Start: 62051, Stop: 61722, Start Num: 48

Candidate Starts for Chandler\_80:

(Start: 48 @62051 has 88 MA's), (59, 61952), (62, 61931), (66, 61910),

Gene: Charles1\_85 Start: 63190, Stop: 62888, Start Num: 42

Candidate Starts for Charles1\_85:

(22, 63271), (Start: 42 @63190 has 243 MA's), (59, 63073), (62, 63052), (70, 63013),

Gene: CharlieGBrown\_82 Start: 62913, Stop: 62611, Start Num: 42

Candidate Starts for CharlieGBrown\_82:

(22, 62994), (Start: 42 @62913 has 243 MA's), (53, 62844), (59, 62796), (62, 62775), (70, 62736),

Gene: Chentzyk\_82 Start: 62218, Stop: 61889, Start Num: 48

Candidate Starts for Chentzyk\_82:

(Start: 48 @62218 has 88 MA's), (59, 62119), (62, 62098), (66, 62077),

Gene: Cher\_84 Start: 63384, Stop: 63082, Start Num: 42

Candidate Starts for Cher\_84:

(22, 63465), (Start: 42 @63384 has 243 MA's), (59, 63267), (62, 63246), (70, 63207),

Gene: Childish\_84 Start: 63575, Stop: 63273, Start Num: 42

Candidate Starts for Childish\_84:

(22, 63656), (Start: 42 @63575 has 243 MA's), (59, 63458), (62, 63437), (70, 63398),

Gene: Chipette\_83 Start: 63112, Stop: 62810, Start Num: 42

Candidate Starts for Chipette\_83:

(22, 63193), (Start: 42 @63112 has 243 MA's), (59, 62995), (62, 62974), (70, 62935),

Gene: Chorkpop\_85 Start: 63038, Stop: 62736, Start Num: 42

Candidate Starts for Chorkpop\_85:

(22, 63119), (Start: 42 @63038 has 243 MA's), (59, 62921), (62, 62900), (70, 62861),

Gene: Chuni\_85 Start: 63624, Stop: 63322, Start Num: 42

Candidate Starts for Chuni\_85:

(22, 63705), (Start: 42 @63624 has 243 MA's), (53, 63555), (59, 63507), (62, 63486), (70, 63447),

Gene: Chute\_84 Start: 63577, Stop: 63275, Start Num: 42

Candidate Starts for Chute\_84:

(22, 63658), (Start: 42 @63577 has 243 MA's), (53, 63508), (59, 63460), (62, 63439), (70, 63400),

Gene: CloverMinnie\_76 Start: 57325, Stop: 57026, Start Num: 40

Candidate Starts for CloverMinnie\_76:

(Start: 40 @57325 has 6 MA's), (54, 57247), (63, 57193), (67, 57175), (77, 57064),

Gene: Cobra\_84 Start: 63408, Stop: 63106, Start Num: 42

Candidate Starts for Cobra\_84:

(22, 63489), (Start: 42 @63408 has 243 MA's), (59, 63291), (62, 63270), (70, 63231),

Gene: Coffee\_70 Start: 59058, Stop: 58756, Start Num: 48

Candidate Starts for Coffee\_70:

(Start: 48 @59058 has 88 MA's), (55, 58998), (59, 58959), (62, 58938), (66, 58917), (77, 58806), (84, 58785), (85, 58779), (87, 58773),

Gene: Colbert\_82 Start: 62306, Stop: 62004, Start Num: 42

Candidate Starts for Colbert\_82:

(22, 62387), (Start: 42 @62306 has 243 MA's), (62, 62168), (70, 62129),

Gene: Coletti\_87 Start: 63933, Stop: 63631, Start Num: 42

Candidate Starts for Coletti\_87:

(22, 64014), (Start: 42 @63933 has 243 MA's), (53, 63864), (59, 63816), (62, 63795), (70, 63756),

Gene: Cornbread\_83 Start: 63065, Stop: 62763, Start Num: 42

Candidate Starts for Cornbread\_83:

(22, 63146), (Start: 42 @63065 has 243 MA's), (59, 62948), (62, 62927), (70, 62888),

Gene: Cornobble\_82 Start: 62876, Stop: 62574, Start Num: 42

Candidate Starts for Cornobble\_82:

(22, 62957), (Start: 42 @62876 has 243 MA's), (62, 62738), (70, 62699),

Gene: Corofin\_80 Start: 61286, Stop: 60957, Start Num: 48

Candidate Starts for Corofin\_80:

(Start: 48 @61286 has 88 MA's), (59, 61187), (62, 61166), (66, 61145),

Gene: Cosmolli16\_86 Start: 63753, Stop: 63451, Start Num: 42

Candidate Starts for Cosmolli16\_86:

(22, 63834), (Start: 42 @63753 has 243 MA's), (59, 63636), (62, 63615), (70, 63576),

Gene: Craff\_86 Start: 63796, Stop: 63494, Start Num: 42

Candidate Starts for Craff\_86:

(22, 63877), (Start: 42 @63796 has 243 MA's), (59, 63679), (62, 63658), (70, 63619),

Gene: D12\_66 Start: 49780, Stop: 50079, Start Num: 48

Candidate Starts for D12\_66:

(Start: 48 @49780 has 88 MA's), (59, 49879), (62, 49900), (68, 49930), (72, 49987), (77, 50038), (86, 50068),

Gene: DaddyDaniels\_87 Start: 63529, Stop: 63227, Start Num: 42

Candidate Starts for DaddyDaniels\_87:

(22, 63610), (Start: 42 @63529 has 243 MA's), (59, 63412), (62, 63391), (70, 63352),

Gene: Daffy\_83 Start: 63023, Stop: 62721, Start Num: 42

Candidate Starts for Daffy\_83:

(22, 63104), (Start: 42 @63023 has 243 MA's), (59, 62906), (62, 62885), (70, 62846),

Gene: Daisy\_79 Start: 60837, Stop: 60508, Start Num: 48

Candidate Starts for Daisy\_79:

(Start: 48 @60837 has 88 MA's), (59, 60738), (62, 60717), (66, 60696),

Gene: Daka\_86 Start: 63229, Stop: 62927, Start Num: 42

Candidate Starts for Daka\_86:

(22, 63310), (Start: 42 @63229 has 243 MA's), (62, 63091), (70, 63052),

Gene: Dati\_81 Start: 63207, Stop: 62905, Start Num: 42

Candidate Starts for Dati\_81:

(22, 63288), (Start: 42 @63207 has 243 MA's), (59, 63090), (62, 63069), (70, 63030),

Gene: Deenasa\_80 Start: 62186, Stop: 61857, Start Num: 48

Candidate Starts for Deenasa\_80:

(Start: 48 @62186 has 88 MA's), (59, 62087), (62, 62066), (66, 62045),

Gene: DelRivs\_82 Start: 62836, Stop: 62534, Start Num: 42

Candidate Starts for DelRivs\_82:

(22, 62917), (Start: 42 @62836 has 243 MA's), (59, 62719), (62, 62698), (70, 62659),

Gene: Dice\_83 Start: 62868, Stop: 62566, Start Num: 42

Candidate Starts for Dice\_83:

(22, 62949), (Start: 42 @62868 has 243 MA's), (59, 62751), (62, 62730), (70, 62691),

Gene: Dingo\_81 Start: 62589, Stop: 62287, Start Num: 42

Candidate Starts for Dingo\_81:

(22, 62670), (Start: 42 @62589 has 243 MA's), (59, 62472), (62, 62451), (70, 62412),

Gene: Dione\_82 Start: 62588, Stop: 62286, Start Num: 42

Candidate Starts for Dione\_82:

(22, 62669), (Start: 42 @62588 has 243 MA's), (53, 62519), (59, 62471), (62, 62450), (70, 62411),

Gene: DirtJuice\_84 Start: 63328, Stop: 63026, Start Num: 42

Candidate Starts for DirtJuice\_84:

(22, 63409), (Start: 42 @63328 has 243 MA's), (59, 63211), (62, 63190), (70, 63151),

Gene: DoesntMatter\_81 Start: 62864, Stop: 62562, Start Num: 42

Candidate Starts for DoesntMatter\_81:

(22, 62945), (Start: 42 @62864 has 243 MA's), (59, 62747), (62, 62726), (70, 62687),

Gene: DolOn\_88 Start: 64314, Stop: 64012, Start Num: 42

Candidate Starts for DolOn\_88:

(22, 64395), (Start: 42 @64314 has 243 MA's), (59, 64197), (62, 64176), (70, 64137),

Gene: DonSanchon\_80 Start: 62546, Stop: 62244, Start Num: 42

Candidate Starts for DonSanchon\_80:

(22, 62627), (Start: 42 @62546 has 243 MA's), (53, 62477), (59, 62429), (62, 62408), (70, 62369),

Gene: Duggie\_84 Start: 63170, Stop: 62868, Start Num: 42

Candidate Starts for Duggie\_84:

(22, 63251), (Start: 42 @63170 has 243 MA's), (59, 63053), (62, 63032), (70, 62993),

Gene: DunneganBoMo\_189 Start: 141037, Stop: 141381, Start Num: 31

Candidate Starts for DunneganBoMo\_189:

(Start: 31 @141037 has 2 MA's), (79, 141343),

Gene: Durga\_86 Start: 63652, Stop: 63350, Start Num: 42

Candidate Starts for Durga\_86:

(22, 63733), (Start: 42 @63652 has 243 MA's), (59, 63535), (62, 63514), (70, 63475),

Gene: Eaglehorse\_70 Start: 58944, Stop: 58642, Start Num: 48

Candidate Starts for Eaglehorse\_70:

(Start: 48 @58944 has 88 MA's), (55, 58884), (59, 58845), (62, 58824), (66, 58803), (77, 58692), (84, 58671), (85, 58665), (87, 58659),

Gene: Ellewin\_194 Start: 140428, Stop: 140649, Start Num: 54

Candidate Starts for Ellewin\_194:

(Start: 31 @140305 has 2 MA's), (54, 140428), (73, 140575),

Gene: ElvisPhasley\_85 Start: 64194, Stop: 63892, Start Num: 42

Candidate Starts for ElvisPhasley\_85:

(22, 64275), (Start: 42 @64194 has 243 MA's), (59, 64077), (62, 64056), (70, 64017),

Gene: Emiris\_86 Start: 63558, Stop: 63256, Start Num: 42

Candidate Starts for Emiris\_86:

(22, 63639), (Start: 42 @63558 has 243 MA's), (59, 63441), (62, 63420), (70, 63381),

Gene: Emmetator\_192 Start: 140436, Stop: 140780, Start Num: 31

Candidate Starts for Emmetator\_192:

(Start: 31 @140436 has 2 MA's), (79, 140742),

Gene: EmpTee\_83 Start: 62960, Stop: 62658, Start Num: 42

Candidate Starts for EmpTee\_83:

(22, 63041), (Start: 42 @62960 has 243 MA's), (53, 62891), (59, 62843), (62, 62822), (70, 62783),

Gene: Etaye\_83 Start: 63736, Stop: 63434, Start Num: 42

Candidate Starts for Etaye\_83:

(22, 63817), (Start: 42 @63736 has 243 MA's), (59, 63619), (62, 63598), (70, 63559),

Gene: Eugenia\_86 Start: 63671, Stop: 63369, Start Num: 42

Candidate Starts for Eugenia\_86:

(22, 63752), (Start: 42 @63671 has 243 MA's), (59, 63554), (62, 63533), (70, 63494),

Gene: Faze9\_69 Start: 59082, Stop: 58780, Start Num: 48

Candidate Starts for Faze9\_69:

(Start: 48 @59082 has 88 MA's), (59, 58983), (62, 58962), (66, 58941), (77, 58830), (84, 58809), (85, 58803), (87, 58797),

Gene: FelixTres\_78 Start: 57603, Stop: 57304, Start Num: 40

Candidate Starts for FelixTres\_78:

(Start: 40 @57603 has 6 MA's), (63, 57471), (67, 57453), (77, 57342), (81, 57333),

Gene: FleetyMac\_87 Start: 63060, Stop: 62758, Start Num: 42

Candidate Starts for FleetyMac\_87:

(22, 63141), (Start: 42 @63060 has 243 MA's), (53, 62991), (59, 62943), (62, 62922), (70, 62883),

Gene: FloraSnap32\_196 Start: 136494, Stop: 136784, Start Num: 43

Candidate Starts for FloraSnap32\_196:

(32, 136458), (Start: 43 @136494 has 8 MA's), (73, 136713),

Gene: FluffyNinja\_85 Start: 63249, Stop: 62947, Start Num: 42

Candidate Starts for FluffyNinja\_85:

(22, 63330), (Start: 42 @63249 has 243 MA's), (53, 63180), (59, 63132), (62, 63111), (70, 63072),

Gene: Fozzie\_82 Start: 63575, Stop: 63273, Start Num: 42

Candidate Starts for Fozzie\_82:

(22, 63656), (Start: 42 @63575 has 243 MA's), (59, 63458), (62, 63437), (70, 63398),

Gene: Frankicide\_83 Start: 63074, Stop: 62772, Start Num: 42

Candidate Starts for Frankicide\_83:

(22, 63155), (Start: 42 @63074 has 243 MA's), (59, 62957), (62, 62936), (70, 62897),

Gene: FremontTroll\_82 Start: 63487, Stop: 63185, Start Num: 42

Candidate Starts for FremontTroll\_82:

(22, 63568), (Start: 42 @63487 has 243 MA's), (59, 63370), (62, 63349), (70, 63310),

Gene: FrenchFry\_71 Start: 59069, Stop: 58767, Start Num: 48

Candidate Starts for FrenchFry\_71:

(Start: 48 @59069 has 88 MA's), (55, 59009), (59, 58970), (62, 58949), (66, 58928), (77, 58817), (84, 58796), (85, 58790), (87, 58784),

Gene: Freya\_81 Start: 62566, Stop: 62264, Start Num: 42

Candidate Starts for Freya\_81:

(22, 62647), (Start: 42 @62566 has 243 MA's), (59, 62449), (62, 62428), (70, 62389),

Gene: Fringe\_88 Start: 63724, Stop: 63422, Start Num: 42

Candidate Starts for Fringe\_88:

(22, 63805), (Start: 42 @63724 has 243 MA's), (59, 63607), (62, 63586), (70, 63547),

Gene: FrostedClock\_200 Start: 137527, Stop: 137817, Start Num: 43

Candidate Starts for FrostedClock\_200:

(32, 137491), (Start: 43 @137527 has 8 MA's), (61, 137644), (73, 137746),

Gene: FugateOSU\_84 Start: 64008, Stop: 63706, Start Num: 42

Candidate Starts for FugateOSU\_84:

(22, 64089), (Start: 42 @64008 has 243 MA's), (53, 63939), (59, 63891), (62, 63870), (70, 63831),

Gene: Gadjet\_81 Start: 61637, Stop: 61308, Start Num: 48

Candidate Starts for Gadjet\_81:

(Start: 48 @61637 has 88 MA's), (59, 61538), (62, 61517), (66, 61496),

Gene: Gareth\_84 Start: 63396, Stop: 63094, Start Num: 42

Candidate Starts for Gareth\_84:

(22, 63477), (Start: 42 @63396 has 243 MA's), (59, 63279), (62, 63258), (70, 63219),

Gene: GeneCoco\_85 Start: 63576, Stop: 63274, Start Num: 42

Candidate Starts for GeneCoco\_85:

(22, 63657), (Start: 42 @63576 has 243 MA's), (59, 63459), (62, 63438), (70, 63399),

Gene: Gervas\_81 Start: 61731, Stop: 61402, Start Num: 48

Candidate Starts for Gervas\_81:

(Start: 48 @61731 has 88 MA's), (59, 61632), (62, 61611), (66, 61590),

Gene: Giraffe\_84 Start: 63401, Stop: 63099, Start Num: 42

Candidate Starts for Giraffe\_84:

(22, 63482), (Start: 42 @63401 has 243 MA's), (53, 63332), (59, 63284), (62, 63263), (70, 63224),

Gene: Glass\_72 Start: 59070, Stop: 58768, Start Num: 48

Candidate Starts for Glass\_72:

(Start: 48 @59070 has 88 MA's), (55, 59010), (59, 58971), (62, 58950), (66, 58929), (77, 58818), (84, 58797), (85, 58791), (87, 58785),

Gene: GlenHope\_81 Start: 61310, Stop: 60981, Start Num: 48

Candidate Starts for GlenHope\_81:

(Start: 48 @61310 has 88 MA's), (59, 61211), (62, 61190), (66, 61169),

Gene: Glubnar\_81 Start: 61169, Stop: 60840, Start Num: 48

Candidate Starts for Glubnar\_81:

(Start: 48 @61169 has 88 MA's), (59, 61070), (62, 61049), (66, 61028),

Gene: GodPhather\_69 Start: 50749, Stop: 51048, Start Num: 48  
Candidate Starts for GodPhather\_69:  
(30, 50668), (Start: 48 @50749 has 88 MA's), (59, 50848), (62, 50869), (68, 50899), (72, 50956), (77, 51007),

Gene: Godines\_71 Start: 59323, Stop: 59021, Start Num: 48  
Candidate Starts for Godines\_71:  
(Start: 48 @59323 has 88 MA's), (55, 59263), (59, 59224), (62, 59203), (66, 59182), (77, 59071), (84, 59050), (85, 59044), (87, 59038),

Gene: GoldenEssence\_185 Start: 131868, Stop: 132158, Start Num: 43  
Candidate Starts for GoldenEssence\_185:  
(32, 131832), (Start: 43 @131868 has 8 MA's), (73, 132087),

Gene: Gophee\_84 Start: 63387, Stop: 63085, Start Num: 42  
Candidate Starts for Gophee\_84:  
(22, 63468), (Start: 42 @63387 has 243 MA's), (59, 63270), (62, 63249), (70, 63210),

Gene: Grand2040\_82 Start: 63365, Stop: 63063, Start Num: 42  
Candidate Starts for Grand2040\_82:  
(22, 63446), (Start: 42 @63365 has 243 MA's), (59, 63248), (62, 63227), (70, 63188),

Gene: GreenChile\_83 Start: 63061, Stop: 62759, Start Num: 42  
Candidate Starts for GreenChile\_83:  
(22, 63142), (Start: 42 @63061 has 243 MA's), (59, 62944), (62, 62923), (70, 62884),

Gene: Gustav\_45 Start: 33684, Stop: 33406, Start Num: 43  
Candidate Starts for Gustav\_45:  
(16, 33798), (18, 33789), (23, 33756), (27, 33747), (Start: 43 @33684 has 8 MA's), (55, 33609), (59, 33582), (60, 33579), (63, 33558), (65, 33549), (73, 33471),

Gene: Gwennie1\_83 Start: 63211, Stop: 62909, Start Num: 42  
Candidate Starts for Gwennie1\_83:  
(22, 63292), (Start: 42 @63211 has 243 MA's), (59, 63094), (62, 63073), (70, 63034),

Gene: Gyarad\_0083 Start: 62885, Stop: 62583, Start Num: 42  
Candidate Starts for Gyarad\_0083:  
(22, 62966), (Start: 42 @62885 has 243 MA's), (59, 62768), (62, 62747), (70, 62708),

Gene: HSavage\_82 Start: 62902, Stop: 62600, Start Num: 42  
Candidate Starts for HSavage\_82:  
(22, 62983), (Start: 42 @62902 has 243 MA's), (59, 62785), (62, 62764), (70, 62725),

Gene: Haimas\_82 Start: 62827, Stop: 62525, Start Num: 42  
Candidate Starts for Haimas\_82:  
(22, 62908), (Start: 42 @62827 has 243 MA's), (59, 62710), (62, 62689), (70, 62650),

Gene: Haleema\_83 Start: 62947, Stop: 62645, Start Num: 42  
Candidate Starts for Haleema\_83:  
(22, 63028), (Start: 42 @62947 has 243 MA's), (62, 62809), (70, 62770),

Gene: Halfpint\_79 Start: 61052, Stop: 60723, Start Num: 48  
Candidate Starts for Halfpint\_79:

(Start: 48 @61052 has 88 MA's), (59, 60953), (62, 60932), (66, 60911),

Gene: Hamish\_81 Start: 63116, Stop: 62814, Start Num: 42

Candidate Starts for Hamish\_81:

(22, 63197), (Start: 42 @63116 has 243 MA's), (59, 62999), (62, 62978), (70, 62939),

Gene: Happabalu\_82 Start: 64042, Stop: 63701, Start Num: 42

Candidate Starts for Happabalu\_82:

(22, 64123), (Start: 42 @64042 has 243 MA's), (59, 63925), (62, 63904), (70, 63865), (91, 63715),

Gene: Harvey\_81 Start: 62724, Stop: 62422, Start Num: 42

Candidate Starts for Harvey\_81:

(22, 62805), (Start: 42 @62724 has 243 MA's), (59, 62607), (62, 62586), (70, 62547),

Gene: HarveySr\_79 Start: 60821, Stop: 60492, Start Num: 48

Candidate Starts for HarveySr\_79:

(Start: 48 @60821 has 88 MA's), (59, 60722), (62, 60701), (66, 60680),

Gene: Heathcliff\_80 Start: 61231, Stop: 60902, Start Num: 48

Candidate Starts for Heathcliff\_80:

(Start: 48 @61231 has 88 MA's), (59, 61132), (62, 61111), (66, 61090),

Gene: Hedgerow\_70 Start: 59020, Stop: 58718, Start Num: 48

Candidate Starts for Hedgerow\_70:

(Start: 48 @59020 has 88 MA's), (55, 58960), (59, 58921), (62, 58900), (66, 58879), (77, 58768), (84, 58747), (85, 58741), (87, 58735),

Gene: Held\_82 Start: 62845, Stop: 62543, Start Num: 42

Candidate Starts for Held\_82:

(22, 62926), (Start: 42 @62845 has 243 MA's), (59, 62728), (62, 62707), (70, 62668),

Gene: HenryJackson\_85 Start: 63564, Stop: 63262, Start Num: 42

Candidate Starts for HenryJackson\_85:

(22, 63645), (Start: 42 @63564 has 243 MA's), (59, 63447), (62, 63426), (70, 63387),

Gene: Hetaeria\_84 Start: 63213, Stop: 62911, Start Num: 42

Candidate Starts for Hetaeria\_84:

(22, 63294), (Start: 42 @63213 has 243 MA's), (59, 63096), (62, 63075), (70, 63036),

Gene: HighStump\_85 Start: 63351, Stop: 63049, Start Num: 42

Candidate Starts for HighStump\_85:

(22, 63432), (Start: 42 @63351 has 243 MA's), (59, 63234), (62, 63213), (70, 63174),

Gene: Hocus\_82 Start: 62865, Stop: 62563, Start Num: 42

Candidate Starts for Hocus\_82:

(22, 62946), (Start: 42 @62865 has 243 MA's), (59, 62748), (62, 62727), (70, 62688),

Gene: HogWash\_85 Start: 63878, Stop: 63576, Start Num: 42

Candidate Starts for HogWash\_85:

(22, 63959), (Start: 42 @63878 has 243 MA's), (59, 63761), (62, 63740), (70, 63701),

Gene: Holeinone\_70 Start: 58925, Stop: 58623, Start Num: 48

Candidate Starts for Holeinone\_70:

(Start: 48 @58925 has 88 MA's), (55, 58865), (59, 58826), (62, 58805), (66, 58784), (77, 58673), (84, 58652), (85, 58646), (87, 58640),

Gene: Horchata\_81 Start: 63042, Stop: 62740, Start Num: 42

Candidate Starts for Horchata\_81:

(22, 63123), (Start: 42 @63042 has 243 MA's), (59, 62925), (62, 62904), (70, 62865),

Gene: ImtiyazSitla\_85 Start: 63370, Stop: 63068, Start Num: 42

Candidate Starts for ImtiyazSitla\_85:

(22, 63451), (Start: 42 @63370 has 243 MA's), (53, 63301), (59, 63253), (62, 63232), (70, 63193),

Gene: Inchworm\_85 Start: 63238, Stop: 62936, Start Num: 42

Candidate Starts for Inchworm\_85:

(22, 63319), (Start: 42 @63238 has 243 MA's), (53, 63169), (59, 63121), (62, 63100), (70, 63061),

Gene: Inverness\_82 Start: 63039, Stop: 62737, Start Num: 42

Candidate Starts for Inverness\_82:

(22, 63120), (Start: 42 @63039 has 243 MA's), (59, 62922), (62, 62901), (70, 62862),

Gene: Iridessa\_86 Start: 62963, Stop: 62661, Start Num: 42

Candidate Starts for Iridessa\_86:

(22, 63044), (Start: 42 @62963 has 243 MA's), (59, 62846), (62, 62825), (70, 62786),

Gene: Iridoclysis\_83 Start: 63129, Stop: 62827, Start Num: 42

Candidate Starts for Iridoclysis\_83:

(22, 63210), (Start: 42 @63129 has 243 MA's), (53, 63060), (59, 63012), (62, 62991), (70, 62952),

Gene: IsaacEli\_86 Start: 63369, Stop: 63067, Start Num: 42

Candidate Starts for IsaacEli\_86:

(22, 63450), (Start: 42 @63369 has 243 MA's), (59, 63252), (62, 63231), (70, 63192),

Gene: ItsyBitsy1\_69 Start: 59161, Stop: 58859, Start Num: 48

Candidate Starts for ItsyBitsy1\_69:

(Start: 48 @59161 has 88 MA's), (55, 59101), (59, 59062), (62, 59041), (66, 59020), (77, 58909), (84, 58888), (85, 58882), (87, 58876),

Gene: JDog\_83 Start: 63399, Stop: 63097, Start Num: 42

Candidate Starts for JDog\_83:

(22, 63480), (Start: 42 @63399 has 243 MA's), (59, 63282), (62, 63261), (70, 63222),

Gene: JacAttac\_84 Start: 62843, Stop: 62541, Start Num: 42

Candidate Starts for JacAttac\_84:

(22, 62924), (Start: 42 @62843 has 243 MA's), (53, 62774), (59, 62726), (62, 62705), (70, 62666),

Gene: Jackstina\_75 Start: 61145, Stop: 60816, Start Num: 48

Candidate Starts for Jackstina\_75:

(Start: 48 @61145 has 88 MA's), (59, 61046), (62, 61025), (66, 61004),

Gene: JakeO\_85 Start: 63127, Stop: 62825, Start Num: 42

Candidate Starts for JakeO\_85:

(22, 63208), (Start: 42 @63127 has 243 MA's), (59, 63010), (62, 62989), (70, 62950),

Gene: JangoPhett\_82 Start: 63203, Stop: 62901, Start Num: 42

Candidate Starts for JangoPhett\_82:

(22, 63284), (Start: 42 @63203 has 243 MA's), (59, 63086), (62, 63065), (70, 63026),

Gene: Jesabah\_86 Start: 63966, Stop: 63664, Start Num: 42

Candidate Starts for Jesabah\_86:

(22, 64047), (Start: 42 @63966 has 243 MA's), (59, 63849), (62, 63828), (70, 63789),

Gene: Jillium\_85 Start: 63559, Stop: 63257, Start Num: 42

Candidate Starts for Jillium\_85:

(22, 63640), (Start: 42 @63559 has 243 MA's), (59, 63442), (62, 63421), (70, 63382),

Gene: Jiminy\_84 Start: 63063, Stop: 62761, Start Num: 42

Candidate Starts for Jiminy\_84:

(22, 63144), (Start: 42 @63063 has 243 MA's), (53, 62994), (59, 62946), (62, 62925), (70, 62886),

Gene: Jiraiya\_85 Start: 63147, Stop: 62845, Start Num: 42

Candidate Starts for Jiraiya\_85:

(22, 63228), (Start: 42 @63147 has 243 MA's), (59, 63030), (62, 63009), (70, 62970),

Gene: KLucky39\_82 Start: 62922, Stop: 62620, Start Num: 42

Candidate Starts for KLucky39\_82:

(22, 63003), (Start: 42 @62922 has 243 MA's), (59, 62805), (62, 62784), (70, 62745),

Gene: Kahve\_85 Start: 63562, Stop: 63260, Start Num: 42

Candidate Starts for Kahve\_85:

(22, 63643), (Start: 42 @63562 has 243 MA's), (59, 63445), (62, 63424), (70, 63385),

Gene: Kailash\_82 Start: 63262, Stop: 62960, Start Num: 42

Candidate Starts for Kailash\_82:

(22, 63343), (Start: 42 @63262 has 243 MA's), (53, 63193), (59, 63145), (62, 63124), (70, 63085),

Gene: Kaleb\_71 Start: 59076, Stop: 58774, Start Num: 48

Candidate Starts for Kaleb\_71:

(Start: 48 @59076 has 88 MA's), (55, 59016), (59, 58977), (62, 58956), (66, 58935), (77, 58824), (84, 58803), (85, 58797), (87, 58791),

Gene: Kamiyu\_80 Start: 61234, Stop: 60905, Start Num: 48

Candidate Starts for Kamiyu\_80:

(Start: 48 @61234 has 88 MA's), (59, 61135), (62, 61114), (66, 61093),

Gene: KarasumaRum\_75 Start: 62138, Stop: 61818, Start Num: 44

Candidate Starts for KarasumaRum\_75:

(28, 62207), (29, 62204), (37, 62162), (44, 62138), (59, 62021), (63, 61997), (67, 61979), (69, 61973), (70, 61961), (77, 61871), (88, 61829),

Gene: Karn\_84 Start: 63118, Stop: 62816, Start Num: 42

Candidate Starts for Karn\_84:

(22, 63199), (Start: 42 @63118 has 243 MA's), (59, 63001), (62, 62980), (70, 62941),

Gene: Katniss\_86 Start: 62978, Stop: 62676, Start Num: 42

Candidate Starts for Katniss\_86:

(22, 63059), (Start: 42 @62978 has 243 MA's), (53, 62909), (59, 62861), (62, 62840), (70, 62801),

Gene: Keitherie\_87 Start: 63620, Stop: 63318, Start Num: 42  
Candidate Starts for Keitherie\_87:  
(22, 63701), (Start: 42 @63620 has 243 MA's), (53, 63551), (59, 63503), (62, 63482), (70, 63443),

Gene: Khan1\_84 Start: 63341, Stop: 63039, Start Num: 42  
Candidate Starts for Khan1\_84:  
(22, 63422), (Start: 42 @63341 has 243 MA's), (59, 63224), (62, 63203), (70, 63164),

Gene: Kheth\_70 Start: 58987, Stop: 58685, Start Num: 48  
Candidate Starts for Kheth\_70:  
(Start: 48 @58987 has 88 MA's), (55, 58927), (59, 58888), (62, 58867), (66, 58846), (77, 58735), (84, 58714), (85, 58708), (87, 58702),

Gene: Kikipoo\_86 Start: 63369, Stop: 63067, Start Num: 42  
Candidate Starts for Kikipoo\_86:  
(22, 63450), (Start: 42 @63369 has 243 MA's), (59, 63252), (62, 63231), (70, 63192),

Gene: Kimbrough\_85 Start: 63441, Stop: 63139, Start Num: 42  
Candidate Starts for Kimbrough\_85:  
(22, 63522), (Start: 42 @63441 has 243 MA's), (59, 63324), (62, 63303), (70, 63264),

Gene: KingTut\_75 Start: 59601, Stop: 59299, Start Num: 42  
Candidate Starts for KingTut\_75:  
(22, 59682), (Start: 42 @59601 has 243 MA's), (59, 59484), (62, 59463), (70, 59424),

Gene: KingVeVeVe\_82 Start: 62576, Stop: 62274, Start Num: 42  
Candidate Starts for KingVeVeVe\_82:  
(22, 62657), (Start: 42 @62576 has 243 MA's), (59, 62459), (62, 62438), (70, 62399),

Gene: KlimbOn\_83 Start: 62881, Stop: 62579, Start Num: 42  
Candidate Starts for KlimbOn\_83:  
(22, 62962), (Start: 42 @62881 has 243 MA's), (59, 62764), (62, 62743), (70, 62704),

Gene: Kloppinator\_84 Start: 63012, Stop: 62710, Start Num: 42  
Candidate Starts for Kloppinator\_84:  
(22, 63093), (Start: 42 @63012 has 243 MA's), (59, 62895), (62, 62874), (70, 62835),

Gene: Kolhan\_71 Start: 58964, Stop: 58662, Start Num: 48  
Candidate Starts for Kolhan\_71:  
(Start: 48 @58964 has 88 MA's), (59, 58865), (62, 58844), (66, 58823), (77, 58712), (84, 58691), (85, 58685), (87, 58679),

Gene: Kronus\_80 Start: 62318, Stop: 61989, Start Num: 48  
Candidate Starts for Kronus\_80:  
(Start: 48 @62318 has 88 MA's), (59, 62219), (62, 62198), (66, 62177),

Gene: Kumao\_87 Start: 55246, Stop: 55530, Start Num: 46  
Candidate Starts for Kumao\_87:  
(13, 55096), (20, 55132), (Start: 31 @55183 has 2 MA's), (34, 55207), (Start: 46 @55246 has 1 MA's), (63, 55372), (76, 55492),

Gene: Kwadwo\_83 Start: 62867, Stop: 62565, Start Num: 42  
Candidate Starts for Kwadwo\_83:

(22, 62948), (Start: 42 @62867 has 243 MA's), (53, 62798), (59, 62750), (62, 62729), (70, 62690),

Gene: Kwksand96\_85 Start: 63133, Stop: 62831, Start Num: 42

Candidate Starts for Kwksand96\_85:

(22, 63214), (Start: 42 @63133 has 243 MA's), (53, 63064), (59, 63016), (62, 62995), (70, 62956),

Gene: Labeouficaum\_84 Start: 62946, Stop: 62644, Start Num: 42

Candidate Starts for Labeouficaum\_84:

(22, 63027), (Start: 42 @62946 has 243 MA's), (59, 62829), (62, 62808), (70, 62769),

Gene: Lars\_71 Start: 59048, Stop: 58746, Start Num: 48

Candidate Starts for Lars\_71:

(Start: 48 @59048 has 88 MA's), (55, 58988), (59, 58949), (62, 58928), (66, 58907), (77, 58796), (84, 58775), (85, 58769), (87, 58763),

Gene: LasagnaCat\_85 Start: 63248, Stop: 62946, Start Num: 42

Candidate Starts for LasagnaCat\_85:

(22, 63329), (Start: 42 @63248 has 243 MA's), (53, 63179), (59, 63131), (62, 63110), (70, 63071),

Gene: Lasso\_83 Start: 63108, Stop: 62806, Start Num: 42

Candidate Starts for Lasso\_83:

(22, 63189), (Start: 42 @63108 has 243 MA's), (62, 62970), (70, 62931),

Gene: Laure\_199 Start: 125992, Stop: 126291, Start Num: 44

Candidate Starts for Laure\_199:

(35, 125962), (44, 125992), (63, 126121), (78, 126250), (82, 126262), (85, 126274),

Gene: Lego3393\_82 Start: 63569, Stop: 63267, Start Num: 42

Candidate Starts for Lego3393\_82:

(22, 63650), (Start: 42 @63569 has 243 MA's), (53, 63500), (59, 63452), (62, 63431), (70, 63392),

Gene: Legolas\_85 Start: 63195, Stop: 62893, Start Num: 42

Candidate Starts for Legolas\_85:

(22, 63276), (Start: 42 @63195 has 243 MA's), (53, 63126), (59, 63078), (62, 63057), (70, 63018),

Gene: Lehmann\_87 Start: 63406, Stop: 63104, Start Num: 42

Candidate Starts for Lehmann\_87:

(22, 63487), (Start: 42 @63406 has 243 MA's), (59, 63289), (62, 63268), (70, 63229),

Gene: LeiMonet\_86 Start: 63329, Stop: 63027, Start Num: 42

Candidate Starts for LeiMonet\_86:

(22, 63410), (Start: 42 @63329 has 243 MA's), (59, 63212), (62, 63191), (70, 63152),

Gene: LemonSlice\_84 Start: 62854, Stop: 62552, Start Num: 42

Candidate Starts for LemonSlice\_84:

(22, 62935), (Start: 42 @62854 has 243 MA's), (62, 62716), (70, 62677),

Gene: LeoJr\_199 Start: 136061, Stop: 136414, Start Num: 31

Candidate Starts for LeoJr\_199:

(Start: 31 @136061 has 2 MA's), (73, 136334), (89, 136409),

Gene: Lephleur\_70 Start: 58910, Stop: 58608, Start Num: 48

Candidate Starts for Lephleur\_70:

(Start: 48 @58910 has 88 MA's), (55, 58850), (59, 58811), (62, 58790), (66, 58769), (77, 58658), (84, 58637), (85, 58631), (87, 58625),

Gene: LestyG\_78 Start: 60804, Stop: 60475, Start Num: 48

Candidate Starts for LestyG\_78:

(Start: 48 @60804 has 88 MA's), (59, 60705), (62, 60684), (66, 60663),

Gene: LilSmirk\_70 Start: 58947, Stop: 58645, Start Num: 48

Candidate Starts for LilSmirk\_70:

(Start: 48 @58947 has 88 MA's), (55, 58887), (59, 58848), (62, 58827), (66, 58806), (77, 58695), (84, 58674), (85, 58668), (87, 58662),

Gene: LizLemon\_70 Start: 59075, Stop: 58773, Start Num: 48

Candidate Starts for LizLemon\_70:

(Start: 48 @59075 has 88 MA's), (55, 59015), (59, 58976), (62, 58955), (66, 58934), (77, 58823), (84, 58802), (85, 58796), (87, 58790),

Gene: Longacauda\_85 Start: 63348, Stop: 63046, Start Num: 42

Candidate Starts for Longacauda\_85:

(22, 63429), (Start: 42 @63348 has 243 MA's), (53, 63279), (59, 63231), (62, 63210), (70, 63171),

Gene: Lopsy\_81 Start: 62535, Stop: 62233, Start Num: 42

Candidate Starts for Lopsy\_81:

(22, 62616), (Start: 42 @62535 has 243 MA's), (53, 62466), (59, 62418), (62, 62397),

Gene: LostAndPhound\_83 Start: 63397, Stop: 63095, Start Num: 42

Candidate Starts for LostAndPhound\_83:

(22, 63478), (Start: 42 @63397 has 243 MA's), (59, 63280), (62, 63259), (70, 63220),

Gene: LuckyMarjie\_81 Start: 62606, Stop: 62304, Start Num: 42

Candidate Starts for LuckyMarjie\_81:

(22, 62687), (Start: 42 @62606 has 243 MA's), (59, 62489), (62, 62468), (70, 62429),

Gene: Lulwa\_81 Start: 62220, Stop: 61918, Start Num: 42

Candidate Starts for Lulwa\_81:

(22, 62301), (Start: 42 @62220 has 243 MA's), (59, 62103), (62, 62082), (70, 62043),

Gene: Lumine\_85 Start: 63045, Stop: 62743, Start Num: 42

Candidate Starts for Lumine\_85:

(22, 63126), (Start: 42 @63045 has 243 MA's), (59, 62928), (62, 62907), (70, 62868),

Gene: MRabcd\_84 Start: 63322, Stop: 63020, Start Num: 42

Candidate Starts for MRabcd\_84:

(22, 63403), (Start: 42 @63322 has 243 MA's), (59, 63205), (62, 63184), (70, 63145),

Gene: Mag7\_82 Start: 62806, Stop: 62504, Start Num: 42

Candidate Starts for Mag7\_82:

(22, 62887), (Start: 42 @62806 has 243 MA's), (53, 62737), (59, 62689), (62, 62668), (70, 62629),

Gene: Magic8\_83 Start: 63174, Stop: 62872, Start Num: 42

Candidate Starts for Magic8\_83:

(22, 63255), (Start: 42 @63174 has 243 MA's), (59, 63057), (62, 63036), (70, 62997),

Gene: Magritte\_241 Start: 125100, Stop: 125468, Start Num: 43  
Candidate Starts for Magritte\_241:  
(Start: 43 @125100 has 8 MA's), (45, 125106), (54, 125181), (92, 125451),

Gene: MakoManhole\_74 Start: 56700, Stop: 56401, Start Num: 40  
Candidate Starts for MakoManhole\_74:  
(Start: 40 @56700 has 6 MA's), (63, 56568), (67, 56550), (77, 56439),

Gene: Mana\_82 Start: 63010, Stop: 62708, Start Num: 42  
Candidate Starts for Mana\_82:  
(22, 63091), (Start: 42 @63010 has 243 MA's), (59, 62893), (62, 62872), (70, 62833),

Gene: Manad\_83 Start: 63120, Stop: 62818, Start Num: 42  
Candidate Starts for Manad\_83:  
(22, 63201), (Start: 42 @63120 has 243 MA's), (59, 63003), (62, 62982), (70, 62943),

Gene: Marley1013\_81 Start: 62170, Stop: 61841, Start Num: 48  
Candidate Starts for Marley1013\_81:  
(Start: 48 @62170 has 88 MA's), (59, 62071), (62, 62050), (66, 62029),

Gene: Marlia\_81 Start: 61703, Stop: 61374, Start Num: 48  
Candidate Starts for Marlia\_81:  
(Start: 48 @61703 has 88 MA's), (59, 61604), (62, 61583), (66, 61562),

Gene: Maru\_84 Start: 63458, Stop: 63156, Start Num: 42  
Candidate Starts for Maru\_84:  
(22, 63539), (Start: 42 @63458 has 243 MA's), (59, 63341), (62, 63320), (70, 63281),

Gene: Maskar\_85 Start: 63370, Stop: 63068, Start Num: 42  
Candidate Starts for Maskar\_85:  
(22, 63451), (Start: 42 @63370 has 243 MA's), (53, 63301), (59, 63253), (62, 63232), (70, 63193),

Gene: MasterPo\_71 Start: 58942, Stop: 58640, Start Num: 48  
Candidate Starts for MasterPo\_71:  
(Start: 48 @58942 has 88 MA's), (55, 58882), (59, 58843), (62, 58822), (66, 58801), (77, 58690), (84, 58669), (85, 58663), (87, 58657),

Gene: Matalotodo\_83 Start: 63854, Stop: 63552, Start Num: 42  
Candidate Starts for Matalotodo\_83:  
(22, 63935), (Start: 42 @63854 has 243 MA's), (59, 63737), (62, 63716), (70, 63677),

Gene: Mcshane\_83 Start: 62868, Stop: 62566, Start Num: 42  
Candidate Starts for Mcshane\_83:  
(22, 62949), (Start: 42 @62868 has 243 MA's), (59, 62751), (62, 62730), (70, 62691),

Gene: Mecca\_84 Start: 63422, Stop: 63120, Start Num: 42  
Candidate Starts for Mecca\_84:  
(22, 63503), (Start: 42 @63422 has 243 MA's), (59, 63305), (62, 63284), (70, 63245),

Gene: Megabear\_66 Start: 49066, Stop: 49365, Start Num: 48  
Candidate Starts for Megabear\_66:  
(Start: 48 @49066 has 88 MA's), (59, 49165), (62, 49186), (68, 49216), (72, 49273), (77, 49324), (86, 49354),

Gene: Megamind20\_84 Start: 62832, Stop: 62530, Start Num: 42  
Candidate Starts for Megamind20\_84:  
(22, 62913), (Start: 42 @62832 has 243 MA's), (53, 62763), (59, 62715), (62, 62694), (70, 62655),

Gene: Megatron\_85 Start: 63540, Stop: 63238, Start Num: 42  
Candidate Starts for Megatron\_85:  
(22, 63621), (Start: 42 @63540 has 243 MA's), (53, 63471), (59, 63423), (62, 63402), (70, 63363),

Gene: Melc17\_81 Start: 63490, Stop: 63188, Start Num: 42  
Candidate Starts for Melc17\_81:  
(22, 63571), (Start: 42 @63490 has 243 MA's), (59, 63373), (62, 63352), (70, 63313),

Gene: MelsMeow\_83 Start: 63130, Stop: 62828, Start Num: 42  
Candidate Starts for MelsMeow\_83:  
(22, 63211), (Start: 42 @63130 has 243 MA's), (53, 63061), (59, 63013), (62, 62992), (70, 62953),

Gene: Mesmerelda\_83 Start: 63422, Stop: 63120, Start Num: 42  
Candidate Starts for Mesmerelda\_83:  
(22, 63503), (Start: 42 @63422 has 243 MA's), (59, 63305), (62, 63284), (70, 63245),

Gene: MichaelPhcott\_82 Start: 62803, Stop: 62501, Start Num: 42  
Candidate Starts for MichaelPhcott\_82:  
(22, 62884), (Start: 42 @62803 has 243 MA's), (53, 62734), (59, 62686), (62, 62665), (70, 62626),

Gene: Mikota\_81 Start: 62574, Stop: 62272, Start Num: 42  
Candidate Starts for Mikota\_81:  
(22, 62655), (Start: 42 @62574 has 243 MA's), (59, 62457), (62, 62436), (70, 62397),

Gene: Mimi\_197 Start: 137277, Stop: 137567, Start Num: 43  
Candidate Starts for Mimi\_197:  
(32, 137241), (Start: 43 @137277 has 8 MA's), (61, 137394), (73, 137496),

Gene: MiniBoss\_81 Start: 62175, Stop: 61873, Start Num: 42  
Candidate Starts for MiniBoss\_81:  
(22, 62256), (Start: 42 @62175 has 243 MA's), (59, 62058), (62, 62037), (70, 61998),

Gene: MitKao\_84 Start: 63024, Stop: 62722, Start Num: 42  
Candidate Starts for MitKao\_84:  
(22, 63105), (Start: 42 @63024 has 243 MA's), (59, 62907), (62, 62886), (70, 62847),

Gene: MmasiCarm\_81 Start: 61673, Stop: 61344, Start Num: 48  
Candidate Starts for MmasiCarm\_81:  
(Start: 48 @61673 has 88 MA's), (59, 61574), (62, 61553), (66, 61532),

Gene: Morrissey\_45 Start: 34634, Stop: 34356, Start Num: 43  
Candidate Starts for Morrissey\_45:  
(Start: 43 @34634 has 8 MA's), (55, 34559), (59, 34532), (60, 34529), (63, 34508), (65, 34499), (67, 34490), (73, 34421),

Gene: Mortcellus\_80 Start: 62399, Stop: 62070, Start Num: 48  
Candidate Starts for Mortcellus\_80:  
(Start: 48 @62399 has 88 MA's), (59, 62300), (62, 62279), (66, 62258),

Gene: Morty\_85 Start: 63410, Stop: 63108, Start Num: 42  
Candidate Starts for Morty\_85:  
(22, 63491), (Start: 42 @63410 has 243 MA's), (59, 63293), (62, 63272), (70, 63233),

Gene: Morty007\_79 Start: 62170, Stop: 61841, Start Num: 48  
Candidate Starts for Morty007\_79:  
(Start: 48 @62170 has 88 MA's), (59, 62071), (62, 62050), (66, 62029),

Gene: MossRose\_77 Start: 57611, Stop: 57312, Start Num: 40  
Candidate Starts for MossRose\_77:  
(Start: 40 @57611 has 6 MA's), (63, 57479), (67, 57461), (77, 57350),

Gene: MrPhizzler\_87 Start: 63318, Stop: 63016, Start Num: 42  
Candidate Starts for MrPhizzler\_87:  
(22, 63399), (Start: 42 @63318 has 243 MA's), (59, 63201), (62, 63180), (70, 63141),

Gene: Mulan\_83 Start: 63053, Stop: 62751, Start Num: 42  
Candidate Starts for Mulan\_83:  
(22, 63134), (Start: 42 @63053 has 243 MA's), (59, 62936), (62, 62915), (70, 62876),

Gene: Mutante\_85 Start: 63025, Stop: 62723, Start Num: 42  
Candidate Starts for Mutante\_85:  
(22, 63106), (Start: 42 @63025 has 243 MA's), (59, 62908), (62, 62887), (70, 62848),

Gene: Nathan\_85 Start: 63551, Stop: 63249, Start Num: 42  
Candidate Starts for Nathan\_85:  
(22, 63632), (Start: 42 @63551 has 243 MA's), (59, 63434), (62, 63413), (70, 63374),

Gene: Neos5\_80 Start: 61632, Stop: 61303, Start Num: 48  
Candidate Starts for Neos5\_80:  
(Start: 48 @61632 has 88 MA's), (59, 61533), (62, 61512), (66, 61491),

Gene: Nicole21\_85 Start: 63159, Stop: 62857, Start Num: 42  
Candidate Starts for Nicole21\_85:  
(22, 63240), (Start: 42 @63159 has 243 MA's), (53, 63090), (59, 63042), (62, 63021), (70, 62982),

Gene: Nozo\_80 Start: 62041, Stop: 61712, Start Num: 48  
Candidate Starts for Nozo\_80:  
(Start: 48 @62041 has 88 MA's), (59, 61942), (62, 61921), (66, 61900),

Gene: Numberten\_83 Start: 63140, Stop: 62838, Start Num: 42  
Candidate Starts for Numberten\_83:  
(22, 63221), (Start: 42 @63140 has 243 MA's), (59, 63023), (62, 63002), (70, 62963),

Gene: Nyala\_83 Start: 62875, Stop: 62573, Start Num: 42  
Candidate Starts for Nyala\_83:  
(22, 62956), (Start: 42 @62875 has 243 MA's), (59, 62758), (62, 62737), (70, 62698),

Gene: OSmaximus\_85 Start: 63706, Stop: 63404, Start Num: 42  
Candidate Starts for OSmaximus\_85:  
(22, 63787), (Start: 42 @63706 has 243 MA's), (62, 63568), (70, 63529),

Gene: Obutu\_82 Start: 61844, Stop: 61515, Start Num: 48  
Candidate Starts for Obutu\_82:  
(Start: 48 @61844 has 88 MA's), (59, 61745), (62, 61724), (66, 61703),

Gene: Olak\_83 Start: 63039, Stop: 62737, Start Num: 42  
Candidate Starts for Olak\_83:  
(22, 63120), (Start: 42 @63039 has 243 MA's), (62, 62901), (70, 62862),

Gene: Oline\_83 Start: 63029, Stop: 62727, Start Num: 42  
Candidate Starts for Oline\_83:  
(22, 63110), (Start: 42 @63029 has 243 MA's), (59, 62912), (62, 62891), (70, 62852),

Gene: Olive\_82 Start: 63270, Stop: 62968, Start Num: 42  
Candidate Starts for Olive\_82:  
(22, 63351), (Start: 42 @63270 has 243 MA's), (59, 63153), (62, 63132), (70, 63093),

Gene: OliverWalter\_84 Start: 63326, Stop: 63024, Start Num: 42  
Candidate Starts for OliverWalter\_84:  
(22, 63407), (Start: 42 @63326 has 243 MA's), (59, 63209), (62, 63188), (70, 63149),

Gene: Omniscient\_85 Start: 63729, Stop: 63427, Start Num: 42  
Candidate Starts for Omniscient\_85:  
(22, 63810), (Start: 42 @63729 has 243 MA's), (53, 63660), (59, 63612), (62, 63591), (70, 63552),

Gene: Oosterbaan\_84 Start: 63266, Stop: 62964, Start Num: 42  
Candidate Starts for Oosterbaan\_84:  
(22, 63347), (Start: 42 @63266 has 243 MA's), (59, 63149), (62, 63128), (70, 63089),

Gene: Opia\_71 Start: 58968, Stop: 58666, Start Num: 48  
Candidate Starts for Opia\_71:  
(Start: 48 @58968 has 88 MA's), (55, 58908), (59, 58869), (62, 58848), (66, 58827), (77, 58716), (84, 58695), (85, 58689), (87, 58683),

Gene: Orfeu\_83 Start: 63388, Stop: 63086, Start Num: 42  
Candidate Starts for Orfeu\_83:  
(22, 63469), (Start: 42 @63388 has 243 MA's), (59, 63271), (62, 63250), (70, 63211),

Gene: Orwigg\_83 Start: 62794, Stop: 62492, Start Num: 42  
Candidate Starts for Orwigg\_83:  
(22, 62875), (Start: 42 @62794 has 243 MA's), (59, 62677), (62, 62656), (70, 62617),

Gene: PR\_67 Start: 49757, Stop: 50056, Start Num: 48  
Candidate Starts for PR\_67:  
(Start: 48 @49757 has 88 MA's), (59, 49856), (62, 49877), (68, 49907), (72, 49964), (77, 50015), (86, 50045),

Gene: Pacifista\_83 Start: 62879, Stop: 62577, Start Num: 42  
Candidate Starts for Pacifista\_83:  
(22, 62960), (Start: 42 @62879 has 243 MA's), (59, 62762), (62, 62741), (70, 62702),

Gene: PallasAthena\_85 Start: 62860, Stop: 62558, Start Num: 42  
Candidate Starts for PallasAthena\_85:  
(22, 62941), (Start: 42 @62860 has 243 MA's), (59, 62743), (62, 62722), (70, 62683),

Gene: Parvarticeps\_13 Start: 8726, Stop: 9028, Start Num: 41  
Candidate Starts for Parvarticeps\_13:  
(1, 7829), (2, 8093), (5, 8369), (15, 8615), (19, 8627), (41, 8726), (54, 8810), (64, 8870), (82, 9002),

Gene: Patbob\_197 Start: 137664, Stop: 137954, Start Num: 43  
Candidate Starts for Patbob\_197:  
(32, 137628), (Start: 43 @137664 has 8 MA's), (73, 137883),

Gene: Phaedrux\_75 Start: 60692, Stop: 60363, Start Num: 48  
Candidate Starts for Phaedrux\_75:  
(Start: 48 @60692 has 88 MA's), (59, 60593), (62, 60572), (66, 60551),

Gene: Phamished\_84 Start: 63046, Stop: 62744, Start Num: 42  
Candidate Starts for Phamished\_84:  
(22, 63127), (Start: 42 @63046 has 243 MA's), (59, 62929), (62, 62908), (70, 62869),

Gene: Phantasmagoria\_69 Start: 58957, Stop: 58655, Start Num: 48  
Candidate Starts for Phantasmagoria\_69:  
(Start: 48 @58957 has 88 MA's), (59, 58858), (62, 58837), (66, 58816), (77, 58705), (84, 58684), (85, 58678), (87, 58672),

Gene: Phareon\_82 Start: 62571, Stop: 62269, Start Num: 42  
Candidate Starts for Phareon\_82:  
(22, 62652), (Start: 42 @62571 has 243 MA's), (59, 62454), (62, 62433), (70, 62394),

Gene: PhatLouie\_86 Start: 63405, Stop: 63103, Start Num: 42  
Candidate Starts for PhatLouie\_86:  
(22, 63486), (Start: 42 @63405 has 243 MA's), (59, 63288), (62, 63267), (70, 63228),

Gene: Phayeta\_83 Start: 61761, Stop: 61432, Start Num: 48  
Candidate Starts for Phayeta\_83:  
(Start: 48 @61761 has 88 MA's), (59, 61662), (62, 61641), (66, 61620),

Gene: PhenghisKhan\_84 Start: 63035, Stop: 62733, Start Num: 42  
Candidate Starts for PhenghisKhan\_84:  
(22, 63116), (Start: 42 @63035 has 243 MA's), (53, 62966), (59, 62918), (62, 62897), (70, 62858),

Gene: Pherdinand\_85 Start: 63251, Stop: 62949, Start Num: 42  
Candidate Starts for Pherdinand\_85:  
(22, 63332), (Start: 42 @63251 has 243 MA's), (53, 63182), (59, 63134), (62, 63113), (70, 63074),

Gene: Phergie\_84 Start: 63024, Stop: 62722, Start Num: 42  
Candidate Starts for Phergie\_84:  
(22, 63105), (Start: 42 @63024 has 243 MA's), (53, 62955), (59, 62907), (62, 62886), (70, 62847),

Gene: Philly\_79 Start: 61124, Stop: 60795, Start Num: 48  
Candidate Starts for Philly\_79:  
(Start: 48 @61124 has 88 MA's), (59, 61025), (62, 61004), (66, 60983),

Gene: Phipps\_83 Start: 63102, Stop: 62800, Start Num: 42  
Candidate Starts for Phipps\_83:  
(22, 63183), (Start: 42 @63102 has 243 MA's), (59, 62985), (62, 62964), (70, 62925),

Gene: Phleuron\_82 Start: 62836, Stop: 62534, Start Num: 42  
Candidate Starts for Phleuron\_82:  
(22, 62917), (Start: 42 @62836 has 243 MA's), (53, 62767), (59, 62719), (62, 62698), (70, 62659),

Gene: Phlyer\_80 Start: 61987, Stop: 61658, Start Num: 48  
Candidate Starts for Phlyer\_80:  
(Start: 48 @61987 has 88 MA's), (59, 61888), (62, 61867), (66, 61846),

Gene: Phrampa\_191 Start: 137032, Stop: 137322, Start Num: 43  
Candidate Starts for Phrampa\_191:  
(32, 136996), (Start: 43 @137032 has 8 MA's), (73, 137251),

Gene: PhrodoBaggins\_86 Start: 63405, Stop: 63103, Start Num: 42  
Candidate Starts for PhrodoBaggins\_86:  
(22, 63486), (Start: 42 @63405 has 243 MA's), (59, 63288), (62, 63267), (70, 63228),

Gene: Phunky\_82 Start: 62909, Stop: 62607, Start Num: 42  
Candidate Starts for Phunky\_82:  
(22, 62990), (Start: 42 @62909 has 243 MA's), (62, 62771), (70, 62732),

Gene: Piglet\_0084 Start: 63524, Stop: 63222, Start Num: 42  
Candidate Starts for Piglet\_0084:  
(22, 63605), (Start: 42 @63524 has 243 MA's), (59, 63407), (62, 63386), (70, 63347),

Gene: PinheadLarry\_83 Start: 63175, Stop: 62873, Start Num: 42  
Candidate Starts for PinheadLarry\_83:  
(22, 63256), (Start: 42 @63175 has 243 MA's), (62, 63037), (70, 62998),

Gene: Pinkman\_84 Start: 63248, Stop: 62946, Start Num: 42  
Candidate Starts for Pinkman\_84:  
(22, 63329), (Start: 42 @63248 has 243 MA's), (59, 63131), (62, 63110), (70, 63071),

Gene: Pipefish\_82 Start: 62383, Stop: 62054, Start Num: 48  
Candidate Starts for Pipefish\_82:  
(Start: 48 @62383 has 88 MA's), (59, 62284), (62, 62263), (66, 62242),

Gene: Pipsqueak\_81 Start: 62861, Stop: 62559, Start Num: 42  
Candidate Starts for Pipsqueak\_81:  
(22, 62942), (Start: 42 @62861 has 243 MA's), (59, 62744), (62, 62723), (70, 62684),

Gene: Placalicious\_83 Start: 63894, Stop: 63592, Start Num: 42  
Candidate Starts for Placalicious\_83:  
(22, 63975), (Start: 42 @63894 has 243 MA's), (59, 63777), (62, 63756), (70, 63717),

Gene: Plata\_83 Start: 63116, Stop: 62775, Start Num: 42  
Candidate Starts for Plata\_83:  
(22, 63197), (Start: 42 @63116 has 243 MA's), (59, 62999), (62, 62978), (70, 62939), (91, 62789),

Gene: Plmatters\_82 Start: 62849, Stop: 62547, Start Num: 42  
Candidate Starts for Plmatters\_82:  
(22, 62930), (Start: 42 @62849 has 243 MA's), (59, 62732), (62, 62711), (70, 62672),

Gene: Podrick\_83 Start: 62937, Stop: 62635, Start Num: 42  
Candidate Starts for Podrick\_83:  
(22, 63018), (Start: 42 @62937 has 243 MA's), (59, 62820), (62, 62799), (70, 62760),

Gene: Potter\_80 Start: 62858, Stop: 62556, Start Num: 42  
Candidate Starts for Potter\_80:  
(22, 62939), (Start: 42 @62858 has 243 MA's), (59, 62741), (62, 62720), (70, 62681),

Gene: Prickles\_85 Start: 63228, Stop: 62926, Start Num: 42  
Candidate Starts for Prickles\_85:  
(22, 63309), (Start: 42 @63228 has 243 MA's), (62, 63090), (70, 63051),

Gene: PrinceCharming\_71 Start: 58997, Stop: 58695, Start Num: 48  
Candidate Starts for PrinceCharming\_71:  
(Start: 48 @58997 has 88 MA's), (55, 58937), (59, 58898), (62, 58877), (66, 58856), (77, 58745), (84, 58724), (85, 58718), (87, 58712),

Gene: ProfessorX\_82 Start: 62895, Stop: 62593, Start Num: 42  
Candidate Starts for ProfessorX\_82:  
(22, 62976), (Start: 42 @62895 has 243 MA's), (59, 62778), (62, 62757), (70, 62718),

Gene: Puppies\_40 Start: 32033, Stop: 31737, Start Num: 43  
Candidate Starts for Puppies\_40:  
(9, 32213), (10, 32204), (25, 32105), (Start: 43 @32033 has 8 MA's), (55, 31949), (65, 31889), (73, 31811),

Gene: QueenBeane\_84 Start: 63182, Stop: 62880, Start Num: 42  
Candidate Starts for QueenBeane\_84:  
(22, 63263), (Start: 42 @63182 has 243 MA's), (53, 63113), (59, 63065), (62, 63044), (70, 63005),

Gene: Quisquilliae\_86 Start: 63192, Stop: 62890, Start Num: 42  
Candidate Starts for Quisquilliae\_86:  
(22, 63273), (Start: 42 @63192 has 243 MA's), (59, 63075), (62, 63054), (70, 63015),

Gene: Racecar\_198 Start: 137389, Stop: 137679, Start Num: 43  
Candidate Starts for Racecar\_198:  
(32, 137353), (Start: 43 @137389 has 8 MA's), (61, 137506), (73, 137608),

Gene: RagingRooster\_79 Start: 60967, Stop: 60638, Start Num: 48  
Candidate Starts for RagingRooster\_79:  
(Start: 48 @60967 has 88 MA's), (59, 60868), (62, 60847), (66, 60826),

Gene: RedMaple\_84 Start: 63795, Stop: 63493, Start Num: 42  
Candidate Starts for RedMaple\_84:  
(22, 63876), (Start: 42 @63795 has 243 MA's), (59, 63678), (62, 63657), (70, 63618),

Gene: ReginaGlobina\_203 Start: 137344, Stop: 137697, Start Num: 31  
Candidate Starts for ReginaGlobina\_203:  
(Start: 31 @137344 has 2 MA's), (73, 137617), (89, 137692),

Gene: Rhinoforte\_70 Start: 58995, Stop: 58693, Start Num: 48  
Candidate Starts for Rhinoforte\_70:

(Start: 48 @58995 has 88 MA's), (55, 58935), (59, 58896), (62, 58875), (66, 58854), (77, 58743), (84, 58722), (85, 58716), (87, 58710),

Gene: Ricotta\_84 Start: 62877, Stop: 62575, Start Num: 42

Candidate Starts for Ricotta\_84:

(22, 62958), (Start: 42 @62877 has 243 MA's), (59, 62760), (62, 62739), (70, 62700),

Gene: Riggan\_85 Start: 63363, Stop: 63061, Start Num: 42

Candidate Starts for Riggan\_85:

(22, 63444), (Start: 42 @63363 has 243 MA's), (53, 63294), (59, 63246), (62, 63225), (70, 63186),

Gene: Rimu\_84 Start: 63341, Stop: 63039, Start Num: 42

Candidate Starts for Rimu\_84:

(22, 63422), (Start: 42 @63341 has 243 MA's), (59, 63224), (62, 63203), (70, 63164),

Gene: Rita1961\_81 Start: 61621, Stop: 61292, Start Num: 48

Candidate Starts for Rita1961\_81:

(Start: 48 @61621 has 88 MA's), (59, 61522), (62, 61501), (66, 61480),

Gene: Riverton\_83 Start: 63121, Stop: 62819, Start Num: 42

Candidate Starts for Riverton\_83:

(22, 63202), (Start: 42 @63121 has 243 MA's), (59, 63004), (62, 62983), (70, 62944),

Gene: Robyn\_86 Start: 63620, Stop: 63318, Start Num: 42

Candidate Starts for Robyn\_86:

(22, 63701), (Start: 42 @63620 has 243 MA's), (59, 63503), (62, 63482), (70, 63443),

Gene: Roliet\_81 Start: 62222, Stop: 61920, Start Num: 42

Candidate Starts for Roliet\_81:

(22, 62303), (Start: 42 @62222 has 243 MA's), (59, 62105), (62, 62084), (70, 62045),

Gene: RomaT\_80 Start: 61841, Stop: 61512, Start Num: 48

Candidate Starts for RomaT\_80:

(Start: 48 @61841 has 88 MA's), (59, 61742), (62, 61721), (66, 61700),

Gene: Roscoe\_84 Start: 63482, Stop: 63180, Start Num: 42

Candidate Starts for Roscoe\_84:

(22, 63563), (Start: 42 @63482 has 243 MA's), (59, 63365), (62, 63344), (70, 63305),

Gene: Rosebush\_69 Start: 59062, Stop: 58760, Start Num: 48

Candidate Starts for Rosebush\_69:

(Start: 48 @59062 has 88 MA's), (55, 59002), (59, 58963), (62, 58942), (66, 58921), (77, 58810), (84, 58789), (85, 58783), (87, 58777),

Gene: SDcharge11\_83 Start: 62515, Stop: 62213, Start Num: 42

Candidate Starts for SDcharge11\_83:

(22, 62596), (Start: 42 @62515 has 243 MA's), (59, 62398), (62, 62377), (70, 62338),

Gene: Sabella\_70 Start: 58897, Stop: 58595, Start Num: 48

Candidate Starts for Sabella\_70:

(Start: 48 @58897 has 88 MA's), (59, 58798), (62, 58777), (66, 58756), (77, 58645), (84, 58624), (85, 58618), (87, 58612),

Gene: SallyH\_87 Start: 63122, Stop: 62820, Start Num: 42  
Candidate Starts for SallyH\_87:  
(22, 63203), (Start: 42 @63122 has 243 MA's), (59, 63005), (62, 62984), (70, 62945),

Gene: Samaymay\_84 Start: 63182, Stop: 62880, Start Num: 42  
Candidate Starts for Samaymay\_84:  
(22, 63263), (Start: 42 @63182 has 243 MA's), (53, 63113), (59, 63065), (62, 63044), (70, 63005),

Gene: SassyCat97\_82 Start: 62849, Stop: 62547, Start Num: 42  
Candidate Starts for SassyCat97\_82:  
(22, 62930), (Start: 42 @62849 has 243 MA's), (59, 62732), (62, 62711), (70, 62672),

Gene: Schadenfreude\_84 Start: 62740, Stop: 62438, Start Num: 42  
Candidate Starts for Schadenfreude\_84:  
(22, 62821), (Start: 42 @62740 has 243 MA's), (59, 62623), (62, 62602), (70, 62563),

Gene: Schueller\_82 Start: 63123, Stop: 62821, Start Num: 42  
Candidate Starts for Schueller\_82:  
(22, 63204), (Start: 42 @63123 has 243 MA's), (53, 63054), (59, 63006), (62, 62985), (70, 62946),

Gene: Scoot17C\_85 Start: 62962, Stop: 62660, Start Num: 42  
Candidate Starts for Scoot17C\_85:  
(22, 63043), (Start: 42 @62962 has 243 MA's), (59, 62845), (62, 62824), (70, 62785),

Gene: Scrick\_83 Start: 62863, Stop: 62561, Start Num: 42  
Candidate Starts for Scrick\_83:  
(22, 62944), (Start: 42 @62863 has 243 MA's), (59, 62746), (62, 62725), (70, 62686),

Gene: Selr12\_85 Start: 62905, Stop: 62603, Start Num: 42  
Candidate Starts for Selr12\_85:  
(22, 62986), (Start: 42 @62905 has 243 MA's), (59, 62788), (62, 62767), (70, 62728),

Gene: Serpentine\_0085 Start: 63416, Stop: 63114, Start Num: 42  
Candidate Starts for Serpentine\_0085:  
(22, 63497), (Start: 42 @63416 has 243 MA's), (59, 63299), (62, 63278), (70, 63239),

Gene: ShadowBud\_85 Start: 63189, Stop: 62887, Start Num: 42  
Candidate Starts for ShadowBud\_85:  
(22, 63270), (Start: 42 @63189 has 243 MA's), (59, 63072), (62, 63051), (70, 63012),

Gene: Sheila\_80 Start: 62428, Stop: 62126, Start Num: 42  
Candidate Starts for Sheila\_80:  
(22, 62509), (Start: 42 @62428 has 243 MA's), (59, 62311), (62, 62290), (70, 62251),

Gene: Shenandoah\_79 Start: 60887, Stop: 60558, Start Num: 48  
Candidate Starts for Shenandoah\_79:  
(Start: 48 @60887 has 88 MA's), (59, 60788), (62, 60767), (66, 60746),

Gene: ShiVal\_82 Start: 62887, Stop: 62585, Start Num: 42  
Candidate Starts for ShiVal\_82:  
(22, 62968), (Start: 42 @62887 has 243 MA's), (59, 62770), (62, 62749), (70, 62710),

Gene: Simielle\_83 Start: 62829, Stop: 62527, Start Num: 42

Candidate Starts for Simielle\_83:

(22, 62910), (Start: 42 @62829 has 243 MA's), (59, 62712), (62, 62691), (70, 62652),

Gene: SirBeauregard\_85 Start: 63409, Stop: 63107, Start Num: 42

Candidate Starts for SirBeauregard\_85:

(22, 63490), (Start: 42 @63409 has 243 MA's), (53, 63340), (59, 63292), (62, 63271), (70, 63232),

Gene: Skippy\_85 Start: 63257, Stop: 62955, Start Num: 42

Candidate Starts for Skippy\_85:

(22, 63338), (Start: 42 @63257 has 243 MA's), (59, 63140), (62, 63119), (70, 63080),

Gene: Slatt\_84 Start: 63144, Stop: 62842, Start Num: 42

Candidate Starts for Slatt\_84:

(22, 63225), (Start: 42 @63144 has 243 MA's), (59, 63027), (62, 63006), (70, 62967),

Gene: SlippinJimmy\_83 Start: 62651, Stop: 62322, Start Num: 48

Candidate Starts for SlippinJimmy\_83:

(Start: 48 @62651 has 88 MA's), (59, 62552), (62, 62531), (66, 62510),

Gene: Soile\_85 Start: 63382, Stop: 63080, Start Num: 42

Candidate Starts for Soile\_85:

(22, 63463), (Start: 42 @63382 has 243 MA's), (59, 63265), (62, 63244), (70, 63205),

Gene: Solosis\_82 Start: 62850, Stop: 62548, Start Num: 42

Candidate Starts for Solosis\_82:

(22, 62931), (Start: 42 @62850 has 243 MA's), (59, 62733), (62, 62712),

Gene: Sophia\_82 Start: 62839, Stop: 62537, Start Num: 42

Candidate Starts for Sophia\_82:

(22, 62920), (Start: 42 @62839 has 243 MA's), (62, 62701), (70, 62662),

Gene: Soto\_81 Start: 62555, Stop: 62253, Start Num: 42

Candidate Starts for Soto\_81:

(22, 62636), (Start: 42 @62555 has 243 MA's), (59, 62438), (62, 62417), (70, 62378),

Gene: Spartan300\_83 Start: 63100, Stop: 62798, Start Num: 42

Candidate Starts for Spartan300\_83:

(22, 63181), (Start: 42 @63100 has 243 MA's), (59, 62983), (62, 62962), (70, 62923),

Gene: Squid\_83 Start: 63129, Stop: 62827, Start Num: 42

Candidate Starts for Squid\_83:

(22, 63210), (Start: 42 @63129 has 243 MA's), (59, 63012), (62, 62991), (70, 62952),

Gene: Squiggle\_83 Start: 62857, Stop: 62555, Start Num: 42

Candidate Starts for Squiggle\_83:

(22, 62938), (Start: 42 @62857 has 243 MA's), (59, 62740), (62, 62719), (70, 62680),

Gene: StinkyVeggy\_75 Start: 62138, Stop: 61818, Start Num: 44

Candidate Starts for StinkyVeggy\_75:

(28, 62207), (29, 62204), (37, 62162), (44, 62138), (59, 62021), (63, 61997), (67, 61979), (69, 61973),  
(70, 61961), (77, 61871), (88, 61829),

Gene: Struggle\_84 Start: 62955, Stop: 62653, Start Num: 42

Candidate Starts for Struggle\_84:

(22, 63036), (Start: 42 @62955 has 243 MA's), (59, 62838), (62, 62817), (70, 62778),

Gene: Surely\_84 Start: 63420, Stop: 63118, Start Num: 42

Candidate Starts for Surely\_84:

(22, 63501), (Start: 42 @63420 has 243 MA's), (59, 63303), (62, 63282), (70, 63243),

Gene: SwainyDoc\_81 Start: 61650, Stop: 61321, Start Num: 48

Candidate Starts for SwainyDoc\_81:

(Start: 48 @61650 has 88 MA's), (59, 61551), (62, 61530), (66, 61509),

Gene: Swiphy\_86 Start: 63405, Stop: 63103, Start Num: 42

Candidate Starts for Swiphy\_86:

(22, 63486), (Start: 42 @63405 has 243 MA's), (59, 63288), (62, 63267), (70, 63228),

Gene: Swish\_85 Start: 63266, Stop: 62964, Start Num: 42

Candidate Starts for Swish\_85:

(22, 63347), (Start: 42 @63266 has 243 MA's), (59, 63149), (62, 63128), (70, 63089),

Gene: SynergyX\_80 Start: 61278, Stop: 60949, Start Num: 48

Candidate Starts for SynergyX\_80:

(Start: 48 @61278 has 88 MA's), (59, 61179), (62, 61158), (66, 61137),

Gene: TA17A\_73 Start: 58905, Stop: 58603, Start Num: 48

Candidate Starts for TA17A\_73:

(Start: 48 @58905 has 88 MA's), (59, 58806), (62, 58785), (66, 58764), (77, 58653), (84, 58632), (85, 58626),

Gene: TPA2\_75 Start: 59427, Stop: 59762, Start Num: 39

Candidate Starts for TPA2\_75:

(39, 59427), (64, 59565), (67, 59580), (70, 59601), (83, 59709), (90, 59751),

Gene: Talia1610\_198 Start: 137685, Stop: 137975, Start Num: 43

Candidate Starts for Talia1610\_198:

(32, 137649), (Start: 43 @137685 has 8 MA's), (61, 137802), (73, 137904),

Gene: TallGrassMM\_83 Start: 62915, Stop: 62613, Start Num: 42

Candidate Starts for TallGrassMM\_83:

(22, 62996), (Start: 42 @62915 has 243 MA's), (59, 62798), (62, 62777),

Gene: Taptic\_67 Start: 49153, Stop: 49491, Start Num: 48

Candidate Starts for Taptic\_67:

(30, 49072), (Start: 48 @49153 has 88 MA's), (59, 49252), (62, 49273), (68, 49303), (72, 49360), (77, 49411), (88, 49453),

Gene: Telesworld\_82 Start: 62993, Stop: 62691, Start Num: 42

Candidate Starts for Telesworld\_82:

(22, 63074), (Start: 42 @62993 has 243 MA's), (53, 62924), (59, 62876), (62, 62855), (70, 62816),

Gene: Thonko\_87 Start: 63460, Stop: 63152, Start Num: 42

Candidate Starts for Thonko\_87:

(3, 63853), (4, 63850), (6, 63805), (7, 63748), (8, 63745), (12, 63604), (14, 63583), (Start: 42 @63460 has 243 MA's), (55, 63382), (59, 63343), (62, 63322), (75, 63226), (80, 63184),

Gene: Thora\_83 Start: 63370, Stop: 63068, Start Num: 42

Candidate Starts for Thora\_83:

(22, 63451), (Start: 42 @63370 has 243 MA's), (59, 63253), (62, 63232), (70, 63193),

Gene: ThreeOh3D2\_86 Start: 63523, Stop: 63221, Start Num: 42

Candidate Starts for ThreeOh3D2\_86:

(22, 63604), (Start: 42 @63523 has 243 MA's), (59, 63406), (62, 63385), (70, 63346),

Gene: Thunderbird\_84 Start: 63112, Stop: 62810, Start Num: 42

Candidate Starts for Thunderbird\_84:

(22, 63193), (Start: 42 @63112 has 243 MA's), (59, 62995), (62, 62974), (70, 62935),

Gene: Timmi\_83 Start: 62886, Stop: 62584, Start Num: 42

Candidate Starts for Timmi\_83:

(22, 62967), (Start: 42 @62886 has 243 MA's), (59, 62769), (62, 62748), (70, 62709),

Gene: Tinciduntolum\_71 Start: 59064, Stop: 58762, Start Num: 48

Candidate Starts for Tinciduntolum\_71:

(Start: 48 @59064 has 88 MA's), (55, 59004), (59, 58965), (62, 58944), (66, 58923), (77, 58812), (84, 58791), (85, 58785), (87, 58779),

Gene: TinyTerror\_81 Start: 61701, Stop: 61372, Start Num: 48

Candidate Starts for TinyTerror\_81:

(Start: 48 @61701 has 88 MA's), (59, 61602), (62, 61581), (66, 61560),

Gene: TomBombadil\_84 Start: 63413, Stop: 63111, Start Num: 42

Candidate Starts for TomBombadil\_84:

(22, 63494), (Start: 42 @63413 has 243 MA's), (59, 63296), (62, 63275), (70, 63236),

Gene: Tomlarah\_85 Start: 63720, Stop: 63418, Start Num: 42

Candidate Starts for Tomlarah\_85:

(Start: 42 @63720 has 243 MA's), (53, 63651), (59, 63603), (62, 63582), (70, 63543),

Gene: TooFast2Furius\_86 Start: 63277, Stop: 62975, Start Num: 42

Candidate Starts for TooFast2Furius\_86:

(22, 63358), (Start: 42 @63277 has 243 MA's), (59, 63160), (62, 63139), (70, 63100),

Gene: Tooj\_81 Start: 62529, Stop: 62227, Start Num: 42

Candidate Starts for Tooj\_81:

(22, 62610), (Start: 42 @62529 has 243 MA's), (53, 62460), (59, 62412), (62, 62391), (70, 62352),

Gene: Tres\_70 Start: 58918, Stop: 58616, Start Num: 48

Candidate Starts for Tres\_70:

(Start: 48 @58918 has 88 MA's), (55, 58858), (59, 58819), (62, 58798), (66, 58777), (77, 58666), (84, 58645), (85, 58639), (87, 58633),

Gene: Triad\_86 Start: 62711, Stop: 62409, Start Num: 42

Candidate Starts for Triad\_86:

(22, 62792), (Start: 42 @62711 has 243 MA's), (59, 62594), (62, 62573), (70, 62534),

Gene: True\_82 Start: 62862, Stop: 62560, Start Num: 42

Candidate Starts for True\_82:

(22, 62943), (Start: 42 @62862 has 243 MA's), (59, 62745), (62, 62724), (70, 62685),

Gene: Tydolla\_76 Start: 61257, Stop: 60928, Start Num: 48

Candidate Starts for Tydolla\_76:

(Start: 48 @61257 has 88 MA's), (59, 61158), (62, 61137), (66, 61116),

Gene: TyrionL\_84 Start: 62946, Stop: 62644, Start Num: 42

Candidate Starts for TyrionL\_84:

(22, 63027), (Start: 42 @62946 has 243 MA's), (59, 62829), (62, 62808), (70, 62769),

Gene: UAch1\_85 Start: 63213, Stop: 62911, Start Num: 42

Candidate Starts for UAch1\_85:

(22, 63294), (Start: 42 @63213 has 243 MA's), (59, 63096), (62, 63075), (70, 63036),

Gene: Upyo\_44 Start: 33729, Stop: 33457, Start Num: 47

Candidate Starts for Upyo\_44:

(26, 33810), (28, 33807), (33, 33774), (Start: 47 @33729 has 1 MA's), (55, 33657), (59, 33630), (60, 33627), (71, 33558), (73, 33519),

Gene: Usavi\_85 Start: 63710, Stop: 63408, Start Num: 42

Candidate Starts for Usavi\_85:

(22, 63791), (Start: 42 @63710 has 243 MA's), (59, 63593), (62, 63572), (70, 63533),

Gene: Vaishali24\_85 Start: 63319, Stop: 63017, Start Num: 42

Candidate Starts for Vaishali24\_85:

(22, 63400), (Start: 42 @63319 has 243 MA's), (59, 63202), (62, 63181), (70, 63142),

Gene: Valjean\_83 Start: 63104, Stop: 62802, Start Num: 42

Candidate Starts for Valjean\_83:

(22, 63185), (Start: 42 @63104 has 243 MA's), (59, 62987), (62, 62966), (70, 62927),

Gene: Vaticameos\_81 Start: 61419, Stop: 61117, Start Num: 42

Candidate Starts for Vaticameos\_81:

(22, 61500), (Start: 42 @61419 has 243 MA's), (59, 61302), (62, 61281), (70, 61242),

Gene: Veritas\_83 Start: 63027, Stop: 62725, Start Num: 42

Candidate Starts for Veritas\_83:

(22, 63108), (Start: 42 @63027 has 243 MA's), (53, 62958), (59, 62910), (62, 62889), (70, 62850),

Gene: Vic9\_00070 Start: 59761, Stop: 59459, Start Num: 48

Candidate Starts for Vic9\_00070:

(Start: 48 @59761 has 88 MA's), (55, 59701), (59, 59662), (62, 59641), (66, 59620), (77, 59509), (84, 59488), (85, 59482), (87, 59476),

Gene: Virapocalypse\_85 Start: 63212, Stop: 62910, Start Num: 42

Candidate Starts for Virapocalypse\_85:

(22, 63293), (Start: 42 @63212 has 243 MA's), (59, 63095), (62, 63074), (70, 63035),

Gene: Virgeve\_82 Start: 62832, Stop: 62530, Start Num: 42

Candidate Starts for Virgeve\_82:

(22, 62913), (Start: 42 @62832 has 243 MA's), (59, 62715), (62, 62694), (70, 62655),

Gene: Vista\_83 Start: 63026, Stop: 62724, Start Num: 42

Candidate Starts for Vista\_83:

(22, 63107), (Start: 42 @63026 has 243 MA's), (53, 62957), (59, 62909), (62, 62888), (70, 62849),

Gene: Vivaldi\_84 Start: 63291, Stop: 62989, Start Num: 42

Candidate Starts for Vivaldi\_84:

(22, 63372), (Start: 42 @63291 has 243 MA's), (53, 63222), (59, 63174), (62, 63153), (70, 63114),

Gene: WaddleDee\_185 Start: 139500, Stop: 139844, Start Num: 31

Candidate Starts for WaddleDee\_185:

(Start: 31 @139500 has 2 MA's), (73, 139770),

Gene: Wallhey\_85 Start: 63133, Stop: 62831, Start Num: 42

Candidate Starts for Wallhey\_85:

(22, 63214), (Start: 42 @63133 has 243 MA's), (59, 63016), (62, 62995), (70, 62956),

Gene: Waterdiva\_85 Start: 63400, Stop: 63098, Start Num: 42

Candidate Starts for Waterdiva\_85:

(22, 63481), (Start: 42 @63400 has 243 MA's), (59, 63283), (62, 63262), (70, 63223),

Gene: Weher20\_81 Start: 63470, Stop: 63168, Start Num: 42

Candidate Starts for Weher20\_81:

(22, 63551), (Start: 42 @63470 has 243 MA's), (59, 63353), (62, 63332), (70, 63293),

Gene: West99\_70 Start: 59095, Stop: 58793, Start Num: 48

Candidate Starts for West99\_70:

(Start: 48 @59095 has 88 MA's), (55, 59035), (59, 58996), (62, 58975), (66, 58954), (77, 58843), (84, 58822), (85, 58816), (87, 58810),

Gene: Windsor\_84 Start: 63415, Stop: 63113, Start Num: 42

Candidate Starts for Windsor\_84:

(22, 63496), (Start: 42 @63415 has 243 MA's), (59, 63298), (62, 63277), (70, 63238),

Gene: Yahalom\_78 Start: 61084, Stop: 60755, Start Num: 48

Candidate Starts for Yahalom\_78:

(Start: 48 @61084 has 88 MA's), (59, 60985), (62, 60964), (66, 60943),

Gene: Yeshua\_78 Start: 57669, Stop: 57370, Start Num: 40

Candidate Starts for Yeshua\_78:

(Start: 40 @57669 has 6 MA's), (63, 57537), (67, 57519), (77, 57408),

Gene: Yinz\_80 Start: 61149, Stop: 60820, Start Num: 48

Candidate Starts for Yinz\_80:

(Start: 48 @61149 has 88 MA's), (59, 61050), (62, 61029), (66, 61008),

Gene: Yoshand\_85 Start: 63250, Stop: 62948, Start Num: 42

Candidate Starts for Yoshand\_85:

(22, 63331), (Start: 42 @63250 has 243 MA's), (59, 63133), (62, 63112), (70, 63073),

Gene: YouGoGlencoco\_84 Start: 63140, Stop: 62838, Start Num: 42

Candidate Starts for YouGoGlencoco\_84:

(22, 63221), (Start: 42 @63140 has 243 MA's), (59, 63023), (62, 63002), (70, 62963),

Gene: Zaider\_85 Start: 63514, Stop: 63212, Start Num: 42

Candidate Starts for Zaider\_85:

(22, 63595), (Start: 42 @63514 has 243 MA's), (59, 63397), (62, 63376), (70, 63337),

Gene: Zelda\_84 Start: 63471, Stop: 63169, Start Num: 42

Candidate Starts for Zelda\_84:

(22, 63552), (Start: 42 @63471 has 243 MA's), (59, 63354), (62, 63333), (70, 63294),

Gene: phiAsp2\_75 Start: 57707, Stop: 58057, Start Num: 24

Candidate Starts for phiAsp2\_75:

(24, 57707), (Start: 48 @57806 has 88 MA's), (49, 57827), (50, 57833), (51, 57836), (62, 57920), (65, 57932), (67, 57941), (69, 57947),