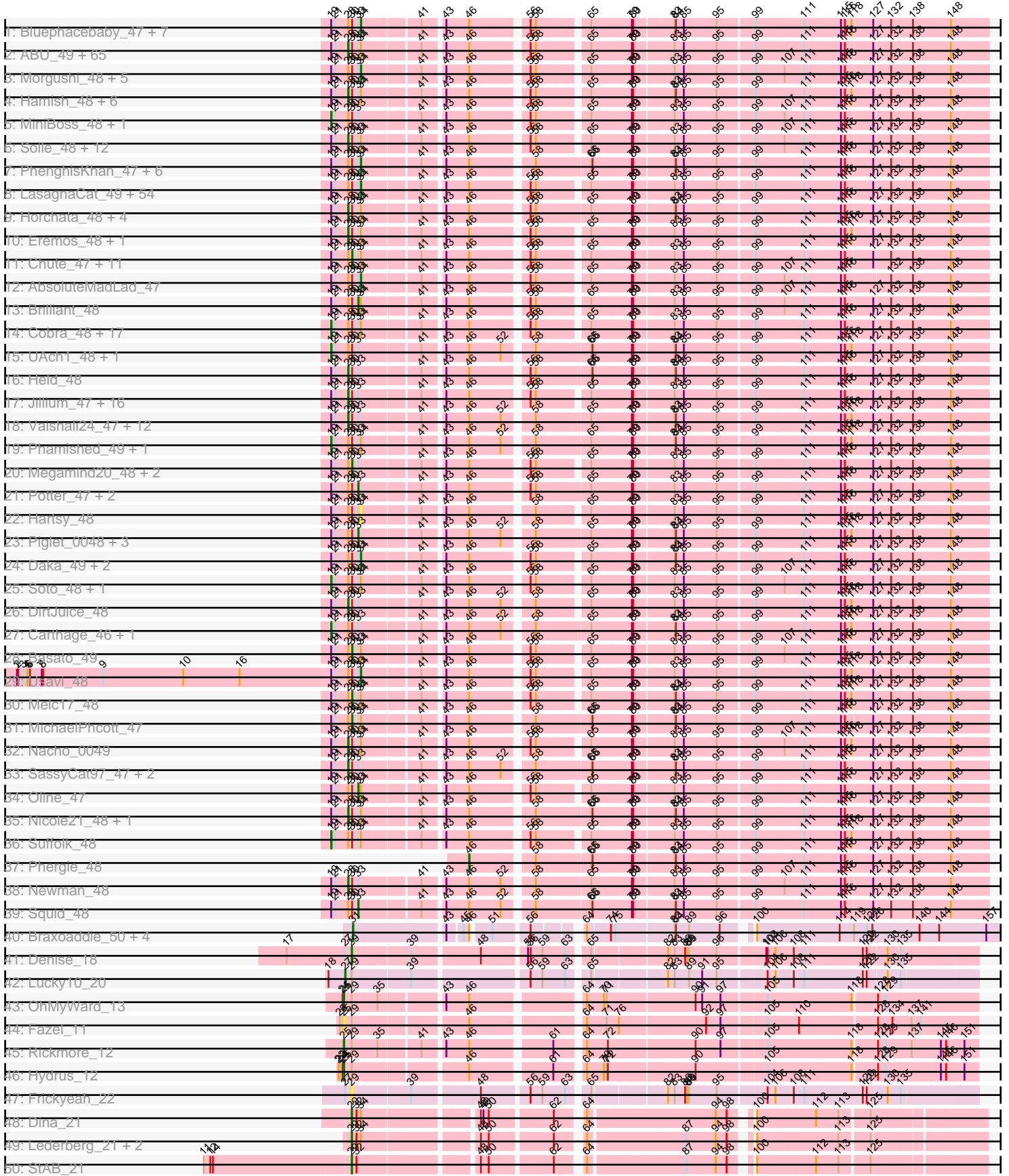
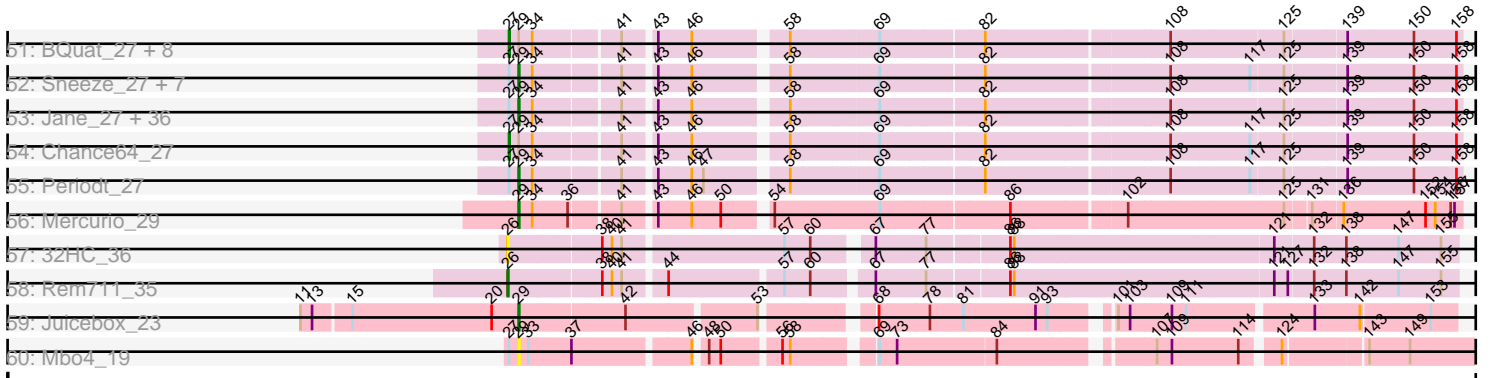


Pham 157506



# Pham 157506



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 157506 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157506 has 350 members, 32 are drafts.

Phages represented in each track:

- Track 1 : Bluephacebaby\_47, Colbert\_48, JDog\_48, Andre\_51, Haimas\_48, OliverWalter\_48, Virapocalypse\_48, CheetO\_48
- Track 2 : ABU\_49, Beaglebox\_47, Kwadwo\_47, DoesntMatter\_47, Scrick\_48, Haleema\_47, Fang\_49, Solosis\_47, Telesworld\_47, Emiris\_49, Megatron\_49, Swish\_49, Xavier\_47, Wallhey\_47, Slatt\_48, DaddyDaniels\_48, Mikota\_48, Vaticameos\_44, HighStump\_48, CamL\_48, Puhltonio\_48, Kimbrough\_48, TomBombadil\_48, Fringe\_49, Kwksand96\_47, Podrick\_48, Pherdinand\_49, TallGrassMM\_48, Dione\_47, Buckeye\_48, LuckyMarjie\_47, Pipsqueak\_48, Chaelin\_48, Burr\_47, Morty\_49, Valjean\_48, Roscoe\_49, RedMaple\_48, Simielle\_47, Numberten\_48, Boehler\_48, Maru\_47, OSmaximus\_49, Bishoperium\_47, Yoshand\_49, Mcshane\_47, Olive\_48, Plmatters\_48, Tomlahrah\_48, Waterdiva\_48, Jiminy\_47, Freya\_47, Grand2040\_47, Omniscient\_48, Skippy\_48, QueenBeane\_48, Mana\_47, Samaymay\_48, PinheadLarry\_48, Sheila\_48, Mecca\_47, Toni\_47, Chah\_50, Hocus\_47, Serendipity\_48, Phareon\_48
- Track 3 : Morgushi\_48, KingVeVeVe\_48, Pops\_48, SDcharge11\_48, Crownjwl\_48, MelsMeow\_48
- Track 4 : Hamish\_48, JangoPhett\_48, Phipps\_48, Weher20\_48, Altwerkus\_47, Dati\_48, Etaye\_48
- Track 5 : MiniBoss\_48, AltPhacts\_48
- Track 6 : Soile\_48, Spartan300\_48, Badfish\_49, Riggan\_48, Roliet\_48, BlueHusk\_48, MRabcd\_47, HSavage\_48, Iridoclysis\_48, JakeO\_47, Sophia\_47, ProfessorX\_48, Dingo\_48
- Track 7 : PhenghisKhan\_47, Mag7\_47, BatteryCK\_47, Phleuron\_47, PhrankReynolds\_46, Veritas\_47, Magic8\_48
- Track 8 : LasagnaCat\_49, Katniss\_49, Lulumae\_47, Orion\_49, Scoot17C\_49, PhrodoBaggins\_48, Quisquilliae\_48, IsaacEli\_49, Squiggle\_48, Kahve\_47, HenryJackson\_47, FugateOSU\_47, JacAttac\_49, Nyala\_47, Lasso\_48, Apizium\_48, LeiMonet\_49, CampRoach\_49, PhatLouie\_48, Rimu\_50, Lumine\_47, Anderson\_48, Labeouficaum\_47, Maskar\_48, CharlieGBrown\_47, Struggle\_47, Adriana\_49, Selr12\_50, DuchessDung\_47, PG1\_49, MrPhizzler\_47, Mulan\_48, Pinkman\_47, FluffyNinja\_49, BlackStallion\_49, Banjo\_47, Windsor\_47, Roy17\_48, ThreeOh3D2\_49, Dice\_50, Ashraf\_48, ImtiyazSitla\_48, Coletti\_47, Eugenia\_48, Mutante\_47, Trypo\_49, Schueller\_48, GeneCoco\_48, Cornobble\_47, Olak\_48, Kikipoo\_49, Longacauda\_47, Childish\_47, Durga\_49, Sigman\_49
- Track 9 : Horchata\_48, Oosterbaan\_48, Thora\_48, Prickles\_48, Hertubise\_48
- Track 10 : Eremos\_48, Murdoc\_48

- Track 11 : Chute\_47, Timmi\_47, Keitherie\_48, Charles1\_48, Ricotta\_48, Gophee\_48, Fozzie\_47, Cannibal\_48, Orwigg\_49, Swiphy\_50, Doddsville\_48, Legolas\_48
- Track 12 : AbsoluteMadLad\_47
- Track 13 : Brilliant\_48
- Track 14 : Cobra\_48, Phunky\_48, PhatCats2014\_49, Lulwa\_48, Orfeu\_48, ShiVal\_48, Craff\_49, Kloppinator\_49, Derpp\_47, Vortex\_48, DelRivs\_47, Zonia\_48, Inchworm\_49, Gareth\_47, Duggie\_47, Lego3393\_47, Virgeve\_47, TyrionL\_47
- Track 15 : UAch1\_48, Hetaeria\_48
- Track 16 : Held\_48
- Track 17 : Jillium\_47, LostAndPhound\_47, Mesh1\_48, YouGoGlencoco\_48, True\_47, Zaider\_49, Placalicious\_47, Cosmolli16\_47, Zelda\_48, Matalotodo\_48, Cher\_47, Chorkpop\_48, MitKao\_48, Mosaic\_47, UncleHowie\_48, Surely\_48, LemonSlice\_48
- Track 18 : Vaishali24\_47, Harvey\_48, Robyn\_47, Tooj\_48, Gyarad\_0048, Serpentine\_0048, Aelin\_47, Chunky\_48, Manad\_48, KlimbOn\_48, Lopsy\_47, Schadenfreude\_47, Inverness\_48
- Track 19 : Phamished\_49, FriarPreacher\_47
- Track 20 : Megamind20\_48, DonSanchon\_47, Pacifista\_50
- Track 21 : Potter\_47, KingTut\_39, Vista\_48
- Track 22 : Hartsy\_48
- Track 23 : Piglet\_0048, Frankicide\_48, KLucky39\_48, Antonia\_47
- Track 24 : Daka\_49, Gwilliam\_49, Daffy\_48
- Track 25 : Soto\_48, EmpTee\_48
- Track 26 : DirtJuice\_48
- Track 27 : Carthage\_46, Vivaldi\_49
- Track 28 : Basato\_49
- Track 29 : Usavi\_48
- Track 30 : Melc17\_48
- Track 31 : MichaelPhcott\_47
- Track 32 : Nacho\_0049
- Track 33 : SassyCat97\_47, Giraffe\_48, LeeLot\_48
- Track 34 : Oline\_47
- Track 35 : Nicole21\_48, Kailash\_48
- Track 36 : Suffolk\_48
- Track 37 : Phergie\_48
- Track 38 : Newman\_48
- Track 39 : Squid\_48
- Track 40 : Braxoaddie\_50, CoffeeBean\_51, Maselop\_50, Polyyuki\_50, Apiary\_50
- Track 41 : Denise\_18
- Track 42 : Lucky10\_20
- Track 43 : OhMyWard\_13
- Track 44 : Fazel\_11
- Track 45 : Rickmore\_12
- Track 46 : Hydrus\_12
- Track 47 : Frickyeah\_22
- Track 48 : Dina\_21
- Track 49 : Lederberg\_21, Troy\_21, SamW\_21
- Track 50 : StAB\_21
- Track 51 : BQuat\_27, LouisV14\_27, Remy19\_27, Kareem\_27, JorRay\_27, CLED96\_27, Coleslaw\_27, Annihilator\_27, ZoMa\_27
- Track 52 : Sneeze\_27, Aroostook\_27, Jonghyun\_27, Gideon\_27, Hotshotbaby7\_27, ECartman\_27, Jolene\_27, Rabbs\_27

- Track 53 : Jane\_27, BPs\_27, Mowgli\_27, PinkYoshi\_27, Phish\_27, CassieYates\_27, Camri\_27, Hope\_27, Frosty24\_27, TomBrady\_27, OctaviousRex\_27, Renaissance\_27, Kasen3\_27, Sizemore\_27, Olga\_27, DNAIII\_0027, Cedasite\_27, Plagueis\_27, Peeb\_27, ShaboiShabazz\_27, Cherrybomb426\_27, Liefie\_27, Gomashi\_27, DMoney\_27, BruceB\_27, Grizzly\_27, Phreak\_27, Halo\_27, Angel\_27, Zombie\_27, Crespo\_27, Darionha\_27, Sweets\_27, GoldenAsh\_27, Marmie\_27, Avrafan\_27, Schiebel\_27
- Track 54 : Chance64\_27
- Track 55 : Periodt\_27
- Track 56 : Mercurio\_29
- Track 57 : 32HC\_36
- Track 58 : Rem711\_35
- Track 59 : Juicebox\_23
- Track 60 : Mbo4\_19

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

The start number called the most often in the published annotations is 28, it was called in 131 of the 318 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABU\_49, Aelin\_47, Altwerkus\_47, Badfish\_49, Beaglebox\_47, Bishoperium\_47, BlueHusk\_48, Boehler\_48, Buckeye\_48, Burr\_47, CamL\_48, Chaelin\_48, Chah\_50, Cher\_47, Chorkpop\_48, Chunky\_48, Cosmolli16\_47, DaddyDaniels\_48, Dati\_48, Dingo\_48, Dione\_47, DirtJuice\_48, DoesntMatter\_47, Emiris\_49, Eremos\_48, Etaye\_48, Fang\_49, Freya\_47, Fringe\_49, Giraffe\_48, Grand2040\_47, Gyarad\_0048, HSavage\_48, Haleema\_47, Hamish\_48, Harvey\_48, Held\_48, Hertubise\_48, HighStump\_48, Hocus\_47, Horchata\_48, Inverness\_48, Iridoclysis\_48, JakeO\_47, JangoPhett\_48, Jillium\_47, Jiminy\_47, Kailash\_48, Kimbrough\_48, KlimbOn\_48, Kwadwo\_47, Kwksand96\_47, LeeLot\_48, LemonSlice\_48, Lopsy\_47, LostAndPhound\_47, LuckyMarjie\_47, MRabcd\_47, Mana\_47, Manad\_48, Maru\_47, Matalotodo\_48, Mcshane\_47, Mecca\_47, Megatron\_49, Mesh1\_48, Mikota\_48, MitKao\_48, Morty\_49, Mosaic\_47, Murdoc\_48, Nacho\_0049, Newman\_48, Nicole21\_48, Numberten\_48, OSmaximus\_49, Olive\_48, Omniscient\_48, Oosterbaan\_48, Phareon\_48, Pherdinand\_49, Phipps\_48, PinheadLarry\_48, Pipsqueak\_48, Placalicious\_47, Plmatters\_48, Podrick\_48, Prickles\_48, ProfessorX\_48, Puhltonio\_48, QueenBeane\_48, RedMaple\_48, Riggan\_48, Robyn\_47, Roliet\_48, Roscoe\_49, Samaymay\_48, SassyCat97\_47, Schadenfreude\_47, Scrick\_48, Serendipity\_48, Serpentine\_0048, Sheila\_48, Simielle\_47, Skippy\_48, Slatt\_48, Soile\_48, Solosis\_47, Sophia\_47, Spartan300\_48, Surely\_48, Swish\_49, TallGrassMM\_48, Telesworld\_47, Thora\_48, TomBombadil\_48, Tomlarah\_48, Toni\_47, Tooj\_48, True\_47, UncleHowie\_48, Vaishali24\_47, Valjean\_48, Vaticameos\_44, Wallhey\_47, Waterdiva\_48, Weher20\_48, Xavier\_47, Yoshand\_49, YouGoGlencoco\_48, Zaider\_49, Zelda\_48,

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

- AbsoluteMadLad\_47, Adriana\_49, AltPhacts\_48, Anderson\_48, Andre\_51, Antonia\_47, Apizium\_48, Ashraf\_48, Banjo\_47, Basato\_49, BatteryCK\_47, BlackStallion\_49, Bluephacebaby\_47, Brilliant\_48, CampRoach\_49, Cannibal\_48, Carthage\_46, Charles1\_48, CharlieGBrown\_47, CheetO\_48, Childish\_47, Chute\_47,

Cobra\_48, Colbert\_48, Coletti\_47, Cornobble\_47, Craff\_49, Crownjwl\_48, Daffy\_48, Daka\_49, DelRivs\_47, Derpp\_47, Dice\_50, Doddsville\_48, DonSanchon\_47, DuchessDung\_47, Duggie\_47, Durga\_49, EmpTee\_48, Eugenia\_48, FluffyNinja\_49, Fozzie\_47, Frankicide\_48, FriarPreacher\_47, FugateOSU\_47, Gareth\_47, GeneCoco\_48, Gophee\_48, Gwilliam\_49, Haimas\_48, Hartsy\_48, HenryJackson\_47, Hetaeria\_48, ImtiyazSitla\_48, Inchworm\_49, IsaacEli\_49, JDog\_48, JacAttac\_49, KLucky39\_48, Kahve\_47, Katniss\_49, Keitherie\_48, Kikipoo\_49, KingTut\_39, KingVeVeVe\_48, Kloppinator\_49, Labeoufcaum\_47, LasagnaCat\_49, Lasso\_48, Lego3393\_47, Legolas\_48, LeiMonet\_49, Longacauda\_47, Lulumae\_47, Lulwa\_48, Lumine\_47, Mag7\_47, Magic8\_48, Maskar\_48, Megamind20\_48, Melc17\_48, MelsMeow\_48, MichaelPhcott\_47, MiniBoss\_48, Morgushi\_48, MrPhizzler\_47, Mulan\_48, Mutante\_47, Nyala\_47, Olak\_48, Oline\_47, OliverWalter\_48, Orfeu\_48, Orion\_49, Orwigg\_49, PG1\_49, Pacifista\_50, Phamished\_49, PhatCats2014\_49, PhatLouie\_48, PhenghisKhan\_47, Phleuron\_47, PhrankReynolds\_46, PhrodoBaggins\_48, Phunky\_48, Piglet\_0048, Pinkman\_47, Pops\_48, Potter\_47, Quisquillae\_48, Ricotta\_48, Rimu\_50, Roy17\_48, SDcharge11\_48, Schueller\_48, Scoot17C\_49, Selr12\_50, ShiVal\_48, Sigman\_49, Soto\_48, Squid\_48, Squiggle\_48, Struggle\_47, Suffolk\_48, Swiphy\_50, ThreeOh3D2\_49, Timmi\_47, Trypo\_49, TyrionL\_47, UAch1\_48, Usavi\_48, Veritas\_47, Virapocalypse\_48, Virgeve\_47, Vista\_48, Vivaldi\_49, Vortex\_48, Windsor\_47, Zonia\_48,

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

- 32HC\_36, Angel\_27, Annihilator\_27, Apiary\_50, Aroostook\_27, Avrafan\_27, BPs\_27, BQuat\_27, Braxoaddie\_50, BruceB\_27, CLED96\_27, Camri\_27, CassieYates\_27, Cedasite\_27, Chance64\_27, Cherrybomb426\_27, CoffeeBean\_51, Coleslaw\_27, Crespo\_27, DMoney\_27, DNAlI\_0027, Darionha\_27, Denise\_18, Dina\_21, ECartman\_27, Fazel\_11, Frickyeah\_22, Frosty24\_27, Gideon\_27, GoldenAsh\_27, Gomashi\_27, Grizzly\_27, Halo\_27, Hope\_27, Hotshotbaby7\_27, Hydrus\_12, Jane\_27, Jolene\_27, Jonghyun\_27, JorRay\_27, Juicebox\_23, Kareem\_27, Kasen3\_27, Lederberg\_21, Liefie\_27, LouisV14\_27, Lucky10\_20, Marmie\_27, Maselop\_50, Mbo4\_19, Mercurio\_29, Mowgli\_27, OctaviousRex\_27, OhMyWard\_13, Olga\_27, Peeb\_27, Periodt\_27, Phergie\_48, Phish\_27, Phreak\_27, PinkYoshi\_27, Plagueis\_27, Polyuyki\_50, Rabbs\_27, Rem711\_35, Remy19\_27, Renaissance\_27, Rickmore\_12, SamW\_21, Schiebel\_27, ShaboiShabazz\_27, Sizemore\_27, Sneeze\_27, StAB\_21, Sweets\_27, TomBrady\_27, Troy\_21, ZoMa\_27, Zombie\_27,

### Summary by start number:

Start 19:

- Found in 271 of 350 ( 77.4% ) of genes in pham
- Manual Annotations of this start: 28 of 318
- Called 10.7% of time when present
- Phage (with cluster) where this start called: AltPhacts\_48 (B1), Carthage\_46 (B1), Cobra\_48 (B1), Craff\_49 (B1), DelRivs\_47 (B1), Derpp\_47 (B1), Duggie\_47 (B1), EmpTee\_48 (B1), FriarPreacher\_47 (B1), Gareth\_47 (B1), Hetaeria\_48 (B1), Inchworm\_49 (B1), Kloppinator\_49 (B1), Lego3393\_47 (B1), Lulwa\_48 (B1), MiniBoss\_48 (B1), Orfeu\_48 (B1), Phamished\_49 (B1), PhatCats2014\_49 (B1), Phunky\_48 (B1), ShiVal\_48 (B1), Soto\_48 (B1), Suffolk\_48 (B1), TyrionL\_47 (B1), UAch1\_48 (B1), Virgeve\_47 (B1), Vivaldi\_49 (B1), Vortex\_48 (B1), Zonia\_48 (B1),

Start 25:

- Found in 4 of 350 ( 1.1% ) of genes in pham

- Manual Annotations of this start: 3 of 318
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fazel\_11 (DJ), Hydrus\_12 (DJ), OhMyWard\_13 (DJ), Rickmore\_12 (DJ),

#### Start 26:

- Found in 2 of 350 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 318
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 32HC\_36 (Z), Rem711\_35 (Z),

#### Start 27:

- Found in 60 of 350 ( 17.1% ) of genes in pham
- Manual Annotations of this start: 10 of 318
- Called 18.3% of time when present
- Phage (with cluster) where this start called: Annihilator\_27 (G1), BQuat\_27 (G1), CLED96\_27 (G1), Chance64\_27 (G1), Coleslaw\_27 (G1), JorRay\_27 (G1), Kareem\_27 (G1), LouisV14\_27 (G1), Lucky10\_20 (DH), Remy19\_27 (G1), ZoMa\_27 (G1),

#### Start 28:

- Found in 271 of 350 ( 77.4% ) of genes in pham
- Manual Annotations of this start: 131 of 318
- Called 48.7% of time when present
- Phage (with cluster) where this start called: ABU\_49 (B1), Aelin\_47 (B1), Altwerkus\_47 (B1), Badfish\_49 (B1), Beaglebox\_47 (B1), Bishoperium\_47 (B1), BlueHusk\_48 (B1), Boehler\_48 (B1), Buckeye\_48 (B1), Burr\_47 (B1), CamL\_48 (B1), Chaelin\_48 (B1), Chah\_50 (B1), Cher\_47 (B1), Chorkpop\_48 (B1), Chunky\_48 (B1), Cosmolli16\_47 (B1), DaddyDaniels\_48 (B1), Dati\_48 (B1), Dingo\_48 (B1), Dione\_47 (B1), DirtJuice\_48 (B1), DoesntMatter\_47 (B1), Emiris\_49 (B1), Eremos\_48 (B1), Etaye\_48 (B1), Fang\_49 (B1), Freya\_47 (B1), Fringe\_49 (B1), Giraffe\_48 (B1), Grand2040\_47 (B1), Gyarad\_0048 (B1), HSavage\_48 (B1), Haleema\_47 (B1), Hamish\_48 (B1), Harvey\_48 (B1), Held\_48 (B1), Hertubise\_48 (B1), HighStump\_48 (B1), Hocus\_47 (B1), Horchata\_48 (B1), Inverness\_48 (B1), Iridoclysis\_48 (B1), JakeO\_47 (B1), JangoPhett\_48 (B1), Jillium\_47 (B1), Jiminy\_47 (B1), Kailash\_48 (B1), Kimbrough\_48 (B1), KlimbOn\_48 (B1), Kwadwo\_47 (B1), Kwksand96\_47 (B1), LeeLot\_48 (B1), LemonSlice\_48 (B1), Lopsy\_47 (B1), LostAndPhound\_47 (B1), LuckyMarjie\_47 (B1), MRabcd\_47 (B1), Mana\_47 (B1), Manad\_48 (B1), Maru\_47 (B1), Matalotodo\_48 (B1), Mcshane\_47 (B1), Mecca\_47 (B1), Megatron\_49 (B1), Mesh1\_48 (B1), Mikota\_48 (B1), MitKao\_48 (B1), Morty\_49 (B1), Mosaic\_47 (B1), Murdoc\_48 (B1), Nacho\_0049 (B1), Newman\_48 (B1), Nicole21\_48 (B1), Numberben\_48 (B1), OSmaximus\_49 (B1), Olive\_48 (B1), Omniscient\_48 (B1), Oosterbaan\_48 (B1), Phareon\_48 (B1), Pherdinand\_49 (B1), Phipps\_48 (B1), PinheadLarry\_48 (B1), Pipsqueak\_48 (B1), Placalicious\_47 (B1), Plmatters\_48 (B1), Podrick\_48 (B1), Prickles\_48 (B1), ProfessorX\_48 (B1), Puhltonio\_48 (B1), QueenBeane\_48 (B1), RedMaple\_48 (B1), Riggan\_48 (B1), Robyn\_47 (B1), Roliet\_48 (B1), Roscoe\_49 (B1), Samaymay\_48 (B1), SassyCat97\_47 (B1), Schadenfreude\_47 (B1), Scrick\_48 (B1), Serendipity\_48 (B1), Serpentine\_0048 (B1), Sheila\_48 (B1), Simielle\_47 (B1), Skippy\_48 (B1), Slatt\_48 (B1), Soile\_48 (B1), Solosis\_47 (B1), Sophia\_47 (B1), Spartan300\_48 (B1), Surely\_48 (B1), Swish\_49 (B1), TallGrassMM\_48 (B1), Telesworld\_47 (B1), Thora\_48 (B1), TomBombadil\_48 (B1), Tomlarah\_48 (B1), Toni\_47 (B1), Tooj\_48 (B1), True\_47 (B1), UncleHowie\_48 (B1), Vaishali24\_47 (B1), Valjean\_48 (B1), Vaticameos\_44 (B1), Wallhey\_47 (B1),

Waterdiva\_48 (B1), Weher20\_48 (B1), Xavier\_47 (B1), Yoshand\_49 (B1), YouGoGlencoco\_48 (B1), Zaider\_49 (B1), Zelda\_48 (B1),

#### Start 29:

- Found in 71 of 350 ( 20.3% ) of genes in pham
- Manual Annotations of this start: 53 of 318
- Called 78.9% of time when present
- Phage (with cluster) where this start called: Angel\_27 (G1), Aroostook\_27 (G1), Avrafan\_27 (G1), BPs\_27 (G1), BruceB\_27 (G1), Camri\_27 (G1), CassieYates\_27 (G1), Cedasite\_27 (G1), Cherrybomb426\_27 (G1), Crespo\_27 (G1), DMoney\_27 (G1), DNAll\_0027 (G1), Darionha\_27 (G1), Denise\_18 (CZ5), Dina\_21 (EP), ECartman\_27 (G1), Frickyeah\_22 (DN1), Frosty24\_27 (G1), Gideon\_27 (G1), GoldenAsh\_27 (G1), Gomashi\_27 (G1), Grizzly\_27 (G1), Halo\_27 (G1), Hope\_27 (G1), Hotshotbaby7\_27 (G1), Jane\_27 (G1), Jolene\_27 (G1), Jonghyun\_27 (G1), Juicebox\_23 (singleton), Kasen3\_27 (G1), Lederberg\_21 (EP), Liefie\_27 (G1), Marmie\_27 (G1), Mbo4\_19 (singleton), Mercurio\_29 (G4), Mowgli\_27 (G1), OctaviousRex\_27 (G1), Olga\_27 (G1), Peeb\_27 (G1), Periodt\_27 (G1), Phish\_27 (G1), Phreak\_27 (G1), PinkYoshi\_27 (G1), Plagueis\_27 (G1), Rabbs\_27 (G1), Renaissance\_27 (G1), SamW\_21 (EP), Schiebel\_27 (G1), ShaboiShabazz\_27 (G1), Sizemore\_27 (G1), Sneeze\_27 (G1), StAB\_21 (EP), Sweets\_27 (G1), TomBrady\_27 (G1), Troy\_21 (EP), Zombie\_27 (G1),

#### Start 30:

- Found in 271 of 350 ( 77.4% ) of genes in pham
- Manual Annotations of this start: 12 of 318
- Called 6.6% of time when present
- Phage (with cluster) where this start called: Basato\_49 (B1), Cannibal\_48 (B1), Charles1\_48 (B1), Chute\_47 (B1), Doddsville\_48 (B1), DonSanchon\_47 (B1), Fozzie\_47 (B1), Gophee\_48 (B1), Keitherie\_48 (B1), Legolas\_48 (B1), Megamind20\_48 (B1), Melc17\_48 (B1), MichaelPhcott\_47 (B1), Orwigg\_49 (B1), Pacifista\_50 (B1), Ricotta\_48 (B1), Swiphy\_50 (B1), Timmi\_47 (B1),

#### Start 31:

- Found in 5 of 350 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 4 of 318
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apiary\_50 (CR), Braxoaddie\_50 (CR), CoffeeBean\_51 (CR), Maselop\_50 (CR), Polygyuki\_50 (CR),

#### Start 33:

- Found in 272 of 350 ( 77.7% ) of genes in pham
- Manual Annotations of this start: 10 of 318
- Called 3.7% of time when present
- Phage (with cluster) where this start called: Antonia\_47 (B1), Brilliant\_48 (B1), Frankicide\_48 (B1), KLucky39\_48 (B1), KingTut\_39 (B1), Oline\_47 (B1), Piglet\_0048 (B1), Potter\_47 (B1), Squid\_48 (B1), Vista\_48 (B1),

#### Start 34:

- Found in 279 of 350 ( 79.7% ) of genes in pham
- Manual Annotations of this start: 65 of 318
- Called 29.4% of time when present
- Phage (with cluster) where this start called: AbsoluteMadLad\_47 (B1), Adriana\_49 (B1), Anderson\_48 (B1), Andre\_51 (B1), Apizium\_48 (B1), Ashraf\_48 (B1), Banjo\_47



(B1), BatteryCK\_47 (B1), BlackStallion\_49 (B1), Bluephacebaby\_47 (B1), CampRoach\_49 (B1), CharlieGBrown\_47 (B1), CheetO\_48 (B1), Childish\_47 (B1), Colbert\_48 (B1), Coletti\_47 (B1), Cornobble\_47 (B1), Crownjwl\_48 (B1), Daffy\_48 (B1), Daka\_49 (B1), Dice\_50 (B1), DuchessDung\_47 (B1), Durga\_49 (B1), Eugenia\_48 (B1), FluffyNinja\_49 (B1), FugateOSU\_47 (B1), GeneCoco\_48 (B1), Gwilliam\_49 (B1), Haimas\_48 (B1), Hartsy\_48 (B1), HenryJackson\_47 (B1), ImtiyazSitla\_48 (B1), IsaacEli\_49 (B1), JDog\_48 (B1), JacAttac\_49 (B1), Kahve\_47 (B1), Katniss\_49 (B1), Kikipoo\_49 (B1), KingVeVeVe\_48 (B1), Labeouficaum\_47 (B1), LasagnaCat\_49 (B1), Lasso\_48 (B1), LeiMonet\_49 (B1), Longacauda\_47 (B1), Lulumae\_47 (B1), Lumine\_47 (B1), Mag7\_47 (B1), Magic8\_48 (B1), Maskar\_48 (B1), MelsMeow\_48 (B1), Morgushi\_48 (B1), MrPhizzler\_47 (B1), Mulan\_48 (B1), Mutante\_47 (B1), Nyala\_47 (B1), Olak\_48 (B1), OliverWalter\_48 (B1), Orion\_49 (B1), PG1\_49 (B1), PhatLouie\_48 (B1), PhenghisKhan\_47 (B1), Phleuron\_47 (B1), PhrankReynolds\_46 (B1), PhrodoBaggins\_48 (B1), Pinkman\_47 (B1), Pops\_48 (B1), Quisquilliae\_48 (B1), Rimu\_50 (B1), Roy17\_48 (B1), SDcharge11\_48 (B1), Schueller\_48 (B1), Scoot17C\_49 (B1), Selr12\_50 (B1), Sigman\_49 (B1), Squiggle\_48 (B1), Struggle\_47 (B1), ThreeOh3D2\_49 (B1), Trypo\_49 (B1), Usavi\_48 (B1), Veritas\_47 (B1), Virapocalypse\_48 (B1), Windsor\_47 (B1),

Start 46:

- Found in 339 of 350 ( 96.9% ) of genes in pham
- Manual Annotations of this start: 1 of 318
- Called 0.3% of time when present
- Phage (with cluster) where this start called: Phergie\_48 (B1),

### Summary by clusters:

There are 11 clusters represented in this pham: singleton, G4, DJ, DH, G1, CZ5, DN1, B1, CR, Z, EP,

Info for manual annotations of cluster B1:

- Start number 19 was manually annotated 28 times for cluster B1.
- Start number 28 was manually annotated 131 times for cluster B1.
- Start number 30 was manually annotated 12 times for cluster B1.
- Start number 33 was manually annotated 10 times for cluster B1.
- Start number 34 was manually annotated 65 times for cluster B1.
- Start number 46 was manually annotated 1 time for cluster B1.

Info for manual annotations of cluster CR:

- Start number 31 was manually annotated 4 times for cluster CR.

Info for manual annotations of cluster CZ5:

- Start number 29 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster DH:

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

Info for manual annotations of cluster DJ:

- Start number 25 was manually annotated 3 times for cluster DJ.

Info for manual annotations of cluster EP:

- Start number 29 was manually annotated 5 times for cluster EP.

Info for manual annotations of cluster G1:

- Start number 27 was manually annotated 9 times for cluster G1.
- Start number 29 was manually annotated 45 times for cluster G1.

Info for manual annotations of cluster G4:

- Start number 29 was manually annotated 1 time for cluster G4.

Info for manual annotations of cluster Z:

- Start number 26 was manually annotated 1 time for cluster Z.

### **Gene Information:**

Gene: 32HC\_36 Start: 27405, Stop: 28772, Start Num: 26

Candidate Starts for 32HC\_36:

(Start: 26 @27405 has 1 MA's), (38, 27534), (40, 27549), (41, 27564), (57, 27801), (60, 27840), (67, 27912), (77, 27990), (86, 28101), (88, 28107), (121, 28497), (132, 28554), (138, 28602), (147, 28683), (155, 28746),

Gene: ABU\_49 Start: 40509, Stop: 41825, Start Num: 28

Candidate Starts for ABU\_49:

(Start: 19 @40470 has 28 MA's), (21, 40479), (Start: 28 @40509 has 131 MA's), (Start: 30 @40518 has 12 MA's), (Start: 33 @40530 has 10 MA's), (Start: 34 @40536 has 65 MA's), (41, 40656), (43, 40698), (Start: 46 @40749 has 1 MA's), (56, 40863), (58, 40875), (65, 40977), (79, 41064), (80, 41067), (83, 41151), (85, 41169), (95, 41244), (99, 41319), (111, 41427), (115, 41505), (116, 41514), (127, 41574), (132, 41610), (138, 41658), (148, 41745),

Gene: AbsoluteMadLad\_47 Start: 40413, Stop: 41702, Start Num: 34

Candidate Starts for AbsoluteMadLad\_47:

(Start: 19 @40347 has 28 MA's), (21, 40356), (Start: 28 @40386 has 131 MA's), (Start: 30 @40395 has 12 MA's), (Start: 33 @40407 has 10 MA's), (Start: 34 @40413 has 65 MA's), (41, 40533), (43, 40575), (Start: 46 @40626 has 1 MA's), (56, 40740), (58, 40752), (65, 40854), (79, 40941), (80, 40944), (83, 41028), (85, 41046), (95, 41121), (99, 41196), (107, 41259), (111, 41304), (115, 41382), (116, 41391), (132, 41487), (138, 41535), (148, 41622),

Gene: Adriana\_49 Start: 40534, Stop: 41823, Start Num: 34

Candidate Starts for Adriana\_49:

(Start: 19 @40468 has 28 MA's), (21, 40477), (Start: 28 @40507 has 131 MA's), (Start: 30 @40516 has 12 MA's), (Start: 33 @40528 has 10 MA's), (Start: 34 @40534 has 65 MA's), (41, 40654), (43, 40696), (Start: 46 @40747 has 1 MA's), (56, 40861), (58, 40873), (65, 40975), (79, 41062), (80, 41065), (83, 41149), (85, 41167), (95, 41242), (99, 41317), (111, 41425), (115, 41503), (116, 41512), (127, 41572), (132, 41608), (138, 41656), (148, 41743),

Gene: Aelin\_47 Start: 39938, Stop: 41266, Start Num: 28

Candidate Starts for Aelin\_47:

(Start: 19 @39899 has 28 MA's), (21, 39908), (Start: 28 @39938 has 131 MA's), (Start: 30 @39947 has 12 MA's), (Start: 33 @39959 has 10 MA's), (41, 40085), (43, 40127), (Start: 46 @40178 has 1 MA's), (52, 40247), (58, 40304), (65, 40418), (79, 40505), (80, 40508), (83, 40592), (84, 40595), (85, 40610), (95, 40685), (99, 40760), (111, 40868), (115, 40946), (116, 40955), (118, 40970), (127, 41015), (132, 41051), (138, 41099), (148, 41186),

Gene: AltPhacts\_48 Start: 40320, Stop: 41675, Start Num: 19

Candidate Starts for AltPhacts\_48:

(Start: 19 @40320 has 28 MA's), (21, 40329), (Start: 28 @40359 has 131 MA's), (Start: 30 @40368 has 12 MA's), (Start: 33 @40380 has 10 MA's), (41, 40506), (43, 40548), (Start: 46 @40599 has 1 MA's), (56, 40713), (58, 40725), (65, 40827), (79, 40914), (80, 40917), (83, 41001), (85, 41019), (95, 41094), (99, 41169), (107, 41232), (111, 41277), (115, 41355), (116, 41364), (127, 41424), (132, 41460), (138, 41508), (148, 41595),

Gene: Altwerkus\_47 Start: 40065, Stop: 41381, Start Num: 28

Candidate Starts for Altwerkus\_47:

(Start: 19 @40026 has 28 MA's), (21, 40035), (Start: 28 @40065 has 131 MA's), (Start: 30 @40074 has 12 MA's), (Start: 33 @40086 has 10 MA's), (Start: 34 @40092 has 65 MA's), (41, 40212), (43, 40254), (Start: 46 @40305 has 1 MA's), (56, 40419), (58, 40431), (65, 40533), (79, 40620), (80, 40623), (83, 40707), (84, 40710), (85, 40725), (95, 40800), (99, 40875), (111, 40983), (115, 41061), (116, 41070), (118, 41085), (127, 41130), (132, 41166), (138, 41214), (148, 41301),

Gene: Anderson\_48 Start: 40391, Stop: 41680, Start Num: 34

Candidate Starts for Anderson\_48:

(Start: 19 @40325 has 28 MA's), (21, 40334), (Start: 28 @40364 has 131 MA's), (Start: 30 @40373 has 12 MA's), (Start: 33 @40385 has 10 MA's), (Start: 34 @40391 has 65 MA's), (41, 40511), (43, 40553), (Start: 46 @40604 has 1 MA's), (56, 40718), (58, 40730), (65, 40832), (79, 40919), (80, 40922), (83, 41006), (85, 41024), (95, 41099), (99, 41174), (111, 41282), (115, 41360), (116, 41369), (127, 41429), (132, 41465), (138, 41513), (148, 41600),

Gene: Andre\_51 Start: 40528, Stop: 41817, Start Num: 34

Candidate Starts for Andre\_51:

(Start: 19 @40462 has 28 MA's), (21, 40471), (Start: 28 @40501 has 131 MA's), (Start: 30 @40510 has 12 MA's), (Start: 33 @40522 has 10 MA's), (Start: 34 @40528 has 65 MA's), (41, 40648), (43, 40690), (Start: 46 @40741 has 1 MA's), (56, 40855), (58, 40867), (65, 40969), (79, 41056), (80, 41059), (83, 41143), (84, 41146), (85, 41161), (95, 41236), (99, 41311), (111, 41419), (115, 41497), (116, 41506), (118, 41521), (127, 41566), (132, 41602), (138, 41650), (148, 41737),

Gene: Angel\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Angel\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Annihilator\_27 Start: 23861, Stop: 25192, Start Num: 27

Candidate Starts for Annihilator\_27:

(Start: 27 @23861 has 10 MA's), (Start: 29 @23876 has 53 MA's), (Start: 34 @23897 has 65 MA's), (41, 24017), (43, 24059), (Start: 46 @24110 has 1 MA's), (58, 24236), (69, 24359), (82, 24509), (108, 24776), (125, 24938), (139, 25025), (150, 25121), (158, 25184),

Gene: Antonia\_47 Start: 39959, Stop: 41266, Start Num: 33

Candidate Starts for Antonia\_47:

(Start: 19 @39899 has 28 MA's), (21, 39908), (Start: 28 @39938 has 131 MA's), (Start: 30 @39947 has 12 MA's), (Start: 33 @39959 has 10 MA's), (41, 40085), (43, 40127), (Start: 46 @40178 has 1 MA's), (52, 40247), (58, 40304), (65, 40418), (79, 40505), (80, 40508), (83, 40592), (84, 40595), (85, 40610), (95, 40685), (99, 40760), (111, 40868), (115, 40946), (116, 40955), (118, 40970), (127, 41015), (132, 41051), (138, 41099), (148, 41186),

Gene: Apiary\_50 Start: 35704, Stop: 37047, Start Num: 31

Candidate Starts for Apiary\_50:

(Start: 31 @35704 has 4 MA's), (43, 35902), (45, 35932), (Start: 46 @35944 has 1 MA's), (51, 35983), (56, 36055), (64, 36133), (74, 36175), (75, 36184), (83, 36307), (84, 36310), (89, 36340), (96, 36409), (100, 36457), (114, 36640), (119, 36673), (123, 36703), (126, 36715), (140, 36823), (144, 36868), (157, 36973),

Gene: Apizium\_48 Start: 40292, Stop: 41581, Start Num: 34

Candidate Starts for Apizium\_48:

(Start: 19 @40226 has 28 MA's), (21, 40235), (Start: 28 @40265 has 131 MA's), (Start: 30 @40274 has 12 MA's), (Start: 33 @40286 has 10 MA's), (Start: 34 @40292 has 65 MA's), (41, 40412), (43, 40454), (Start: 46 @40505 has 1 MA's), (56, 40619), (58, 40631), (65, 40733), (79, 40820), (80, 40823), (83, 40907), (85, 40925), (95, 41000), (99, 41075), (111, 41183), (115, 41261), (116, 41270), (127, 41330), (132, 41366), (138, 41414), (148, 41501),

Gene: Aroostook\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Aroostook\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (117, 24899), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Ashraf\_48 Start: 40093, Stop: 41382, Start Num: 34

Candidate Starts for Ashraf\_48:

(Start: 19 @40027 has 28 MA's), (21, 40036), (Start: 28 @40066 has 131 MA's), (Start: 30 @40075 has 12 MA's), (Start: 33 @40087 has 10 MA's), (Start: 34 @40093 has 65 MA's), (41, 40213), (43, 40255), (Start: 46 @40306 has 1 MA's), (56, 40420), (58, 40432), (65, 40534), (79, 40621), (80, 40624), (83, 40708), (85, 40726), (95, 40801), (99, 40876), (111, 40984), (115, 41062), (116, 41071), (127, 41131), (132, 41167), (138, 41215), (148, 41302),

Gene: Avrafan\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Avrafan\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: BPs\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for BPs\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: BQuat\_27 Start: 23861, Stop: 25192, Start Num: 27

Candidate Starts for BQuat\_27:

(Start: 27 @23861 has 10 MA's), (Start: 29 @23876 has 53 MA's), (Start: 34 @23897 has 65 MA's), (41, 24017), (43, 24059), (Start: 46 @24110 has 1 MA's), (58, 24236), (69, 24359), (82, 24509), (108, 24776), (125, 24938), (139, 25025), (150, 25121), (158, 25184),

Gene: Badfish\_49 Start: 40532, Stop: 41848, Start Num: 28

Candidate Starts for Badfish\_49:

(Start: 19 @40493 has 28 MA's), (21, 40502), (Start: 28 @40532 has 131 MA's), (Start: 30 @40541 has 12 MA's), (Start: 33 @40553 has 10 MA's), (Start: 34 @40559 has 65 MA's), (41, 40679), (43, 40721), (Start: 46 @40772 has 1 MA's), (56, 40886), (58, 40898), (65, 41000), (79, 41087), (80, 41090), (83, 41174), (85, 41192), (95, 41267), (99, 41342), (107, 41405), (111, 41450), (115, 41528), (116, 41537), (127, 41597), (132, 41633), (138, 41681), (148, 41768),

Gene: Banjo\_47 Start: 40090, Stop: 41379, Start Num: 34

Candidate Starts for Banjo\_47:

(Start: 19 @40024 has 28 MA's), (21, 40033), (Start: 28 @40063 has 131 MA's), (Start: 30 @40072 has 12 MA's), (Start: 33 @40084 has 10 MA's), (Start: 34 @40090 has 65 MA's), (41, 40210), (43, 40252), (Start: 46 @40303 has 1 MA's), (56, 40417), (58, 40429), (65, 40531), (79, 40618), (80, 40621), (83, 40705), (85, 40723), (95, 40798), (99, 40873), (111, 40981), (115, 41059), (116, 41068), (127, 41128), (132, 41164), (138, 41212), (148, 41299),

Gene: Basato\_49 Start: 40657, Stop: 41964, Start Num: 30

Candidate Starts for Basato\_49:

(Start: 19 @40609 has 28 MA's), (21, 40618), (Start: 28 @40648 has 131 MA's), (Start: 30 @40657 has 12 MA's), (Start: 33 @40669 has 10 MA's), (Start: 34 @40675 has 65 MA's), (41, 40795), (43, 40837), (Start: 46 @40888 has 1 MA's), (56, 41002), (58, 41014), (65, 41116), (79, 41203), (80, 41206), (83, 41290), (85, 41308), (95, 41383), (99, 41458), (107, 41521), (111, 41566), (115, 41644), (116, 41653), (127, 41713), (132, 41749), (138, 41797), (148, 41884),

Gene: BatteryCK\_47 Start: 40018, Stop: 41322, Start Num: 34

Candidate Starts for BatteryCK\_47:

(Start: 19 @39952 has 28 MA's), (21, 39961), (Start: 28 @39991 has 131 MA's), (Start: 30 @40000 has 12 MA's), (Start: 33 @40012 has 10 MA's), (Start: 34 @40018 has 65 MA's), (41, 40138), (43, 40180), (Start: 46 @40231 has 1 MA's), (58, 40357), (65, 40471), (66, 40474), (79, 40561), (80, 40564), (83, 40648), (84, 40651), (85, 40666), (95, 40741), (99, 40816), (111, 40924), (115, 41002), (116, 41011), (127, 41071), (132, 41107), (138, 41155), (148, 41242),

Gene: Beaglebox\_47 Start: 40084, Stop: 41400, Start Num: 28

Candidate Starts for Beaglebox\_47:

(Start: 19 @40045 has 28 MA's), (21, 40054), (Start: 28 @40084 has 131 MA's), (Start: 30 @40093 has 12 MA's), (Start: 33 @40105 has 10 MA's), (Start: 34 @40111 has 65 MA's), (41, 40231), (43, 40273), (Start: 46 @40324 has 1 MA's), (56, 40438), (58, 40450), (65, 40552), (79, 40639), (80, 40642), (83, 40726), (85, 40744), (95, 40819), (99, 40894), (111, 41002), (115, 41080), (116, 41089), (127, 41149), (132, 41185), (138, 41233), (148, 41320),

Gene: Bishoperium\_47 Start: 40078, Stop: 41394, Start Num: 28

Candidate Starts for Bishoperium\_47:

(Start: 19 @40039 has 28 MA's), (21, 40048), (Start: 28 @40078 has 131 MA's), (Start: 30 @40087 has 12 MA's), (Start: 33 @40099 has 10 MA's), (Start: 34 @40105 has 65 MA's), (41, 40225), (43, 40267), (Start: 46 @40318 has 1 MA's), (56, 40432), (58, 40444), (65, 40546), (79, 40633), (80, 40636), (83, 40720), (85, 40738), (95, 40813), (99, 40888), (111, 40996), (115, 41074), (116, 41083), (127, 41143), (132, 41179), (138, 41227), (148, 41314),

Gene: BlackStallion\_49 Start: 40544, Stop: 41833, Start Num: 34

Candidate Starts for BlackStallion\_49:

(Start: 19 @40478 has 28 MA's), (21, 40487), (Start: 28 @40517 has 131 MA's), (Start: 30 @40526 has 12 MA's), (Start: 33 @40538 has 10 MA's), (Start: 34 @40544 has 65 MA's), (41, 40664), (43, 40706), (Start: 46 @40757 has 1 MA's), (56, 40871), (58, 40883), (65, 40985), (79, 41072), (80, 41075), (83, 41159), (85, 41177), (95, 41252), (99, 41327), (111, 41435), (115, 41513), (116, 41522), (127, 41582), (132, 41618), (138, 41666), (148, 41753),

Gene: BlueHusk\_48 Start: 39884, Stop: 41200, Start Num: 28

Candidate Starts for BlueHusk\_48:

(Start: 19 @39845 has 28 MA's), (21, 39854), (Start: 28 @39884 has 131 MA's), (Start: 30 @39893 has 12 MA's), (Start: 33 @39905 has 10 MA's), (Start: 34 @39911 has 65 MA's), (41, 40031), (43,

40073), (Start: 46 @40124 has 1 MA's), (56, 40238), (58, 40250), (65, 40352), (79, 40439), (80, 40442), (83, 40526), (85, 40544), (95, 40619), (99, 40694), (107, 40757), (111, 40802), (115, 40880), (116, 40889), (127, 40949), (132, 40985), (138, 41033), (148, 41120),

Gene: Bluephacebaby\_47 Start: 40108, Stop: 41397, Start Num: 34

Candidate Starts for Bluephacebaby\_47:

(Start: 19 @40042 has 28 MA's), (21, 40051), (Start: 28 @40081 has 131 MA's), (Start: 30 @40090 has 12 MA's), (Start: 33 @40102 has 10 MA's), (Start: 34 @40108 has 65 MA's), (41, 40228), (43, 40270), (Start: 46 @40321 has 1 MA's), (56, 40435), (58, 40447), (65, 40549), (79, 40636), (80, 40639), (83, 40723), (84, 40726), (85, 40741), (95, 40816), (99, 40891), (111, 40999), (115, 41077), (116, 41086), (118, 41101), (127, 41146), (132, 41182), (138, 41230), (148, 41317),

Gene: Boehler\_48 Start: 40387, Stop: 41703, Start Num: 28

Candidate Starts for Boehler\_48:

(Start: 19 @40348 has 28 MA's), (21, 40357), (Start: 28 @40387 has 131 MA's), (Start: 30 @40396 has 12 MA's), (Start: 33 @40408 has 10 MA's), (Start: 34 @40414 has 65 MA's), (41, 40534), (43, 40576), (Start: 46 @40627 has 1 MA's), (56, 40741), (58, 40753), (65, 40855), (79, 40942), (80, 40945), (83, 41029), (85, 41047), (95, 41122), (99, 41197), (111, 41305), (115, 41383), (116, 41392), (127, 41452), (132, 41488), (138, 41536), (148, 41623),

Gene: Braxoaddie\_50 Start: 35693, Stop: 37036, Start Num: 31

Candidate Starts for Braxoaddie\_50:

(Start: 31 @35693 has 4 MA's), (43, 35891), (45, 35921), (Start: 46 @35933 has 1 MA's), (51, 35972), (56, 36044), (64, 36122), (74, 36164), (75, 36173), (83, 36296), (84, 36299), (89, 36329), (96, 36398), (100, 36446), (114, 36629), (119, 36662), (123, 36692), (126, 36704), (140, 36812), (144, 36857), (157, 36962),

Gene: Brilliant\_48 Start: 40101, Stop: 41396, Start Num: 33

Candidate Starts for Brilliant\_48:

(Start: 19 @40041 has 28 MA's), (21, 40050), (Start: 28 @40080 has 131 MA's), (Start: 30 @40089 has 12 MA's), (Start: 33 @40101 has 10 MA's), (Start: 34 @40107 has 65 MA's), (41, 40227), (43, 40269), (Start: 46 @40320 has 1 MA's), (56, 40434), (58, 40446), (65, 40548), (79, 40635), (80, 40638), (83, 40722), (85, 40740), (95, 40815), (99, 40890), (107, 40953), (111, 40998), (115, 41076), (116, 41085), (127, 41145), (132, 41181), (138, 41229), (148, 41316),

Gene: BruceB\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for BruceB\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Buckeye\_48 Start: 40401, Stop: 41717, Start Num: 28

Candidate Starts for Buckeye\_48:

(Start: 19 @40362 has 28 MA's), (21, 40371), (Start: 28 @40401 has 131 MA's), (Start: 30 @40410 has 12 MA's), (Start: 33 @40422 has 10 MA's), (Start: 34 @40428 has 65 MA's), (41, 40548), (43, 40590), (Start: 46 @40641 has 1 MA's), (56, 40755), (58, 40767), (65, 40869), (79, 40956), (80, 40959), (83, 41043), (85, 41061), (95, 41136), (99, 41211), (111, 41319), (115, 41397), (116, 41406), (127, 41466), (132, 41502), (138, 41550), (148, 41637),

Gene: Burr\_47 Start: 40075, Stop: 41391, Start Num: 28

Candidate Starts for Burr\_47:

(Start: 19 @40036 has 28 MA's), (21, 40045), (Start: 28 @40075 has 131 MA's), (Start: 30 @40084 has 12 MA's), (Start: 33 @40096 has 10 MA's), (Start: 34 @40102 has 65 MA's), (41, 40222), (43,

40264), (Start: 46 @40315 has 1 MA's), (56, 40429), (58, 40441), (65, 40543), (79, 40630), (80, 40633), (83, 40717), (85, 40735), (95, 40810), (99, 40885), (111, 40993), (115, 41071), (116, 41080), (127, 41140), (132, 41176), (138, 41224), (148, 41311),

Gene: CLED96\_27 Start: 23870, Stop: 25201, Start Num: 27

Candidate Starts for CLED96\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: CamL\_48 Start: 40370, Stop: 41686, Start Num: 28

Candidate Starts for CamL\_48:

(Start: 19 @40331 has 28 MA's), (21, 40340), (Start: 28 @40370 has 131 MA's), (Start: 30 @40379 has 12 MA's), (Start: 33 @40391 has 10 MA's), (Start: 34 @40397 has 65 MA's), (41, 40517), (43, 40559), (Start: 46 @40610 has 1 MA's), (56, 40724), (58, 40736), (65, 40838), (79, 40925), (80, 40928), (83, 41012), (85, 41030), (95, 41105), (99, 41180), (111, 41288), (115, 41366), (116, 41375), (127, 41435), (132, 41471), (138, 41519), (148, 41606),

Gene: CampRoach\_49 Start: 40531, Stop: 41820, Start Num: 34

Candidate Starts for CampRoach\_49:

(Start: 19 @40465 has 28 MA's), (21, 40474), (Start: 28 @40504 has 131 MA's), (Start: 30 @40513 has 12 MA's), (Start: 33 @40525 has 10 MA's), (Start: 34 @40531 has 65 MA's), (41, 40651), (43, 40693), (Start: 46 @40744 has 1 MA's), (56, 40858), (58, 40870), (65, 40972), (79, 41059), (80, 41062), (83, 41146), (85, 41164), (95, 41239), (99, 41314), (111, 41422), (115, 41500), (116, 41509), (127, 41569), (132, 41605), (138, 41653), (148, 41740),

Gene: Camri\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Camri\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Cannibal\_48 Start: 40362, Stop: 41669, Start Num: 30

Candidate Starts for Cannibal\_48:

(Start: 19 @40314 has 28 MA's), (21, 40323), (Start: 28 @40353 has 131 MA's), (Start: 30 @40362 has 12 MA's), (Start: 33 @40374 has 10 MA's), (Start: 34 @40380 has 65 MA's), (41, 40500), (43, 40542), (Start: 46 @40593 has 1 MA's), (56, 40707), (58, 40719), (65, 40821), (79, 40908), (80, 40911), (83, 40995), (85, 41013), (95, 41088), (99, 41163), (111, 41271), (115, 41349), (116, 41358), (127, 41418), (132, 41454), (138, 41502), (148, 41589),

Gene: Carthage\_46 Start: 39249, Stop: 40616, Start Num: 19

Candidate Starts for Carthage\_46:

(Start: 19 @39249 has 28 MA's), (21, 39258), (Start: 28 @39288 has 131 MA's), (Start: 30 @39297 has 12 MA's), (Start: 33 @39309 has 10 MA's), (41, 39435), (43, 39477), (Start: 46 @39528 has 1 MA's), (52, 39597), (58, 39654), (65, 39768), (79, 39855), (80, 39858), (83, 39942), (84, 39945), (85, 39960), (95, 40035), (99, 40110), (111, 40218), (115, 40296), (116, 40305), (118, 40320), (127, 40365), (132, 40401), (138, 40449), (148, 40536),

Gene: CassieYates\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for CassieYates\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Cedasite\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Cedasite\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Chaelin\_48 Start: 40076, Stop: 41392, Start Num: 28

Candidate Starts for Chaelin\_48:

(Start: 19 @40037 has 28 MA's), (21, 40046), (Start: 28 @40076 has 131 MA's), (Start: 30 @40085 has 12 MA's), (Start: 33 @40097 has 10 MA's), (Start: 34 @40103 has 65 MA's), (41, 40223), (43, 40265), (Start: 46 @40316 has 1 MA's), (56, 40430), (58, 40442), (65, 40544), (79, 40631), (80, 40634), (83, 40718), (85, 40736), (95, 40811), (99, 40886), (111, 40994), (115, 41072), (116, 41081), (127, 41141), (132, 41177), (138, 41225), (148, 41312),

Gene: Chah\_50 Start: 40531, Stop: 41847, Start Num: 28

Candidate Starts for Chah\_50:

(Start: 19 @40492 has 28 MA's), (21, 40501), (Start: 28 @40531 has 131 MA's), (Start: 30 @40540 has 12 MA's), (Start: 33 @40552 has 10 MA's), (Start: 34 @40558 has 65 MA's), (41, 40678), (43, 40720), (Start: 46 @40771 has 1 MA's), (56, 40885), (58, 40897), (65, 40999), (79, 41086), (80, 41089), (83, 41173), (85, 41191), (95, 41266), (99, 41341), (111, 41449), (115, 41527), (116, 41536), (127, 41596), (132, 41632), (138, 41680), (148, 41767),

Gene: Chance64\_27 Start: 23870, Stop: 25201, Start Num: 27

Candidate Starts for Chance64\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (117, 24899), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Charles1\_48 Start: 40370, Stop: 41677, Start Num: 30

Candidate Starts for Charles1\_48:

(Start: 19 @40322 has 28 MA's), (21, 40331), (Start: 28 @40361 has 131 MA's), (Start: 30 @40370 has 12 MA's), (Start: 33 @40382 has 10 MA's), (Start: 34 @40388 has 65 MA's), (41, 40508), (43, 40550), (Start: 46 @40601 has 1 MA's), (56, 40715), (58, 40727), (65, 40829), (79, 40916), (80, 40919), (83, 41003), (85, 41021), (95, 41096), (99, 41171), (111, 41279), (115, 41357), (116, 41366), (127, 41426), (132, 41462), (138, 41510), (148, 41597),

Gene: CharlieGBrown\_47 Start: 39978, Stop: 41267, Start Num: 34

Candidate Starts for CharlieGBrown\_47:

(Start: 19 @39912 has 28 MA's), (21, 39921), (Start: 28 @39951 has 131 MA's), (Start: 30 @39960 has 12 MA's), (Start: 33 @39972 has 10 MA's), (Start: 34 @39978 has 65 MA's), (41, 40098), (43, 40140), (Start: 46 @40191 has 1 MA's), (56, 40305), (58, 40317), (65, 40419), (79, 40506), (80, 40509), (83, 40593), (85, 40611), (95, 40686), (99, 40761), (111, 40869), (115, 40947), (116, 40956), (127, 41016), (132, 41052), (138, 41100), (148, 41187),

Gene: CheetO\_48 Start: 40408, Stop: 41709, Start Num: 34

Candidate Starts for CheetO\_48:

(Start: 19 @40342 has 28 MA's), (21, 40351), (Start: 28 @40381 has 131 MA's), (Start: 30 @40390 has 12 MA's), (Start: 33 @40402 has 10 MA's), (Start: 34 @40408 has 65 MA's), (41, 40528), (43, 40570), (Start: 46 @40621 has 1 MA's), (56, 40735), (58, 40747), (65, 40861), (79, 40948), (80, 40951), (83, 41035), (84, 41038), (85, 41053), (95, 41128), (99, 41203), (111, 41311), (115, 41389), (116, 41398), (118, 41413), (127, 41458), (132, 41494), (138, 41542), (148, 41629),



Gene: Cher\_47 Start: 40098, Stop: 41414, Start Num: 28

Candidate Starts for Cher\_47:

(Start: 19 @40059 has 28 MA's), (21, 40068), (Start: 28 @40098 has 131 MA's), (Start: 30 @40107 has 12 MA's), (Start: 33 @40119 has 10 MA's), (41, 40245), (43, 40287), (Start: 46 @40338 has 1 MA's), (56, 40452), (58, 40464), (65, 40566), (79, 40653), (80, 40656), (83, 40740), (85, 40758), (95, 40833), (99, 40908), (111, 41016), (115, 41094), (116, 41103), (127, 41163), (132, 41199), (138, 41247), (148, 41334),

Gene: Cherrybomb426\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Cherrybomb426\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Childish\_47 Start: 40128, Stop: 41417, Start Num: 34

Candidate Starts for Childish\_47:

(Start: 19 @40062 has 28 MA's), (21, 40071), (Start: 28 @40101 has 131 MA's), (Start: 30 @40110 has 12 MA's), (Start: 33 @40122 has 10 MA's), (Start: 34 @40128 has 65 MA's), (41, 40248), (43, 40290), (Start: 46 @40341 has 1 MA's), (56, 40455), (58, 40467), (65, 40569), (79, 40656), (80, 40659), (83, 40743), (85, 40761), (95, 40836), (99, 40911), (111, 41019), (115, 41097), (116, 41106), (127, 41166), (132, 41202), (138, 41250), (148, 41337),

Gene: Chorkpop\_48 Start: 40097, Stop: 41425, Start Num: 28

Candidate Starts for Chorkpop\_48:

(Start: 19 @40058 has 28 MA's), (21, 40067), (Start: 28 @40097 has 131 MA's), (Start: 30 @40106 has 12 MA's), (Start: 33 @40118 has 10 MA's), (41, 40244), (43, 40286), (Start: 46 @40337 has 1 MA's), (56, 40451), (58, 40463), (65, 40577), (79, 40664), (80, 40667), (83, 40751), (85, 40769), (95, 40844), (99, 40919), (111, 41027), (115, 41105), (116, 41114), (127, 41174), (132, 41210), (138, 41258), (148, 41345),

Gene: Chunky\_48 Start: 40384, Stop: 41712, Start Num: 28

Candidate Starts for Chunky\_48:

(Start: 19 @40345 has 28 MA's), (21, 40354), (Start: 28 @40384 has 131 MA's), (Start: 30 @40393 has 12 MA's), (Start: 33 @40405 has 10 MA's), (41, 40531), (43, 40573), (Start: 46 @40624 has 1 MA's), (52, 40693), (58, 40750), (65, 40864), (79, 40951), (80, 40954), (83, 41038), (84, 41041), (85, 41056), (95, 41131), (99, 41206), (111, 41314), (115, 41392), (116, 41401), (118, 41416), (127, 41461), (132, 41497), (138, 41545), (148, 41632),

Gene: Chute\_47 Start: 40434, Stop: 41741, Start Num: 30

Candidate Starts for Chute\_47:

(Start: 19 @40386 has 28 MA's), (21, 40395), (Start: 28 @40425 has 131 MA's), (Start: 30 @40434 has 12 MA's), (Start: 33 @40446 has 10 MA's), (Start: 34 @40452 has 65 MA's), (41, 40572), (43, 40614), (Start: 46 @40665 has 1 MA's), (56, 40779), (58, 40791), (65, 40893), (79, 40980), (80, 40983), (83, 41067), (85, 41085), (95, 41160), (99, 41235), (111, 41343), (115, 41421), (116, 41430), (127, 41490), (132, 41526), (138, 41574), (148, 41661),

Gene: Cobra\_48 Start: 40343, Stop: 41698, Start Num: 19

Candidate Starts for Cobra\_48:

(Start: 19 @40343 has 28 MA's), (21, 40352), (Start: 28 @40382 has 131 MA's), (Start: 30 @40391 has 12 MA's), (Start: 33 @40403 has 10 MA's), (Start: 34 @40409 has 65 MA's), (41, 40529), (43, 40571), (Start: 46 @40622 has 1 MA's), (56, 40736), (58, 40748), (65, 40850), (79, 40937), (80, 40940), (83, 41024), (85, 41042), (95, 41117), (99, 41192), (111, 41300), (115, 41378), (116, 41387), (127, 41447), (132, 41483), (138, 41531), (148, 41618),

Gene: CoffeeBean\_51 Start: 35651, Stop: 36994, Start Num: 31

Candidate Starts for CoffeeBean\_51:

(Start: 31 @35651 has 4 MA's), (43, 35849), (45, 35879), (Start: 46 @35891 has 1 MA's), (51, 35930), (56, 36002), (64, 36080), (74, 36122), (75, 36131), (83, 36254), (84, 36257), (89, 36287), (96, 36356), (100, 36404), (114, 36587), (119, 36620), (123, 36650), (126, 36662), (140, 36770), (144, 36815), (157, 36920),

Gene: Colbert\_48 Start: 40464, Stop: 41765, Start Num: 34

Candidate Starts for Colbert\_48:

(Start: 19 @40398 has 28 MA's), (21, 40407), (Start: 28 @40437 has 131 MA's), (Start: 30 @40446 has 12 MA's), (Start: 33 @40458 has 10 MA's), (Start: 34 @40464 has 65 MA's), (41, 40584), (43, 40626), (Start: 46 @40677 has 1 MA's), (56, 40791), (58, 40803), (65, 40917), (79, 41004), (80, 41007), (83, 41091), (84, 41094), (85, 41109), (95, 41184), (99, 41259), (111, 41367), (115, 41445), (116, 41454), (118, 41469), (127, 41514), (132, 41550), (138, 41598), (148, 41685),

Gene: Coleslaw\_27 Start: 23861, Stop: 25192, Start Num: 27

Candidate Starts for Coleslaw\_27:

(Start: 27 @23861 has 10 MA's), (Start: 29 @23876 has 53 MA's), (Start: 34 @23897 has 65 MA's), (41, 24017), (43, 24059), (Start: 46 @24110 has 1 MA's), (58, 24236), (69, 24359), (82, 24509), (108, 24776), (125, 24938), (139, 25025), (150, 25121), (158, 25184),

Gene: Coletti\_47 Start: 40452, Stop: 41741, Start Num: 34

Candidate Starts for Coletti\_47:

(Start: 19 @40386 has 28 MA's), (21, 40395), (Start: 28 @40425 has 131 MA's), (Start: 30 @40434 has 12 MA's), (Start: 33 @40446 has 10 MA's), (Start: 34 @40452 has 65 MA's), (41, 40572), (43, 40614), (Start: 46 @40665 has 1 MA's), (56, 40779), (58, 40791), (65, 40893), (79, 40980), (80, 40983), (83, 41067), (85, 41085), (95, 41160), (99, 41235), (111, 41343), (115, 41421), (116, 41430), (127, 41490), (132, 41526), (138, 41574), (148, 41661),

Gene: Cornobble\_47 Start: 39966, Stop: 41255, Start Num: 34

Candidate Starts for Cornobble\_47:

(Start: 19 @39900 has 28 MA's), (21, 39909), (Start: 28 @39939 has 131 MA's), (Start: 30 @39948 has 12 MA's), (Start: 33 @39960 has 10 MA's), (Start: 34 @39966 has 65 MA's), (41, 40086), (43, 40128), (Start: 46 @40179 has 1 MA's), (56, 40293), (58, 40305), (65, 40407), (79, 40494), (80, 40497), (83, 40581), (85, 40599), (95, 40674), (99, 40749), (111, 40857), (115, 40935), (116, 40944), (127, 41004), (132, 41040), (138, 41088), (148, 41175),

Gene: Cosmolli16\_47 Start: 40089, Stop: 41405, Start Num: 28

Candidate Starts for Cosmolli16\_47:

(Start: 19 @40050 has 28 MA's), (21, 40059), (Start: 28 @40089 has 131 MA's), (Start: 30 @40098 has 12 MA's), (Start: 33 @40110 has 10 MA's), (41, 40236), (43, 40278), (Start: 46 @40329 has 1 MA's), (56, 40443), (58, 40455), (65, 40557), (79, 40644), (80, 40647), (83, 40731), (85, 40749), (95, 40824), (99, 40899), (111, 41007), (115, 41085), (116, 41094), (127, 41154), (132, 41190), (138, 41238), (148, 41325),

Gene: Craff\_49 Start: 40478, Stop: 41833, Start Num: 19

Candidate Starts for Craff\_49:

(Start: 19 @40478 has 28 MA's), (21, 40487), (Start: 28 @40517 has 131 MA's), (Start: 30 @40526 has 12 MA's), (Start: 33 @40538 has 10 MA's), (Start: 34 @40544 has 65 MA's), (41, 40664), (43, 40706), (Start: 46 @40757 has 1 MA's), (56, 40871), (58, 40883), (65, 40985), (79, 41072), (80, 41075), (83, 41159), (85, 41177), (95, 41252), (99, 41327), (111, 41435), (115, 41513), (116, 41522), (127, 41582), (132, 41618), (138, 41666), (148, 41753),

Gene: Crespo\_27 Start: 23886, Stop: 25202, Start Num: 29

Candidate Starts for Crespo\_27:

(Start: 27 @23871 has 10 MA's), (Start: 29 @23886 has 53 MA's), (Start: 34 @23907 has 65 MA's), (41, 24027), (43, 24069), (Start: 46 @24120 has 1 MA's), (58, 24246), (69, 24369), (82, 24519), (108, 24786), (125, 24948), (139, 25035), (150, 25131), (158, 25194),

Gene: Crownjwl\_48 Start: 40185, Stop: 41474, Start Num: 34

Candidate Starts for Crownjwl\_48:

(Start: 19 @40119 has 28 MA's), (21, 40128), (Start: 28 @40158 has 131 MA's), (Start: 30 @40167 has 12 MA's), (Start: 33 @40179 has 10 MA's), (Start: 34 @40185 has 65 MA's), (41, 40305), (43, 40347), (Start: 46 @40398 has 1 MA's), (56, 40512), (58, 40524), (65, 40626), (79, 40713), (80, 40716), (83, 40800), (85, 40818), (95, 40893), (99, 40968), (107, 41031), (111, 41076), (115, 41154), (116, 41163), (127, 41223), (132, 41259), (138, 41307), (148, 41394),

Gene: DMoney\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for DMoney\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: DNAIII\_0027 Start: 23636, Stop: 24952, Start Num: 29

Candidate Starts for DNAIII\_0027:

(Start: 27 @23621 has 10 MA's), (Start: 29 @23636 has 53 MA's), (Start: 34 @23657 has 65 MA's), (41, 23777), (43, 23819), (Start: 46 @23870 has 1 MA's), (58, 23996), (69, 24119), (82, 24269), (108, 24536), (125, 24698), (139, 24785), (150, 24881), (158, 24944),

Gene: DaddyDaniels\_48 Start: 40070, Stop: 41386, Start Num: 28

Candidate Starts for DaddyDaniels\_48:

(Start: 19 @40031 has 28 MA's), (21, 40040), (Start: 28 @40070 has 131 MA's), (Start: 30 @40079 has 12 MA's), (Start: 33 @40091 has 10 MA's), (Start: 34 @40097 has 65 MA's), (41, 40217), (43, 40259), (Start: 46 @40310 has 1 MA's), (56, 40424), (58, 40436), (65, 40538), (79, 40625), (80, 40628), (83, 40712), (85, 40730), (95, 40805), (99, 40880), (111, 40988), (115, 41066), (116, 41075), (127, 41135), (132, 41171), (138, 41219), (148, 41306),

Gene: Daffy\_48 Start: 40122, Stop: 41411, Start Num: 34

Candidate Starts for Daffy\_48:

(Start: 19 @40056 has 28 MA's), (21, 40065), (Start: 28 @40095 has 131 MA's), (Start: 30 @40104 has 12 MA's), (Start: 33 @40116 has 10 MA's), (Start: 34 @40122 has 65 MA's), (41, 40242), (43, 40284), (Start: 46 @40335 has 1 MA's), (56, 40449), (58, 40461), (65, 40563), (79, 40650), (80, 40653), (83, 40737), (84, 40740), (85, 40755), (95, 40830), (99, 40905), (111, 41013), (115, 41091), (116, 41100), (127, 41160), (132, 41196), (138, 41244), (148, 41331),

Gene: Daka\_49 Start: 40401, Stop: 41690, Start Num: 34

Candidate Starts for Daka\_49:

(Start: 19 @40335 has 28 MA's), (21, 40344), (Start: 28 @40374 has 131 MA's), (Start: 30 @40383 has 12 MA's), (Start: 33 @40395 has 10 MA's), (Start: 34 @40401 has 65 MA's), (41, 40521), (43, 40563), (Start: 46 @40614 has 1 MA's), (56, 40728), (58, 40740), (65, 40842), (79, 40929), (80, 40932), (83, 41016), (84, 41019), (85, 41034), (95, 41109), (99, 41184), (111, 41292), (115, 41370), (116, 41379), (127, 41439), (132, 41475), (138, 41523), (148, 41610),

Gene: Darionha\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Darionha\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Dati\_48 Start: 40098, Stop: 41414, Start Num: 28

Candidate Starts for Dati\_48:

(Start: 19 @40059 has 28 MA's), (21, 40068), (Start: 28 @40098 has 131 MA's), (Start: 30 @40107 has 12 MA's), (Start: 33 @40119 has 10 MA's), (Start: 34 @40125 has 65 MA's), (41, 40245), (43, 40287), (Start: 46 @40338 has 1 MA's), (56, 40452), (58, 40464), (65, 40566), (79, 40653), (80, 40656), (83, 40740), (84, 40743), (85, 40758), (95, 40833), (99, 40908), (111, 41016), (115, 41094), (116, 41103), (118, 41118), (127, 41163), (132, 41199), (138, 41247), (148, 41334),

Gene: DelRivs\_47 Start: 40063, Stop: 41418, Start Num: 19

Candidate Starts for DelRivs\_47:

(Start: 19 @40063 has 28 MA's), (21, 40072), (Start: 28 @40102 has 131 MA's), (Start: 30 @40111 has 12 MA's), (Start: 33 @40123 has 10 MA's), (Start: 34 @40129 has 65 MA's), (41, 40249), (43, 40291), (Start: 46 @40342 has 1 MA's), (56, 40456), (58, 40468), (65, 40570), (79, 40657), (80, 40660), (83, 40744), (85, 40762), (95, 40837), (99, 40912), (111, 41020), (115, 41098), (116, 41107), (127, 41167), (132, 41203), (138, 41251), (148, 41338),

Gene: Denise\_18 Start: 16581, Stop: 17858, Start Num: 29

Candidate Starts for Denise\_18:

(17, 16434), (Start: 27 @16566 has 10 MA's), (Start: 29 @16581 has 53 MA's), (39, 16704), (48, 16848), (55, 16941), (56, 16947), (59, 16971), (63, 17022), (65, 17061), (82, 17211), (83, 17226), (86, 17247), (88, 17253), (89, 17256), (95, 17319), (103, 17418), (104, 17421), (106, 17439), (108, 17478), (111, 17496), (120, 17622), (122, 17631), (130, 17670), (135, 17697),

Gene: Derpp\_47 Start: 39901, Stop: 41256, Start Num: 19

Candidate Starts for Derpp\_47:

(Start: 19 @39901 has 28 MA's), (21, 39910), (Start: 28 @39940 has 131 MA's), (Start: 30 @39949 has 12 MA's), (Start: 33 @39961 has 10 MA's), (Start: 34 @39967 has 65 MA's), (41, 40087), (43, 40129), (Start: 46 @40180 has 1 MA's), (56, 40294), (58, 40306), (65, 40408), (79, 40495), (80, 40498), (83, 40582), (85, 40600), (95, 40675), (99, 40750), (111, 40858), (115, 40936), (116, 40945), (127, 41005), (132, 41041), (138, 41089), (148, 41176),

Gene: Dice\_50 Start: 40093, Stop: 41382, Start Num: 34

Candidate Starts for Dice\_50:

(Start: 19 @40027 has 28 MA's), (21, 40036), (Start: 28 @40066 has 131 MA's), (Start: 30 @40075 has 12 MA's), (Start: 33 @40087 has 10 MA's), (Start: 34 @40093 has 65 MA's), (41, 40213), (43, 40255), (Start: 46 @40306 has 1 MA's), (56, 40420), (58, 40432), (65, 40534), (79, 40621), (80, 40624), (83, 40708), (85, 40726), (95, 40801), (99, 40876), (111, 40984), (115, 41062), (116, 41071), (127, 41131), (132, 41167), (138, 41215), (148, 41302),

Gene: Dina\_21 Start: 19817, Stop: 21049, Start Num: 29

Candidate Starts for Dina\_21:

(Start: 29 @19817 has 53 MA's), (32, 19826), (Start: 34 @19832 has 65 MA's), (48, 20063), (49, 20069), (50, 20081), (62, 20210), (64, 20258), (94, 20522), (98, 20546), (100, 20579), (112, 20705), (113, 20756), (125, 20819),

Gene: Dingo\_48 Start: 40365, Stop: 41681, Start Num: 28

Candidate Starts for Dingo\_48:

(Start: 19 @40326 has 28 MA's), (21, 40335), (Start: 28 @40365 has 131 MA's), (Start: 30 @40374 has 12 MA's), (Start: 33 @40386 has 10 MA's), (Start: 34 @40392 has 65 MA's), (41, 40512), (43,

40554), (Start: 46 @40605 has 1 MA's), (56, 40719), (58, 40731), (65, 40833), (79, 40920), (80, 40923), (83, 41007), (85, 41025), (95, 41100), (99, 41175), (107, 41238), (111, 41283), (115, 41361), (116, 41370), (127, 41430), (132, 41466), (138, 41514), (148, 41601),

Gene: Dione\_47 Start: 40074, Stop: 41390, Start Num: 28

Candidate Starts for Dione\_47:

(Start: 19 @40035 has 28 MA's), (21, 40044), (Start: 28 @40074 has 131 MA's), (Start: 30 @40083 has 12 MA's), (Start: 33 @40095 has 10 MA's), (Start: 34 @40101 has 65 MA's), (41, 40221), (43, 40263), (Start: 46 @40314 has 1 MA's), (56, 40428), (58, 40440), (65, 40542), (79, 40629), (80, 40632), (83, 40716), (85, 40734), (95, 40809), (99, 40884), (111, 40992), (115, 41070), (116, 41079), (127, 41139), (132, 41175), (138, 41223), (148, 41310),

Gene: DirtJuice\_48 Start: 40364, Stop: 41680, Start Num: 28

Candidate Starts for DirtJuice\_48:

(Start: 19 @40325 has 28 MA's), (21, 40334), (Start: 28 @40364 has 131 MA's), (Start: 30 @40373 has 12 MA's), (Start: 33 @40385 has 10 MA's), (41, 40511), (43, 40553), (Start: 46 @40604 has 1 MA's), (52, 40673), (58, 40730), (65, 40832), (79, 40919), (80, 40922), (83, 41006), (85, 41024), (95, 41099), (99, 41174), (111, 41282), (115, 41360), (116, 41369), (118, 41384), (127, 41429), (132, 41465), (138, 41513), (148, 41600),

Gene: Doddsville\_48 Start: 40103, Stop: 41410, Start Num: 30

Candidate Starts for Doddsville\_48:

(Start: 19 @40055 has 28 MA's), (21, 40064), (Start: 28 @40094 has 131 MA's), (Start: 30 @40103 has 12 MA's), (Start: 33 @40115 has 10 MA's), (Start: 34 @40121 has 65 MA's), (41, 40241), (43, 40283), (Start: 46 @40334 has 1 MA's), (56, 40448), (58, 40460), (65, 40562), (79, 40649), (80, 40652), (83, 40736), (85, 40754), (95, 40829), (99, 40904), (111, 41012), (115, 41090), (116, 41099), (127, 41159), (132, 41195), (138, 41243), (148, 41330),

Gene: DoesntMatter\_47 Start: 40367, Stop: 41683, Start Num: 28

Candidate Starts for DoesntMatter\_47:

(Start: 19 @40328 has 28 MA's), (21, 40337), (Start: 28 @40367 has 131 MA's), (Start: 30 @40376 has 12 MA's), (Start: 33 @40388 has 10 MA's), (Start: 34 @40394 has 65 MA's), (41, 40514), (43, 40556), (Start: 46 @40607 has 1 MA's), (56, 40721), (58, 40733), (65, 40835), (79, 40922), (80, 40925), (83, 41009), (85, 41027), (95, 41102), (99, 41177), (111, 41285), (115, 41363), (116, 41372), (127, 41432), (132, 41468), (138, 41516), (148, 41603),

Gene: DonSanchon\_47 Start: 40086, Stop: 41393, Start Num: 30

Candidate Starts for DonSanchon\_47:

(Start: 19 @40038 has 28 MA's), (21, 40047), (Start: 28 @40077 has 131 MA's), (Start: 30 @40086 has 12 MA's), (Start: 33 @40098 has 10 MA's), (41, 40224), (43, 40266), (Start: 46 @40317 has 1 MA's), (56, 40431), (58, 40443), (65, 40545), (79, 40632), (80, 40635), (83, 40719), (85, 40737), (95, 40812), (99, 40887), (111, 40995), (115, 41073), (116, 41082), (127, 41142), (132, 41178), (138, 41226), (148, 41313),

Gene: DuchessDung\_47 Start: 39393, Stop: 40682, Start Num: 34

Candidate Starts for DuchessDung\_47:

(Start: 19 @39327 has 28 MA's), (21, 39336), (Start: 28 @39366 has 131 MA's), (Start: 30 @39375 has 12 MA's), (Start: 33 @39387 has 10 MA's), (Start: 34 @39393 has 65 MA's), (41, 39513), (43, 39555), (Start: 46 @39606 has 1 MA's), (56, 39720), (58, 39732), (65, 39834), (79, 39921), (80, 39924), (83, 40008), (85, 40026), (95, 40101), (99, 40176), (111, 40284), (115, 40362), (116, 40371), (127, 40431), (132, 40467), (138, 40515), (148, 40602),

Gene: Duggie\_47 Start: 40057, Stop: 41412, Start Num: 19

Candidate Starts for Duggie\_47:

(Start: 19 @40057 has 28 MA's), (21, 40066), (Start: 28 @40096 has 131 MA's), (Start: 30 @40105 has 12 MA's), (Start: 33 @40117 has 10 MA's), (Start: 34 @40123 has 65 MA's), (41, 40243), (43, 40285), (Start: 46 @40336 has 1 MA's), (56, 40450), (58, 40462), (65, 40564), (79, 40651), (80, 40654), (83, 40738), (85, 40756), (95, 40831), (99, 40906), (111, 41014), (115, 41092), (116, 41101), (127, 41161), (132, 41197), (138, 41245), (148, 41332),

Gene: Durga\_49 Start: 40559, Stop: 41848, Start Num: 34

Candidate Starts for Durga\_49:

(Start: 19 @40493 has 28 MA's), (21, 40502), (Start: 28 @40532 has 131 MA's), (Start: 30 @40541 has 12 MA's), (Start: 33 @40553 has 10 MA's), (Start: 34 @40559 has 65 MA's), (41, 40679), (43, 40721), (Start: 46 @40772 has 1 MA's), (56, 40886), (58, 40898), (65, 41000), (79, 41087), (80, 41090), (83, 41174), (85, 41192), (95, 41267), (99, 41342), (111, 41450), (115, 41528), (116, 41537), (127, 41597), (132, 41633), (138, 41681), (148, 41768),

Gene: ECartman\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for ECartman\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (117, 24899), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Emiris\_49 Start: 40500, Stop: 41816, Start Num: 28

Candidate Starts for Emiris\_49:

(Start: 19 @40461 has 28 MA's), (21, 40470), (Start: 28 @40500 has 131 MA's), (Start: 30 @40509 has 12 MA's), (Start: 33 @40521 has 10 MA's), (Start: 34 @40527 has 65 MA's), (41, 40647), (43, 40689), (Start: 46 @40740 has 1 MA's), (56, 40854), (58, 40866), (65, 40968), (79, 41055), (80, 41058), (83, 41142), (85, 41160), (95, 41235), (99, 41310), (111, 41418), (115, 41496), (116, 41505), (127, 41565), (132, 41601), (138, 41649), (148, 41736),

Gene: EmpTee\_48 Start: 40341, Stop: 41696, Start Num: 19

Candidate Starts for EmpTee\_48:

(Start: 19 @40341 has 28 MA's), (21, 40350), (Start: 28 @40380 has 131 MA's), (Start: 30 @40389 has 12 MA's), (Start: 33 @40401 has 10 MA's), (Start: 34 @40407 has 65 MA's), (41, 40527), (43, 40569), (Start: 46 @40620 has 1 MA's), (56, 40734), (58, 40746), (65, 40848), (79, 40935), (80, 40938), (83, 41022), (85, 41040), (95, 41115), (99, 41190), (107, 41253), (111, 41298), (115, 41376), (116, 41385), (127, 41445), (132, 41481), (138, 41529), (148, 41616),

Gene: Eremos\_48 Start: 40373, Stop: 41689, Start Num: 28

Candidate Starts for Eremos\_48:

(Start: 19 @40334 has 28 MA's), (21, 40343), (Start: 28 @40373 has 131 MA's), (Start: 30 @40382 has 12 MA's), (Start: 33 @40394 has 10 MA's), (Start: 34 @40400 has 65 MA's), (41, 40520), (43, 40562), (Start: 46 @40613 has 1 MA's), (56, 40727), (58, 40739), (65, 40841), (79, 40928), (80, 40931), (83, 41015), (85, 41033), (95, 41108), (99, 41183), (111, 41291), (115, 41369), (116, 41378), (118, 41393), (127, 41438), (132, 41474), (138, 41522), (148, 41609),

Gene: Etaye\_48 Start: 40367, Stop: 41683, Start Num: 28

Candidate Starts for Etaye\_48:

(Start: 19 @40328 has 28 MA's), (21, 40337), (Start: 28 @40367 has 131 MA's), (Start: 30 @40376 has 12 MA's), (Start: 33 @40388 has 10 MA's), (Start: 34 @40394 has 65 MA's), (41, 40514), (43, 40556), (Start: 46 @40607 has 1 MA's), (56, 40721), (58, 40733), (65, 40835), (79, 40922), (80, 40925), (83, 41009), (84, 41012), (85, 41027), (95, 41102), (99, 41177), (111, 41285), (115, 41363), (116, 41372), (118, 41387), (127, 41432), (132, 41468), (138, 41516), (148, 41603),

Gene: Eugenia\_48 Start: 40404, Stop: 41693, Start Num: 34

Candidate Starts for Eugenia\_48:

(Start: 19 @40338 has 28 MA's), (21, 40347), (Start: 28 @40377 has 131 MA's), (Start: 30 @40386 has 12 MA's), (Start: 33 @40398 has 10 MA's), (Start: 34 @40404 has 65 MA's), (41, 40524), (43, 40566), (Start: 46 @40617 has 1 MA's), (56, 40731), (58, 40743), (65, 40845), (79, 40932), (80, 40935), (83, 41019), (85, 41037), (95, 41112), (99, 41187), (111, 41295), (115, 41373), (116, 41382), (127, 41442), (132, 41478), (138, 41526), (148, 41613),

Gene: Fang\_49 Start: 40525, Stop: 41841, Start Num: 28

Candidate Starts for Fang\_49:

(Start: 19 @40486 has 28 MA's), (21, 40495), (Start: 28 @40525 has 131 MA's), (Start: 30 @40534 has 12 MA's), (Start: 33 @40546 has 10 MA's), (Start: 34 @40552 has 65 MA's), (41, 40672), (43, 40714), (Start: 46 @40765 has 1 MA's), (56, 40879), (58, 40891), (65, 40993), (79, 41080), (80, 41083), (83, 41167), (85, 41185), (95, 41260), (99, 41335), (111, 41443), (115, 41521), (116, 41530), (127, 41590), (132, 41626), (138, 41674), (148, 41761),

Gene: Fazel\_11 Start: 5376, Stop: 6665, Start Num: 25

Candidate Starts for Fazel\_11:

(23, 5370), (Start: 25 @5376 has 3 MA's), (Start: 29 @5394 has 53 MA's), (Start: 46 @5625 has 1 MA's), (64, 5838), (71, 5880), (76, 5907), (92, 6090), (97, 6123), (105, 6219), (110, 6285), (128, 6444), (134, 6477), (137, 6519), (141, 6540),

Gene: FluffyNinja\_49 Start: 40545, Stop: 41834, Start Num: 34

Candidate Starts for FluffyNinja\_49:

(Start: 19 @40479 has 28 MA's), (21, 40488), (Start: 28 @40518 has 131 MA's), (Start: 30 @40527 has 12 MA's), (Start: 33 @40539 has 10 MA's), (Start: 34 @40545 has 65 MA's), (41, 40665), (43, 40707), (Start: 46 @40758 has 1 MA's), (56, 40872), (58, 40884), (65, 40986), (79, 41073), (80, 41076), (83, 41160), (85, 41178), (95, 41253), (99, 41328), (111, 41436), (115, 41514), (116, 41523), (127, 41583), (132, 41619), (138, 41667), (148, 41754),

Gene: Fozzie\_47 Start: 40411, Stop: 41718, Start Num: 30

Candidate Starts for Fozzie\_47:

(Start: 19 @40363 has 28 MA's), (21, 40372), (Start: 28 @40402 has 131 MA's), (Start: 30 @40411 has 12 MA's), (Start: 33 @40423 has 10 MA's), (Start: 34 @40429 has 65 MA's), (41, 40549), (43, 40591), (Start: 46 @40642 has 1 MA's), (56, 40756), (58, 40768), (65, 40870), (79, 40957), (80, 40960), (83, 41044), (85, 41062), (95, 41137), (99, 41212), (111, 41320), (115, 41398), (116, 41407), (127, 41467), (132, 41503), (138, 41551), (148, 41638),

Gene: Frankicide\_48 Start: 40413, Stop: 41720, Start Num: 33

Candidate Starts for Frankicide\_48:

(Start: 19 @40353 has 28 MA's), (21, 40362), (Start: 28 @40392 has 131 MA's), (Start: 30 @40401 has 12 MA's), (Start: 33 @40413 has 10 MA's), (41, 40539), (43, 40581), (Start: 46 @40632 has 1 MA's), (52, 40701), (58, 40758), (65, 40872), (79, 40959), (80, 40962), (83, 41046), (84, 41049), (85, 41064), (95, 41139), (99, 41214), (111, 41322), (115, 41400), (116, 41409), (118, 41424), (127, 41469), (132, 41505), (138, 41553), (148, 41640),

Gene: Freya\_47 Start: 40065, Stop: 41381, Start Num: 28

Candidate Starts for Freya\_47:

(Start: 19 @40026 has 28 MA's), (21, 40035), (Start: 28 @40065 has 131 MA's), (Start: 30 @40074 has 12 MA's), (Start: 33 @40086 has 10 MA's), (Start: 34 @40092 has 65 MA's), (41, 40212), (43, 40254), (Start: 46 @40305 has 1 MA's), (56, 40419), (58, 40431), (65, 40533), (79, 40620), (80, 40623), (83, 40707), (85, 40725), (95, 40800), (99, 40875), (111, 40983), (115, 41061), (116, 41070), (127, 41130), (132, 41166), (138, 41214), (148, 41301),

Gene: FriarPreacher\_47 Start: 40365, Stop: 41732, Start Num: 19

Candidate Starts for FriarPreacher\_47:

(Start: 19 @40365 has 28 MA's), (21, 40374), (Start: 28 @40404 has 131 MA's), (Start: 30 @40413 has 12 MA's), (Start: 33 @40425 has 10 MA's), (Start: 34 @40431 has 65 MA's), (41, 40551), (43, 40593), (Start: 46 @40644 has 1 MA's), (52, 40713), (58, 40770), (65, 40884), (79, 40971), (80, 40974), (83, 41058), (84, 41061), (85, 41076), (95, 41151), (99, 41226), (111, 41334), (115, 41412), (116, 41421), (118, 41436), (127, 41481), (132, 41517), (138, 41565), (148, 41652),

Gene: Frickyeah\_22 Start: 18680, Stop: 19957, Start Num: 29

Candidate Starts for Frickyeah\_22:

(Start: 27 @18665 has 10 MA's), (Start: 29 @18680 has 53 MA's), (39, 18803), (48, 18947), (56, 19046), (59, 19070), (63, 19121), (65, 19160), (82, 19310), (83, 19325), (86, 19346), (88, 19352), (89, 19355), (95, 19418), (104, 19520), (106, 19538), (108, 19577), (111, 19595), (120, 19721), (122, 19730), (130, 19769), (135, 19796),

Gene: Fringe\_49 Start: 40501, Stop: 41817, Start Num: 28

Candidate Starts for Fringe\_49:

(Start: 19 @40462 has 28 MA's), (21, 40471), (Start: 28 @40501 has 131 MA's), (Start: 30 @40510 has 12 MA's), (Start: 33 @40522 has 10 MA's), (Start: 34 @40528 has 65 MA's), (41, 40648), (43, 40690), (Start: 46 @40741 has 1 MA's), (56, 40855), (58, 40867), (65, 40969), (79, 41056), (80, 41059), (83, 41143), (85, 41161), (95, 41236), (99, 41311), (111, 41419), (115, 41497), (116, 41506), (127, 41566), (132, 41602), (138, 41650), (148, 41737),

Gene: Frosty24\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Frosty24\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: FugateOSU\_47 Start: 40106, Stop: 41395, Start Num: 34

Candidate Starts for FugateOSU\_47:

(Start: 19 @40040 has 28 MA's), (21, 40049), (Start: 28 @40079 has 131 MA's), (Start: 30 @40088 has 12 MA's), (Start: 33 @40100 has 10 MA's), (Start: 34 @40106 has 65 MA's), (41, 40226), (43, 40268), (Start: 46 @40319 has 1 MA's), (56, 40433), (58, 40445), (65, 40547), (79, 40634), (80, 40637), (83, 40721), (85, 40739), (95, 40814), (99, 40889), (111, 40997), (115, 41075), (116, 41084), (127, 41144), (132, 41180), (138, 41228), (148, 41315),

Gene: Gareth\_47 Start: 40034, Stop: 41389, Start Num: 19

Candidate Starts for Gareth\_47:

(Start: 19 @40034 has 28 MA's), (21, 40043), (Start: 28 @40073 has 131 MA's), (Start: 30 @40082 has 12 MA's), (Start: 33 @40094 has 10 MA's), (Start: 34 @40100 has 65 MA's), (41, 40220), (43, 40262), (Start: 46 @40313 has 1 MA's), (56, 40427), (58, 40439), (65, 40541), (79, 40628), (80, 40631), (83, 40715), (85, 40733), (95, 40808), (99, 40883), (111, 40991), (115, 41069), (116, 41078), (127, 41138), (132, 41174), (138, 41222), (148, 41309),

Gene: GeneCoco\_48 Start: 40415, Stop: 41704, Start Num: 34

Candidate Starts for GeneCoco\_48:

(Start: 19 @40349 has 28 MA's), (21, 40358), (Start: 28 @40388 has 131 MA's), (Start: 30 @40397 has 12 MA's), (Start: 33 @40409 has 10 MA's), (Start: 34 @40415 has 65 MA's), (41, 40535), (43, 40577), (Start: 46 @40628 has 1 MA's), (56, 40742), (58, 40754), (65, 40856), (79, 40943), (80, 40946), (83, 41030), (85, 41048), (95, 41123), (99, 41198), (111, 41306), (115, 41384), (116, 41393), (127, 41453), (132, 41489), (138, 41537), (148, 41624),



Gene: Gideon\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Gideon\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (117, 24899), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Giraffe\_48 Start: 40082, Stop: 41413, Start Num: 28

Candidate Starts for Giraffe\_48:

(Start: 19 @40043 has 28 MA's), (21, 40052), (Start: 28 @40082 has 131 MA's), (Start: 30 @40091 has 12 MA's), (Start: 33 @40103 has 10 MA's), (41, 40229), (43, 40271), (Start: 46 @40322 has 1 MA's), (52, 40391), (58, 40448), (65, 40562), (66, 40565), (79, 40652), (80, 40655), (83, 40739), (84, 40742), (85, 40757), (95, 40832), (99, 40907), (111, 41015), (115, 41093), (116, 41102), (127, 41162), (132, 41198), (138, 41246), (148, 41333),

Gene: GoldenAsh\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for GoldenAsh\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Gomashi\_27 Start: 23886, Stop: 25202, Start Num: 29

Candidate Starts for Gomashi\_27:

(Start: 27 @23871 has 10 MA's), (Start: 29 @23886 has 53 MA's), (Start: 34 @23907 has 65 MA's), (41, 24027), (43, 24069), (Start: 46 @24120 has 1 MA's), (58, 24246), (69, 24369), (82, 24519), (108, 24786), (125, 24948), (139, 25035), (150, 25131), (158, 25194),

Gene: Gophee\_48 Start: 40380, Stop: 41687, Start Num: 30

Candidate Starts for Gophee\_48:

(Start: 19 @40332 has 28 MA's), (21, 40341), (Start: 28 @40371 has 131 MA's), (Start: 30 @40380 has 12 MA's), (Start: 33 @40392 has 10 MA's), (Start: 34 @40398 has 65 MA's), (41, 40518), (43, 40560), (Start: 46 @40611 has 1 MA's), (56, 40725), (58, 40737), (65, 40839), (79, 40926), (80, 40929), (83, 41013), (85, 41031), (95, 41106), (99, 41181), (111, 41289), (115, 41367), (116, 41376), (127, 41436), (132, 41472), (138, 41520), (148, 41607),

Gene: Grand2040\_47 Start: 40091, Stop: 41407, Start Num: 28

Candidate Starts for Grand2040\_47:

(Start: 19 @40052 has 28 MA's), (21, 40061), (Start: 28 @40091 has 131 MA's), (Start: 30 @40100 has 12 MA's), (Start: 33 @40112 has 10 MA's), (Start: 34 @40118 has 65 MA's), (41, 40238), (43, 40280), (Start: 46 @40331 has 1 MA's), (56, 40445), (58, 40457), (65, 40559), (79, 40646), (80, 40649), (83, 40733), (85, 40751), (95, 40826), (99, 40901), (111, 41009), (115, 41087), (116, 41096), (127, 41156), (132, 41192), (138, 41240), (148, 41327),

Gene: Grizzly\_27 Start: 23889, Stop: 25205, Start Num: 29

Candidate Starts for Grizzly\_27:

(Start: 27 @23874 has 10 MA's), (Start: 29 @23889 has 53 MA's), (Start: 34 @23910 has 65 MA's), (41, 24030), (43, 24072), (Start: 46 @24123 has 1 MA's), (58, 24249), (69, 24372), (82, 24522), (108, 24789), (125, 24951), (139, 25038), (150, 25134), (158, 25197),

Gene: Gwilliam\_49 Start: 40404, Stop: 41693, Start Num: 34

Candidate Starts for Gwilliam\_49:

(Start: 19 @40338 has 28 MA's), (21, 40347), (Start: 28 @40377 has 131 MA's), (Start: 30 @40386 has 12 MA's), (Start: 33 @40398 has 10 MA's), (Start: 34 @40404 has 65 MA's), (41, 40524), (43,

40566), (Start: 46 @40617 has 1 MA's), (56, 40731), (58, 40743), (65, 40845), (79, 40932), (80, 40935), (83, 41019), (84, 41022), (85, 41037), (95, 41112), (99, 41187), (111, 41295), (115, 41373), (116, 41382), (127, 41442), (132, 41478), (138, 41526), (148, 41613),

Gene: Gyarad\_0048 Start: 40379, Stop: 41707, Start Num: 28

Candidate Starts for Gyarad\_0048:

(Start: 19 @40340 has 28 MA's), (21, 40349), (Start: 28 @40379 has 131 MA's), (Start: 30 @40388 has 12 MA's), (Start: 33 @40400 has 10 MA's), (41, 40526), (43, 40568), (Start: 46 @40619 has 1 MA's), (52, 40688), (58, 40745), (65, 40859), (79, 40946), (80, 40949), (83, 41033), (84, 41036), (85, 41051), (95, 41126), (99, 41201), (111, 41309), (115, 41387), (116, 41396), (118, 41411), (127, 41456), (132, 41492), (138, 41540), (148, 41627),

Gene: HSavage\_48 Start: 40383, Stop: 41699, Start Num: 28

Candidate Starts for HSavage\_48:

(Start: 19 @40344 has 28 MA's), (21, 40353), (Start: 28 @40383 has 131 MA's), (Start: 30 @40392 has 12 MA's), (Start: 33 @40404 has 10 MA's), (Start: 34 @40410 has 65 MA's), (41, 40530), (43, 40572), (Start: 46 @40623 has 1 MA's), (56, 40737), (58, 40749), (65, 40851), (79, 40938), (80, 40941), (83, 41025), (85, 41043), (95, 41118), (99, 41193), (107, 41256), (111, 41301), (115, 41379), (116, 41388), (127, 41448), (132, 41484), (138, 41532), (148, 41619),

Gene: Haimas\_48 Start: 40404, Stop: 41693, Start Num: 34

Candidate Starts for Haimas\_48:

(Start: 19 @40338 has 28 MA's), (21, 40347), (Start: 28 @40377 has 131 MA's), (Start: 30 @40386 has 12 MA's), (Start: 33 @40398 has 10 MA's), (Start: 34 @40404 has 65 MA's), (41, 40524), (43, 40566), (Start: 46 @40617 has 1 MA's), (56, 40731), (58, 40743), (65, 40845), (79, 40932), (80, 40935), (83, 41019), (84, 41022), (85, 41037), (95, 41112), (99, 41187), (111, 41295), (115, 41373), (116, 41382), (118, 41397), (127, 41442), (132, 41478), (138, 41526), (148, 41613),

Gene: Haleema\_47 Start: 40091, Stop: 41407, Start Num: 28

Candidate Starts for Haleema\_47:

(Start: 19 @40052 has 28 MA's), (21, 40061), (Start: 28 @40091 has 131 MA's), (Start: 30 @40100 has 12 MA's), (Start: 33 @40112 has 10 MA's), (Start: 34 @40118 has 65 MA's), (41, 40238), (43, 40280), (Start: 46 @40331 has 1 MA's), (56, 40445), (58, 40457), (65, 40559), (79, 40646), (80, 40649), (83, 40733), (85, 40751), (95, 40826), (99, 40901), (111, 41009), (115, 41087), (116, 41096), (127, 41156), (132, 41192), (138, 41240), (148, 41327),

Gene: Halo\_27 Start: 23880, Stop: 25196, Start Num: 29

Candidate Starts for Halo\_27:

(Start: 27 @23865 has 10 MA's), (Start: 29 @23880 has 53 MA's), (Start: 34 @23901 has 65 MA's), (41, 24021), (43, 24063), (Start: 46 @24114 has 1 MA's), (58, 24240), (69, 24363), (82, 24513), (108, 24780), (125, 24942), (139, 25029), (150, 25125), (158, 25188),

Gene: Hamish\_48 Start: 40369, Stop: 41685, Start Num: 28

Candidate Starts for Hamish\_48:

(Start: 19 @40330 has 28 MA's), (21, 40339), (Start: 28 @40369 has 131 MA's), (Start: 30 @40378 has 12 MA's), (Start: 33 @40390 has 10 MA's), (Start: 34 @40396 has 65 MA's), (41, 40516), (43, 40558), (Start: 46 @40609 has 1 MA's), (56, 40723), (58, 40735), (65, 40837), (79, 40924), (80, 40927), (83, 41011), (84, 41014), (85, 41029), (95, 41104), (99, 41179), (111, 41287), (115, 41365), (116, 41374), (118, 41389), (127, 41434), (132, 41470), (138, 41518), (148, 41605),

Gene: Hartsy\_48 Start: 40447, Stop: 41736, Start Num: 34

Candidate Starts for Hartsy\_48:

(Start: 19 @40381 has 28 MA's), (21, 40390), (Start: 28 @40420 has 131 MA's), (Start: 30 @40429 has 12 MA's), (Start: 33 @40441 has 10 MA's), (Start: 34 @40447 has 65 MA's), (41, 40567), (43, 40609), (Start: 46 @40660 has 1 MA's), (58, 40786), (65, 40888), (79, 40975), (80, 40978), (83, 41062), (85, 41080), (95, 41155), (99, 41230), (111, 41338), (115, 41416), (116, 41425), (127, 41485), (132, 41521), (138, 41569), (148, 41656),

Gene: Harvey\_48 Start: 40395, Stop: 41723, Start Num: 28

Candidate Starts for Harvey\_48:

(Start: 19 @40356 has 28 MA's), (21, 40365), (Start: 28 @40395 has 131 MA's), (Start: 30 @40404 has 12 MA's), (Start: 33 @40416 has 10 MA's), (41, 40542), (43, 40584), (Start: 46 @40635 has 1 MA's), (52, 40704), (58, 40761), (65, 40875), (79, 40962), (80, 40965), (83, 41049), (84, 41052), (85, 41067), (95, 41142), (99, 41217), (111, 41325), (115, 41403), (116, 41412), (118, 41427), (127, 41472), (132, 41508), (138, 41556), (148, 41643),

Gene: Held\_48 Start: 40081, Stop: 41412, Start Num: 28

Candidate Starts for Held\_48:

(Start: 19 @40042 has 28 MA's), (21, 40051), (Start: 28 @40081 has 131 MA's), (Start: 30 @40090 has 12 MA's), (Start: 33 @40102 has 10 MA's), (41, 40228), (43, 40270), (Start: 46 @40321 has 1 MA's), (56, 40435), (58, 40447), (65, 40561), (66, 40564), (79, 40651), (80, 40654), (83, 40738), (84, 40741), (85, 40756), (95, 40831), (99, 40906), (111, 41014), (115, 41092), (116, 41101), (127, 41161), (132, 41197), (138, 41245), (148, 41332),

Gene: HenryJackson\_47 Start: 40118, Stop: 41407, Start Num: 34

Candidate Starts for HenryJackson\_47:

(Start: 19 @40052 has 28 MA's), (21, 40061), (Start: 28 @40091 has 131 MA's), (Start: 30 @40100 has 12 MA's), (Start: 33 @40112 has 10 MA's), (Start: 34 @40118 has 65 MA's), (41, 40238), (43, 40280), (Start: 46 @40331 has 1 MA's), (56, 40445), (58, 40457), (65, 40559), (79, 40646), (80, 40649), (83, 40733), (85, 40751), (95, 40826), (99, 40901), (111, 41009), (115, 41087), (116, 41096), (127, 41156), (132, 41192), (138, 41240), (148, 41327),

Gene: Hertubise\_48 Start: 40391, Stop: 41707, Start Num: 28

Candidate Starts for Hertubise\_48:

(Start: 19 @40352 has 28 MA's), (21, 40361), (Start: 28 @40391 has 131 MA's), (Start: 30 @40400 has 12 MA's), (Start: 33 @40412 has 10 MA's), (Start: 34 @40418 has 65 MA's), (41, 40538), (43, 40580), (Start: 46 @40631 has 1 MA's), (56, 40745), (58, 40757), (65, 40859), (79, 40946), (80, 40949), (83, 41033), (84, 41036), (85, 41051), (95, 41126), (99, 41201), (111, 41309), (115, 41387), (116, 41396), (127, 41456), (132, 41492), (138, 41540), (148, 41627),

Gene: Hetaeria\_48 Start: 40354, Stop: 41724, Start Num: 19

Candidate Starts for Hetaeria\_48:

(Start: 19 @40354 has 28 MA's), (21, 40363), (Start: 28 @40393 has 131 MA's), (Start: 30 @40402 has 12 MA's), (Start: 33 @40414 has 10 MA's), (41, 40540), (43, 40582), (Start: 46 @40633 has 1 MA's), (52, 40702), (58, 40759), (65, 40873), (66, 40876), (79, 40963), (80, 40966), (83, 41050), (84, 41053), (85, 41068), (95, 41143), (99, 41218), (111, 41326), (115, 41404), (116, 41413), (118, 41428), (127, 41473), (132, 41509), (138, 41557), (148, 41644),

Gene: HighStump\_48 Start: 40218, Stop: 41534, Start Num: 28

Candidate Starts for HighStump\_48:

(Start: 19 @40179 has 28 MA's), (21, 40188), (Start: 28 @40218 has 131 MA's), (Start: 30 @40227 has 12 MA's), (Start: 33 @40239 has 10 MA's), (Start: 34 @40245 has 65 MA's), (41, 40365), (43, 40407), (Start: 46 @40458 has 1 MA's), (56, 40572), (58, 40584), (65, 40686), (79, 40773), (80, 40776), (83, 40860), (85, 40878), (95, 40953), (99, 41028), (111, 41136), (115, 41214), (116, 41223), (127, 41283), (132, 41319), (138, 41367), (148, 41454),

Gene: Hocus\_47 Start: 40080, Stop: 41396, Start Num: 28

Candidate Starts for Hocus\_47:

(Start: 19 @40041 has 28 MA's), (21, 40050), (Start: 28 @40080 has 131 MA's), (Start: 30 @40089 has 12 MA's), (Start: 33 @40101 has 10 MA's), (Start: 34 @40107 has 65 MA's), (41, 40227), (43, 40269), (Start: 46 @40320 has 1 MA's), (56, 40434), (58, 40446), (65, 40548), (79, 40635), (80, 40638), (83, 40722), (85, 40740), (95, 40815), (99, 40890), (111, 40998), (115, 41076), (116, 41085), (127, 41145), (132, 41181), (138, 41229), (148, 41316),

Gene: Hope\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Hope\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Horchata\_48 Start: 40371, Stop: 41699, Start Num: 28

Candidate Starts for Horchata\_48:

(Start: 19 @40332 has 28 MA's), (21, 40341), (Start: 28 @40371 has 131 MA's), (Start: 30 @40380 has 12 MA's), (Start: 33 @40392 has 10 MA's), (Start: 34 @40398 has 65 MA's), (41, 40518), (43, 40560), (Start: 46 @40611 has 1 MA's), (56, 40725), (58, 40737), (65, 40851), (79, 40938), (80, 40941), (83, 41025), (84, 41028), (85, 41043), (95, 41118), (99, 41193), (111, 41301), (115, 41379), (116, 41388), (127, 41448), (132, 41484), (138, 41532), (148, 41619),

Gene: Hotshotbaby7\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Hotshotbaby7\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (117, 24899), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Hydrus\_12 Start: 5629, Stop: 6915, Start Num: 25

Candidate Starts for Hydrus\_12:

(22, 5617), (23, 5620), (24, 5626), (Start: 25 @5629 has 3 MA's), (Start: 29 @5647 has 53 MA's), (Start: 46 @5878 has 1 MA's), (61, 6040), (64, 6091), (70, 6127), (71, 6133), (72, 6136), (90, 6319), (105, 6472), (118, 6649), (128, 6694), (129, 6712), (145, 6835), (146, 6847), (151, 6886),

Gene: ImtiyazSitla\_48 Start: 40093, Stop: 41382, Start Num: 34

Candidate Starts for ImtiyazSitla\_48:

(Start: 19 @40027 has 28 MA's), (21, 40036), (Start: 28 @40066 has 131 MA's), (Start: 30 @40075 has 12 MA's), (Start: 33 @40087 has 10 MA's), (Start: 34 @40093 has 65 MA's), (41, 40213), (43, 40255), (Start: 46 @40306 has 1 MA's), (56, 40420), (58, 40432), (65, 40534), (79, 40621), (80, 40624), (83, 40708), (85, 40726), (95, 40801), (99, 40876), (111, 40984), (115, 41062), (116, 41071), (127, 41131), (132, 41167), (138, 41215), (148, 41302),

Gene: Inchworm\_49 Start: 40465, Stop: 41820, Start Num: 19

Candidate Starts for Inchworm\_49:

(Start: 19 @40465 has 28 MA's), (21, 40474), (Start: 28 @40504 has 131 MA's), (Start: 30 @40513 has 12 MA's), (Start: 33 @40525 has 10 MA's), (Start: 34 @40531 has 65 MA's), (41, 40651), (43, 40693), (Start: 46 @40744 has 1 MA's), (56, 40858), (58, 40870), (65, 40972), (79, 41059), (80, 41062), (83, 41146), (85, 41164), (95, 41239), (99, 41314), (111, 41422), (115, 41500), (116, 41509), (127, 41569), (132, 41605), (138, 41653), (148, 41740),

Gene: Inverness\_48 Start: 40380, Stop: 41708, Start Num: 28

Candidate Starts for Inverness\_48:

(Start: 19 @40341 has 28 MA's), (21, 40350), (Start: 28 @40380 has 131 MA's), (Start: 30 @40389 has 12 MA's), (Start: 33 @40401 has 10 MA's), (41, 40527), (43, 40569), (Start: 46 @40620 has 1 MA's), (52, 40689), (58, 40746), (65, 40860), (79, 40947), (80, 40950), (83, 41034), (84, 41037), (85, 41052), (95, 41127), (99, 41202), (111, 41310), (115, 41388), (116, 41397), (118, 41412), (127, 41457), (132, 41493), (138, 41541), (148, 41628),

Gene: Iridoclysis\_48 Start: 40363, Stop: 41679, Start Num: 28

Candidate Starts for Iridoclysis\_48:

(Start: 19 @40324 has 28 MA's), (21, 40333), (Start: 28 @40363 has 131 MA's), (Start: 30 @40372 has 12 MA's), (Start: 33 @40384 has 10 MA's), (Start: 34 @40390 has 65 MA's), (41, 40510), (43, 40552), (Start: 46 @40603 has 1 MA's), (56, 40717), (58, 40729), (65, 40831), (79, 40918), (80, 40921), (83, 41005), (85, 41023), (95, 41098), (99, 41173), (107, 41236), (111, 41281), (115, 41359), (116, 41368), (127, 41428), (132, 41464), (138, 41512), (148, 41599),

Gene: IsaacEli\_49 Start: 40549, Stop: 41838, Start Num: 34

Candidate Starts for IsaacEli\_49:

(Start: 19 @40483 has 28 MA's), (21, 40492), (Start: 28 @40522 has 131 MA's), (Start: 30 @40531 has 12 MA's), (Start: 33 @40543 has 10 MA's), (Start: 34 @40549 has 65 MA's), (41, 40669), (43, 40711), (Start: 46 @40762 has 1 MA's), (56, 40876), (58, 40888), (65, 40990), (79, 41077), (80, 41080), (83, 41164), (85, 41182), (95, 41257), (99, 41332), (111, 41440), (115, 41518), (116, 41527), (127, 41587), (132, 41623), (138, 41671), (148, 41758),

Gene: JDog\_48 Start: 40127, Stop: 41416, Start Num: 34

Candidate Starts for JDog\_48:

(Start: 19 @40061 has 28 MA's), (21, 40070), (Start: 28 @40100 has 131 MA's), (Start: 30 @40109 has 12 MA's), (Start: 33 @40121 has 10 MA's), (Start: 34 @40127 has 65 MA's), (41, 40247), (43, 40289), (Start: 46 @40340 has 1 MA's), (56, 40454), (58, 40466), (65, 40568), (79, 40655), (80, 40658), (83, 40742), (84, 40745), (85, 40760), (95, 40835), (99, 40910), (111, 41018), (115, 41096), (116, 41105), (118, 41120), (127, 41165), (132, 41201), (138, 41249), (148, 41336),

Gene: JacAttac\_49 Start: 40531, Stop: 41820, Start Num: 34

Candidate Starts for JacAttac\_49:

(Start: 19 @40465 has 28 MA's), (21, 40474), (Start: 28 @40504 has 131 MA's), (Start: 30 @40513 has 12 MA's), (Start: 33 @40525 has 10 MA's), (Start: 34 @40531 has 65 MA's), (41, 40651), (43, 40693), (Start: 46 @40744 has 1 MA's), (56, 40858), (58, 40870), (65, 40972), (79, 41059), (80, 41062), (83, 41146), (85, 41164), (95, 41239), (99, 41314), (111, 41422), (115, 41500), (116, 41509), (127, 41569), (132, 41605), (138, 41653), (148, 41740),

Gene: JakeO\_47 Start: 40099, Stop: 41415, Start Num: 28

Candidate Starts for JakeO\_47:

(Start: 19 @40060 has 28 MA's), (21, 40069), (Start: 28 @40099 has 131 MA's), (Start: 30 @40108 has 12 MA's), (Start: 33 @40120 has 10 MA's), (Start: 34 @40126 has 65 MA's), (41, 40246), (43, 40288), (Start: 46 @40339 has 1 MA's), (56, 40453), (58, 40465), (65, 40567), (79, 40654), (80, 40657), (83, 40741), (85, 40759), (95, 40834), (99, 40909), (107, 40972), (111, 41017), (115, 41095), (116, 41104), (127, 41164), (132, 41200), (138, 41248), (148, 41335),

Gene: Jane\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Jane\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: JangoPhett\_48 Start: 40374, Stop: 41690, Start Num: 28

Candidate Starts for JangoPhett\_48:

(Start: 19 @40335 has 28 MA's), (21, 40344), (Start: 28 @40374 has 131 MA's), (Start: 30 @40383 has 12 MA's), (Start: 33 @40395 has 10 MA's), (Start: 34 @40401 has 65 MA's), (41, 40521), (43, 40563), (Start: 46 @40614 has 1 MA's), (56, 40728), (58, 40740), (65, 40842), (79, 40929), (80, 40932), (83, 41016), (84, 41019), (85, 41034), (95, 41109), (99, 41184), (111, 41292), (115, 41370), (116, 41379), (118, 41394), (127, 41439), (132, 41475), (138, 41523), (148, 41610),

Gene: Jillium\_47 Start: 40093, Stop: 41409, Start Num: 28

Candidate Starts for Jillium\_47:

(Start: 19 @40054 has 28 MA's), (21, 40063), (Start: 28 @40093 has 131 MA's), (Start: 30 @40102 has 12 MA's), (Start: 33 @40114 has 10 MA's), (41, 40240), (43, 40282), (Start: 46 @40333 has 1 MA's), (56, 40447), (58, 40459), (65, 40561), (79, 40648), (80, 40651), (83, 40735), (85, 40753), (95, 40828), (99, 40903), (111, 41011), (115, 41089), (116, 41098), (127, 41158), (132, 41194), (138, 41242), (148, 41329),

Gene: Jiminy\_47 Start: 39934, Stop: 41250, Start Num: 28

Candidate Starts for Jiminy\_47:

(Start: 19 @39895 has 28 MA's), (21, 39904), (Start: 28 @39934 has 131 MA's), (Start: 30 @39943 has 12 MA's), (Start: 33 @39955 has 10 MA's), (Start: 34 @39961 has 65 MA's), (41, 40081), (43, 40123), (Start: 46 @40174 has 1 MA's), (56, 40288), (58, 40300), (65, 40402), (79, 40489), (80, 40492), (83, 40576), (85, 40594), (95, 40669), (99, 40744), (111, 40852), (115, 40930), (116, 40939), (127, 40999), (132, 41035), (138, 41083), (148, 41170),

Gene: Jolene\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Jolene\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (117, 24899), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Jonghyun\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Jonghyun\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (117, 24899), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: JorRay\_27 Start: 23870, Stop: 25201, Start Num: 27

Candidate Starts for JorRay\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Juicebox\_23 Start: 21279, Stop: 22559, Start Num: 29

Candidate Starts for Juicebox\_23:

(11, 20949), (13, 20967), (15, 21021), (20, 21237), (Start: 29 @21279 has 53 MA's), (42, 21432), (53, 21621), (68, 21762), (78, 21837), (81, 21885), (91, 21996), (93, 22014), (101, 22086), (103, 22104), (109, 22164), (111, 22185), (133, 22365), (142, 22428), (153, 22524),

Gene: KLucky39\_48 Start: 40399, Stop: 41706, Start Num: 33

Candidate Starts for KLucky39\_48:

(Start: 19 @40339 has 28 MA's), (21, 40348), (Start: 28 @40378 has 131 MA's), (Start: 30 @40387 has 12 MA's), (Start: 33 @40399 has 10 MA's), (41, 40525), (43, 40567), (Start: 46 @40618 has 1 MA's), (52, 40687), (58, 40744), (65, 40858), (79, 40945), (80, 40948), (83, 41032), (84, 41035), (85, 41050), (95, 41125), (99, 41200), (111, 41308), (115, 41386), (116, 41395), (118, 41410), (127,

41455), (132, 41491), (138, 41539), (148, 41626),

Gene: Kahve\_47 Start: 40115, Stop: 41404, Start Num: 34

Candidate Starts for Kahve\_47:

(Start: 19 @40049 has 28 MA's), (21, 40058), (Start: 28 @40088 has 131 MA's), (Start: 30 @40097 has 12 MA's), (Start: 33 @40109 has 10 MA's), (Start: 34 @40115 has 65 MA's), (41, 40235), (43, 40277), (Start: 46 @40328 has 1 MA's), (56, 40442), (58, 40454), (65, 40556), (79, 40643), (80, 40646), (83, 40730), (85, 40748), (95, 40823), (99, 40898), (111, 41006), (115, 41084), (116, 41093), (127, 41153), (132, 41189), (138, 41237), (148, 41324),

Gene: Kailash\_48 Start: 40435, Stop: 41766, Start Num: 28

Candidate Starts for Kailash\_48:

(Start: 19 @40396 has 28 MA's), (21, 40405), (Start: 28 @40435 has 131 MA's), (Start: 30 @40444 has 12 MA's), (Start: 33 @40456 has 10 MA's), (Start: 34 @40462 has 65 MA's), (41, 40582), (43, 40624), (Start: 46 @40675 has 1 MA's), (58, 40801), (65, 40915), (66, 40918), (79, 41005), (80, 41008), (83, 41092), (84, 41095), (85, 41110), (95, 41185), (99, 41260), (111, 41368), (115, 41446), (116, 41455), (127, 41515), (132, 41551), (138, 41599), (148, 41686),

Gene: Kareem\_27 Start: 23870, Stop: 25201, Start Num: 27

Candidate Starts for Kareem\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Kasen3\_27 Start: 23886, Stop: 25202, Start Num: 29

Candidate Starts for Kasen3\_27:

(Start: 27 @23871 has 10 MA's), (Start: 29 @23886 has 53 MA's), (Start: 34 @23907 has 65 MA's), (41, 24027), (43, 24069), (Start: 46 @24120 has 1 MA's), (58, 24246), (69, 24369), (82, 24519), (108, 24786), (125, 24948), (139, 25035), (150, 25131), (158, 25194),

Gene: Katniss\_49 Start: 40558, Stop: 41847, Start Num: 34

Candidate Starts for Katniss\_49:

(Start: 19 @40492 has 28 MA's), (21, 40501), (Start: 28 @40531 has 131 MA's), (Start: 30 @40540 has 12 MA's), (Start: 33 @40552 has 10 MA's), (Start: 34 @40558 has 65 MA's), (41, 40678), (43, 40720), (Start: 46 @40771 has 1 MA's), (56, 40885), (58, 40897), (65, 40999), (79, 41086), (80, 41089), (83, 41173), (85, 41191), (95, 41266), (99, 41341), (111, 41449), (115, 41527), (116, 41536), (127, 41596), (132, 41632), (138, 41680), (148, 41767),

Gene: Keitherie\_48 Start: 40443, Stop: 41750, Start Num: 30

Candidate Starts for Keitherie\_48:

(Start: 19 @40395 has 28 MA's), (21, 40404), (Start: 28 @40434 has 131 MA's), (Start: 30 @40443 has 12 MA's), (Start: 33 @40455 has 10 MA's), (Start: 34 @40461 has 65 MA's), (41, 40581), (43, 40623), (Start: 46 @40674 has 1 MA's), (56, 40788), (58, 40800), (65, 40902), (79, 40989), (80, 40992), (83, 41076), (85, 41094), (95, 41169), (99, 41244), (111, 41352), (115, 41430), (116, 41439), (127, 41499), (132, 41535), (138, 41583), (148, 41670),

Gene: Kikipoo\_49 Start: 40549, Stop: 41838, Start Num: 34

Candidate Starts for Kikipoo\_49:

(Start: 19 @40483 has 28 MA's), (21, 40492), (Start: 28 @40522 has 131 MA's), (Start: 30 @40531 has 12 MA's), (Start: 33 @40543 has 10 MA's), (Start: 34 @40549 has 65 MA's), (41, 40669), (43, 40711), (Start: 46 @40762 has 1 MA's), (56, 40876), (58, 40888), (65, 40990), (79, 41077), (80, 41080), (83, 41164), (85, 41182), (95, 41257), (99, 41332), (111, 41440), (115, 41518), (116, 41527), (127, 41587), (132, 41623), (138, 41671), (148, 41758),

Gene: Kimbrough\_48 Start: 40095, Stop: 41411, Start Num: 28

Candidate Starts for Kimbrough\_48:

(Start: 19 @40056 has 28 MA's), (21, 40065), (Start: 28 @40095 has 131 MA's), (Start: 30 @40104 has 12 MA's), (Start: 33 @40116 has 10 MA's), (Start: 34 @40122 has 65 MA's), (41, 40242), (43, 40284), (Start: 46 @40335 has 1 MA's), (56, 40449), (58, 40461), (65, 40563), (79, 40650), (80, 40653), (83, 40737), (85, 40755), (95, 40830), (99, 40905), (111, 41013), (115, 41091), (116, 41100), (127, 41160), (132, 41196), (138, 41244), (148, 41331),

Gene: KingTut\_39 Start: 35779, Stop: 37074, Start Num: 33

Candidate Starts for KingTut\_39:

(Start: 19 @35719 has 28 MA's), (21, 35728), (Start: 28 @35758 has 131 MA's), (Start: 30 @35767 has 12 MA's), (Start: 33 @35779 has 10 MA's), (41, 35905), (43, 35947), (Start: 46 @35998 has 1 MA's), (56, 36112), (58, 36124), (65, 36226), (79, 36313), (80, 36316), (83, 36400), (85, 36418), (95, 36493), (99, 36568), (111, 36676), (115, 36754), (116, 36763), (127, 36823), (132, 36859), (138, 36907), (148, 36994),

Gene: KingVeVeVe\_48 Start: 40393, Stop: 41682, Start Num: 34

Candidate Starts for KingVeVeVe\_48:

(Start: 19 @40327 has 28 MA's), (21, 40336), (Start: 28 @40366 has 131 MA's), (Start: 30 @40375 has 12 MA's), (Start: 33 @40387 has 10 MA's), (Start: 34 @40393 has 65 MA's), (41, 40513), (43, 40555), (Start: 46 @40606 has 1 MA's), (56, 40720), (58, 40732), (65, 40834), (79, 40921), (80, 40924), (83, 41008), (85, 41026), (95, 41101), (99, 41176), (107, 41239), (111, 41284), (115, 41362), (116, 41371), (127, 41431), (132, 41467), (138, 41515), (148, 41602),

Gene: KlimbOn\_48 Start: 40372, Stop: 41700, Start Num: 28

Candidate Starts for KlimbOn\_48:

(Start: 19 @40333 has 28 MA's), (21, 40342), (Start: 28 @40372 has 131 MA's), (Start: 30 @40381 has 12 MA's), (Start: 33 @40393 has 10 MA's), (41, 40519), (43, 40561), (Start: 46 @40612 has 1 MA's), (52, 40681), (58, 40738), (65, 40852), (79, 40939), (80, 40942), (83, 41026), (84, 41029), (85, 41044), (95, 41119), (99, 41194), (111, 41302), (115, 41380), (116, 41389), (118, 41404), (127, 41449), (132, 41485), (138, 41533), (148, 41620),

Gene: Kloppinator\_49 Start: 40758, Stop: 42113, Start Num: 19

Candidate Starts for Kloppinator\_49:

(Start: 19 @40758 has 28 MA's), (21, 40767), (Start: 28 @40797 has 131 MA's), (Start: 30 @40806 has 12 MA's), (Start: 33 @40818 has 10 MA's), (Start: 34 @40824 has 65 MA's), (41, 40944), (43, 40986), (Start: 46 @41037 has 1 MA's), (56, 41151), (58, 41163), (65, 41265), (79, 41352), (80, 41355), (83, 41439), (85, 41457), (95, 41532), (99, 41607), (111, 41715), (115, 41793), (116, 41802), (127, 41862), (132, 41898), (138, 41946), (148, 42033),

Gene: Kwadwo\_47 Start: 40070, Stop: 41386, Start Num: 28

Candidate Starts for Kwadwo\_47:

(Start: 19 @40031 has 28 MA's), (21, 40040), (Start: 28 @40070 has 131 MA's), (Start: 30 @40079 has 12 MA's), (Start: 33 @40091 has 10 MA's), (Start: 34 @40097 has 65 MA's), (41, 40217), (43, 40259), (Start: 46 @40310 has 1 MA's), (56, 40424), (58, 40436), (65, 40538), (79, 40625), (80, 40628), (83, 40712), (85, 40730), (95, 40805), (99, 40880), (111, 40988), (115, 41066), (116, 41075), (127, 41135), (132, 41171), (138, 41219), (148, 41306),

Gene: Kwksand96\_47 Start: 39945, Stop: 41261, Start Num: 28

Candidate Starts for Kwksand96\_47:

(Start: 19 @39906 has 28 MA's), (21, 39915), (Start: 28 @39945 has 131 MA's), (Start: 30 @39954 has 12 MA's), (Start: 33 @39966 has 10 MA's), (Start: 34 @39972 has 65 MA's), (41, 40092), (43,



40134), (Start: 46 @40185 has 1 MA's), (56, 40299), (58, 40311), (65, 40413), (79, 40500), (80, 40503), (83, 40587), (85, 40605), (95, 40680), (99, 40755), (111, 40863), (115, 40941), (116, 40950), (127, 41010), (132, 41046), (138, 41094), (148, 41181),

Gene: Labeouficaum\_47 Start: 39967, Stop: 41256, Start Num: 34

Candidate Starts for Labeouficaum\_47:

(Start: 19 @39901 has 28 MA's), (21, 39910), (Start: 28 @39940 has 131 MA's), (Start: 30 @39949 has 12 MA's), (Start: 33 @39961 has 10 MA's), (Start: 34 @39967 has 65 MA's), (41, 40087), (43, 40129), (Start: 46 @40180 has 1 MA's), (56, 40294), (58, 40306), (65, 40408), (79, 40495), (80, 40498), (83, 40582), (85, 40600), (95, 40675), (99, 40750), (111, 40858), (115, 40936), (116, 40945), (127, 41005), (132, 41041), (138, 41089), (148, 41176),

Gene: LasagnaCat\_49 Start: 40543, Stop: 41832, Start Num: 34

Candidate Starts for LasagnaCat\_49:

(Start: 19 @40477 has 28 MA's), (21, 40486), (Start: 28 @40516 has 131 MA's), (Start: 30 @40525 has 12 MA's), (Start: 33 @40537 has 10 MA's), (Start: 34 @40543 has 65 MA's), (41, 40663), (43, 40705), (Start: 46 @40756 has 1 MA's), (56, 40870), (58, 40882), (65, 40984), (79, 41071), (80, 41074), (83, 41158), (85, 41176), (95, 41251), (99, 41326), (111, 41434), (115, 41512), (116, 41521), (127, 41581), (132, 41617), (138, 41665), (148, 41752),

Gene: Lasso\_48 Start: 40372, Stop: 41661, Start Num: 34

Candidate Starts for Lasso\_48:

(Start: 19 @40306 has 28 MA's), (21, 40315), (Start: 28 @40345 has 131 MA's), (Start: 30 @40354 has 12 MA's), (Start: 33 @40366 has 10 MA's), (Start: 34 @40372 has 65 MA's), (41, 40492), (43, 40534), (Start: 46 @40585 has 1 MA's), (56, 40699), (58, 40711), (65, 40813), (79, 40900), (80, 40903), (83, 40987), (85, 41005), (95, 41080), (99, 41155), (111, 41263), (115, 41341), (116, 41350), (127, 41410), (132, 41446), (138, 41494), (148, 41581),

Gene: Lederberg\_21 Start: 19839, Stop: 21065, Start Num: 29

Candidate Starts for Lederberg\_21:

(Start: 29 @19839 has 53 MA's), (32, 19848), (Start: 34 @19854 has 65 MA's), (48, 20085), (50, 20103), (62, 20232), (64, 20280), (87, 20478), (94, 20544), (98, 20568), (100, 20601), (113, 20778), (125, 20841),

Gene: LeeLot\_48 Start: 40382, Stop: 41713, Start Num: 28

Candidate Starts for LeeLot\_48:

(Start: 19 @40343 has 28 MA's), (21, 40352), (Start: 28 @40382 has 131 MA's), (Start: 30 @40391 has 12 MA's), (Start: 33 @40403 has 10 MA's), (41, 40529), (43, 40571), (Start: 46 @40622 has 1 MA's), (52, 40691), (58, 40748), (65, 40862), (66, 40865), (79, 40952), (80, 40955), (83, 41039), (84, 41042), (85, 41057), (95, 41132), (99, 41207), (111, 41315), (115, 41393), (116, 41402), (127, 41462), (132, 41498), (138, 41546), (148, 41633),

Gene: Lego3393\_47 Start: 40486, Stop: 41841, Start Num: 19

Candidate Starts for Lego3393\_47:

(Start: 19 @40486 has 28 MA's), (21, 40495), (Start: 28 @40525 has 131 MA's), (Start: 30 @40534 has 12 MA's), (Start: 33 @40546 has 10 MA's), (Start: 34 @40552 has 65 MA's), (41, 40672), (43, 40714), (Start: 46 @40765 has 1 MA's), (56, 40879), (58, 40891), (65, 40993), (79, 41080), (80, 41083), (83, 41167), (85, 41185), (95, 41260), (99, 41335), (111, 41443), (115, 41521), (116, 41530), (127, 41590), (132, 41626), (138, 41674), (148, 41761),

Gene: Legolas\_48 Start: 40124, Stop: 41431, Start Num: 30

Candidate Starts for Legolas\_48:

(Start: 19 @40076 has 28 MA's), (21, 40085), (Start: 28 @40115 has 131 MA's), (Start: 30 @40124 has 12 MA's), (Start: 33 @40136 has 10 MA's), (Start: 34 @40142 has 65 MA's), (41, 40262), (43, 40304), (Start: 46 @40355 has 1 MA's), (56, 40469), (58, 40481), (65, 40583), (79, 40670), (80, 40673), (83, 40757), (85, 40775), (95, 40850), (99, 40925), (111, 41033), (115, 41111), (116, 41120), (127, 41180), (132, 41216), (138, 41264), (148, 41351),

Gene: LeiMonet\_49 Start: 40104, Stop: 41393, Start Num: 34

Candidate Starts for LeiMonet\_49:

(Start: 19 @40038 has 28 MA's), (21, 40047), (Start: 28 @40077 has 131 MA's), (Start: 30 @40086 has 12 MA's), (Start: 33 @40098 has 10 MA's), (Start: 34 @40104 has 65 MA's), (41, 40224), (43, 40266), (Start: 46 @40317 has 1 MA's), (56, 40431), (58, 40443), (65, 40545), (79, 40632), (80, 40635), (83, 40719), (85, 40737), (95, 40812), (99, 40887), (111, 40995), (115, 41073), (116, 41082), (127, 41142), (132, 41178), (138, 41226), (148, 41313),

Gene: LemonSlice\_48 Start: 40082, Stop: 41398, Start Num: 28

Candidate Starts for LemonSlice\_48:

(Start: 19 @40043 has 28 MA's), (21, 40052), (Start: 28 @40082 has 131 MA's), (Start: 30 @40091 has 12 MA's), (Start: 33 @40103 has 10 MA's), (41, 40229), (43, 40271), (Start: 46 @40322 has 1 MA's), (56, 40436), (58, 40448), (65, 40550), (79, 40637), (80, 40640), (83, 40724), (85, 40742), (95, 40817), (99, 40892), (111, 41000), (115, 41078), (116, 41087), (127, 41147), (132, 41183), (138, 41231), (148, 41318),

Gene: Liefie\_27 Start: 23884, Stop: 25200, Start Num: 29

Candidate Starts for Liefie\_27:

(Start: 27 @23869 has 10 MA's), (Start: 29 @23884 has 53 MA's), (Start: 34 @23905 has 65 MA's), (41, 24025), (43, 24067), (Start: 46 @24118 has 1 MA's), (58, 24244), (69, 24367), (82, 24517), (108, 24784), (125, 24946), (139, 25033), (150, 25129), (158, 25192),

Gene: Longacauda\_47 Start: 40105, Stop: 41394, Start Num: 34

Candidate Starts for Longacauda\_47:

(Start: 19 @40039 has 28 MA's), (21, 40048), (Start: 28 @40078 has 131 MA's), (Start: 30 @40087 has 12 MA's), (Start: 33 @40099 has 10 MA's), (Start: 34 @40105 has 65 MA's), (41, 40225), (43, 40267), (Start: 46 @40318 has 1 MA's), (56, 40432), (58, 40444), (65, 40546), (79, 40633), (80, 40636), (83, 40720), (85, 40738), (95, 40813), (99, 40888), (111, 40996), (115, 41074), (116, 41083), (127, 41143), (132, 41179), (138, 41227), (148, 41314),

Gene: Lopsy\_47 Start: 39931, Stop: 41259, Start Num: 28

Candidate Starts for Lopsy\_47:

(Start: 19 @39892 has 28 MA's), (21, 39901), (Start: 28 @39931 has 131 MA's), (Start: 30 @39940 has 12 MA's), (Start: 33 @39952 has 10 MA's), (41, 40078), (43, 40120), (Start: 46 @40171 has 1 MA's), (52, 40240), (58, 40297), (65, 40411), (79, 40498), (80, 40501), (83, 40585), (84, 40588), (85, 40603), (95, 40678), (99, 40753), (111, 40861), (115, 40939), (116, 40948), (118, 40963), (127, 41008), (132, 41044), (138, 41092), (148, 41179),

Gene: LostAndPhound\_47 Start: 40085, Stop: 41413, Start Num: 28

Candidate Starts for LostAndPhound\_47:

(Start: 19 @40046 has 28 MA's), (21, 40055), (Start: 28 @40085 has 131 MA's), (Start: 30 @40094 has 12 MA's), (Start: 33 @40106 has 10 MA's), (41, 40232), (43, 40274), (Start: 46 @40325 has 1 MA's), (56, 40439), (58, 40451), (65, 40565), (79, 40652), (80, 40655), (83, 40739), (85, 40757), (95, 40832), (99, 40907), (111, 41015), (115, 41093), (116, 41102), (127, 41162), (132, 41198), (138, 41246), (148, 41333),

Gene: LouisV14\_27 Start: 23870, Stop: 25201, Start Num: 27

Candidate Starts for LouisV14\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Lucky10\_20 Start: 17297, Stop: 18589, Start Num: 27

Candidate Starts for Lucky10\_20:

(18, 17261), (Start: 27 @17297 has 10 MA's), (Start: 29 @17312 has 53 MA's), (39, 17435), (56, 17678), (59, 17702), (63, 17753), (65, 17792), (82, 17942), (83, 17957), (89, 17987), (91, 18017), (95, 18050), (104, 18152), (106, 18170), (108, 18209), (111, 18227), (120, 18353), (122, 18362), (130, 18401), (135, 18428),

Gene: LuckyMarjie\_47 Start: 40085, Stop: 41401, Start Num: 28

Candidate Starts for LuckyMarjie\_47:

(Start: 19 @40046 has 28 MA's), (21, 40055), (Start: 28 @40085 has 131 MA's), (Start: 30 @40094 has 12 MA's), (Start: 33 @40106 has 10 MA's), (Start: 34 @40112 has 65 MA's), (41, 40232), (43, 40274), (Start: 46 @40325 has 1 MA's), (56, 40439), (58, 40451), (65, 40553), (79, 40640), (80, 40643), (83, 40727), (85, 40745), (95, 40820), (99, 40895), (111, 41003), (115, 41081), (116, 41090), (127, 41150), (132, 41186), (138, 41234), (148, 41321),

Gene: Lulumae\_47 Start: 40097, Stop: 41386, Start Num: 34

Candidate Starts for Lulumae\_47:

(Start: 19 @40031 has 28 MA's), (21, 40040), (Start: 28 @40070 has 131 MA's), (Start: 30 @40079 has 12 MA's), (Start: 33 @40091 has 10 MA's), (Start: 34 @40097 has 65 MA's), (41, 40217), (43, 40259), (Start: 46 @40310 has 1 MA's), (56, 40424), (58, 40436), (65, 40538), (79, 40625), (80, 40628), (83, 40712), (85, 40730), (95, 40805), (99, 40880), (111, 40988), (115, 41066), (116, 41075), (127, 41135), (132, 41171), (138, 41219), (148, 41306),

Gene: Lulwa\_48 Start: 40324, Stop: 41679, Start Num: 19

Candidate Starts for Lulwa\_48:

(Start: 19 @40324 has 28 MA's), (21, 40333), (Start: 28 @40363 has 131 MA's), (Start: 30 @40372 has 12 MA's), (Start: 33 @40384 has 10 MA's), (Start: 34 @40390 has 65 MA's), (41, 40510), (43, 40552), (Start: 46 @40603 has 1 MA's), (56, 40717), (58, 40729), (65, 40831), (79, 40918), (80, 40921), (83, 41005), (85, 41023), (95, 41098), (99, 41173), (111, 41281), (115, 41359), (116, 41368), (127, 41428), (132, 41464), (138, 41512), (148, 41599),

Gene: Lumine\_47 Start: 40093, Stop: 41382, Start Num: 34

Candidate Starts for Lumine\_47:

(Start: 19 @40027 has 28 MA's), (21, 40036), (Start: 28 @40066 has 131 MA's), (Start: 30 @40075 has 12 MA's), (Start: 33 @40087 has 10 MA's), (Start: 34 @40093 has 65 MA's), (41, 40213), (43, 40255), (Start: 46 @40306 has 1 MA's), (56, 40420), (58, 40432), (65, 40534), (79, 40621), (80, 40624), (83, 40708), (85, 40726), (95, 40801), (99, 40876), (111, 40984), (115, 41062), (116, 41071), (127, 41131), (132, 41167), (138, 41215), (148, 41302),

Gene: MRabcd\_47 Start: 40076, Stop: 41392, Start Num: 28

Candidate Starts for MRabcd\_47:

(Start: 19 @40037 has 28 MA's), (21, 40046), (Start: 28 @40076 has 131 MA's), (Start: 30 @40085 has 12 MA's), (Start: 33 @40097 has 10 MA's), (Start: 34 @40103 has 65 MA's), (41, 40223), (43, 40265), (Start: 46 @40316 has 1 MA's), (56, 40430), (58, 40442), (65, 40544), (79, 40631), (80, 40634), (83, 40718), (85, 40736), (95, 40811), (99, 40886), (107, 40949), (111, 40994), (115, 41072), (116, 41081), (127, 41141), (132, 41177), (138, 41225), (148, 41312),

Gene: Mag7\_47 Start: 40012, Stop: 41316, Start Num: 34

Candidate Starts for Mag7\_47:

(Start: 19 @39946 has 28 MA's), (21, 39955), (Start: 28 @39985 has 131 MA's), (Start: 30 @39994 has 12 MA's), (Start: 33 @40006 has 10 MA's), (Start: 34 @40012 has 65 MA's), (41, 40132), (43, 40174), (Start: 46 @40225 has 1 MA's), (58, 40351), (65, 40465), (66, 40468), (79, 40555), (80, 40558), (83, 40642), (84, 40645), (85, 40660), (95, 40735), (99, 40810), (111, 40918), (115, 40996), (116, 41005), (127, 41065), (132, 41101), (138, 41149), (148, 41236),

Gene: Magic8\_48 Start: 40447, Stop: 41751, Start Num: 34

Candidate Starts for Magic8\_48:

(Start: 19 @40381 has 28 MA's), (21, 40390), (Start: 28 @40420 has 131 MA's), (Start: 30 @40429 has 12 MA's), (Start: 33 @40441 has 10 MA's), (Start: 34 @40447 has 65 MA's), (41, 40567), (43, 40609), (Start: 46 @40660 has 1 MA's), (58, 40786), (65, 40900), (66, 40903), (79, 40990), (80, 40993), (83, 41077), (84, 41080), (85, 41095), (95, 41170), (99, 41245), (111, 41353), (115, 41431), (116, 41440), (127, 41500), (132, 41536), (138, 41584), (148, 41671),

Gene: Mana\_47 Start: 40085, Stop: 41401, Start Num: 28

Candidate Starts for Mana\_47:

(Start: 19 @40046 has 28 MA's), (21, 40055), (Start: 28 @40085 has 131 MA's), (Start: 30 @40094 has 12 MA's), (Start: 33 @40106 has 10 MA's), (Start: 34 @40112 has 65 MA's), (41, 40232), (43, 40274), (Start: 46 @40325 has 1 MA's), (56, 40439), (58, 40451), (65, 40553), (79, 40640), (80, 40643), (83, 40727), (85, 40745), (95, 40820), (99, 40895), (111, 41003), (115, 41081), (116, 41090), (127, 41150), (132, 41186), (138, 41234), (148, 41321),

Gene: Manad\_48 Start: 40333, Stop: 41661, Start Num: 28

Candidate Starts for Manad\_48:

(Start: 19 @40294 has 28 MA's), (21, 40303), (Start: 28 @40333 has 131 MA's), (Start: 30 @40342 has 12 MA's), (Start: 33 @40354 has 10 MA's), (41, 40480), (43, 40522), (Start: 46 @40573 has 1 MA's), (52, 40642), (58, 40699), (65, 40813), (79, 40900), (80, 40903), (83, 40987), (84, 40990), (85, 41005), (95, 41080), (99, 41155), (111, 41263), (115, 41341), (116, 41350), (118, 41365), (127, 41410), (132, 41446), (138, 41494), (148, 41581),

Gene: Marmie\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Marmie\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Maru\_47 Start: 40028, Stop: 41344, Start Num: 28

Candidate Starts for Maru\_47:

(Start: 19 @39989 has 28 MA's), (21, 39998), (Start: 28 @40028 has 131 MA's), (Start: 30 @40037 has 12 MA's), (Start: 33 @40049 has 10 MA's), (Start: 34 @40055 has 65 MA's), (41, 40175), (43, 40217), (Start: 46 @40268 has 1 MA's), (56, 40382), (58, 40394), (65, 40496), (79, 40583), (80, 40586), (83, 40670), (85, 40688), (95, 40763), (99, 40838), (111, 40946), (115, 41024), (116, 41033), (127, 41093), (132, 41129), (138, 41177), (148, 41264),

Gene: Maselop\_50 Start: 35727, Stop: 37070, Start Num: 31

Candidate Starts for Maselop\_50:

(Start: 31 @35727 has 4 MA's), (43, 35925), (45, 35955), (Start: 46 @35967 has 1 MA's), (51, 36006), (56, 36078), (64, 36156), (74, 36198), (75, 36207), (83, 36330), (84, 36333), (89, 36363), (96, 36432), (100, 36480), (114, 36663), (119, 36696), (123, 36726), (126, 36738), (140, 36846), (144, 36891), (157, 36996),

Gene: Maskar\_48 Start: 40093, Stop: 41382, Start Num: 34

Candidate Starts for Maskar\_48:

(Start: 19 @40027 has 28 MA's), (21, 40036), (Start: 28 @40066 has 131 MA's), (Start: 30 @40075 has 12 MA's), (Start: 33 @40087 has 10 MA's), (Start: 34 @40093 has 65 MA's), (41, 40213), (43, 40255), (Start: 46 @40306 has 1 MA's), (56, 40420), (58, 40432), (65, 40534), (79, 40621), (80, 40624), (83, 40708), (85, 40726), (95, 40801), (99, 40876), (111, 40984), (115, 41062), (116, 41071), (127, 41131), (132, 41167), (138, 41215), (148, 41302),

Gene: Matalotodo\_48 Start: 40380, Stop: 41696, Start Num: 28

Candidate Starts for Matalotodo\_48:

(Start: 19 @40341 has 28 MA's), (21, 40350), (Start: 28 @40380 has 131 MA's), (Start: 30 @40389 has 12 MA's), (Start: 33 @40401 has 10 MA's), (41, 40527), (43, 40569), (Start: 46 @40620 has 1 MA's), (56, 40734), (58, 40746), (65, 40848), (79, 40935), (80, 40938), (83, 41022), (85, 41040), (95, 41115), (99, 41190), (111, 41298), (115, 41376), (116, 41385), (127, 41445), (132, 41481), (138, 41529), (148, 41616),

Gene: Mbo4\_19 Start: 17568, Stop: 18866, Start Num: 29

Candidate Starts for Mbo4\_19:

(Start: 27 @17553 has 10 MA's), (Start: 29 @17568 has 53 MA's), (Start: 33 @17583 has 10 MA's), (37, 17646), (Start: 46 @17814 has 1 MA's), (48, 17826), (50, 17844), (56, 17925), (58, 17937), (69, 18045), (73, 18072), (84, 18222), (107, 18429), (109, 18450), (114, 18552), (124, 18600), (143, 18711), (149, 18774),

Gene: Mcshane\_47 Start: 40077, Stop: 41393, Start Num: 28

Candidate Starts for Mcshane\_47:

(Start: 19 @40038 has 28 MA's), (21, 40047), (Start: 28 @40077 has 131 MA's), (Start: 30 @40086 has 12 MA's), (Start: 33 @40098 has 10 MA's), (Start: 34 @40104 has 65 MA's), (41, 40224), (43, 40266), (Start: 46 @40317 has 1 MA's), (56, 40431), (58, 40443), (65, 40545), (79, 40632), (80, 40635), (83, 40719), (85, 40737), (95, 40812), (99, 40887), (111, 40995), (115, 41073), (116, 41082), (127, 41142), (132, 41178), (138, 41226), (148, 41313),

Gene: Mecca\_47 Start: 40083, Stop: 41399, Start Num: 28

Candidate Starts for Mecca\_47:

(Start: 19 @40044 has 28 MA's), (21, 40053), (Start: 28 @40083 has 131 MA's), (Start: 30 @40092 has 12 MA's), (Start: 33 @40104 has 10 MA's), (Start: 34 @40110 has 65 MA's), (41, 40230), (43, 40272), (Start: 46 @40323 has 1 MA's), (56, 40437), (58, 40449), (65, 40551), (79, 40638), (80, 40641), (83, 40725), (85, 40743), (95, 40818), (99, 40893), (111, 41001), (115, 41079), (116, 41088), (127, 41148), (132, 41184), (138, 41232), (148, 41319),

Gene: Megamind20\_48 Start: 40114, Stop: 41421, Start Num: 30

Candidate Starts for Megamind20\_48:

(Start: 19 @40066 has 28 MA's), (21, 40075), (Start: 28 @40105 has 131 MA's), (Start: 30 @40114 has 12 MA's), (Start: 33 @40126 has 10 MA's), (41, 40252), (43, 40294), (Start: 46 @40345 has 1 MA's), (56, 40459), (58, 40471), (65, 40573), (79, 40660), (80, 40663), (83, 40747), (85, 40765), (95, 40840), (99, 40915), (111, 41023), (115, 41101), (116, 41110), (127, 41170), (132, 41206), (138, 41254), (148, 41341),

Gene: Megatron\_49 Start: 40513, Stop: 41829, Start Num: 28

Candidate Starts for Megatron\_49:

(Start: 19 @40474 has 28 MA's), (21, 40483), (Start: 28 @40513 has 131 MA's), (Start: 30 @40522 has 12 MA's), (Start: 33 @40534 has 10 MA's), (Start: 34 @40540 has 65 MA's), (41, 40660), (43, 40702), (Start: 46 @40753 has 1 MA's), (56, 40867), (58, 40879), (65, 40981), (79, 41068), (80, 41071), (83, 41155), (85, 41173), (95, 41248), (99, 41323), (111, 41431), (115, 41509), (116, 41518), (127, 41578), (132, 41614), (138, 41662), (148, 41749),

Gene: Melc17\_48 Start: 40384, Stop: 41691, Start Num: 30

Candidate Starts for Melc17\_48:

(Start: 19 @40336 has 28 MA's), (21, 40345), (Start: 28 @40375 has 131 MA's), (Start: 30 @40384 has 12 MA's), (Start: 33 @40396 has 10 MA's), (Start: 34 @40402 has 65 MA's), (41, 40522), (43, 40564), (Start: 46 @40615 has 1 MA's), (56, 40729), (58, 40741), (65, 40843), (79, 40930), (80, 40933), (83, 41017), (84, 41020), (85, 41035), (95, 41110), (99, 41185), (111, 41293), (115, 41371), (116, 41380), (118, 41395), (127, 41440), (132, 41476), (138, 41524), (148, 41611),

Gene: MelsMeow\_48 Start: 40143, Stop: 41432, Start Num: 34

Candidate Starts for MelsMeow\_48:

(Start: 19 @40077 has 28 MA's), (21, 40086), (Start: 28 @40116 has 131 MA's), (Start: 30 @40125 has 12 MA's), (Start: 33 @40137 has 10 MA's), (Start: 34 @40143 has 65 MA's), (41, 40263), (43, 40305), (Start: 46 @40356 has 1 MA's), (56, 40470), (58, 40482), (65, 40584), (79, 40671), (80, 40674), (83, 40758), (85, 40776), (95, 40851), (99, 40926), (107, 40989), (111, 41034), (115, 41112), (116, 41121), (127, 41181), (132, 41217), (138, 41265), (148, 41352),

Gene: Mercurio\_29 Start: 26072, Stop: 27397, Start Num: 29

Candidate Starts for Mercurio\_29:

(Start: 29 @26072 has 53 MA's), (Start: 34 @26093 has 65 MA's), (36, 26147), (41, 26213), (43, 26255), (Start: 46 @26306 has 1 MA's), (50, 26348), (54, 26408), (69, 26567), (86, 26753), (102, 26921), (125, 27149), (131, 27182), (136, 27224), (152, 27341), (154, 27356), (156, 27380), (157, 27386),

Gene: Mesh1\_48 Start: 40392, Stop: 41708, Start Num: 28

Candidate Starts for Mesh1\_48:

(Start: 19 @40353 has 28 MA's), (21, 40362), (Start: 28 @40392 has 131 MA's), (Start: 30 @40401 has 12 MA's), (Start: 33 @40413 has 10 MA's), (41, 40539), (43, 40581), (Start: 46 @40632 has 1 MA's), (56, 40746), (58, 40758), (65, 40860), (79, 40947), (80, 40950), (83, 41034), (85, 41052), (95, 41127), (99, 41202), (111, 41310), (115, 41388), (116, 41397), (127, 41457), (132, 41493), (138, 41541), (148, 41628),

Gene: MichaelPhcott\_47 Start: 39991, Stop: 41313, Start Num: 30

Candidate Starts for MichaelPhcott\_47:

(Start: 19 @39943 has 28 MA's), (21, 39952), (Start: 28 @39982 has 131 MA's), (Start: 30 @39991 has 12 MA's), (Start: 33 @40003 has 10 MA's), (Start: 34 @40009 has 65 MA's), (41, 40129), (43, 40171), (Start: 46 @40222 has 1 MA's), (58, 40348), (65, 40462), (66, 40465), (79, 40552), (80, 40555), (83, 40639), (84, 40642), (85, 40657), (95, 40732), (99, 40807), (111, 40915), (115, 40993), (116, 41002), (127, 41062), (132, 41098), (138, 41146), (148, 41233),

Gene: Mikota\_48 Start: 40363, Stop: 41679, Start Num: 28

Candidate Starts for Mikota\_48:

(Start: 19 @40324 has 28 MA's), (21, 40333), (Start: 28 @40363 has 131 MA's), (Start: 30 @40372 has 12 MA's), (Start: 33 @40384 has 10 MA's), (Start: 34 @40390 has 65 MA's), (41, 40510), (43, 40552), (Start: 46 @40603 has 1 MA's), (56, 40717), (58, 40729), (65, 40831), (79, 40918), (80, 40921), (83, 41005), (85, 41023), (95, 41098), (99, 41173), (111, 41281), (115, 41359), (116, 41368), (127, 41428), (132, 41464), (138, 41512), (148, 41599),

Gene: MiniBoss\_48 Start: 40330, Stop: 41685, Start Num: 19

Candidate Starts for MiniBoss\_48:

(Start: 19 @40330 has 28 MA's), (21, 40339), (Start: 28 @40369 has 131 MA's), (Start: 30 @40378 has 12 MA's), (Start: 33 @40390 has 10 MA's), (41, 40516), (43, 40558), (Start: 46 @40609 has 1 MA's), (56, 40723), (58, 40735), (65, 40837), (79, 40924), (80, 40927), (83, 41011), (85, 41029), (95,

41104), (99, 41179), (107, 41242), (111, 41287), (115, 41365), (116, 41374), (127, 41434), (132, 41470), (138, 41518), (148, 41605),

Gene: MitKao\_48 Start: 40083, Stop: 41411, Start Num: 28

Candidate Starts for MitKao\_48:

(Start: 19 @40044 has 28 MA's), (21, 40053), (Start: 28 @40083 has 131 MA's), (Start: 30 @40092 has 12 MA's), (Start: 33 @40104 has 10 MA's), (41, 40230), (43, 40272), (Start: 46 @40323 has 1 MA's), (56, 40437), (58, 40449), (65, 40563), (79, 40650), (80, 40653), (83, 40737), (85, 40755), (95, 40830), (99, 40905), (111, 41013), (115, 41091), (116, 41100), (127, 41160), (132, 41196), (138, 41244), (148, 41331),

Gene: Morgushi\_48 Start: 40111, Stop: 41400, Start Num: 34

Candidate Starts for Morgushi\_48:

(Start: 19 @40045 has 28 MA's), (21, 40054), (Start: 28 @40084 has 131 MA's), (Start: 30 @40093 has 12 MA's), (Start: 33 @40105 has 10 MA's), (Start: 34 @40111 has 65 MA's), (41, 40231), (43, 40273), (Start: 46 @40324 has 1 MA's), (56, 40438), (58, 40450), (65, 40552), (79, 40639), (80, 40642), (83, 40726), (85, 40744), (95, 40819), (99, 40894), (107, 40957), (111, 41002), (115, 41080), (116, 41089), (127, 41149), (132, 41185), (138, 41233), (148, 41320),

Gene: Morty\_49 Start: 40522, Stop: 41838, Start Num: 28

Candidate Starts for Morty\_49:

(Start: 19 @40483 has 28 MA's), (21, 40492), (Start: 28 @40522 has 131 MA's), (Start: 30 @40531 has 12 MA's), (Start: 33 @40543 has 10 MA's), (Start: 34 @40549 has 65 MA's), (41, 40669), (43, 40711), (Start: 46 @40762 has 1 MA's), (56, 40876), (58, 40888), (65, 40990), (79, 41077), (80, 41080), (83, 41164), (85, 41182), (95, 41257), (99, 41332), (111, 41440), (115, 41518), (116, 41527), (127, 41587), (132, 41623), (138, 41671), (148, 41758),

Gene: Mosaic\_47 Start: 40077, Stop: 41405, Start Num: 28

Candidate Starts for Mosaic\_47:

(Start: 19 @40038 has 28 MA's), (21, 40047), (Start: 28 @40077 has 131 MA's), (Start: 30 @40086 has 12 MA's), (Start: 33 @40098 has 10 MA's), (41, 40224), (43, 40266), (Start: 46 @40317 has 1 MA's), (56, 40431), (58, 40443), (65, 40557), (79, 40644), (80, 40647), (83, 40731), (85, 40749), (95, 40824), (99, 40899), (111, 41007), (115, 41085), (116, 41094), (127, 41154), (132, 41190), (138, 41238), (148, 41325),

Gene: Mowgli\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Mowgli\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: MrPhizzler\_47 Start: 40113, Stop: 41402, Start Num: 34

Candidate Starts for MrPhizzler\_47:

(Start: 19 @40047 has 28 MA's), (21, 40056), (Start: 28 @40086 has 131 MA's), (Start: 30 @40095 has 12 MA's), (Start: 33 @40107 has 10 MA's), (Start: 34 @40113 has 65 MA's), (41, 40233), (43, 40275), (Start: 46 @40326 has 1 MA's), (56, 40440), (58, 40452), (65, 40554), (79, 40641), (80, 40644), (83, 40728), (85, 40746), (95, 40821), (99, 40896), (111, 41004), (115, 41082), (116, 41091), (127, 41151), (132, 41187), (138, 41235), (148, 41322),

Gene: Mulan\_48 Start: 40266, Stop: 41555, Start Num: 34

Candidate Starts for Mulan\_48:

(Start: 19 @40200 has 28 MA's), (21, 40209), (Start: 28 @40239 has 131 MA's), (Start: 30 @40248 has 12 MA's), (Start: 33 @40260 has 10 MA's), (Start: 34 @40266 has 65 MA's), (41, 40386), (43,

40428), (Start: 46 @40479 has 1 MA's), (56, 40593), (58, 40605), (65, 40707), (79, 40794), (80, 40797), (83, 40881), (85, 40899), (95, 40974), (99, 41049), (111, 41157), (115, 41235), (116, 41244), (127, 41304), (132, 41340), (138, 41388), (148, 41475),

Gene: Murdoc\_48 Start: 40370, Stop: 41686, Start Num: 28

Candidate Starts for Murdoc\_48:

(Start: 19 @40331 has 28 MA's), (21, 40340), (Start: 28 @40370 has 131 MA's), (Start: 30 @40379 has 12 MA's), (Start: 33 @40391 has 10 MA's), (Start: 34 @40397 has 65 MA's), (41, 40517), (43, 40559), (Start: 46 @40610 has 1 MA's), (56, 40724), (58, 40736), (65, 40838), (79, 40925), (80, 40928), (83, 41012), (85, 41030), (95, 41105), (99, 41180), (111, 41288), (115, 41366), (116, 41375), (118, 41390), (127, 41435), (132, 41471), (138, 41519), (148, 41606),

Gene: Mutante\_47 Start: 40116, Stop: 41405, Start Num: 34

Candidate Starts for Mutante\_47:

(Start: 19 @40050 has 28 MA's), (21, 40059), (Start: 28 @40089 has 131 MA's), (Start: 30 @40098 has 12 MA's), (Start: 33 @40110 has 10 MA's), (Start: 34 @40116 has 65 MA's), (41, 40236), (43, 40278), (Start: 46 @40329 has 1 MA's), (56, 40443), (58, 40455), (65, 40557), (79, 40644), (80, 40647), (83, 40731), (85, 40749), (95, 40824), (99, 40899), (111, 41007), (115, 41085), (116, 41094), (127, 41154), (132, 41190), (138, 41238), (148, 41325),

Gene: Nacho\_0049 Start: 40516, Stop: 41832, Start Num: 28

Candidate Starts for Nacho\_0049:

(Start: 19 @40477 has 28 MA's), (21, 40486), (Start: 28 @40516 has 131 MA's), (Start: 30 @40525 has 12 MA's), (Start: 33 @40537 has 10 MA's), (Start: 34 @40543 has 65 MA's), (41, 40663), (43, 40705), (Start: 46 @40756 has 1 MA's), (56, 40870), (58, 40882), (65, 40984), (79, 41071), (80, 41074), (83, 41158), (85, 41176), (95, 41251), (99, 41326), (107, 41389), (111, 41434), (115, 41512), (116, 41521), (118, 41536), (127, 41581), (132, 41617), (138, 41665), (148, 41752),

Gene: Newman\_48 Start: 40375, Stop: 41703, Start Num: 28

Candidate Starts for Newman\_48:

(Start: 19 @40336 has 28 MA's), (21, 40345), (Start: 28 @40375 has 131 MA's), (Start: 30 @40384 has 12 MA's), (Start: 33 @40396 has 10 MA's), (41, 40522), (43, 40564), (Start: 46 @40615 has 1 MA's), (52, 40684), (58, 40741), (65, 40855), (79, 40942), (80, 40945), (83, 41029), (85, 41047), (95, 41122), (99, 41197), (107, 41260), (111, 41305), (115, 41383), (116, 41392), (127, 41452), (132, 41488), (138, 41536), (148, 41623),

Gene: Nicole21\_48 Start: 40376, Stop: 41707, Start Num: 28

Candidate Starts for Nicole21\_48:

(Start: 19 @40337 has 28 MA's), (21, 40346), (Start: 28 @40376 has 131 MA's), (Start: 30 @40385 has 12 MA's), (Start: 33 @40397 has 10 MA's), (Start: 34 @40403 has 65 MA's), (41, 40523), (43, 40565), (Start: 46 @40616 has 1 MA's), (58, 40742), (65, 40856), (66, 40859), (79, 40946), (80, 40949), (83, 41033), (84, 41036), (85, 41051), (95, 41126), (99, 41201), (111, 41309), (115, 41387), (116, 41396), (127, 41456), (132, 41492), (138, 41540), (148, 41627),

Gene: Numberten\_48 Start: 40382, Stop: 41698, Start Num: 28

Candidate Starts for Numberten\_48:

(Start: 19 @40343 has 28 MA's), (21, 40352), (Start: 28 @40382 has 131 MA's), (Start: 30 @40391 has 12 MA's), (Start: 33 @40403 has 10 MA's), (Start: 34 @40409 has 65 MA's), (41, 40529), (43, 40571), (Start: 46 @40622 has 1 MA's), (56, 40736), (58, 40748), (65, 40850), (79, 40937), (80, 40940), (83, 41024), (85, 41042), (95, 41117), (99, 41192), (111, 41300), (115, 41378), (116, 41387), (127, 41447), (132, 41483), (138, 41531), (148, 41618),

Gene: Nyala\_47 Start: 40108, Stop: 41397, Start Num: 34



Candidate Starts for Nyala\_47:

(Start: 19 @40042 has 28 MA's), (21, 40051), (Start: 28 @40081 has 131 MA's), (Start: 30 @40090 has 12 MA's), (Start: 33 @40102 has 10 MA's), (Start: 34 @40108 has 65 MA's), (41, 40228), (43, 40270), (Start: 46 @40321 has 1 MA's), (56, 40435), (58, 40447), (65, 40549), (79, 40636), (80, 40639), (83, 40723), (85, 40741), (95, 40816), (99, 40891), (111, 40999), (115, 41077), (116, 41086), (127, 41146), (132, 41182), (138, 41230), (148, 41317),

Gene: OSmaximus\_49 Start: 40555, Stop: 41871, Start Num: 28

Candidate Starts for OSmaximus\_49:

(Start: 19 @40516 has 28 MA's), (21, 40525), (Start: 28 @40555 has 131 MA's), (Start: 30 @40564 has 12 MA's), (Start: 33 @40576 has 10 MA's), (Start: 34 @40582 has 65 MA's), (41, 40702), (43, 40744), (Start: 46 @40795 has 1 MA's), (56, 40909), (58, 40921), (65, 41023), (79, 41110), (80, 41113), (83, 41197), (85, 41215), (95, 41290), (99, 41365), (111, 41473), (115, 41551), (116, 41560), (127, 41620), (132, 41656), (138, 41704), (148, 41791),

Gene: OctaviousRex\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for OctaviousRex\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: OhMyWard\_13 Start: 6444, Stop: 7730, Start Num: 25

Candidate Starts for OhMyWard\_13:

(24, 6441), (Start: 25 @6444 has 3 MA's), (Start: 29 @6462 has 53 MA's), (35, 6516), (43, 6642), (Start: 46 @6693 has 1 MA's), (64, 6906), (70, 6942), (71, 6948), (90, 7134), (91, 7149), (97, 7191), (105, 7287), (118, 7464), (128, 7509), (129, 7527),

Gene: Olak\_48 Start: 40111, Stop: 41400, Start Num: 34

Candidate Starts for Olak\_48:

(Start: 19 @40045 has 28 MA's), (21, 40054), (Start: 28 @40084 has 131 MA's), (Start: 30 @40093 has 12 MA's), (Start: 33 @40105 has 10 MA's), (Start: 34 @40111 has 65 MA's), (41, 40231), (43, 40273), (Start: 46 @40324 has 1 MA's), (56, 40438), (58, 40450), (65, 40552), (79, 40639), (80, 40642), (83, 40726), (85, 40744), (95, 40819), (99, 40894), (111, 41002), (115, 41080), (116, 41089), (127, 41149), (132, 41185), (138, 41233), (148, 41320),

Gene: Olga\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Olga\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Oline\_47 Start: 39965, Stop: 41260, Start Num: 33

Candidate Starts for Oline\_47:

(Start: 19 @39905 has 28 MA's), (21, 39914), (Start: 28 @39944 has 131 MA's), (Start: 30 @39953 has 12 MA's), (Start: 33 @39965 has 10 MA's), (Start: 34 @39971 has 65 MA's), (41, 40091), (43, 40133), (Start: 46 @40184 has 1 MA's), (56, 40298), (58, 40310), (65, 40412), (79, 40499), (80, 40502), (83, 40586), (85, 40604), (95, 40679), (99, 40754), (111, 40862), (115, 40940), (116, 40949), (127, 41009), (132, 41045), (138, 41093), (148, 41180),

Gene: Olive\_48 Start: 40371, Stop: 41687, Start Num: 28

Candidate Starts for Olive\_48:

(Start: 19 @40332 has 28 MA's), (21, 40341), (Start: 28 @40371 has 131 MA's), (Start: 30 @40380 has 12 MA's), (Start: 33 @40392 has 10 MA's), (Start: 34 @40398 has 65 MA's), (41, 40518), (43,

40560), (Start: 46 @40611 has 1 MA's), (56, 40725), (58, 40737), (65, 40839), (79, 40926), (80, 40929), (83, 41013), (85, 41031), (95, 41106), (99, 41181), (111, 41289), (115, 41367), (116, 41376), (127, 41436), (132, 41472), (138, 41520), (148, 41607),

Gene: OliverWalter\_48 Start: 40420, Stop: 41709, Start Num: 34

Candidate Starts for OliverWalter\_48:

(Start: 19 @40354 has 28 MA's), (21, 40363), (Start: 28 @40393 has 131 MA's), (Start: 30 @40402 has 12 MA's), (Start: 33 @40414 has 10 MA's), (Start: 34 @40420 has 65 MA's), (41, 40540), (43, 40582), (Start: 46 @40633 has 1 MA's), (56, 40747), (58, 40759), (65, 40861), (79, 40948), (80, 40951), (83, 41035), (84, 41038), (85, 41053), (95, 41128), (99, 41203), (111, 41311), (115, 41389), (116, 41398), (118, 41413), (127, 41458), (132, 41494), (138, 41542), (148, 41629),

Gene: Omniscient\_48 Start: 40390, Stop: 41706, Start Num: 28

Candidate Starts for Omniscient\_48:

(Start: 19 @40351 has 28 MA's), (21, 40360), (Start: 28 @40390 has 131 MA's), (Start: 30 @40399 has 12 MA's), (Start: 33 @40411 has 10 MA's), (Start: 34 @40417 has 65 MA's), (41, 40537), (43, 40579), (Start: 46 @40630 has 1 MA's), (56, 40744), (58, 40756), (65, 40858), (79, 40945), (80, 40948), (83, 41032), (85, 41050), (95, 41125), (99, 41200), (111, 41308), (115, 41386), (116, 41395), (127, 41455), (132, 41491), (138, 41539), (148, 41626),

Gene: Oosterbaan\_48 Start: 40378, Stop: 41694, Start Num: 28

Candidate Starts for Oosterbaan\_48:

(Start: 19 @40339 has 28 MA's), (21, 40348), (Start: 28 @40378 has 131 MA's), (Start: 30 @40387 has 12 MA's), (Start: 33 @40399 has 10 MA's), (Start: 34 @40405 has 65 MA's), (41, 40525), (43, 40567), (Start: 46 @40618 has 1 MA's), (56, 40732), (58, 40744), (65, 40846), (79, 40933), (80, 40936), (83, 41020), (84, 41023), (85, 41038), (95, 41113), (99, 41188), (111, 41296), (115, 41374), (116, 41383), (127, 41443), (132, 41479), (138, 41527), (148, 41614),

Gene: Orfeu\_48 Start: 40038, Stop: 41393, Start Num: 19

Candidate Starts for Orfeu\_48:

(Start: 19 @40038 has 28 MA's), (21, 40047), (Start: 28 @40077 has 131 MA's), (Start: 30 @40086 has 12 MA's), (Start: 33 @40098 has 10 MA's), (Start: 34 @40104 has 65 MA's), (41, 40224), (43, 40266), (Start: 46 @40317 has 1 MA's), (56, 40431), (58, 40443), (65, 40545), (79, 40632), (80, 40635), (83, 40719), (85, 40737), (95, 40812), (99, 40887), (111, 40995), (115, 41073), (116, 41082), (127, 41142), (132, 41178), (138, 41226), (148, 41313),

Gene: Orion\_49 Start: 40538, Stop: 41827, Start Num: 34

Candidate Starts for Orion\_49:

(Start: 19 @40472 has 28 MA's), (21, 40481), (Start: 28 @40511 has 131 MA's), (Start: 30 @40520 has 12 MA's), (Start: 33 @40532 has 10 MA's), (Start: 34 @40538 has 65 MA's), (41, 40658), (43, 40700), (Start: 46 @40751 has 1 MA's), (56, 40865), (58, 40877), (65, 40979), (79, 41066), (80, 41069), (83, 41153), (85, 41171), (95, 41246), (99, 41321), (111, 41429), (115, 41507), (116, 41516), (127, 41576), (132, 41612), (138, 41660), (148, 41747),

Gene: Orwigg\_49 Start: 40086, Stop: 41393, Start Num: 30

Candidate Starts for Orwigg\_49:

(Start: 19 @40038 has 28 MA's), (21, 40047), (Start: 28 @40077 has 131 MA's), (Start: 30 @40086 has 12 MA's), (Start: 33 @40098 has 10 MA's), (Start: 34 @40104 has 65 MA's), (41, 40224), (43, 40266), (Start: 46 @40317 has 1 MA's), (56, 40431), (58, 40443), (65, 40545), (79, 40632), (80, 40635), (83, 40719), (85, 40737), (95, 40812), (99, 40887), (111, 40995), (115, 41073), (116, 41082), (127, 41142), (132, 41178), (138, 41226), (148, 41313),

Gene: PG1\_49 Start: 40551, Stop: 41840, Start Num: 34

Candidate Starts for PG1\_49:

(Start: 19 @40485 has 28 MA's), (21, 40494), (Start: 28 @40524 has 131 MA's), (Start: 30 @40533 has 12 MA's), (Start: 33 @40545 has 10 MA's), (Start: 34 @40551 has 65 MA's), (41, 40671), (43, 40713), (Start: 46 @40764 has 1 MA's), (56, 40878), (58, 40890), (65, 40992), (79, 41079), (80, 41082), (83, 41166), (85, 41184), (95, 41259), (99, 41334), (111, 41442), (115, 41520), (116, 41529), (127, 41589), (132, 41625), (138, 41673), (148, 41760),

Gene: Pacifista\_50 Start: 40089, Stop: 41396, Start Num: 30

Candidate Starts for Pacifista\_50:

(Start: 19 @40041 has 28 MA's), (21, 40050), (Start: 28 @40080 has 131 MA's), (Start: 30 @40089 has 12 MA's), (Start: 33 @40101 has 10 MA's), (41, 40227), (43, 40269), (Start: 46 @40320 has 1 MA's), (56, 40434), (58, 40446), (65, 40548), (79, 40635), (80, 40638), (83, 40722), (85, 40740), (95, 40815), (99, 40890), (111, 40998), (115, 41076), (116, 41085), (127, 41145), (132, 41181), (138, 41229), (148, 41316),

Gene: Peeb\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Peeb\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Periodt\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Periodt\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (47, 24134), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (117, 24899), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Phamished\_49 Start: 40480, Stop: 41847, Start Num: 19

Candidate Starts for Phamished\_49:

(Start: 19 @40480 has 28 MA's), (21, 40489), (Start: 28 @40519 has 131 MA's), (Start: 30 @40528 has 12 MA's), (Start: 33 @40540 has 10 MA's), (Start: 34 @40546 has 65 MA's), (41, 40666), (43, 40708), (Start: 46 @40759 has 1 MA's), (52, 40828), (58, 40885), (65, 40999), (79, 41086), (80, 41089), (83, 41173), (84, 41176), (85, 41191), (95, 41266), (99, 41341), (111, 41449), (115, 41527), (116, 41536), (118, 41551), (127, 41596), (132, 41632), (138, 41680), (148, 41767),

Gene: Phareon\_48 Start: 40079, Stop: 41395, Start Num: 28

Candidate Starts for Phareon\_48:

(Start: 19 @40040 has 28 MA's), (21, 40049), (Start: 28 @40079 has 131 MA's), (Start: 30 @40088 has 12 MA's), (Start: 33 @40100 has 10 MA's), (Start: 34 @40106 has 65 MA's), (41, 40226), (43, 40268), (Start: 46 @40319 has 1 MA's), (56, 40433), (58, 40445), (65, 40547), (79, 40634), (80, 40637), (83, 40721), (85, 40739), (95, 40814), (99, 40889), (111, 40997), (115, 41075), (116, 41084), (127, 41144), (132, 41180), (138, 41228), (148, 41315),

Gene: PhatCats2014\_49 Start: 40489, Stop: 41844, Start Num: 19

Candidate Starts for PhatCats2014\_49:

(Start: 19 @40489 has 28 MA's), (21, 40498), (Start: 28 @40528 has 131 MA's), (Start: 30 @40537 has 12 MA's), (Start: 33 @40549 has 10 MA's), (Start: 34 @40555 has 65 MA's), (41, 40675), (43, 40717), (Start: 46 @40768 has 1 MA's), (56, 40882), (58, 40894), (65, 40996), (79, 41083), (80, 41086), (83, 41170), (85, 41188), (95, 41263), (99, 41338), (111, 41446), (115, 41524), (116, 41533), (127, 41593), (132, 41629), (138, 41677), (148, 41764),

Gene: PhatLouie\_48 Start: 40409, Stop: 41698, Start Num: 34

Candidate Starts for PhatLouie\_48:

(Start: 19 @40343 has 28 MA's), (21, 40352), (Start: 28 @40382 has 131 MA's), (Start: 30 @40391 has 12 MA's), (Start: 33 @40403 has 10 MA's), (Start: 34 @40409 has 65 MA's), (41, 40529), (43, 40571), (Start: 46 @40622 has 1 MA's), (56, 40736), (58, 40748), (65, 40850), (79, 40937), (80, 40940), (83, 41024), (85, 41042), (95, 41117), (99, 41192), (111, 41300), (115, 41378), (116, 41387), (127, 41447), (132, 41483), (138, 41531), (148, 41618),

Gene: PhenghisKhan\_47 Start: 40015, Stop: 41319, Start Num: 34

Candidate Starts for PhenghisKhan\_47:

(Start: 19 @39949 has 28 MA's), (21, 39958), (Start: 28 @39988 has 131 MA's), (Start: 30 @39997 has 12 MA's), (Start: 33 @40009 has 10 MA's), (Start: 34 @40015 has 65 MA's), (41, 40135), (43, 40177), (Start: 46 @40228 has 1 MA's), (58, 40354), (65, 40468), (66, 40471), (79, 40558), (80, 40561), (83, 40645), (84, 40648), (85, 40663), (95, 40738), (99, 40813), (111, 40921), (115, 40999), (116, 41008), (127, 41068), (132, 41104), (138, 41152), (148, 41239),

Gene: Pherdinand\_49 Start: 40519, Stop: 41835, Start Num: 28

Candidate Starts for Pherdinand\_49:

(Start: 19 @40480 has 28 MA's), (21, 40489), (Start: 28 @40519 has 131 MA's), (Start: 30 @40528 has 12 MA's), (Start: 33 @40540 has 10 MA's), (Start: 34 @40546 has 65 MA's), (41, 40666), (43, 40708), (Start: 46 @40759 has 1 MA's), (56, 40873), (58, 40885), (65, 40987), (79, 41074), (80, 41077), (83, 41161), (85, 41179), (95, 41254), (99, 41329), (111, 41437), (115, 41515), (116, 41524), (127, 41584), (132, 41620), (138, 41668), (148, 41755),

Gene: Phergie\_48 Start: 40220, Stop: 41311, Start Num: 46

Candidate Starts for Phergie\_48:

(Start: 46 @40220 has 1 MA's), (58, 40346), (65, 40460), (66, 40463), (79, 40550), (80, 40553), (83, 40637), (84, 40640), (85, 40655), (95, 40730), (99, 40805), (111, 40913), (115, 40991), (116, 41000), (127, 41060), (132, 41096), (138, 41144), (148, 41231),

Gene: Phipps\_48 Start: 40359, Stop: 41675, Start Num: 28

Candidate Starts for Phipps\_48:

(Start: 19 @40320 has 28 MA's), (21, 40329), (Start: 28 @40359 has 131 MA's), (Start: 30 @40368 has 12 MA's), (Start: 33 @40380 has 10 MA's), (Start: 34 @40386 has 65 MA's), (41, 40506), (43, 40548), (Start: 46 @40599 has 1 MA's), (56, 40713), (58, 40725), (65, 40827), (79, 40914), (80, 40917), (83, 41001), (84, 41004), (85, 41019), (95, 41094), (99, 41169), (111, 41277), (115, 41355), (116, 41364), (118, 41379), (127, 41424), (132, 41460), (138, 41508), (148, 41595),

Gene: Phish\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Phish\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Phleuron\_47 Start: 40012, Stop: 41316, Start Num: 34

Candidate Starts for Phleuron\_47:

(Start: 19 @39946 has 28 MA's), (21, 39955), (Start: 28 @39985 has 131 MA's), (Start: 30 @39994 has 12 MA's), (Start: 33 @40006 has 10 MA's), (Start: 34 @40012 has 65 MA's), (41, 40132), (43, 40174), (Start: 46 @40225 has 1 MA's), (58, 40351), (65, 40465), (66, 40468), (79, 40555), (80, 40558), (83, 40642), (84, 40645), (85, 40660), (95, 40735), (99, 40810), (111, 40918), (115, 40996), (116, 41005), (127, 41065), (132, 41101), (138, 41149), (148, 41236),

Gene: PhrankReynolds\_46 Start: 40012, Stop: 41316, Start Num: 34

Candidate Starts for PhrankReynolds\_46:

(Start: 19 @39946 has 28 MA's), (21, 39955), (Start: 28 @39985 has 131 MA's), (Start: 30 @39994 has 12 MA's), (Start: 33 @40006 has 10 MA's), (Start: 34 @40012 has 65 MA's), (41, 40132), (43, 40174), (Start: 46 @40225 has 1 MA's), (58, 40351), (65, 40465), (66, 40468), (79, 40555), (80, 40558), (83, 40642), (84, 40645), (85, 40660), (95, 40735), (99, 40810), (111, 40918), (115, 40996), (116, 41005), (127, 41065), (132, 41101), (138, 41149), (148, 41236),

Gene: Phreak\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Phreak\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: PhrodoBaggins\_48 Start: 40534, Stop: 41823, Start Num: 34

Candidate Starts for PhrodoBaggins\_48:

(Start: 19 @40468 has 28 MA's), (21, 40477), (Start: 28 @40507 has 131 MA's), (Start: 30 @40516 has 12 MA's), (Start: 33 @40528 has 10 MA's), (Start: 34 @40534 has 65 MA's), (41, 40654), (43, 40696), (Start: 46 @40747 has 1 MA's), (56, 40861), (58, 40873), (65, 40975), (79, 41062), (80, 41065), (83, 41149), (85, 41167), (95, 41242), (99, 41317), (111, 41425), (115, 41503), (116, 41512), (127, 41572), (132, 41608), (138, 41656), (148, 41743),

Gene: Phunky\_48 Start: 40337, Stop: 41692, Start Num: 19

Candidate Starts for Phunky\_48:

(Start: 19 @40337 has 28 MA's), (21, 40346), (Start: 28 @40376 has 131 MA's), (Start: 30 @40385 has 12 MA's), (Start: 33 @40397 has 10 MA's), (Start: 34 @40403 has 65 MA's), (41, 40523), (43, 40565), (Start: 46 @40616 has 1 MA's), (56, 40730), (58, 40742), (65, 40844), (79, 40931), (80, 40934), (83, 41018), (85, 41036), (95, 41111), (99, 41186), (111, 41294), (115, 41372), (116, 41381), (127, 41441), (132, 41477), (138, 41525), (148, 41612),

Gene: Piglet\_0048 Start: 40510, Stop: 41817, Start Num: 33

Candidate Starts for Piglet\_0048:

(Start: 19 @40450 has 28 MA's), (21, 40459), (Start: 28 @40489 has 131 MA's), (Start: 30 @40498 has 12 MA's), (Start: 33 @40510 has 10 MA's), (41, 40636), (43, 40678), (Start: 46 @40729 has 1 MA's), (52, 40798), (58, 40855), (65, 40969), (79, 41056), (80, 41059), (83, 41143), (84, 41146), (85, 41161), (95, 41236), (99, 41311), (111, 41419), (115, 41497), (116, 41506), (118, 41521), (127, 41566), (132, 41602), (138, 41650), (148, 41737),

Gene: PinheadLarry\_48 Start: 40089, Stop: 41405, Start Num: 28

Candidate Starts for PinheadLarry\_48:

(Start: 19 @40050 has 28 MA's), (21, 40059), (Start: 28 @40089 has 131 MA's), (Start: 30 @40098 has 12 MA's), (Start: 33 @40110 has 10 MA's), (Start: 34 @40116 has 65 MA's), (41, 40236), (43, 40278), (Start: 46 @40329 has 1 MA's), (56, 40443), (58, 40455), (65, 40557), (79, 40644), (80, 40647), (83, 40731), (85, 40749), (95, 40824), (99, 40899), (111, 41007), (115, 41085), (116, 41094), (127, 41154), (132, 41190), (138, 41238), (148, 41325),

Gene: PinkYoshi\_27 Start: 23876, Stop: 25192, Start Num: 29

Candidate Starts for PinkYoshi\_27:

(Start: 27 @23861 has 10 MA's), (Start: 29 @23876 has 53 MA's), (Start: 34 @23897 has 65 MA's), (41, 24017), (43, 24059), (Start: 46 @24110 has 1 MA's), (58, 24236), (69, 24359), (82, 24509), (108, 24776), (125, 24938), (139, 25025), (150, 25121), (158, 25184),

Gene: Pinkman\_47 Start: 39965, Stop: 41254, Start Num: 34

Candidate Starts for Pinkman\_47:

(Start: 19 @39899 has 28 MA's), (21, 39908), (Start: 28 @39938 has 131 MA's), (Start: 30 @39947 has 12 MA's), (Start: 33 @39959 has 10 MA's), (Start: 34 @39965 has 65 MA's), (41, 40085), (43, 40127), (Start: 46 @40178 has 1 MA's), (56, 40292), (58, 40304), (65, 40406), (79, 40493), (80, 40496), (83, 40580), (85, 40598), (95, 40673), (99, 40748), (111, 40856), (115, 40934), (116, 40943), (127, 41003), (132, 41039), (138, 41087), (148, 41174),

Gene: Pipsqueak\_48 Start: 40383, Stop: 41699, Start Num: 28

Candidate Starts for Pipsqueak\_48:

(Start: 19 @40344 has 28 MA's), (21, 40353), (Start: 28 @40383 has 131 MA's), (Start: 30 @40392 has 12 MA's), (Start: 33 @40404 has 10 MA's), (Start: 34 @40410 has 65 MA's), (41, 40530), (43, 40572), (Start: 46 @40623 has 1 MA's), (56, 40737), (58, 40749), (65, 40851), (79, 40938), (80, 40941), (83, 41025), (85, 41043), (95, 41118), (99, 41193), (111, 41301), (115, 41379), (116, 41388), (127, 41448), (132, 41484), (138, 41532), (148, 41619),

Gene: Placalicious\_47 Start: 40076, Stop: 41392, Start Num: 28

Candidate Starts for Placalicious\_47:

(Start: 19 @40037 has 28 MA's), (21, 40046), (Start: 28 @40076 has 131 MA's), (Start: 30 @40085 has 12 MA's), (Start: 33 @40097 has 10 MA's), (41, 40223), (43, 40265), (Start: 46 @40316 has 1 MA's), (56, 40430), (58, 40442), (65, 40544), (79, 40631), (80, 40634), (83, 40718), (85, 40736), (95, 40811), (99, 40886), (111, 40994), (115, 41072), (116, 41081), (127, 41141), (132, 41177), (138, 41225), (148, 41312),

Gene: Plagueis\_27 Start: 23720, Stop: 25036, Start Num: 29

Candidate Starts for Plagueis\_27:

(Start: 27 @23705 has 10 MA's), (Start: 29 @23720 has 53 MA's), (Start: 34 @23741 has 65 MA's), (41, 23861), (43, 23903), (Start: 46 @23954 has 1 MA's), (58, 24080), (69, 24203), (82, 24353), (108, 24620), (125, 24782), (139, 24869), (150, 24965), (158, 25028),

Gene: Plmatters\_48 Start: 40379, Stop: 41695, Start Num: 28

Candidate Starts for Plmatters\_48:

(Start: 19 @40340 has 28 MA's), (21, 40349), (Start: 28 @40379 has 131 MA's), (Start: 30 @40388 has 12 MA's), (Start: 33 @40400 has 10 MA's), (Start: 34 @40406 has 65 MA's), (41, 40526), (43, 40568), (Start: 46 @40619 has 1 MA's), (56, 40733), (58, 40745), (65, 40847), (79, 40934), (80, 40937), (83, 41021), (85, 41039), (95, 41114), (99, 41189), (111, 41297), (115, 41375), (116, 41384), (127, 41444), (132, 41480), (138, 41528), (148, 41615),

Gene: Podrick\_48 Start: 40370, Stop: 41686, Start Num: 28

Candidate Starts for Podrick\_48:

(Start: 19 @40331 has 28 MA's), (21, 40340), (Start: 28 @40370 has 131 MA's), (Start: 30 @40379 has 12 MA's), (Start: 33 @40391 has 10 MA's), (Start: 34 @40397 has 65 MA's), (41, 40517), (43, 40559), (Start: 46 @40610 has 1 MA's), (56, 40724), (58, 40736), (65, 40838), (79, 40925), (80, 40928), (83, 41012), (85, 41030), (95, 41105), (99, 41180), (111, 41288), (115, 41366), (116, 41375), (127, 41435), (132, 41471), (138, 41519), (148, 41606),

Gene: Polyzuki\_50 Start: 35716, Stop: 37059, Start Num: 31

Candidate Starts for Polyzuki\_50:

(Start: 31 @35716 has 4 MA's), (43, 35914), (45, 35944), (Start: 46 @35956 has 1 MA's), (51, 35995), (56, 36067), (64, 36145), (74, 36187), (75, 36196), (83, 36319), (84, 36322), (89, 36352), (96, 36421), (100, 36469), (114, 36652), (119, 36685), (123, 36715), (126, 36727), (140, 36835), (144, 36880), (157, 36985),

Gene: Pops\_48 Start: 40421, Stop: 41710, Start Num: 34

Candidate Starts for Pops\_48:

(Start: 19 @40355 has 28 MA's), (21, 40364), (Start: 28 @40394 has 131 MA's), (Start: 30 @40403 has 12 MA's), (Start: 33 @40415 has 10 MA's), (Start: 34 @40421 has 65 MA's), (41, 40541), (43, 40583), (Start: 46 @40634 has 1 MA's), (56, 40748), (58, 40760), (65, 40862), (79, 40949), (80, 40952), (83, 41036), (85, 41054), (95, 41129), (99, 41204), (107, 41267), (111, 41312), (115, 41390), (116, 41399), (127, 41459), (132, 41495), (138, 41543), (148, 41630),

Gene: Potter\_47 Start: 40115, Stop: 41422, Start Num: 33

Candidate Starts for Potter\_47:

(Start: 19 @40055 has 28 MA's), (21, 40064), (Start: 28 @40094 has 131 MA's), (Start: 30 @40103 has 12 MA's), (Start: 33 @40115 has 10 MA's), (41, 40241), (43, 40283), (Start: 46 @40334 has 1 MA's), (56, 40448), (58, 40460), (65, 40574), (79, 40661), (80, 40664), (83, 40748), (85, 40766), (95, 40841), (99, 40916), (111, 41024), (115, 41102), (116, 41111), (127, 41171), (132, 41207), (138, 41255), (148, 41342),

Gene: Prickles\_48 Start: 40370, Stop: 41686, Start Num: 28

Candidate Starts for Prickles\_48:

(Start: 19 @40331 has 28 MA's), (21, 40340), (Start: 28 @40370 has 131 MA's), (Start: 30 @40379 has 12 MA's), (Start: 33 @40391 has 10 MA's), (Start: 34 @40397 has 65 MA's), (41, 40517), (43, 40559), (Start: 46 @40610 has 1 MA's), (56, 40724), (58, 40736), (65, 40838), (79, 40925), (80, 40928), (83, 41012), (84, 41015), (85, 41030), (95, 41105), (99, 41180), (111, 41288), (115, 41366), (116, 41375), (127, 41435), (132, 41471), (138, 41519), (148, 41606),

Gene: ProfessorX\_48 Start: 40371, Stop: 41687, Start Num: 28

Candidate Starts for ProfessorX\_48:

(Start: 19 @40332 has 28 MA's), (21, 40341), (Start: 28 @40371 has 131 MA's), (Start: 30 @40380 has 12 MA's), (Start: 33 @40392 has 10 MA's), (Start: 34 @40398 has 65 MA's), (41, 40518), (43, 40560), (Start: 46 @40611 has 1 MA's), (56, 40725), (58, 40737), (65, 40839), (79, 40926), (80, 40929), (83, 41013), (85, 41031), (95, 41106), (99, 41181), (107, 41244), (111, 41289), (115, 41367), (116, 41376), (127, 41436), (132, 41472), (138, 41520), (148, 41607),

Gene: Puhltonio\_48 Start: 40380, Stop: 41696, Start Num: 28

Candidate Starts for Puhltonio\_48:

(Start: 19 @40341 has 28 MA's), (21, 40350), (Start: 28 @40380 has 131 MA's), (Start: 30 @40389 has 12 MA's), (Start: 33 @40401 has 10 MA's), (Start: 34 @40407 has 65 MA's), (41, 40527), (43, 40569), (Start: 46 @40620 has 1 MA's), (56, 40734), (58, 40746), (65, 40848), (79, 40935), (80, 40938), (83, 41022), (85, 41040), (95, 41115), (99, 41190), (111, 41298), (115, 41376), (116, 41385), (127, 41445), (132, 41481), (138, 41529), (148, 41616),

Gene: QueenBeane\_48 Start: 40370, Stop: 41686, Start Num: 28

Candidate Starts for QueenBeane\_48:

(Start: 19 @40331 has 28 MA's), (21, 40340), (Start: 28 @40370 has 131 MA's), (Start: 30 @40379 has 12 MA's), (Start: 33 @40391 has 10 MA's), (Start: 34 @40397 has 65 MA's), (41, 40517), (43, 40559), (Start: 46 @40610 has 1 MA's), (56, 40724), (58, 40736), (65, 40838), (79, 40925), (80, 40928), (83, 41012), (85, 41030), (95, 41105), (99, 41180), (111, 41288), (115, 41366), (116, 41375), (127, 41435), (132, 41471), (138, 41519), (148, 41606),

Gene: Quisquilliae\_48 Start: 40434, Stop: 41723, Start Num: 34

Candidate Starts for Quisquilliae\_48:

(Start: 19 @40368 has 28 MA's), (21, 40377), (Start: 28 @40407 has 131 MA's), (Start: 30 @40416 has 12 MA's), (Start: 33 @40428 has 10 MA's), (Start: 34 @40434 has 65 MA's), (41, 40554), (43, 40596), (Start: 46 @40647 has 1 MA's), (56, 40761), (58, 40773), (65, 40875), (79, 40962), (80, 40965), (83, 41049), (85, 41067), (95, 41142), (99, 41217), (111, 41325), (115, 41403), (116, 41412), (127, 41472), (132, 41508), (138, 41556), (148, 41643),

Gene: Rabbs\_27 Start: 23968, Stop: 25284, Start Num: 29

Candidate Starts for Rabbs\_27:

(Start: 27 @23953 has 10 MA's), (Start: 29 @23968 has 53 MA's), (Start: 34 @23989 has 65 MA's), (41, 24109), (43, 24151), (Start: 46 @24202 has 1 MA's), (58, 24328), (69, 24451), (82, 24601), (108, 24868), (117, 24982), (125, 25030), (139, 25117), (150, 25213), (158, 25276),

Gene: RedMaple\_48 Start: 40521, Stop: 41837, Start Num: 28

Candidate Starts for RedMaple\_48:

(Start: 19 @40482 has 28 MA's), (21, 40491), (Start: 28 @40521 has 131 MA's), (Start: 30 @40530 has 12 MA's), (Start: 33 @40542 has 10 MA's), (Start: 34 @40548 has 65 MA's), (41, 40668), (43, 40710), (Start: 46 @40761 has 1 MA's), (56, 40875), (58, 40887), (65, 40989), (79, 41076), (80, 41079), (83, 41163), (85, 41181), (95, 41256), (99, 41331), (111, 41439), (115, 41517), (116, 41526), (127, 41586), (132, 41622), (138, 41670), (148, 41757),

Gene: Rem711\_35 Start: 27403, Stop: 28758, Start Num: 26

Candidate Starts for Rem711\_35:

(Start: 26 @27403 has 1 MA's), (38, 27532), (40, 27547), (41, 27562), (44, 27619), (57, 27784), (60, 27823), (67, 27901), (77, 27979), (86, 28090), (88, 28096), (121, 28486), (127, 28507), (132, 28543), (138, 28591), (147, 28672), (155, 28732),

Gene: Remy19\_27 Start: 23870, Stop: 25201, Start Num: 27

Candidate Starts for Remy19\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Renaissance\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Renaissance\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Rickmore\_12 Start: 5213, Stop: 6499, Start Num: 25

Candidate Starts for Rickmore\_12:

(Start: 25 @5213 has 3 MA's), (Start: 29 @5231 has 53 MA's), (35, 5285), (41, 5369), (43, 5411), (Start: 46 @5462 has 1 MA's), (61, 5624), (64, 5675), (72, 5720), (90, 5903), (97, 5960), (105, 6056), (118, 6233), (128, 6278), (129, 6296), (137, 6353), (145, 6419), (146, 6431), (151, 6470),

Gene: Ricotta\_48 Start: 40102, Stop: 41409, Start Num: 30

Candidate Starts for Ricotta\_48:

(Start: 19 @40054 has 28 MA's), (21, 40063), (Start: 28 @40093 has 131 MA's), (Start: 30 @40102 has 12 MA's), (Start: 33 @40114 has 10 MA's), (Start: 34 @40120 has 65 MA's), (41, 40240), (43, 40282), (Start: 46 @40333 has 1 MA's), (56, 40447), (58, 40459), (65, 40561), (79, 40648), (80, 40651), (83, 40735), (85, 40753), (95, 40828), (99, 40903), (111, 41011), (115, 41089), (116, 41098), (127, 41158), (132, 41194), (138, 41242), (148, 41329),

Gene: Riggan\_48 Start: 40366, Stop: 41682, Start Num: 28

Candidate Starts for Riggan\_48:

(Start: 19 @40327 has 28 MA's), (21, 40336), (Start: 28 @40366 has 131 MA's), (Start: 30 @40375 has 12 MA's), (Start: 33 @40387 has 10 MA's), (Start: 34 @40393 has 65 MA's), (41, 40513), (43, 40555), (Start: 46 @40606 has 1 MA's), (56, 40720), (58, 40732), (65, 40834), (79, 40921), (80, 40924), (83, 41008), (85, 41026), (95, 41101), (99, 41176), (107, 41239), (111, 41284), (115, 41362),



(116, 41371), (127, 41431), (132, 41467), (138, 41515), (148, 41602),

Gene: Rimu\_50 Start: 40133, Stop: 41422, Start Num: 34

Candidate Starts for Rimu\_50:

(Start: 19 @40067 has 28 MA's), (21, 40076), (Start: 28 @40106 has 131 MA's), (Start: 30 @40115 has 12 MA's), (Start: 33 @40127 has 10 MA's), (Start: 34 @40133 has 65 MA's), (41, 40253), (43, 40295), (Start: 46 @40346 has 1 MA's), (56, 40460), (58, 40472), (65, 40574), (79, 40661), (80, 40664), (83, 40748), (85, 40766), (95, 40841), (99, 40916), (111, 41024), (115, 41102), (116, 41111), (127, 41171), (132, 41207), (138, 41255), (148, 41342),

Gene: Robyn\_47 Start: 39950, Stop: 41278, Start Num: 28

Candidate Starts for Robyn\_47:

(Start: 19 @39911 has 28 MA's), (21, 39920), (Start: 28 @39950 has 131 MA's), (Start: 30 @39959 has 12 MA's), (Start: 33 @39971 has 10 MA's), (41, 40097), (43, 40139), (Start: 46 @40190 has 1 MA's), (52, 40259), (58, 40316), (65, 40430), (79, 40517), (80, 40520), (83, 40604), (84, 40607), (85, 40622), (95, 40697), (99, 40772), (111, 40880), (115, 40958), (116, 40967), (118, 40982), (127, 41027), (132, 41063), (138, 41111), (148, 41198),

Gene: Roliet\_48 Start: 40379, Stop: 41695, Start Num: 28

Candidate Starts for Roliet\_48:

(Start: 19 @40340 has 28 MA's), (21, 40349), (Start: 28 @40379 has 131 MA's), (Start: 30 @40388 has 12 MA's), (Start: 33 @40400 has 10 MA's), (Start: 34 @40406 has 65 MA's), (41, 40526), (43, 40568), (Start: 46 @40619 has 1 MA's), (56, 40733), (58, 40745), (65, 40847), (79, 40934), (80, 40937), (83, 41021), (85, 41039), (95, 41114), (99, 41189), (107, 41252), (111, 41297), (115, 41375), (116, 41384), (127, 41444), (132, 41480), (138, 41528), (148, 41615),

Gene: Roscoe\_49 Start: 40616, Stop: 41932, Start Num: 28

Candidate Starts for Roscoe\_49:

(Start: 19 @40577 has 28 MA's), (21, 40586), (Start: 28 @40616 has 131 MA's), (Start: 30 @40625 has 12 MA's), (Start: 33 @40637 has 10 MA's), (Start: 34 @40643 has 65 MA's), (41, 40763), (43, 40805), (Start: 46 @40856 has 1 MA's), (56, 40970), (58, 40982), (65, 41084), (79, 41171), (80, 41174), (83, 41258), (85, 41276), (95, 41351), (99, 41426), (111, 41534), (115, 41612), (116, 41621), (127, 41681), (132, 41717), (138, 41765), (148, 41852),

Gene: Roy17\_48 Start: 40097, Stop: 41386, Start Num: 34

Candidate Starts for Roy17\_48:

(Start: 19 @40031 has 28 MA's), (21, 40040), (Start: 28 @40070 has 131 MA's), (Start: 30 @40079 has 12 MA's), (Start: 33 @40091 has 10 MA's), (Start: 34 @40097 has 65 MA's), (41, 40217), (43, 40259), (Start: 46 @40310 has 1 MA's), (56, 40424), (58, 40436), (65, 40538), (79, 40625), (80, 40628), (83, 40712), (85, 40730), (95, 40805), (99, 40880), (111, 40988), (115, 41066), (116, 41075), (127, 41135), (132, 41171), (138, 41219), (148, 41306),

Gene: SDcharge11\_48 Start: 40384, Stop: 41673, Start Num: 34

Candidate Starts for SDcharge11\_48:

(Start: 19 @40318 has 28 MA's), (21, 40327), (Start: 28 @40357 has 131 MA's), (Start: 30 @40366 has 12 MA's), (Start: 33 @40378 has 10 MA's), (Start: 34 @40384 has 65 MA's), (41, 40504), (43, 40546), (Start: 46 @40597 has 1 MA's), (56, 40711), (58, 40723), (65, 40825), (79, 40912), (80, 40915), (83, 40999), (85, 41017), (95, 41092), (99, 41167), (107, 41230), (111, 41275), (115, 41353), (116, 41362), (127, 41422), (132, 41458), (138, 41506), (148, 41593),

Gene: SamW\_21 Start: 19818, Stop: 21044, Start Num: 29

Candidate Starts for SamW\_21:

(Start: 29 @19818 has 53 MA's), (32, 19827), (Start: 34 @19833 has 65 MA's), (48, 20064), (50, 20082), (62, 20211), (64, 20259), (87, 20457), (94, 20523), (98, 20547), (100, 20580), (113, 20757), (125, 20820),

Gene: Samaymay\_48 Start: 40370, Stop: 41686, Start Num: 28

Candidate Starts for Samaymay\_48:

(Start: 19 @40331 has 28 MA's), (21, 40340), (Start: 28 @40370 has 131 MA's), (Start: 30 @40379 has 12 MA's), (Start: 33 @40391 has 10 MA's), (Start: 34 @40397 has 65 MA's), (41, 40517), (43, 40559), (Start: 46 @40610 has 1 MA's), (56, 40724), (58, 40736), (65, 40838), (79, 40925), (80, 40928), (83, 41012), (85, 41030), (95, 41105), (99, 41180), (111, 41288), (115, 41366), (116, 41375), (127, 41435), (132, 41471), (138, 41519), (148, 41606),

Gene: SassyCat97\_47 Start: 40082, Stop: 41413, Start Num: 28

Candidate Starts for SassyCat97\_47:

(Start: 19 @40043 has 28 MA's), (21, 40052), (Start: 28 @40082 has 131 MA's), (Start: 30 @40091 has 12 MA's), (Start: 33 @40103 has 10 MA's), (41, 40229), (43, 40271), (Start: 46 @40322 has 1 MA's), (52, 40391), (58, 40448), (65, 40562), (66, 40565), (79, 40652), (80, 40655), (83, 40739), (84, 40742), (85, 40757), (95, 40832), (99, 40907), (111, 41015), (115, 41093), (116, 41102), (127, 41162), (132, 41198), (138, 41246), (148, 41333),

Gene: Schadenfreude\_47 Start: 39924, Stop: 41252, Start Num: 28

Candidate Starts for Schadenfreude\_47:

(Start: 19 @39885 has 28 MA's), (21, 39894), (Start: 28 @39924 has 131 MA's), (Start: 30 @39933 has 12 MA's), (Start: 33 @39945 has 10 MA's), (41, 40071), (43, 40113), (Start: 46 @40164 has 1 MA's), (52, 40233), (58, 40290), (65, 40404), (79, 40491), (80, 40494), (83, 40578), (84, 40581), (85, 40596), (95, 40671), (99, 40746), (111, 40854), (115, 40932), (116, 40941), (118, 40956), (127, 41001), (132, 41037), (138, 41085), (148, 41172),

Gene: Schiebel\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Schiebel\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Schueller\_48 Start: 40122, Stop: 41411, Start Num: 34

Candidate Starts for Schueller\_48:

(Start: 19 @40056 has 28 MA's), (21, 40065), (Start: 28 @40095 has 131 MA's), (Start: 30 @40104 has 12 MA's), (Start: 33 @40116 has 10 MA's), (Start: 34 @40122 has 65 MA's), (41, 40242), (43, 40284), (Start: 46 @40335 has 1 MA's), (56, 40449), (58, 40461), (65, 40563), (79, 40650), (80, 40653), (83, 40737), (85, 40755), (95, 40830), (99, 40905), (111, 41013), (115, 41091), (116, 41100), (127, 41160), (132, 41196), (138, 41244), (148, 41331),

Gene: Scoot17C\_49 Start: 40540, Stop: 41829, Start Num: 34

Candidate Starts for Scoot17C\_49:

(Start: 19 @40474 has 28 MA's), (21, 40483), (Start: 28 @40513 has 131 MA's), (Start: 30 @40522 has 12 MA's), (Start: 33 @40534 has 10 MA's), (Start: 34 @40540 has 65 MA's), (41, 40660), (43, 40702), (Start: 46 @40753 has 1 MA's), (56, 40867), (58, 40879), (65, 40981), (79, 41068), (80, 41071), (83, 41155), (85, 41173), (95, 41248), (99, 41323), (111, 41431), (115, 41509), (116, 41518), (127, 41578), (132, 41614), (138, 41662), (148, 41749),

Gene: Scrick\_48 Start: 40106, Stop: 41422, Start Num: 28

Candidate Starts for Scrick\_48:

(Start: 19 @40067 has 28 MA's), (21, 40076), (Start: 28 @40106 has 131 MA's), (Start: 30 @40115 has 12 MA's), (Start: 33 @40127 has 10 MA's), (Start: 34 @40133 has 65 MA's), (41, 40253), (43, 40295), (Start: 46 @40346 has 1 MA's), (56, 40460), (58, 40472), (65, 40574), (79, 40661), (80, 40664), (83, 40748), (85, 40766), (95, 40841), (99, 40916), (111, 41024), (115, 41102), (116, 41111), (127, 41171), (132, 41207), (138, 41255), (148, 41342),

Gene: Selr12\_50 Start: 40136, Stop: 41425, Start Num: 34

Candidate Starts for Selr12\_50:

(Start: 19 @40070 has 28 MA's), (21, 40079), (Start: 28 @40109 has 131 MA's), (Start: 30 @40118 has 12 MA's), (Start: 33 @40130 has 10 MA's), (Start: 34 @40136 has 65 MA's), (41, 40256), (43, 40298), (Start: 46 @40349 has 1 MA's), (56, 40463), (58, 40475), (65, 40577), (79, 40664), (80, 40667), (83, 40751), (85, 40769), (95, 40844), (99, 40919), (111, 41027), (115, 41105), (116, 41114), (127, 41174), (132, 41210), (138, 41258), (148, 41345),

Gene: Serendipity\_48 Start: 40394, Stop: 41710, Start Num: 28

Candidate Starts for Serendipity\_48:

(Start: 19 @40355 has 28 MA's), (21, 40364), (Start: 28 @40394 has 131 MA's), (Start: 30 @40403 has 12 MA's), (Start: 33 @40415 has 10 MA's), (Start: 34 @40421 has 65 MA's), (41, 40541), (43, 40583), (Start: 46 @40634 has 1 MA's), (56, 40748), (58, 40760), (65, 40862), (79, 40949), (80, 40952), (83, 41036), (85, 41054), (95, 41129), (99, 41204), (111, 41312), (115, 41390), (116, 41399), (127, 41459), (132, 41495), (138, 41543), (148, 41630),

Gene: Serpentine\_0048 Start: 40381, Stop: 41709, Start Num: 28

Candidate Starts for Serpentine\_0048:

(Start: 19 @40342 has 28 MA's), (21, 40351), (Start: 28 @40381 has 131 MA's), (Start: 30 @40390 has 12 MA's), (Start: 33 @40402 has 10 MA's), (41, 40528), (43, 40570), (Start: 46 @40621 has 1 MA's), (52, 40690), (58, 40747), (65, 40861), (79, 40948), (80, 40951), (83, 41035), (84, 41038), (85, 41053), (95, 41128), (99, 41203), (111, 41311), (115, 41389), (116, 41398), (118, 41413), (127, 41458), (132, 41494), (138, 41542), (148, 41629),

Gene: ShaboiShabazz\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for ShaboiShabazz\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Sheila\_48 Start: 40419, Stop: 41735, Start Num: 28

Candidate Starts for Sheila\_48:

(Start: 19 @40380 has 28 MA's), (21, 40389), (Start: 28 @40419 has 131 MA's), (Start: 30 @40428 has 12 MA's), (Start: 33 @40440 has 10 MA's), (Start: 34 @40446 has 65 MA's), (41, 40566), (43, 40608), (Start: 46 @40659 has 1 MA's), (56, 40773), (58, 40785), (65, 40887), (79, 40974), (80, 40977), (83, 41061), (85, 41079), (95, 41154), (99, 41229), (111, 41337), (115, 41415), (116, 41424), (127, 41484), (132, 41520), (138, 41568), (148, 41655),

Gene: ShiVal\_48 Start: 40341, Stop: 41696, Start Num: 19

Candidate Starts for ShiVal\_48:

(Start: 19 @40341 has 28 MA's), (21, 40350), (Start: 28 @40380 has 131 MA's), (Start: 30 @40389 has 12 MA's), (Start: 33 @40401 has 10 MA's), (Start: 34 @40407 has 65 MA's), (41, 40527), (43, 40569), (Start: 46 @40620 has 1 MA's), (56, 40734), (58, 40746), (65, 40848), (79, 40935), (80, 40938), (83, 41022), (85, 41040), (95, 41115), (99, 41190), (111, 41298), (115, 41376), (116, 41385), (127, 41445), (132, 41481), (138, 41529), (148, 41616),

Gene: Sigman\_49 Start: 40531, Stop: 41820, Start Num: 34

Candidate Starts for Sigman\_49:

(Start: 19 @40465 has 28 MA's), (21, 40474), (Start: 28 @40504 has 131 MA's), (Start: 30 @40513 has 12 MA's), (Start: 33 @40525 has 10 MA's), (Start: 34 @40531 has 65 MA's), (41, 40651), (43, 40693), (Start: 46 @40744 has 1 MA's), (56, 40858), (58, 40870), (65, 40972), (79, 41059), (80, 41062), (83, 41146), (85, 41164), (95, 41239), (99, 41314), (111, 41422), (115, 41500), (116, 41509), (127, 41569), (132, 41605), (138, 41653), (148, 41740),

Gene: Simielle\_47 Start: 40063, Stop: 41379, Start Num: 28

Candidate Starts for Simielle\_47:

(Start: 19 @40024 has 28 MA's), (21, 40033), (Start: 28 @40063 has 131 MA's), (Start: 30 @40072 has 12 MA's), (Start: 33 @40084 has 10 MA's), (Start: 34 @40090 has 65 MA's), (41, 40210), (43, 40252), (Start: 46 @40303 has 1 MA's), (56, 40417), (58, 40429), (65, 40531), (79, 40618), (80, 40621), (83, 40705), (85, 40723), (95, 40798), (99, 40873), (111, 40981), (115, 41059), (116, 41068), (127, 41128), (132, 41164), (138, 41212), (148, 41299),

Gene: Sizemore\_27 Start: 23886, Stop: 25202, Start Num: 29

Candidate Starts for Sizemore\_27:

(Start: 27 @23871 has 10 MA's), (Start: 29 @23886 has 53 MA's), (Start: 34 @23907 has 65 MA's), (41, 24027), (43, 24069), (Start: 46 @24120 has 1 MA's), (58, 24246), (69, 24369), (82, 24519), (108, 24786), (125, 24948), (139, 25035), (150, 25131), (158, 25194),

Gene: Skippy\_48 Start: 40364, Stop: 41680, Start Num: 28

Candidate Starts for Skippy\_48:

(Start: 19 @40325 has 28 MA's), (21, 40334), (Start: 28 @40364 has 131 MA's), (Start: 30 @40373 has 12 MA's), (Start: 33 @40385 has 10 MA's), (Start: 34 @40391 has 65 MA's), (41, 40511), (43, 40553), (Start: 46 @40604 has 1 MA's), (56, 40718), (58, 40730), (65, 40832), (79, 40919), (80, 40922), (83, 41006), (85, 41024), (95, 41099), (99, 41174), (111, 41282), (115, 41360), (116, 41369), (127, 41429), (132, 41465), (138, 41513), (148, 41600),

Gene: Slatt\_48 Start: 40390, Stop: 41706, Start Num: 28

Candidate Starts for Slatt\_48:

(Start: 19 @40351 has 28 MA's), (21, 40360), (Start: 28 @40390 has 131 MA's), (Start: 30 @40399 has 12 MA's), (Start: 33 @40411 has 10 MA's), (Start: 34 @40417 has 65 MA's), (41, 40537), (43, 40579), (Start: 46 @40630 has 1 MA's), (56, 40744), (58, 40756), (65, 40858), (79, 40945), (80, 40948), (83, 41032), (85, 41050), (95, 41125), (99, 41200), (111, 41308), (115, 41386), (116, 41395), (127, 41455), (132, 41491), (138, 41539), (148, 41626),

Gene: Sneeze\_27 Start: 23967, Stop: 25283, Start Num: 29

Candidate Starts for Sneeze\_27:

(Start: 27 @23952 has 10 MA's), (Start: 29 @23967 has 53 MA's), (Start: 34 @23988 has 65 MA's), (41, 24108), (43, 24150), (Start: 46 @24201 has 1 MA's), (58, 24327), (69, 24450), (82, 24600), (108, 24867), (117, 24981), (125, 25029), (139, 25116), (150, 25212), (158, 25275),

Gene: Soile\_48 Start: 40093, Stop: 41409, Start Num: 28

Candidate Starts for Soile\_48:

(Start: 19 @40054 has 28 MA's), (21, 40063), (Start: 28 @40093 has 131 MA's), (Start: 30 @40102 has 12 MA's), (Start: 33 @40114 has 10 MA's), (Start: 34 @40120 has 65 MA's), (41, 40240), (43, 40282), (Start: 46 @40333 has 1 MA's), (56, 40447), (58, 40459), (65, 40561), (79, 40648), (80, 40651), (83, 40735), (85, 40753), (95, 40828), (99, 40903), (107, 40966), (111, 41011), (115, 41089), (116, 41098), (127, 41158), (132, 41194), (138, 41242), (148, 41329),

Gene: Solosis\_47 Start: 40091, Stop: 41407, Start Num: 28

Candidate Starts for Solosis\_47:

(Start: 19 @40052 has 28 MA's), (21, 40061), (Start: 28 @40091 has 131 MA's), (Start: 30 @40100 has 12 MA's), (Start: 33 @40112 has 10 MA's), (Start: 34 @40118 has 65 MA's), (41, 40238), (43, 40280), (Start: 46 @40331 has 1 MA's), (56, 40445), (58, 40457), (65, 40559), (79, 40646), (80, 40649), (83, 40733), (85, 40751), (95, 40826), (99, 40901), (111, 41009), (115, 41087), (116, 41096), (127, 41156), (132, 41192), (138, 41240), (148, 41327),

Gene: Sophia\_47 Start: 40085, Stop: 41401, Start Num: 28

Candidate Starts for Sophia\_47:

(Start: 19 @40046 has 28 MA's), (21, 40055), (Start: 28 @40085 has 131 MA's), (Start: 30 @40094 has 12 MA's), (Start: 33 @40106 has 10 MA's), (Start: 34 @40112 has 65 MA's), (41, 40232), (43, 40274), (Start: 46 @40325 has 1 MA's), (56, 40439), (58, 40451), (65, 40553), (79, 40640), (80, 40643), (83, 40727), (85, 40745), (95, 40820), (99, 40895), (107, 40958), (111, 41003), (115, 41081), (116, 41090), (127, 41150), (132, 41186), (138, 41234), (148, 41321),

Gene: Soto\_48 Start: 40352, Stop: 41707, Start Num: 19

Candidate Starts for Soto\_48:

(Start: 19 @40352 has 28 MA's), (21, 40361), (Start: 28 @40391 has 131 MA's), (Start: 30 @40400 has 12 MA's), (Start: 33 @40412 has 10 MA's), (Start: 34 @40418 has 65 MA's), (41, 40538), (43, 40580), (Start: 46 @40631 has 1 MA's), (56, 40745), (58, 40757), (65, 40859), (79, 40946), (80, 40949), (83, 41033), (85, 41051), (95, 41126), (99, 41201), (107, 41264), (111, 41309), (115, 41387), (116, 41396), (127, 41456), (132, 41492), (138, 41540), (148, 41627),

Gene: Spartan300\_48 Start: 40376, Stop: 41692, Start Num: 28

Candidate Starts for Spartan300\_48:

(Start: 19 @40337 has 28 MA's), (21, 40346), (Start: 28 @40376 has 131 MA's), (Start: 30 @40385 has 12 MA's), (Start: 33 @40397 has 10 MA's), (Start: 34 @40403 has 65 MA's), (41, 40523), (43, 40565), (Start: 46 @40616 has 1 MA's), (56, 40730), (58, 40742), (65, 40844), (79, 40931), (80, 40934), (83, 41018), (85, 41036), (95, 41111), (99, 41186), (107, 41249), (111, 41294), (115, 41372), (116, 41381), (127, 41441), (132, 41477), (138, 41525), (148, 41612),

Gene: Squid\_48 Start: 40103, Stop: 41413, Start Num: 33

Candidate Starts for Squid\_48:

(Start: 19 @40043 has 28 MA's), (21, 40052), (Start: 28 @40082 has 131 MA's), (Start: 30 @40091 has 12 MA's), (Start: 33 @40103 has 10 MA's), (41, 40229), (43, 40271), (Start: 46 @40322 has 1 MA's), (52, 40391), (58, 40448), (65, 40562), (66, 40565), (79, 40652), (80, 40655), (83, 40739), (84, 40742), (85, 40757), (95, 40832), (99, 40907), (111, 41015), (115, 41093), (116, 41102), (127, 41162), (132, 41198), (138, 41246), (148, 41333),

Gene: Squiggle\_48 Start: 40127, Stop: 41416, Start Num: 34

Candidate Starts for Squiggle\_48:

(Start: 19 @40061 has 28 MA's), (21, 40070), (Start: 28 @40100 has 131 MA's), (Start: 30 @40109 has 12 MA's), (Start: 33 @40121 has 10 MA's), (Start: 34 @40127 has 65 MA's), (41, 40247), (43, 40289), (Start: 46 @40340 has 1 MA's), (56, 40454), (58, 40466), (65, 40568), (79, 40655), (80, 40658), (83, 40742), (85, 40760), (95, 40835), (99, 40910), (111, 41018), (115, 41096), (116, 41105), (127, 41165), (132, 41201), (138, 41249), (148, 41336),

Gene: StAB\_21 Start: 19864, Stop: 21096, Start Num: 29

Candidate Starts for StAB\_21:

(11, 19534), (12, 19549), (14, 19555), (Start: 29 @19864 has 53 MA's), (32, 19873), (48, 20110), (50, 20128), (62, 20257), (64, 20305), (87, 20503), (94, 20569), (98, 20593), (100, 20626), (112, 20752), (113, 20803), (125, 20866),

Gene: Struggle\_47 Start: 39959, Stop: 41248, Start Num: 34

Candidate Starts for Struggle\_47:

(Start: 19 @39893 has 28 MA's), (21, 39902), (Start: 28 @39932 has 131 MA's), (Start: 30 @39941 has 12 MA's), (Start: 33 @39953 has 10 MA's), (Start: 34 @39959 has 65 MA's), (41, 40079), (43, 40121), (Start: 46 @40172 has 1 MA's), (56, 40286), (58, 40298), (65, 40400), (79, 40487), (80, 40490), (83, 40574), (85, 40592), (95, 40667), (99, 40742), (111, 40850), (115, 40928), (116, 40937), (127, 40997), (132, 41033), (138, 41081), (148, 41168),

Gene: Suffolk\_48 Start: 40342, Stop: 41697, Start Num: 19

Candidate Starts for Suffolk\_48:

(Start: 19 @40342 has 28 MA's), (21, 40351), (Start: 28 @40381 has 131 MA's), (Start: 30 @40390 has 12 MA's), (Start: 33 @40402 has 10 MA's), (Start: 34 @40408 has 65 MA's), (41, 40528), (43, 40570), (Start: 46 @40621 has 1 MA's), (56, 40735), (58, 40747), (65, 40849), (79, 40936), (80, 40939), (83, 41023), (85, 41041), (95, 41116), (99, 41191), (111, 41299), (115, 41377), (116, 41386), (118, 41401), (127, 41446), (132, 41482), (138, 41530), (148, 41617),

Gene: Surely\_48 Start: 40387, Stop: 41703, Start Num: 28

Candidate Starts for Surely\_48:

(Start: 19 @40348 has 28 MA's), (21, 40357), (Start: 28 @40387 has 131 MA's), (Start: 30 @40396 has 12 MA's), (Start: 33 @40408 has 10 MA's), (41, 40534), (43, 40576), (Start: 46 @40627 has 1 MA's), (56, 40741), (58, 40753), (65, 40855), (79, 40942), (80, 40945), (83, 41029), (85, 41047), (95, 41122), (99, 41197), (111, 41305), (115, 41383), (116, 41392), (127, 41452), (132, 41488), (138, 41536), (148, 41623),

Gene: Sweets\_27 Start: 23880, Stop: 25196, Start Num: 29

Candidate Starts for Sweets\_27:

(Start: 27 @23865 has 10 MA's), (Start: 29 @23880 has 53 MA's), (Start: 34 @23901 has 65 MA's), (41, 24021), (43, 24063), (Start: 46 @24114 has 1 MA's), (58, 24240), (69, 24363), (82, 24513), (108, 24780), (125, 24942), (139, 25029), (150, 25125), (158, 25188),

Gene: Swiphy\_50 Start: 40391, Stop: 41698, Start Num: 30

Candidate Starts for Swiphy\_50:

(Start: 19 @40343 has 28 MA's), (21, 40352), (Start: 28 @40382 has 131 MA's), (Start: 30 @40391 has 12 MA's), (Start: 33 @40403 has 10 MA's), (Start: 34 @40409 has 65 MA's), (41, 40529), (43, 40571), (Start: 46 @40622 has 1 MA's), (56, 40736), (58, 40748), (65, 40850), (79, 40937), (80, 40940), (83, 41024), (85, 41042), (95, 41117), (99, 41192), (111, 41300), (115, 41378), (116, 41387), (127, 41447), (132, 41483), (138, 41531), (148, 41618),

Gene: Swish\_49 Start: 40505, Stop: 41821, Start Num: 28

Candidate Starts for Swish\_49:

(Start: 19 @40466 has 28 MA's), (21, 40475), (Start: 28 @40505 has 131 MA's), (Start: 30 @40514 has 12 MA's), (Start: 33 @40526 has 10 MA's), (Start: 34 @40532 has 65 MA's), (41, 40652), (43, 40694), (Start: 46 @40745 has 1 MA's), (56, 40859), (58, 40871), (65, 40973), (79, 41060), (80, 41063), (83, 41147), (85, 41165), (95, 41240), (99, 41315), (111, 41423), (115, 41501), (116, 41510), (127, 41570), (132, 41606), (138, 41654), (148, 41741),

Gene: TallGrassMM\_48 Start: 40000, Stop: 41316, Start Num: 28

Candidate Starts for TallGrassMM\_48:

(Start: 19 @39961 has 28 MA's), (21, 39970), (Start: 28 @40000 has 131 MA's), (Start: 30 @40009 has 12 MA's), (Start: 33 @40021 has 10 MA's), (Start: 34 @40027 has 65 MA's), (41, 40147), (43, 40189), (Start: 46 @40240 has 1 MA's), (56, 40354), (58, 40366), (65, 40468), (79, 40555), (80, 40558), (83, 40642), (85, 40660), (95, 40735), (99, 40810), (111, 40918), (115, 40996), (116, 41005), (127, 41065), (132, 41101), (138, 41149), (148, 41236),

Gene: Telesworld\_47 Start: 40079, Stop: 41395, Start Num: 28

Candidate Starts for Telesworld\_47:

(Start: 19 @40040 has 28 MA's), (21, 40049), (Start: 28 @40079 has 131 MA's), (Start: 30 @40088 has 12 MA's), (Start: 33 @40100 has 10 MA's), (Start: 34 @40106 has 65 MA's), (41, 40226), (43, 40268), (Start: 46 @40319 has 1 MA's), (56, 40433), (58, 40445), (65, 40547), (79, 40634), (80, 40637), (83, 40721), (85, 40739), (95, 40814), (99, 40889), (111, 40997), (115, 41075), (116, 41084), (127, 41144), (132, 41180), (138, 41228), (148, 41315),

Gene: Thora\_48 Start: 40386, Stop: 41702, Start Num: 28

Candidate Starts for Thora\_48:

(Start: 19 @40347 has 28 MA's), (21, 40356), (Start: 28 @40386 has 131 MA's), (Start: 30 @40395 has 12 MA's), (Start: 33 @40407 has 10 MA's), (Start: 34 @40413 has 65 MA's), (41, 40533), (43, 40575), (Start: 46 @40626 has 1 MA's), (56, 40740), (58, 40752), (65, 40854), (79, 40941), (80, 40944), (83, 41028), (84, 41031), (85, 41046), (95, 41121), (99, 41196), (111, 41304), (115, 41382), (116, 41391), (127, 41451), (132, 41487), (138, 41535), (148, 41622),

Gene: ThreeOh3D2\_49 Start: 40546, Stop: 41835, Start Num: 34

Candidate Starts for ThreeOh3D2\_49:

(Start: 19 @40480 has 28 MA's), (21, 40489), (Start: 28 @40519 has 131 MA's), (Start: 30 @40528 has 12 MA's), (Start: 33 @40540 has 10 MA's), (Start: 34 @40546 has 65 MA's), (41, 40666), (43, 40708), (Start: 46 @40759 has 1 MA's), (56, 40873), (58, 40885), (65, 40987), (79, 41074), (80, 41077), (83, 41161), (85, 41179), (95, 41254), (99, 41329), (111, 41437), (115, 41515), (116, 41524), (127, 41584), (132, 41620), (138, 41668), (148, 41755),

Gene: Timmi\_47 Start: 40095, Stop: 41402, Start Num: 30

Candidate Starts for Timmi\_47:

(Start: 19 @40047 has 28 MA's), (21, 40056), (Start: 28 @40086 has 131 MA's), (Start: 30 @40095 has 12 MA's), (Start: 33 @40107 has 10 MA's), (Start: 34 @40113 has 65 MA's), (41, 40233), (43, 40275), (Start: 46 @40326 has 1 MA's), (56, 40440), (58, 40452), (65, 40554), (79, 40641), (80, 40644), (83, 40728), (85, 40746), (95, 40821), (99, 40896), (111, 41004), (115, 41082), (116, 41091), (127, 41151), (132, 41187), (138, 41235), (148, 41322),

Gene: TomBombadil\_48 Start: 40371, Stop: 41687, Start Num: 28

Candidate Starts for TomBombadil\_48:

(Start: 19 @40332 has 28 MA's), (21, 40341), (Start: 28 @40371 has 131 MA's), (Start: 30 @40380 has 12 MA's), (Start: 33 @40392 has 10 MA's), (Start: 34 @40398 has 65 MA's), (41, 40518), (43, 40560), (Start: 46 @40611 has 1 MA's), (56, 40725), (58, 40737), (65, 40839), (79, 40926), (80, 40929), (83, 41013), (85, 41031), (95, 41106), (99, 41181), (111, 41289), (115, 41367), (116, 41376), (127, 41436), (132, 41472), (138, 41520), (148, 41607),

Gene: TomBrady\_27 Start: 23886, Stop: 25202, Start Num: 29

Candidate Starts for TomBrady\_27:

(Start: 27 @23871 has 10 MA's), (Start: 29 @23886 has 53 MA's), (Start: 34 @23907 has 65 MA's), (41, 24027), (43, 24069), (Start: 46 @24120 has 1 MA's), (58, 24246), (69, 24369), (82, 24519), (108, 24786), (125, 24948), (139, 25035), (150, 25131), (158, 25194),

Gene: Tomlarah\_48 Start: 40374, Stop: 41690, Start Num: 28

Candidate Starts for Tomlarah\_48:

(Start: 19 @40335 has 28 MA's), (21, 40344), (Start: 28 @40374 has 131 MA's), (Start: 30 @40383 has 12 MA's), (Start: 33 @40395 has 10 MA's), (Start: 34 @40401 has 65 MA's), (41, 40521), (43, 40563), (Start: 46 @40614 has 1 MA's), (56, 40728), (58, 40740), (65, 40842), (79, 40929), (80, 40932), (83, 41016), (85, 41034), (95, 41109), (99, 41184), (111, 41292), (115, 41370), (116, 41379), (127, 41439), (132, 41475), (138, 41523), (148, 41610),

Gene: Toni\_47 Start: 40078, Stop: 41394, Start Num: 28

Candidate Starts for Toni\_47:

(Start: 19 @40039 has 28 MA's), (21, 40048), (Start: 28 @40078 has 131 MA's), (Start: 30 @40087 has 12 MA's), (Start: 33 @40099 has 10 MA's), (Start: 34 @40105 has 65 MA's), (41, 40225), (43, 40267), (Start: 46 @40318 has 1 MA's), (56, 40432), (58, 40444), (65, 40546), (79, 40633), (80, 40636), (83, 40720), (85, 40738), (95, 40813), (99, 40888), (111, 40996), (115, 41074), (116, 41083), (127, 41143), (132, 41179), (138, 41227), (148, 41314),

Gene: Tooj\_48 Start: 40441, Stop: 41769, Start Num: 28

Candidate Starts for Tooj\_48:

(Start: 19 @40402 has 28 MA's), (21, 40411), (Start: 28 @40441 has 131 MA's), (Start: 30 @40450 has 12 MA's), (Start: 33 @40462 has 10 MA's), (41, 40588), (43, 40630), (Start: 46 @40681 has 1 MA's), (52, 40750), (58, 40807), (65, 40921), (79, 41008), (80, 41011), (83, 41095), (84, 41098), (85, 41113), (95, 41188), (99, 41263), (111, 41371), (115, 41449), (116, 41458), (118, 41473), (127, 41518), (132, 41554), (138, 41602), (148, 41689),

Gene: Troy\_21 Start: 19818, Stop: 21044, Start Num: 29

Candidate Starts for Troy\_21:

(Start: 29 @19818 has 53 MA's), (32, 19827), (Start: 34 @19833 has 65 MA's), (48, 20064), (50, 20082), (62, 20211), (64, 20259), (87, 20457), (94, 20523), (98, 20547), (100, 20580), (113, 20757), (125, 20820),

Gene: True\_47 Start: 40084, Stop: 41400, Start Num: 28

Candidate Starts for True\_47:

(Start: 19 @40045 has 28 MA's), (21, 40054), (Start: 28 @40084 has 131 MA's), (Start: 30 @40093 has 12 MA's), (Start: 33 @40105 has 10 MA's), (41, 40231), (43, 40273), (Start: 46 @40324 has 1 MA's), (56, 40438), (58, 40450), (65, 40552), (79, 40639), (80, 40642), (83, 40726), (85, 40744), (95, 40819), (99, 40894), (111, 41002), (115, 41080), (116, 41089), (127, 41149), (132, 41185), (138, 41233), (148, 41320),

Gene: Trypo\_49 Start: 40542, Stop: 41831, Start Num: 34

Candidate Starts for Trypo\_49:

(Start: 19 @40476 has 28 MA's), (21, 40485), (Start: 28 @40515 has 131 MA's), (Start: 30 @40524 has 12 MA's), (Start: 33 @40536 has 10 MA's), (Start: 34 @40542 has 65 MA's), (41, 40662), (43, 40704), (Start: 46 @40755 has 1 MA's), (56, 40869), (58, 40881), (65, 40983), (79, 41070), (80, 41073), (83, 41157), (85, 41175), (95, 41250), (99, 41325), (111, 41433), (115, 41511), (116, 41520), (127, 41580), (132, 41616), (138, 41664), (148, 41751),

Gene: TyrionL\_47 Start: 39901, Stop: 41256, Start Num: 19

Candidate Starts for TyrionL\_47:

(Start: 19 @39901 has 28 MA's), (21, 39910), (Start: 28 @39940 has 131 MA's), (Start: 30 @39949 has 12 MA's), (Start: 33 @39961 has 10 MA's), (Start: 34 @39967 has 65 MA's), (41, 40087), (43, 40129), (Start: 46 @40180 has 1 MA's), (56, 40294), (58, 40306), (65, 40408), (79, 40495), (80, 40498), (83, 40582), (85, 40600), (95, 40675), (99, 40750), (111, 40858), (115, 40936), (116, 40945), (127, 41005), (132, 41041), (138, 41089), (148, 41176),

Gene: UAch1\_48 Start: 40354, Stop: 41724, Start Num: 19

Candidate Starts for UAch1\_48:

(Start: 19 @40354 has 28 MA's), (21, 40363), (Start: 28 @40393 has 131 MA's), (Start: 30 @40402 has 12 MA's), (Start: 33 @40414 has 10 MA's), (41, 40540), (43, 40582), (Start: 46 @40633 has 1 MA's), (52, 40702), (58, 40759), (65, 40873), (66, 40876), (79, 40963), (80, 40966), (83, 41050), (84, 41053), (85, 41068), (95, 41143), (99, 41218), (111, 41326), (115, 41404), (116, 41413), (118, 41428),



(127, 41473), (132, 41509), (138, 41557), (148, 41644),

Gene: UncleHowie\_48 Start: 40083, Stop: 41399, Start Num: 28

Candidate Starts for UncleHowie\_48:

(Start: 19 @40044 has 28 MA's), (21, 40053), (Start: 28 @40083 has 131 MA's), (Start: 30 @40092 has 12 MA's), (Start: 33 @40104 has 10 MA's), (41, 40230), (43, 40272), (Start: 46 @40323 has 1 MA's), (56, 40437), (58, 40449), (65, 40551), (79, 40638), (80, 40641), (83, 40725), (85, 40743), (95, 40818), (99, 40893), (111, 41001), (115, 41079), (116, 41088), (127, 41148), (132, 41184), (138, 41232), (148, 41319),

Gene: Usavi\_48 Start: 40409, Stop: 41698, Start Num: 34

Candidate Starts for Usavi\_48:

(1, 39623), (2, 39626), (3, 39638), (4, 39647), (5, 39650), (6, 39653), (7, 39680), (8, 39683), (9, 39821), (10, 40004), (16, 40133), (Start: 19 @40343 has 28 MA's), (21, 40352), (Start: 28 @40382 has 131 MA's), (Start: 30 @40391 has 12 MA's), (Start: 33 @40403 has 10 MA's), (Start: 34 @40409 has 65 MA's), (41, 40529), (43, 40571), (Start: 46 @40622 has 1 MA's), (56, 40736), (58, 40748), (65, 40850), (79, 40937), (80, 40940), (83, 41024), (85, 41042), (95, 41117), (99, 41192), (111, 41300), (115, 41378), (116, 41387), (118, 41402), (127, 41447), (132, 41483), (138, 41531), (148, 41618),

Gene: Vaishali24\_47 Start: 40042, Stop: 41370, Start Num: 28

Candidate Starts for Vaishali24\_47:

(Start: 19 @40003 has 28 MA's), (21, 40012), (Start: 28 @40042 has 131 MA's), (Start: 30 @40051 has 12 MA's), (Start: 33 @40063 has 10 MA's), (41, 40189), (43, 40231), (Start: 46 @40282 has 1 MA's), (52, 40351), (58, 40408), (65, 40522), (79, 40609), (80, 40612), (83, 40696), (84, 40699), (85, 40714), (95, 40789), (99, 40864), (111, 40972), (115, 41050), (116, 41059), (118, 41074), (127, 41119), (132, 41155), (138, 41203), (148, 41290),

Gene: Valjean\_48 Start: 40379, Stop: 41695, Start Num: 28

Candidate Starts for Valjean\_48:

(Start: 19 @40340 has 28 MA's), (21, 40349), (Start: 28 @40379 has 131 MA's), (Start: 30 @40388 has 12 MA's), (Start: 33 @40400 has 10 MA's), (Start: 34 @40406 has 65 MA's), (41, 40526), (43, 40568), (Start: 46 @40619 has 1 MA's), (56, 40733), (58, 40745), (65, 40847), (79, 40934), (80, 40937), (83, 41021), (85, 41039), (95, 41114), (99, 41189), (111, 41297), (115, 41375), (116, 41384), (127, 41444), (132, 41480), (138, 41528), (148, 41615),

Gene: Vaticameos\_44 Start: 38065, Stop: 39381, Start Num: 28

Candidate Starts for Vaticameos\_44:

(Start: 19 @38026 has 28 MA's), (21, 38035), (Start: 28 @38065 has 131 MA's), (Start: 30 @38074 has 12 MA's), (Start: 33 @38086 has 10 MA's), (Start: 34 @38092 has 65 MA's), (41, 38212), (43, 38254), (Start: 46 @38305 has 1 MA's), (56, 38419), (58, 38431), (65, 38533), (79, 38620), (80, 38623), (83, 38707), (85, 38725), (95, 38800), (99, 38875), (111, 38983), (115, 39061), (116, 39070), (127, 39130), (132, 39166), (138, 39214), (148, 39301),

Gene: Veritas\_47 Start: 39973, Stop: 41277, Start Num: 34

Candidate Starts for Veritas\_47:

(Start: 19 @39907 has 28 MA's), (21, 39916), (Start: 28 @39946 has 131 MA's), (Start: 30 @39955 has 12 MA's), (Start: 33 @39967 has 10 MA's), (Start: 34 @39973 has 65 MA's), (41, 40093), (43, 40135), (Start: 46 @40186 has 1 MA's), (58, 40312), (65, 40426), (66, 40429), (79, 40516), (80, 40519), (83, 40603), (84, 40606), (85, 40621), (95, 40696), (99, 40771), (111, 40879), (115, 40957), (116, 40966), (127, 41026), (132, 41062), (138, 41110), (148, 41197),

Gene: Virapocalypse\_48 Start: 40401, Stop: 41690, Start Num: 34

Candidate Starts for Virapocalypse\_48:

(Start: 19 @40335 has 28 MA's), (21, 40344), (Start: 28 @40374 has 131 MA's), (Start: 30 @40383 has 12 MA's), (Start: 33 @40395 has 10 MA's), (Start: 34 @40401 has 65 MA's), (41, 40521), (43, 40563), (Start: 46 @40614 has 1 MA's), (56, 40728), (58, 40740), (65, 40842), (79, 40929), (80, 40932), (83, 41016), (84, 41019), (85, 41034), (95, 41109), (99, 41184), (111, 41292), (115, 41370), (116, 41379), (118, 41394), (127, 41439), (132, 41475), (138, 41523), (148, 41610),

Gene: Virgeve\_47 Start: 40112, Stop: 41467, Start Num: 19

Candidate Starts for Virgeve\_47:

(Start: 19 @40112 has 28 MA's), (21, 40121), (Start: 28 @40151 has 131 MA's), (Start: 30 @40160 has 12 MA's), (Start: 33 @40172 has 10 MA's), (Start: 34 @40178 has 65 MA's), (41, 40298), (43, 40340), (Start: 46 @40391 has 1 MA's), (56, 40505), (58, 40517), (65, 40619), (79, 40706), (80, 40709), (83, 40793), (85, 40811), (95, 40886), (99, 40961), (111, 41069), (115, 41147), (116, 41156), (127, 41216), (132, 41252), (138, 41300), (148, 41387),

Gene: Vista\_48 Start: 40405, Stop: 41700, Start Num: 33

Candidate Starts for Vista\_48:

(Start: 19 @40345 has 28 MA's), (21, 40354), (Start: 28 @40384 has 131 MA's), (Start: 30 @40393 has 12 MA's), (Start: 33 @40405 has 10 MA's), (41, 40531), (43, 40573), (Start: 46 @40624 has 1 MA's), (56, 40738), (58, 40750), (65, 40852), (79, 40939), (80, 40942), (83, 41026), (85, 41044), (95, 41119), (99, 41194), (111, 41302), (115, 41380), (116, 41389), (127, 41449), (132, 41485), (138, 41533), (148, 41620),

Gene: Vivaldi\_49 Start: 40768, Stop: 42135, Start Num: 19

Candidate Starts for Vivaldi\_49:

(Start: 19 @40768 has 28 MA's), (21, 40777), (Start: 28 @40807 has 131 MA's), (Start: 30 @40816 has 12 MA's), (Start: 33 @40828 has 10 MA's), (41, 40954), (43, 40996), (Start: 46 @41047 has 1 MA's), (52, 41116), (58, 41173), (65, 41287), (79, 41374), (80, 41377), (83, 41461), (84, 41464), (85, 41479), (95, 41554), (99, 41629), (111, 41737), (115, 41815), (116, 41824), (118, 41839), (127, 41884), (132, 41920), (138, 41968), (148, 42055),

Gene: Vortex\_48 Start: 40042, Stop: 41397, Start Num: 19

Candidate Starts for Vortex\_48:

(Start: 19 @40042 has 28 MA's), (21, 40051), (Start: 28 @40081 has 131 MA's), (Start: 30 @40090 has 12 MA's), (Start: 33 @40102 has 10 MA's), (Start: 34 @40108 has 65 MA's), (41, 40228), (43, 40270), (Start: 46 @40321 has 1 MA's), (56, 40435), (58, 40447), (65, 40549), (79, 40636), (80, 40639), (83, 40723), (85, 40741), (95, 40816), (99, 40891), (111, 40999), (115, 41077), (116, 41086), (127, 41146), (132, 41182), (138, 41230), (148, 41317),

Gene: Wallhey\_47 Start: 39944, Stop: 41260, Start Num: 28

Candidate Starts for Wallhey\_47:

(Start: 19 @39905 has 28 MA's), (21, 39914), (Start: 28 @39944 has 131 MA's), (Start: 30 @39953 has 12 MA's), (Start: 33 @39965 has 10 MA's), (Start: 34 @39971 has 65 MA's), (41, 40091), (43, 40133), (Start: 46 @40184 has 1 MA's), (56, 40298), (58, 40310), (65, 40412), (79, 40499), (80, 40502), (83, 40586), (85, 40604), (95, 40679), (99, 40754), (111, 40862), (115, 40940), (116, 40949), (127, 41009), (132, 41045), (138, 41093), (148, 41180),

Gene: Waterdiva\_48 Start: 40376, Stop: 41692, Start Num: 28

Candidate Starts for Waterdiva\_48:

(Start: 19 @40337 has 28 MA's), (21, 40346), (Start: 28 @40376 has 131 MA's), (Start: 30 @40385 has 12 MA's), (Start: 33 @40397 has 10 MA's), (Start: 34 @40403 has 65 MA's), (41, 40523), (43, 40565), (Start: 46 @40616 has 1 MA's), (56, 40730), (58, 40742), (65, 40844), (79, 40931), (80, 40934), (83, 41018), (85, 41036), (95, 41111), (99, 41186), (111, 41294), (115, 41372), (116, 41381), (127, 41441), (132, 41477), (138, 41525), (148, 41612),

Gene: Weher20\_48 Start: 40375, Stop: 41691, Start Num: 28

Candidate Starts for Weher20\_48:

(Start: 19 @40336 has 28 MA's), (21, 40345), (Start: 28 @40375 has 131 MA's), (Start: 30 @40384 has 12 MA's), (Start: 33 @40396 has 10 MA's), (Start: 34 @40402 has 65 MA's), (41, 40522), (43, 40564), (Start: 46 @40615 has 1 MA's), (56, 40729), (58, 40741), (65, 40843), (79, 40930), (80, 40933), (83, 41017), (84, 41020), (85, 41035), (95, 41110), (99, 41185), (111, 41293), (115, 41371), (116, 41380), (118, 41395), (127, 41440), (132, 41476), (138, 41524), (148, 41611),

Gene: Windsor\_47 Start: 40107, Stop: 41396, Start Num: 34

Candidate Starts for Windsor\_47:

(Start: 19 @40041 has 28 MA's), (21, 40050), (Start: 28 @40080 has 131 MA's), (Start: 30 @40089 has 12 MA's), (Start: 33 @40101 has 10 MA's), (Start: 34 @40107 has 65 MA's), (41, 40227), (43, 40269), (Start: 46 @40320 has 1 MA's), (56, 40434), (58, 40446), (65, 40548), (79, 40635), (80, 40638), (83, 40722), (85, 40740), (95, 40815), (99, 40890), (111, 40998), (115, 41076), (116, 41085), (127, 41145), (132, 41181), (138, 41229), (148, 41316),

Gene: Xavier\_47 Start: 40088, Stop: 41404, Start Num: 28

Candidate Starts for Xavier\_47:

(Start: 19 @40049 has 28 MA's), (21, 40058), (Start: 28 @40088 has 131 MA's), (Start: 30 @40097 has 12 MA's), (Start: 33 @40109 has 10 MA's), (Start: 34 @40115 has 65 MA's), (41, 40235), (43, 40277), (Start: 46 @40328 has 1 MA's), (56, 40442), (58, 40454), (65, 40556), (79, 40643), (80, 40646), (83, 40730), (85, 40748), (95, 40823), (99, 40898), (111, 41006), (115, 41084), (116, 41093), (127, 41153), (132, 41189), (138, 41237), (148, 41324),

Gene: Yoshand\_49 Start: 40518, Stop: 41834, Start Num: 28

Candidate Starts for Yoshand\_49:

(Start: 19 @40479 has 28 MA's), (21, 40488), (Start: 28 @40518 has 131 MA's), (Start: 30 @40527 has 12 MA's), (Start: 33 @40539 has 10 MA's), (Start: 34 @40545 has 65 MA's), (41, 40665), (43, 40707), (Start: 46 @40758 has 1 MA's), (56, 40872), (58, 40884), (65, 40986), (79, 41073), (80, 41076), (83, 41160), (85, 41178), (95, 41253), (99, 41328), (111, 41436), (115, 41514), (116, 41523), (127, 41583), (132, 41619), (138, 41667), (148, 41754),

Gene: YouGoGlencoco\_48 Start: 40378, Stop: 41694, Start Num: 28

Candidate Starts for YouGoGlencoco\_48:

(Start: 19 @40339 has 28 MA's), (21, 40348), (Start: 28 @40378 has 131 MA's), (Start: 30 @40387 has 12 MA's), (Start: 33 @40399 has 10 MA's), (41, 40525), (43, 40567), (Start: 46 @40618 has 1 MA's), (56, 40732), (58, 40744), (65, 40846), (79, 40933), (80, 40936), (83, 41020), (85, 41038), (95, 41113), (99, 41188), (111, 41296), (115, 41374), (116, 41383), (127, 41443), (132, 41479), (138, 41527), (148, 41614),

Gene: Zaider\_49 Start: 40608, Stop: 41924, Start Num: 28

Candidate Starts for Zaider\_49:

(Start: 19 @40569 has 28 MA's), (21, 40578), (Start: 28 @40608 has 131 MA's), (Start: 30 @40617 has 12 MA's), (Start: 33 @40629 has 10 MA's), (41, 40755), (43, 40797), (Start: 46 @40848 has 1 MA's), (56, 40962), (58, 40974), (65, 41076), (79, 41163), (80, 41166), (83, 41250), (85, 41268), (95, 41343), (99, 41418), (111, 41526), (115, 41604), (116, 41613), (127, 41673), (132, 41709), (138, 41757), (148, 41844),

Gene: Zelda\_48 Start: 40425, Stop: 41741, Start Num: 28

Candidate Starts for Zelda\_48:

(Start: 19 @40386 has 28 MA's), (21, 40395), (Start: 28 @40425 has 131 MA's), (Start: 30 @40434 has 12 MA's), (Start: 33 @40446 has 10 MA's), (41, 40572), (43, 40614), (Start: 46 @40665 has 1

MA's), (56, 40779), (58, 40791), (65, 40893), (79, 40980), (80, 40983), (83, 41067), (85, 41085), (95, 41160), (99, 41235), (111, 41343), (115, 41421), (116, 41430), (127, 41490), (132, 41526), (138, 41574), (148, 41661),

Gene: ZoMa\_27 Start: 23870, Stop: 25201, Start Num: 27

Candidate Starts for ZoMa\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Zombie\_27 Start: 23885, Stop: 25201, Start Num: 29

Candidate Starts for Zombie\_27:

(Start: 27 @23870 has 10 MA's), (Start: 29 @23885 has 53 MA's), (Start: 34 @23906 has 65 MA's), (41, 24026), (43, 24068), (Start: 46 @24119 has 1 MA's), (58, 24245), (69, 24368), (82, 24518), (108, 24785), (125, 24947), (139, 25034), (150, 25130), (158, 25193),

Gene: Zonia\_48 Start: 40356, Stop: 41711, Start Num: 19

Candidate Starts for Zonia\_48:

(Start: 19 @40356 has 28 MA's), (21, 40365), (Start: 28 @40395 has 131 MA's), (Start: 30 @40404 has 12 MA's), (Start: 33 @40416 has 10 MA's), (Start: 34 @40422 has 65 MA's), (41, 40542), (43, 40584), (Start: 46 @40635 has 1 MA's), (56, 40749), (58, 40761), (65, 40863), (79, 40950), (80, 40953), (83, 41037), (85, 41055), (95, 41130), (99, 41205), (111, 41313), (115, 41391), (116, 41400), (127, 41460), (132, 41496), (138, 41544), (148, 41631),