





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 186553 Report

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

Pham number 186553 has 376 members, 34 are drafts.

Phages represented in each track:

- Track 1 : Gophee\_31, Kailash\_31, Puhltonio\_31, Podrick\_31, Mesh1\_31, Mecca\_30, Samaymay\_31, Scrick\_31, MitKao\_31, TomBombadil\_31, Bishoperium\_30, Phipps\_31, Craff\_31, Potter\_30, Xavier\_30, PhrodoBaggins\_30, Megatron\_31, FriarPreacher\_31, Vaticameos\_31, Bluephacebaby\_30, Kwadwo\_30, CampRoach\_31, Pacifista\_30, Anderson\_31, Harvey\_31, SassyCat97\_30, Chah\_32, QueenBeane\_31, Telesworld\_30, Omniscient\_31, Banjo\_30, Iridoclysis\_31, Adriana\_31, Beaglebox\_30, Lego3393\_31, Kimbrough\_31, Giraffe\_31, Lumine\_30, Riggan\_31, Nyala\_30, Phareon\_31, Kahve\_30, Usavi\_31, Gyarad\_0031, YouGoGlencoco\_31, True\_30, Cosmolli16\_30, LemonSlice\_31, Mag7\_30, Legolas\_30, MRabcd\_30, HighStump\_30, HSavage\_31, Phergie\_30, Apizium\_30, Zaider\_32, LasagnaCat\_31, Cher\_30, Hocus\_30, Veritas\_30, Gwilliam\_31, Skippy\_31, ShiVal\_31, Swiphy\_32, Plmatters\_31, Tomlarah\_31, HenryJackson\_30, Charles1\_31, Megamind20\_31, Haleema\_30, Hartsy\_31, Simielle\_30, Piglet\_0030, Morty\_31, Squid\_31, CamL\_31, Phunky\_31, Phamished\_31, Fringe\_31, Weher20\_31, FugateOSU\_30, Numberten\_31, Orfeu\_30, Hamish\_31, PhatLouie\_31, Mosaic\_30, Melc17\_31, PhrankReynolds\_30, Serendipity\_31, Andre\_31, Placalicious\_30, DelRivs\_30, Serpentine\_0031, Haimas\_31, Waterdiva\_31, PhenghisKhan\_30, Jillium\_30, Nicole21\_31, Surely\_31, Slatt\_31, Virapocalypse\_31, Burr\_30, Dati\_31, BatteryCK\_30, Soile\_31, Orwigg\_31, JangoPhett\_31, DoesntMatter\_31, KLucky39\_31, Buckeye\_31, Gareth\_30, Quisquiliae\_31, MichaelPhcott\_30
- Track 2 : Schueller\_31, Cannibal\_31, Mana\_30, Murdoc\_31, Lasso\_31, LostAndPhound\_30, Emiris\_31, Cobra\_31, LeeLot\_31, JDog\_30, PinheadLarry\_31, Matalotodo\_31, Held\_31, Oosterbaan\_31, SilverBell\_31, LeiMonet\_31, Zelda\_31, Eugenia\_31, DonSanchon\_30, LuckyMarjie\_30, TallGrassMM\_31, Mcshane\_30, Dice\_30, Altwerkus\_30, Dione\_30, Squiggle\_31, Daffy\_31, Vista\_31, Mutante\_30, Jiraiya\_31, Sophia\_30, Lulwa\_31, Grand2040\_30, Chorkpop\_31, Selr12\_31, Maru\_30, Inchworm\_31, UncleHowie\_31, Childish\_30, Ricotta\_30, Magic8\_31, Thunderbird\_30, Pipsqueak\_31, Fang\_31
- Track 3 : Manad\_30, Schadenfreude\_30, Nacho\_0031, Newman\_31, Cornobble\_30, Suffolk\_31, OliverWalter\_31, AbsoluteMadLad\_30
- Track 4 : KingTut\_22, Morgushi\_31, Kwksand96\_30, Durga\_31, Ashraf\_30, Timmi\_30, AltPhacts\_31, Lopsy\_30, Aelin\_30, Roliet\_31, GeneCoco\_31, Vortex\_31, RedMaple\_30, Longacauda\_30, Pops\_31, KingVeVeVe\_31, Inverness\_31, Basato\_32, Daka\_31, Brilliant\_31, Etaye\_31, Antonia\_30, Trypo\_31, Soto\_31, Struggle\_30, BlueHusk\_31, Pinkman\_30, ImtiyazSitla\_30, CheetO\_31, KlimbOn\_31, Rimu\_32, DaddyDaniels\_31, MrPhizzler\_30, MiniBoss\_31, Prickles\_31, Maskar\_30,

Horchata\_31, DirtJuice\_31, Zonia\_31, SDcharge11\_31, Duggie\_30, Wallhey\_30

- Track 5 : Freya\_30
- Track 6 : Chute\_30, Fozzie\_30, OSmaximus\_31, Coletti\_30, Windsor\_30, Virgeve\_30, Keitherie\_31
- Track 7 : Olak\_30, Sigman\_31, Scoot17C\_31, BlackStallion\_31, UAch1\_31, Lulumae\_30, Orion\_31, IsaacEli\_31, ProfessorX\_31, Hertubise\_31, Badfish\_31, Kloppinator\_31, Thora\_31, JacAttac\_31, Katniss\_31, PhatCats2014\_31, PG1\_31, ABU\_31, Yoshand\_31, FluffyNinja\_31, Toni\_30, Swish\_31, Roy17\_31, Hetaeria\_31, Kikipoo\_31, Olive\_31, Mulan\_30, Pherdinand\_31, Boehler\_31
- Track 8 : MelsMeow\_30, JakeO\_30
- Track 9 : Sheila\_31, Tooj\_31, DuchessDung\_29, Chunky\_31, Colbert\_31, Frankicide\_31, Mikota\_31, Phleuron\_30, Oline\_30
- Track 10 : Dingo\_31
- Track 11 : Robyn\_30
- Track 12 : Chaelin\_31
- Track 13 : Jiminy\_30, Doddsville\_31, Labeouficaum\_30, CharlieGBrown\_30, Derpp\_30, TyrionL\_30
- Track 14 : EmpTee\_31, Spartan300\_31, Valjean\_31
- Track 15 : Eremos\_31
- Track 16 : Roscoe\_32
- Track 17 : Vaishali24\_30
- Track 18 : ThreeOh3D2\_31
- Track 19 : Vivaldi\_31
- Track 20 : Carthage\_29
- Track 21 : Solosis\_30
- Track 22 : Crownjwl\_31
- Track 23 : RomaT\_31, Phayeta\_31
- Track 24 : Nozo\_31, Athena\_32, Abinghost\_31, Compostia\_32, Baloo\_31, Briakila\_31, Ben11\_30
- Track 25 : Rita1961\_31
- Track 26 : ChaChing\_31, Jackstina\_28, Tydolla\_31, Devonte\_31, Phlyer\_31, Chandler\_31, LestyG\_31, MmasiCarm\_31, Yinz\_31, RagingRooster\_31, SynergyX\_31, Deenasa\_31, Corofin\_31, HarveySr\_31, Daisy\_31
- Track 27 : Gervas\_31, Obutu\_31, Kronus\_30
- Track 28 : Morty007\_31, Casbah\_30, Marley1013\_31, Akoma\_31, Gadjet\_32
- Track 29 : Mortcellus\_30
- Track 30 : Yahalom\_31
- Track 31 : Phaedruss\_29
- Track 32 : SlippinJimmy\_31, GlenHope\_32
- Track 33 : OrangeOswald\_31, Heathcliff\_31
- Track 34 : Audrey\_31, Philly\_30
- Track 35 : Pipefish\_32, Bernardo\_31
- Track 36 : Kamiyu\_31
- Track 37 : Neos5\_31
- Track 38 : Halfpint\_30
- Track 39 : Hally898\_27, Antihero\_27, GinPorsche\_27, Ahwei\_27, Poster\_27, Lambano\_27, Epah\_27, Nanao\_27
- Track 40 : VioletZ\_28
- Track 41 : Nigel\_26
- Track 42 : QueenPie\_27
- Track 43 : Magpie\_27
- Track 44 : Hangman\_28, Waleliano\_28
- Track 45 : Stinger\_26

- Track 46 : BrownCNA\_29, Lolalove\_28
- Track 47 : Frederick\_28
- Track 48 : Mudslide\_28, Apex\_28
- Track 49 : RawrgerThat\_28
- Track 50 : Mithril\_28
- Track 51 : Fanaw\_27
- Track 52 : ChrisnMich\_27
- Track 53 : Zemanar\_29
- Track 54 : JAMaL\_28
- Track 55 : Cooper\_28
- Track 56 : Prince\_28
- Track 57 : AlanGrant\_29, Vincenzo\_29
- Track 58 : Fortunato\_28
- Track 59 : Hydro\_28
- Track 60 : Xincheng\_27, JaguarMi\_28
- Track 61 : BobbyK\_28
- Track 62 : Heath\_27
- Track 63 : Austelle\_29
- Track 64 : Acadian\_30, Donny\_30, EastView9101\_29, Suigeneris\_30, SirJeffery\_30
- Track 65 : Reprobate\_30, Phelemich\_30
- Track 66 : Serendipitous\_29
- Track 67 : Nangang\_30, StinkyVeggy\_32, KarasumaRum\_32, Shenyu\_30, DigitDog\_30
- Track 68 : Rich\_29
- Track 69 : Bae\_29
- Track 70 : Nehemiah\_29
- Track 71 : Mysterious\_31

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

The start number called the most often in the published annotations is 5, it was called in 296 of the 342 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABU\_31, AbsoluteMadLad\_30, Acadian\_30, Adriana\_31, Aelin\_30, Ahwei\_27, AlanGrant\_29, AltPhacts\_31, Altwerkus\_30, Anderson\_31, Andre\_31, Antihero\_27, Antonia\_30, Apex\_28, Apizium\_30, Ashraf\_30, Austelle\_29, Badfish\_31, Bae\_29, Banjo\_30, Basato\_32, BatteryCK\_30, Beaglebox\_30, Bishoperium\_30, BlackStallion\_31, BlueHusk\_31, Bluephacebaby\_30, BobbyK\_28, Boehler\_31, Brilliant\_31, BrownCNA\_29, Buckeye\_31, Burr\_30, CamL\_31, CampRoach\_31, Cannibal\_31, Carthage\_29, Chaelin\_31, Chah\_32, Charles1\_31, CharlieGBrown\_30, CheetO\_31, Cher\_30, Childish\_30, Chorkpop\_31, ChrisnMich\_27, Chunky\_31, Chute\_30, Cobra\_31, Colbert\_31, Coletti\_30, Cooper\_28, Cornobble\_30, Cosmolli16\_30, Craff\_31, Crownjwl\_31, DaddyDaniels\_31, Daffy\_31, Daka\_31, Dati\_31, DelRivs\_30, Derpp\_30, Dice\_30, DigitDog\_30, Dingo\_31, Dione\_30, DirtJuice\_31, Doddsville\_31, DoesntMatter\_31, DonSanchon\_30, Donny\_30, DuchessDung\_29, Duggie\_30, Durga\_31, EastView9101\_29, Emiris\_31, EmpTee\_31, Epah\_27, Eremos\_31, Etaye\_31, Eugenia\_31, Fanaw\_27, Fang\_31, FluffyNinja\_31, Fozzie\_30, Frankicide\_31, Frederick\_28, Freya\_30, FriarPreacher\_31, Fringe\_31, FugateOSU\_30, Gareth\_30, GeneCoco\_31,

GinPorsche\_27, Giraffe\_31, Gophee\_31, Grand2040\_30, Gwilliam\_31, Gyarad\_0031, HSavage\_31, Haimas\_31, Haleema\_30, Hally898\_27, Hamish\_31, Hangman\_28, Hartsy\_31, Harvey\_31, Heath\_27, Held\_31, HenryJackson\_30, Hertubise\_31, Hetaeria\_31, HighStump\_30, Hocus\_30, Horchata\_31, Hydro\_28, ImtiyazSitla\_30, Inchworm\_31, Inverness\_31, Iridoclysis\_31, IsaacEli\_31, JAMaL\_28, JDog\_30, JacAttac\_31, JaguarMi\_28, JakeO\_30, JangoPhett\_31, Jillium\_30, Jiminy\_30, Jiraiya\_31, KLucky39\_31, Kahve\_30, Kailash\_31, KarasumaRum\_32, Katniss\_31, Keitherie\_31, Kikipoo\_31, Kimbrough\_31, KingTut\_22, KingVeVeVe\_31, KlimbOn\_31, Kloppinator\_31, Kwadwo\_30, Kwksand96\_30, Labeouficaum\_30, Lambano\_27, LasagnaCat\_31, Lasso\_31, LeeLot\_31, Lego3393\_31, Legolas\_30, LeiMonet\_31, LemonSlice\_31, Lolalove\_28, Longacauda\_30, Lopsy\_30, LostAndPhound\_30, LuckyMarjie\_30, Lulumae\_30, Lulwa\_31, Lumine\_30, MRabcd\_30, Mag7\_30, Magic8\_31, Magpie\_27, Mana\_30, Manad\_30, Maru\_30, Maskar\_30, Matalotodo\_31, Mcshane\_30, Mecca\_30, Megamind20\_31, Megatron\_31, Melc17\_31, MelsMeow\_30, Mesh1\_31, MichaelPhcott\_30, Mikota\_31, MiniBoss\_31, MitKao\_31, Mithril\_28, Morgushi\_31, Morty\_31, Mosaic\_30, MrPhizzler\_30, Mudslide\_28, Mulan\_30, Murdoc\_31, Mutante\_30, Mysterious\_31, Nacho\_0031, Nanao\_27, Nangang\_30, Nehemiah\_29, Newman\_31, Nicole21\_31, Nigel\_26, Numberten\_31, Nyala\_30, OSmaximus\_31, Olak\_30, Oline\_30, Olive\_31, OliverWalter\_31, Omniscient\_31, Oosterbaan\_31, Orfeu\_30, Orion\_31, Orwig\_31, PG1\_31, Pacifista\_30, Phamished\_31, Phareon\_31, PhatCats2014\_31, PhatLouie\_31, Phelemich\_30, PhenghisKhan\_30, Pherdinand\_31, Phergie\_30, Phipps\_31, Phleuron\_30, PhrankReynolds\_30, PhrodoBaggins\_30, Phunky\_31, Piglet\_0030, PinheadLarry\_31, Pinkman\_30, Pipsqueak\_31, Placalicious\_30, Plmatters\_31, Podrick\_31, Pops\_31, Poster\_27, Potter\_30, Prickles\_31, Prince\_28, ProfessorX\_31, Puhltonio\_31, QueenBeane\_31, QueenPie\_27, Quisquillae\_31, RawrgerThat\_28, RedMaple\_30, Reprobate\_30, Rich\_29, Ricotta\_30, Riggan\_31, Rimu\_32, Robyn\_30, Roliet\_31, Roscoe\_32, Roy17\_31, SDcharge11\_31, Samaymay\_31, SassyCat97\_30, Schadenfreude\_30, Schueller\_31, Scoot17C\_31, Scrick\_31, Selr12\_31, Serendipitous\_29, Serendipity\_31, Serpentine\_0031, Sheila\_31, Shenyu\_30, ShiVal\_31, Sigman\_31, SilverBell\_31, Simielle\_30, SirJeffery\_30, Skippy\_31, Slatt\_31, Soile\_31, Solosis\_30, Sophia\_30, Soto\_31, Spartan300\_31, Squid\_31, Squiggle\_31, Stinger\_26, StinkyVeggy\_32, Struggle\_30, Suffolk\_31, Suigeneris\_30, Surely\_31, Swiphy\_32, Swish\_31, TallGrassMM\_31, Telesworld\_30, Thora\_31, ThreeOh3D2\_31, Thunderbird\_30, Timmi\_30, TomBombadil\_31, Tomlarah\_31, Toni\_30, Tooj\_31, True\_30, Trypo\_31, TyrionL\_30, UAch1\_31, UncleHowie\_31, Usavi\_31, Vaishali24\_30, Valjean\_31, Vaticameos\_31, Veritas\_30, Vincenzo\_29, VioletZ\_28, Virapocalypse\_31, Virgeve\_30, Vista\_31, Vivaldi\_31, Vortex\_31, Waleliano\_28, Wallhey\_30, Waterdiva\_31, Weher20\_31, Windsor\_30, Xavier\_30, Xincheng\_27, Yoshand\_31, YouGoGlencoco\_31, Zaider\_32, Zelda\_31, Zemanar\_29, Zonia\_31,

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

- Fortunato\_28,

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

- Abinghost\_31, Akoma\_31, Athena\_32, Audrey\_31, Baloo\_31, Ben11\_30, Bernardo\_31, Briakila\_31, Casbah\_30, ChaChing\_31, Chandler\_31, Compostia\_32, Corofin\_31, Daisy\_31, Deenasa\_31, Devonte\_31, Gadget\_32, Gervas\_31, GlenHope\_32, Halfpint\_30, HarveySr\_31, Heathcliff\_31, Jackstina\_28, Kamiyu\_31, Kronus\_30, LestyG\_31, Marley1013\_31, MmasiCarm\_31, Mortcellus\_30, Morty007\_31, Neos5\_31, Nozo\_31, Obutu\_31, OrangeOswald\_31, Phaedrus\_29, Phayeta\_31, Philly\_30, Phlyer\_31, Pipefish\_32, RagingRooster\_31, Rita1961\_31,

RomaT\_31, SlippinJimmy\_31, SynergyX\_31, Tydolla\_31, Yahalom\_31, Yinz\_31,

### Summary by start number:

#### Start 1:

- Found in 16 of 376 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 1 of 342
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Fortunato\_28 (B4),

#### Start 4:

- Found in 47 of 376 ( 12.5% ) of genes in pham
- Manual Annotations of this start: 44 of 342
- Called 97.9% of time when present
- Phage (with cluster) where this start called: Abinghost\_31 (B3), Akoma\_31 (B3), Athena\_32 (B3), Audrey\_31 (B3), Baloo\_31 (B3), Ben11\_30 (B3), Bernardo\_31 (B3), Briakila\_31 (B3), Casbah\_30 (B3), ChaChing\_31 (B3), Chandler\_31 (B3), Compostia\_32 (B3), Corofin\_31 (B3), Daisy\_31 (B3), Deenasa\_31 (B3), Devonte\_31 (B3), Gadget\_32 (B3), Gervas\_31 (B3), GlenHope\_32 (B3), Halfpint\_30 (B3), HarveySr\_31 (B3), Heathcliff\_31 (B3), Jackstina\_28 (B3), Kamiyu\_31 (B3), Kronus\_30 (B3), LestyG\_31 (B3), Marley1013\_31 (B3), MmasiCarm\_31 (B3), Mortcellus\_30 (B3), Morty007\_31 (B3), Neos5\_31 (B3), Nozo\_31 (B3), Obutu\_31 (B3), OrangeOswald\_31 (B3), Phaedrus\_29 (B3), Phayeta\_31 (B3), Philly\_30 (B3), Phlyer\_31 (B3), Pipefish\_32 (B3), RagingRooster\_31 (B3), RomaT\_31 (B3), SlippinJimmy\_31 (B3), SynergyX\_31 (B3), Tydolla\_31 (B3), Yahalom\_31 (B3), Yinz\_31 (B3),

#### Start 5:

- Found in 329 of 376 ( 87.5% ) of genes in pham
- Manual Annotations of this start: 296 of 342
- Called 99.7% of time when present
- Phage (with cluster) where this start called: ABU\_31 (B1), AbsoluteMadLad\_30 (B1), Acadian\_30 (B5), Adriana\_31 (B1), Aelin\_30 (B1), Ahwei\_27 (B4), AlanGrant\_29 (B4), AltPhacts\_31 (B1), Altwerkus\_30 (B1), Anderson\_31 (B1), Andre\_31 (B1), Antihero\_27 (B4), Antonia\_30 (B1), Apex\_28 (B4), Apizium\_30 (B1), Ashraf\_30 (B1), Austelle\_29 (B4), Badfish\_31 (B1), Bae\_29 (B5), Banjo\_30 (B1), Basato\_32 (B1), BatteryCK\_30 (B1), Beaglebox\_30 (B1), Bishoperium\_30 (B1), BlackStallion\_31 (B1), BlueHusk\_31 (B1), Bluephacebaby\_30 (B1), BobbyK\_28 (B4), Boehler\_31 (B1), Brilliant\_31 (B1), BrownCNA\_29 (B4), Buckeye\_31 (B1), Burr\_30 (B1), CamL\_31 (B1), CampRoach\_31 (B1), Cannibal\_31 (B1), Carthage\_29 (B1), Chaelin\_31 (B1), Chah\_32 (B1), Charles1\_31 (B1), CharlieGBrown\_30 (B1), CheetO\_31 (B1), Cher\_30 (B1), Childish\_30 (B1), Chorkpop\_31 (B1), ChrisnMich\_27 (B4), Chunky\_31 (B1), Chute\_30 (B1), Cobra\_31 (B1), Colbert\_31 (B1), Coletti\_30 (B1), Cooper\_28 (B4), Cornobble\_30 (B1), Cosmolli16\_30 (B1), Craff\_31 (B1), Crownjwl\_31 (B1), DaddyDaniels\_31 (B1), Daffy\_31 (B1), Daka\_31 (B1), Dati\_31 (B1), DelRivs\_30 (B1), Derpp\_30 (B1), Dice\_30 (B1), DigitDog\_30 (B5), Dingo\_31 (B1), Dione\_30 (B1), DirtJuice\_31 (B1), Doddsville\_31 (B1), DoesntMatter\_31 (B1), DonSanchon\_30 (B1), Donny\_30 (B5), DuchessDung\_29 (B1), Duggie\_30 (B1), Durga\_31 (B1), EastView9101\_29 (B5), Emiris\_31 (B1), EmpTee\_31 (B1), Epah\_27 (B4), Eremos\_31 (B1), Etaye\_31 (B1), Eugenia\_31 (B1), Fanaw\_27 (B4), Fang\_31 (B1), FluffyNinja\_31 (B1), Fozzie\_30 (B1), Frankicide\_31 (B1), Frederick\_28 (B4), Freya\_30 (B1), FriarPreacher\_31 (B1), Fringe\_31 (B1), FugateOSU\_30 (B1), Gareth\_30 (B1), GeneCoco\_31 (B1), GinPorsche\_27 (B4), Giraffe\_31 (B1),

Gophee\_31 (B1), Grand2040\_30 (B1), Gwilliam\_31 (B1), Gyarad\_0031 (B1), HSavage\_31 (B1), Haimas\_31 (B1), Haleema\_30 (B1), Hally898\_27 (B4), Hamish\_31 (B1), Hangman\_28 (B4), Hartsy\_31 (B1), Harvey\_31 (B1), Heath\_27 (B4), Held\_31 (B1), HenryJackson\_30 (B1), Hertubise\_31 (B1), Hetaeria\_31 (B1), HighStump\_30 (B1), Hocus\_30 (B1), Horchata\_31 (B1), Hydro\_28 (B4), ImtiyazSitla\_30 (B1), Inchworm\_31 (B1), Inverness\_31 (B1), Iridoclysis\_31 (B1), IsaacEli\_31 (B1), JAMaL\_28 (B4), JDog\_30 (B1), JacAttac\_31 (B1), JaguarMi\_28 (B4), JakeO\_30 (B1), JangoPhett\_31 (B1), Jillium\_30 (B1), Jiminy\_30 (B1), Jiraiya\_31 (B1), KLucky39\_31 (B1), Kahve\_30 (B1), Kailash\_31 (B1), KarasumaRum\_32 (B5), Katniss\_31 (B1), Keitherie\_31 (B1), Kikipoo\_31 (B1), Kimbrough\_31 (B1), KingTut\_22 (B1), KingVeVeVe\_31 (B1), KlimbOn\_31 (B1), Kloppinator\_31 (B1), Kwadwo\_30 (B1), Kwksand96\_30 (B1), Labeouficaum\_30 (B1), Lambano\_27 (B4), LasagnaCat\_31 (B1), Lasso\_31 (B1), LeeLot\_31 (B1), Lego3393\_31 (B1), Legolas\_30 (B1), LeiMonet\_31 (B1), LemonSlice\_31 (B1), Lolalove\_28 (B4), Longacauda\_30 (B1), Lopsy\_30 (B1), LostAndPhound\_30 (B1), LuckyMarjie\_30 (B1), Lulumae\_30 (B1), Lulwa\_31 (B1), Lumine\_30 (B1), MRabcd\_30 (B1), Mag7\_30 (B1), Magic8\_31 (B1), Magpie\_27 (B4), Mana\_30 (B1), Manad\_30 (B1), Maru\_30 (B1), Maskar\_30 (B1), Matalotodo\_31 (B1), Mcshane\_30 (B1), Mecca\_30 (B1), Megamind20\_31 (B1), Megatron\_31 (B1), Melc17\_31 (B1), MelsMeow\_30 (B1), Mesh1\_31 (B1), MichaelPhcott\_30 (B1), Mikota\_31 (B1), MiniBoss\_31 (B1), MitKao\_31 (B1), Mithril\_28 (B4), Morgushi\_31 (B1), Morty\_31 (B1), Mosaic\_30 (B1), MrPhizzler\_30 (B1), Mudslide\_28 (B4), Mulan\_30 (B1), Murdoc\_31 (B1), Mutante\_30 (B1), Mysterious\_31 (B5), Nacho\_0031 (B1), Nanao\_27 (B4), Nangang\_30 (B5), Nehemiah\_29 (B5), Newman\_31 (B1), Nicole21\_31 (B1), Nigel\_26 (B4), Numberten\_31 (B1), Nyala\_30 (B1), OSmaximus\_31 (B1), Olak\_30 (B1), Oline\_30 (B1), Olive\_31 (B1), OliverWalter\_31 (B1), Omniscient\_31 (B1), Oosterbaan\_31 (B1), Orfeu\_30 (B1), Orion\_31 (B1), Orwigg\_31 (B1), PG1\_31 (B1), Pacifista\_30 (B1), Phamished\_31 (B1), Phareon\_31 (B1), PhatCats2014\_31 (B1), PhatLouie\_31 (B1), Phelemich\_30 (B5), PhenghisKhan\_30 (B1), Pherdinand\_31 (B1), Phergie\_30 (B1), Phipps\_31 (B1), Phleuron\_30 (B1), PhrankReynolds\_30 (B1), PhrodoBaggins\_30 (B1), Phunky\_31 (B1), Piglet\_0030 (B1), PinheadLarry\_31 (B1), Pinkman\_30 (B1), Pipsqueak\_31 (B1), Placalicious\_30 (B1), Plmatters\_31 (B1), Podrick\_31 (B1), Pops\_31 (B1), Poster\_27 (B4), Potter\_30 (B1), Prickles\_31 (B1), Prince\_28 (B4), ProfessorX\_31 (B1), Puhltonio\_31 (B1), QueenBeane\_31 (B1), QueenPie\_27 (B4), Quisquilliae\_31 (B1), RawrgerThat\_28 (B4), RedMaple\_30 (B1), Reprobate\_30 (B5), Rich\_29 (B5), Ricotta\_30 (B1), Riggan\_31 (B1), Rimu\_32 (B1), Robyn\_30 (B1), Roliet\_31 (B1), Roscoe\_32 (B1), Roy17\_31 (B1), SDcharge11\_31 (B1), Samaymay\_31 (B1), SassyCat97\_30 (B1), Schadenfreude\_30 (B1), Schueller\_31 (B1), Scoot17C\_31 (B1), Scrick\_31 (B1), Selr12\_31 (B1), Serendipitous\_29 (B5), Serendipity\_31 (B1), Serpentine\_0031 (B1), Sheila\_31 (B1), Shenyu\_30 (B5), ShiVal\_31 (B1), Sigman\_31 (B1), SilverBell\_31 (B1), Simielle\_30 (B1), SirJeffery\_30 (B5), Skippy\_31 (B1), Slatt\_31 (B1), Soile\_31 (B1), Solosis\_30 (B1), Sophia\_30 (B1), Soto\_31 (B1), Spartan300\_31 (B1), Squid\_31 (B1), Squiggle\_31 (B1), Stinger\_26 (B4), StinkyVeggy\_32 (B5), Struggle\_30 (B1), Suffolk\_31 (B1), Suigeneris\_30 (B5), Surely\_31 (B1), Swiphy\_32 (B1), Swish\_31 (B1), TallGrassMM\_31 (B1), Telesworld\_30 (B1), Thora\_31 (B1), ThreeOh3D2\_31 (B1), Thunderbird\_30 (B1), Timmi\_30 (B1), TomBombadil\_31 (B1), Tomlarah\_31 (B1), Toni\_30 (B1), Tooj\_31 (B1), True\_30 (B1), Trypo\_31 (B1), TyrionL\_30 (B1), UAch1\_31 (B1), UncleHowie\_31 (B1), Usavi\_31 (B1), Vaishali24\_30 (B1), Valjean\_31 (B1), Vaticameos\_31 (B1), Veritas\_30 (B1), Vincenzo\_29 (B4), VioletZ\_28 (B4), Virapocalypse\_31 (B1), Virgeve\_30 (B1), Vista\_31 (B1), Vivaldi\_31 (B1), Vortex\_31 (B1), Waleliano\_28 (B4), Wallhey\_30 (B1), Waterdiva\_31 (B1), Weher20\_31 (B1), Windsor\_30 (B1), Xavier\_30 (B1), Xincheng\_27 (B4), Yoshand\_31



(B1), YouGoGlencoco\_31 (B1), Zaider\_32 (B1), Zelda\_31 (B1), Zemanar\_29 (B4), Zonia\_31 (B1),

Start 7:

- Found in 44 of 376 ( 11.7% ) of genes in pham
- Manual Annotations of this start: 1 of 342
- Called 2.3% of time when present
- Phage (with cluster) where this start called: Rita1961\_31 (B3),

### **Summary by clusters:**

There are 4 clusters represented in this pham: B4, B5, B1, B3,

Info for manual annotations of cluster B1:

- Start number 5 was manually annotated 263 times for cluster B1.

Info for manual annotations of cluster B3:

- Start number 4 was manually annotated 44 times for cluster B3.
- Start number 7 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster B4:

- Start number 1 was manually annotated 1 time for cluster B4.
- Start number 5 was manually annotated 24 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 5 was manually annotated 9 times for cluster B5.

### **Gene Information:**

Gene: ABU\_31 Start: 28756, Stop: 31011, Start Num: 5

Candidate Starts for ABU\_31:

(Start: 5 @28756 has 296 MA's), (13, 28852), (19, 28930), (20, 28957), (27, 29056), (37, 29215), (44, 29395), (47, 29419), (55, 29509), (56, 29515), (58, 29551), (62, 29590), (64, 29599), (66, 29632), (67, 29671), (69, 29716), (73, 29767), (77, 29818), (78, 29827), (81, 29896), (85, 29971), (88, 30016), (90, 30031), (100, 30166), (104, 30220), (105, 30241), (106, 30274), (109, 30319), (112, 30373), (116, 30457), (120, 30478), (122, 30520), (123, 30559), (127, 30619), (145, 30859), (146, 30892), (147, 30895), (149, 30928), (150, 30934), (151, 30997),

Gene: Abinghost\_31 Start: 28613, Stop: 30838, Start Num: 4

Candidate Starts for Abinghost\_31:

(Start: 4 @28613 has 44 MA's), (Start: 7 @28628 has 1 MA's), (10, 28673), (14, 28730), (21, 28808), (26, 28877), (27, 28889), (30, 28931), (32, 28967), (33, 28994), (34, 29006), (36, 29033), (39, 29123), (43, 29195), (51, 29279), (59, 29387), (60, 29408), (67, 29501), (68, 29516), (76, 29645), (81, 29726), (85, 29801), (87, 29843), (88, 29849), (95, 29948), (100, 29999), (101, 30011), (104, 30053), (105, 30074), (108, 30128), (109, 30152), (111, 30188), (116, 30284), (118, 30293), (122, 30347), (128, 30455), (129, 30482), (133, 30524), (137, 30596), (145, 30686), (147, 30722),

Gene: AbsoluteMadLad\_30 Start: 28765, Stop: 31020, Start Num: 5

Candidate Starts for AbsoluteMadLad\_30:

(Start: 5 @28765 has 296 MA's), (13, 28861), (19, 28939), (20, 28966), (27, 29065), (37, 29224), (44, 29404), (47, 29428), (56, 29524), (58, 29560), (62, 29599), (64, 29608), (66, 29641), (67, 29680), (69,

29725), (73, 29776), (77, 29827), (78, 29836), (81, 29905), (85, 29980), (88, 30025), (90, 30040), (100, 30175), (104, 30229), (105, 30250), (106, 30283), (109, 30328), (112, 30382), (116, 30466), (120, 30487), (122, 30529), (123, 30568), (127, 30628), (145, 30868), (146, 30901), (147, 30904), (149, 30937), (150, 30943), (151, 31006),

Gene: Acadian\_30 Start: 28978, Stop: 31254, Start Num: 5

Candidate Starts for Acadian\_30:

(Start: 5 @28978 has 296 MA's), (6, 28984), (8, 29026), (11, 29047), (12, 29056), (15, 29110), (17, 29131), (18, 29149), (19, 29152), (22, 29194), (23, 29200), (24, 29212), (27, 29281), (28, 29317), (37, 29440), (41, 29545), (52, 29701), (54, 29728), (57, 29779), (62, 29830), (65, 29845), (77, 30058), (80, 30094), (81, 30136), (85, 30211), (95, 30361), (98, 30385), (100, 30412), (105, 30487), (108, 30541), (116, 30700), (118, 30709), (120, 30721), (123, 30802), (124, 30805), (128, 30871), (132, 30919), (136, 30985), (145, 31102),

Gene: Adriana\_31 Start: 28754, Stop: 31009, Start Num: 5

Candidate Starts for Adriana\_31:

(Start: 5 @28754 has 296 MA's), (13, 28850), (19, 28928), (20, 28955), (27, 29054), (37, 29213), (44, 29393), (47, 29417), (55, 29507), (56, 29513), (58, 29549), (62, 29588), (64, 29597), (66, 29630), (67, 29669), (69, 29714), (73, 29765), (77, 29816), (78, 29825), (81, 29894), (85, 29969), (88, 30014), (90, 30029), (100, 30164), (104, 30218), (105, 30239), (106, 30272), (109, 30317), (112, 30371), (114, 30398), (116, 30455), (120, 30476), (122, 30518), (123, 30557), (127, 30617), (145, 30857), (146, 30890), (147, 30893), (149, 30926), (150, 30932), (151, 30995),

Gene: Aelin\_30 Start: 28317, Stop: 30575, Start Num: 5

Candidate Starts for Aelin\_30:

(Start: 5 @28317 has 296 MA's), (13, 28413), (19, 28491), (20, 28518), (27, 28620), (37, 28779), (44, 28959), (47, 28983), (56, 29079), (58, 29115), (62, 29154), (64, 29163), (66, 29196), (67, 29235), (69, 29280), (73, 29331), (77, 29382), (78, 29391), (81, 29460), (85, 29535), (88, 29580), (90, 29595), (100, 29730), (104, 29784), (105, 29805), (106, 29838), (109, 29883), (112, 29937), (114, 29964), (116, 30021), (120, 30042), (122, 30084), (123, 30123), (127, 30183), (145, 30423), (147, 30459), (149, 30492), (151, 30561),

Gene: Ahwei\_27 Start: 27941, Stop: 30238, Start Num: 5

Candidate Starts for Ahwei\_27:

(Start: 5 @27941 has 296 MA's), (13, 28040), (20, 28145), (24, 28181), (27, 28244), (31, 28325), (35, 28391), (37, 28403), (41, 28508), (42, 28547), (45, 28598), (47, 28607), (53, 28688), (54, 28691), (58, 28754), (63, 28796), (65, 28808), (70, 28931), (71, 28955), (76, 29018), (79, 29048), (80, 29057), (82, 29129), (83, 29150), (85, 29186), (86, 29207), (92, 29273), (93, 29285), (95, 29336), (96, 29339), (97, 29357), (99, 29381), (102, 29408), (104, 29441), (105, 29462), (106, 29495), (109, 29540), (117, 29681), (118, 29684), (120, 29696), (124, 29780), (133, 29915), (134, 29939), (138, 30002), (141, 30032), (142, 30038), (145, 30086), (146, 30119), (147, 30122), (151, 30224), (152, 30227),

Gene: Akoma\_31 Start: 28614, Stop: 30842, Start Num: 4

Candidate Starts for Akoma\_31:

(Start: 4 @28614 has 44 MA's), (Start: 7 @28629 has 1 MA's), (10, 28674), (14, 28731), (21, 28809), (26, 28878), (27, 28890), (30, 28932), (32, 28968), (33, 28995), (34, 29007), (36, 29034), (39, 29124), (43, 29196), (51, 29280), (59, 29388), (60, 29409), (67, 29502), (68, 29517), (76, 29646), (81, 29727), (85, 29802), (87, 29844), (88, 29850), (92, 29886), (100, 30000), (101, 30012), (104, 30054), (105, 30075), (108, 30129), (109, 30153), (116, 30288), (118, 30297), (122, 30351), (128, 30459), (129, 30486), (133, 30528), (137, 30600), (145, 30690), (147, 30726),

Gene: AlanGrant\_29 Start: 29686, Stop: 31983, Start Num: 5

Candidate Starts for AlanGrant\_29:

(Start: 5 @29686 has 296 MA's), (Start: 7 @29701 has 1 MA's), (13, 29785), (14, 29803), (18, 29860), (27, 29989), (41, 30253), (42, 30292), (43, 30298), (44, 30328), (45, 30343), (47, 30352), (53, 30433), (54, 30436), (61, 30535), (62, 30538), (63, 30541), (65, 30553), (70, 30676), (71, 30700), (76, 30763), (80, 30802), (82, 30874), (83, 30895), (84, 30916), (85, 30931), (86, 30952), (88, 30982), (91, 31015), (92, 31018), (93, 31030), (95, 31081), (96, 31084), (97, 31102), (99, 31126), (100, 31132), (104, 31186), (105, 31207), (108, 31261), (109, 31285), (116, 31420), (117, 31426), (118, 31429), (120, 31441), (124, 31525), (133, 31660), (134, 31684), (138, 31747), (142, 31783), (143, 31816), (145, 31831), (146, 31864), (147, 31867), (151, 31969), (152, 31972),

Gene: AltPhacts\_31 Start: 28743, Stop: 30998, Start Num: 5

Candidate Starts for AltPhacts\_31:

(Start: 5 @28743 has 296 MA's), (13, 28839), (19, 28917), (20, 28944), (27, 29043), (37, 29202), (44, 29382), (47, 29406), (56, 29502), (58, 29538), (62, 29577), (64, 29586), (66, 29619), (67, 29658), (69, 29703), (73, 29754), (77, 29805), (78, 29814), (81, 29883), (85, 29958), (88, 30003), (90, 30018), (100, 30153), (104, 30207), (105, 30228), (106, 30261), (109, 30306), (112, 30360), (114, 30387), (116, 30444), (120, 30465), (122, 30507), (123, 30546), (127, 30606), (145, 30846), (147, 30882), (149, 30915), (151, 30984),

Gene: Altwerkus\_30 Start: 28443, Stop: 30698, Start Num: 5

Candidate Starts for Altwerkus\_30:

(Start: 5 @28443 has 296 MA's), (13, 28539), (19, 28617), (20, 28644), (27, 28743), (37, 28902), (44, 29082), (47, 29106), (55, 29196), (56, 29202), (58, 29238), (62, 29277), (64, 29286), (66, 29319), (67, 29358), (69, 29403), (73, 29454), (77, 29505), (78, 29514), (81, 29583), (85, 29658), (88, 29703), (90, 29718), (100, 29853), (104, 29907), (105, 29928), (106, 29961), (109, 30006), (112, 30060), (114, 30087), (116, 30144), (120, 30165), (122, 30207), (123, 30246), (127, 30306), (145, 30546), (147, 30582), (149, 30615), (151, 30684),

Gene: Anderson\_31 Start: 28749, Stop: 31004, Start Num: 5

Candidate Starts for Anderson\_31:

(Start: 5 @28749 has 296 MA's), (13, 28845), (19, 28923), (20, 28950), (27, 29049), (37, 29208), (44, 29388), (47, 29412), (55, 29502), (56, 29508), (58, 29544), (62, 29583), (64, 29592), (66, 29625), (67, 29664), (69, 29709), (73, 29760), (77, 29811), (78, 29820), (81, 29889), (85, 29964), (88, 30009), (90, 30024), (100, 30159), (104, 30213), (105, 30234), (106, 30267), (109, 30312), (112, 30366), (114, 30393), (116, 30450), (120, 30471), (122, 30513), (123, 30552), (127, 30612), (145, 30852), (146, 30885), (147, 30888), (149, 30921), (150, 30927), (151, 30990),

Gene: Andre\_31 Start: 28747, Stop: 31002, Start Num: 5

Candidate Starts for Andre\_31:

(Start: 5 @28747 has 296 MA's), (13, 28843), (19, 28921), (20, 28948), (27, 29047), (37, 29206), (44, 29386), (47, 29410), (55, 29500), (56, 29506), (58, 29542), (62, 29581), (64, 29590), (66, 29623), (67, 29662), (69, 29707), (73, 29758), (77, 29809), (78, 29818), (81, 29887), (85, 29962), (88, 30007), (90, 30022), (100, 30157), (104, 30211), (105, 30232), (106, 30265), (109, 30310), (112, 30364), (114, 30391), (116, 30448), (120, 30469), (122, 30511), (123, 30550), (127, 30610), (145, 30850), (146, 30883), (147, 30886), (149, 30919), (150, 30925), (151, 30988),

Gene: Antihero\_27 Start: 27941, Stop: 30238, Start Num: 5

Candidate Starts for Antihero\_27:

(Start: 5 @27941 has 296 MA's), (13, 28040), (20, 28145), (24, 28181), (27, 28244), (31, 28325), (35, 28391), (37, 28403), (41, 28508), (42, 28547), (45, 28598), (47, 28607), (53, 28688), (54, 28691), (58, 28754), (63, 28796), (65, 28808), (70, 28931), (71, 28955), (76, 29018), (79, 29048), (80, 29057), (82, 29129), (83, 29150), (85, 29186), (86, 29207), (92, 29273), (93, 29285), (95, 29336), (96, 29339), (97, 29357), (99, 29381), (102, 29408), (104, 29441), (105, 29462), (106, 29495), (109, 29540), (117, 29681), (118, 29684), (120, 29696), (124, 29780), (133, 29915), (134, 29939), (138, 30002), (141,

30032), (142, 30038), (145, 30086), (146, 30119), (147, 30122), (151, 30224), (152, 30227),

Gene: Antonia\_30 Start: 28317, Stop: 30575, Start Num: 5

Candidate Starts for Antonia\_30:

(Start: 5 @28317 has 296 MA's), (13, 28413), (19, 28491), (20, 28518), (27, 28620), (37, 28779), (44, 28959), (47, 28983), (56, 29079), (58, 29115), (62, 29154), (64, 29163), (66, 29196), (67, 29235), (69, 29280), (73, 29331), (77, 29382), (78, 29391), (81, 29460), (85, 29535), (88, 29580), (90, 29595), (100, 29730), (104, 29784), (105, 29805), (106, 29838), (109, 29883), (112, 29937), (114, 29964), (116, 30021), (120, 30042), (122, 30084), (123, 30123), (127, 30183), (145, 30423), (147, 30459), (149, 30492), (151, 30561),

Gene: Apex\_28 Start: 29148, Stop: 31445, Start Num: 5

Candidate Starts for Apex\_28:

(Start: 1 @28461 has 1 MA's), (2, 28608), (Start: 5 @29148 has 296 MA's), (13, 29247), (14, 29265), (24, 29388), (27, 29451), (31, 29532), (35, 29598), (41, 29715), (42, 29754), (45, 29805), (47, 29814), (52, 29871), (53, 29895), (54, 29898), (58, 29961), (63, 30003), (65, 30015), (69, 30126), (70, 30138), (71, 30162), (76, 30225), (82, 30336), (83, 30357), (85, 30393), (86, 30414), (92, 30480), (93, 30492), (95, 30543), (96, 30546), (97, 30564), (99, 30588), (102, 30615), (104, 30648), (105, 30669), (106, 30702), (109, 30747), (117, 30888), (118, 30891), (119, 30894), (120, 30903), (124, 30987), (132, 31101), (133, 31122), (134, 31146), (138, 31209), (141, 31239), (142, 31245), (145, 31293), (146, 31326), (147, 31329), (151, 31431), (152, 31434),

Gene: Apizium\_30 Start: 28508, Stop: 30766, Start Num: 5

Candidate Starts for Apizium\_30:

(Start: 5 @28508 has 296 MA's), (13, 28604), (19, 28682), (20, 28709), (27, 28811), (37, 28970), (44, 29150), (47, 29174), (55, 29264), (56, 29270), (58, 29306), (62, 29345), (64, 29354), (66, 29387), (67, 29426), (69, 29471), (73, 29522), (77, 29573), (78, 29582), (81, 29651), (85, 29726), (88, 29771), (90, 29786), (100, 29921), (104, 29975), (105, 29996), (106, 30029), (109, 30074), (112, 30128), (114, 30155), (116, 30212), (120, 30233), (122, 30275), (123, 30314), (127, 30374), (145, 30614), (146, 30647), (147, 30650), (149, 30683), (150, 30689), (151, 30752),

Gene: Ashraf\_30 Start: 28315, Stop: 30570, Start Num: 5

Candidate Starts for Ashraf\_30:

(Start: 5 @28315 has 296 MA's), (13, 28411), (19, 28489), (20, 28516), (27, 28615), (37, 28774), (44, 28954), (47, 28978), (56, 29074), (58, 29110), (62, 29149), (64, 29158), (66, 29191), (67, 29230), (69, 29275), (73, 29326), (77, 29377), (78, 29386), (81, 29455), (85, 29530), (88, 29575), (90, 29590), (100, 29725), (104, 29779), (105, 29800), (106, 29833), (109, 29878), (112, 29932), (114, 29959), (116, 30016), (120, 30037), (122, 30079), (123, 30118), (127, 30178), (145, 30418), (147, 30454), (149, 30487), (151, 30556),

Gene: Athena\_32 Start: 29364, Stop: 31589, Start Num: 4

Candidate Starts for Athena\_32:

(Start: 4 @29364 has 44 MA's), (Start: 7 @29379 has 1 MA's), (10, 29424), (14, 29481), (21, 29559), (26, 29628), (27, 29640), (30, 29682), (32, 29718), (33, 29745), (34, 29757), (36, 29784), (39, 29874), (43, 29946), (51, 30030), (59, 30138), (60, 30159), (67, 30252), (68, 30267), (76, 30396), (81, 30477), (85, 30552), (87, 30594), (88, 30600), (95, 30699), (100, 30750), (101, 30762), (104, 30804), (105, 30825), (108, 30879), (109, 30903), (111, 30939), (116, 31035), (118, 31044), (122, 31098), (128, 31206), (129, 31233), (133, 31275), (137, 31347), (145, 31437), (147, 31473),

Gene: Audrey\_31 Start: 28613, Stop: 30838, Start Num: 4

Candidate Starts for Audrey\_31:

(Start: 4 @28613 has 44 MA's), (Start: 7 @28628 has 1 MA's), (10, 28673), (14, 28730), (21, 28808), (26, 28877), (27, 28889), (30, 28931), (32, 28967), (33, 28994), (34, 29006), (36, 29033), (39, 29123),

(43, 29195), (51, 29279), (59, 29387), (60, 29408), (67, 29501), (68, 29516), (76, 29645), (81, 29726), (85, 29801), (88, 29849), (95, 29948), (100, 29999), (101, 30011), (104, 30053), (105, 30074), (108, 30128), (109, 30152), (111, 30188), (116, 30284), (118, 30293), (122, 30347), (128, 30455), (129, 30482), (133, 30524), (137, 30596), (145, 30686), (147, 30722),

Gene: Austelle\_29 Start: 29604, Stop: 31901, Start Num: 5

Candidate Starts for Austelle\_29:

(Start: 1 @28917 has 1 MA's), (2, 29064), (Start: 5 @29604 has 296 MA's), (13, 29703), (14, 29721), (24, 29844), (27, 29907), (31, 29988), (35, 30054), (41, 30171), (42, 30210), (45, 30261), (47, 30270), (52, 30327), (53, 30351), (54, 30354), (58, 30417), (63, 30459), (65, 30471), (70, 30594), (71, 30618), (76, 30681), (80, 30720), (82, 30792), (83, 30813), (85, 30849), (86, 30870), (92, 30936), (93, 30948), (95, 30999), (96, 31002), (97, 31020), (99, 31044), (102, 31071), (104, 31104), (105, 31125), (106, 31158), (109, 31203), (117, 31344), (118, 31347), (120, 31359), (124, 31443), (133, 31578), (134, 31602), (138, 31665), (141, 31695), (142, 31701), (145, 31749), (146, 31782), (147, 31785), (151, 31887), (152, 31890),

Gene: Badfish\_31 Start: 28778, Stop: 31033, Start Num: 5

Candidate Starts for Badfish\_31:

(Start: 5 @28778 has 296 MA's), (13, 28874), (19, 28952), (20, 28979), (27, 29078), (37, 29237), (44, 29417), (47, 29441), (55, 29531), (56, 29537), (58, 29573), (62, 29612), (64, 29621), (66, 29654), (67, 29693), (69, 29738), (73, 29789), (77, 29840), (78, 29849), (81, 29918), (85, 29993), (88, 30038), (90, 30053), (100, 30188), (104, 30242), (105, 30263), (106, 30296), (109, 30341), (112, 30395), (116, 30479), (120, 30500), (122, 30542), (123, 30581), (127, 30641), (145, 30881), (146, 30914), (147, 30917), (149, 30950), (150, 30956), (151, 31019),

Gene: Bae\_29 Start: 28752, Stop: 31019, Start Num: 5

Candidate Starts for Bae\_29:

(Start: 5 @28752 has 296 MA's), (6, 28758), (10, 28809), (12, 28830), (15, 28884), (16, 28896), (17, 28905), (18, 28923), (24, 28986), (41, 29319), (48, 29421), (52, 29475), (62, 29595), (65, 29610), (66, 29637), (77, 29823), (80, 29859), (81, 29901), (88, 30027), (95, 30126), (100, 30177), (108, 30306), (109, 30330), (116, 30465), (122, 30528), (123, 30567), (124, 30570), (128, 30636), (130, 30666), (132, 30684), (136, 30750), (137, 30777), (145, 30867), (149, 30936), (151, 31005), (152, 31008),

Gene: Baloo\_31 Start: 28616, Stop: 30841, Start Num: 4

Candidate Starts for Baloo\_31:

(Start: 4 @28616 has 44 MA's), (Start: 7 @28631 has 1 MA's), (10, 28676), (14, 28733), (21, 28811), (26, 28880), (27, 28892), (30, 28934), (32, 28970), (33, 28997), (34, 29009), (36, 29036), (39, 29126), (43, 29198), (51, 29282), (59, 29390), (60, 29411), (67, 29504), (68, 29519), (76, 29648), (81, 29729), (85, 29804), (87, 29846), (88, 29852), (95, 29951), (100, 30002), (101, 30014), (104, 30056), (105, 30077), (108, 30131), (109, 30155), (111, 30191), (116, 30287), (118, 30296), (122, 30350), (128, 30458), (129, 30485), (133, 30527), (137, 30599), (145, 30689), (147, 30725),

Gene: Banjo\_30 Start: 28454, Stop: 30709, Start Num: 5

Candidate Starts for Banjo\_30:

(Start: 5 @28454 has 296 MA's), (13, 28550), (19, 28628), (20, 28655), (27, 28754), (37, 28913), (44, 29093), (47, 29117), (55, 29207), (56, 29213), (58, 29249), (62, 29288), (64, 29297), (66, 29330), (67, 29369), (69, 29414), (73, 29465), (77, 29516), (78, 29525), (81, 29594), (85, 29669), (88, 29714), (90, 29729), (100, 29864), (104, 29918), (105, 29939), (106, 29972), (109, 30017), (112, 30071), (114, 30098), (116, 30155), (120, 30176), (122, 30218), (123, 30257), (127, 30317), (145, 30557), (146, 30590), (147, 30593), (149, 30626), (150, 30632), (151, 30695),

Gene: Basato\_32 Start: 28982, Stop: 31237, Start Num: 5

Candidate Starts for Basato\_32:

(Start: 5 @28982 has 296 MA's), (13, 29078), (19, 29156), (20, 29183), (27, 29282), (37, 29441), (44, 29621), (47, 29645), (56, 29741), (58, 29777), (62, 29816), (64, 29825), (66, 29858), (67, 29897), (69, 29942), (73, 29993), (77, 30044), (78, 30053), (81, 30122), (85, 30197), (88, 30242), (90, 30257), (100, 30392), (104, 30446), (105, 30467), (106, 30500), (109, 30545), (112, 30599), (114, 30626), (116, 30683), (120, 30704), (122, 30746), (123, 30785), (127, 30845), (145, 31085), (147, 31121), (149, 31154), (151, 31223),

Gene: BatteryCK\_30 Start: 28373, Stop: 30628, Start Num: 5

Candidate Starts for BatteryCK\_30:

(Start: 5 @28373 has 296 MA's), (13, 28469), (19, 28547), (20, 28574), (27, 28673), (37, 28832), (44, 29012), (47, 29036), (55, 29126), (56, 29132), (58, 29168), (62, 29207), (64, 29216), (66, 29249), (67, 29288), (69, 29333), (73, 29384), (77, 29435), (78, 29444), (81, 29513), (85, 29588), (88, 29633), (90, 29648), (100, 29783), (104, 29837), (105, 29858), (106, 29891), (109, 29936), (112, 29990), (114, 30017), (116, 30074), (120, 30095), (122, 30137), (123, 30176), (127, 30236), (145, 30476), (146, 30509), (147, 30512), (149, 30545), (150, 30551), (151, 30614),

Gene: Beaglebox\_30 Start: 28474, Stop: 30729, Start Num: 5

Candidate Starts for Beaglebox\_30:

(Start: 5 @28474 has 296 MA's), (13, 28570), (19, 28648), (20, 28675), (27, 28774), (37, 28933), (44, 29113), (47, 29137), (55, 29227), (56, 29233), (58, 29269), (62, 29308), (64, 29317), (66, 29350), (67, 29389), (69, 29434), (73, 29485), (77, 29536), (78, 29545), (81, 29614), (85, 29689), (88, 29734), (90, 29749), (100, 29884), (104, 29938), (105, 29959), (106, 29992), (109, 30037), (112, 30091), (114, 30118), (116, 30175), (120, 30196), (122, 30238), (123, 30277), (127, 30337), (145, 30577), (146, 30610), (147, 30613), (149, 30646), (150, 30652), (151, 30715),

Gene: Ben11\_30 Start: 28435, Stop: 30660, Start Num: 4

Candidate Starts for Ben11\_30:

(Start: 4 @28435 has 44 MA's), (Start: 7 @28450 has 1 MA's), (10, 28495), (14, 28552), (21, 28630), (26, 28699), (27, 28711), (30, 28753), (32, 28789), (33, 28816), (34, 28828), (36, 28855), (39, 28945), (43, 29017), (51, 29101), (59, 29209), (60, 29230), (67, 29323), (68, 29338), (76, 29467), (81, 29548), (85, 29623), (87, 29665), (88, 29671), (95, 29770), (100, 29821), (101, 29833), (104, 29875), (105, 29896), (108, 29950), (109, 29974), (111, 30010), (116, 30106), (118, 30115), (122, 30169), (128, 30277), (129, 30304), (133, 30346), (137, 30418), (145, 30508), (147, 30544),

Gene: Bernardo\_31 Start: 28703, Stop: 30928, Start Num: 4

Candidate Starts for Bernardo\_31:

(Start: 4 @28703 has 44 MA's), (10, 28763), (14, 28820), (21, 28898), (26, 28967), (27, 28979), (30, 29021), (32, 29057), (34, 29096), (36, 29123), (39, 29213), (40, 29237), (43, 29285), (51, 29369), (59, 29477), (60, 29498), (67, 29591), (68, 29606), (76, 29735), (81, 29816), (85, 29891), (87, 29933), (88, 29939), (95, 30038), (100, 30089), (101, 30101), (104, 30143), (105, 30164), (108, 30218), (109, 30242), (111, 30278), (116, 30374), (118, 30383), (122, 30437), (128, 30545), (129, 30572), (133, 30614), (137, 30686), (145, 30776), (147, 30812),

Gene: Bishoperium\_30 Start: 28463, Stop: 30718, Start Num: 5

Candidate Starts for Bishoperium\_30:

(Start: 5 @28463 has 296 MA's), (13, 28559), (19, 28637), (20, 28664), (27, 28763), (37, 28922), (44, 29102), (47, 29126), (55, 29216), (56, 29222), (58, 29258), (62, 29297), (64, 29306), (66, 29339), (67, 29378), (69, 29423), (73, 29474), (77, 29525), (78, 29534), (81, 29603), (85, 29678), (88, 29723), (90, 29738), (100, 29873), (104, 29927), (105, 29948), (106, 29981), (109, 30026), (112, 30080), (114, 30107), (116, 30164), (120, 30185), (122, 30227), (123, 30266), (127, 30326), (145, 30566), (146, 30599), (147, 30602), (149, 30635), (150, 30641), (151, 30704),

Gene: BlackStallion\_31 Start: 28765, Stop: 31020, Start Num: 5

Candidate Starts for BlackStallion\_31:

(Start: 5 @28765 has 296 MA's), (13, 28861), (19, 28939), (20, 28966), (27, 29065), (37, 29224), (44, 29404), (47, 29428), (55, 29518), (56, 29524), (58, 29560), (62, 29599), (64, 29608), (66, 29641), (67, 29680), (69, 29725), (73, 29776), (77, 29827), (78, 29836), (81, 29905), (85, 29980), (88, 30025), (90, 30040), (100, 30175), (104, 30229), (105, 30250), (106, 30283), (109, 30328), (112, 30382), (116, 30466), (120, 30487), (122, 30529), (123, 30568), (127, 30628), (145, 30868), (146, 30901), (147, 30904), (149, 30937), (150, 30943), (151, 31006),

Gene: BlueHusk\_31 Start: 28262, Stop: 30517, Start Num: 5

Candidate Starts for BlueHusk\_31:

(Start: 5 @28262 has 296 MA's), (13, 28358), (19, 28436), (20, 28463), (27, 28562), (37, 28721), (44, 28901), (47, 28925), (56, 29021), (58, 29057), (62, 29096), (64, 29105), (66, 29138), (67, 29177), (69, 29222), (73, 29273), (77, 29324), (78, 29333), (81, 29402), (85, 29477), (88, 29522), (90, 29537), (100, 29672), (104, 29726), (105, 29747), (106, 29780), (109, 29825), (112, 29879), (114, 29906), (116, 29963), (120, 29984), (122, 30026), (123, 30065), (127, 30125), (145, 30365), (147, 30401), (149, 30434), (151, 30503),

Gene: Bluephacebaby\_30 Start: 28460, Stop: 30715, Start Num: 5

Candidate Starts for Bluephacebaby\_30:

(Start: 5 @28460 has 296 MA's), (13, 28556), (19, 28634), (20, 28661), (27, 28760), (37, 28919), (44, 29099), (47, 29123), (55, 29213), (56, 29219), (58, 29255), (62, 29294), (64, 29303), (66, 29336), (67, 29375), (69, 29420), (73, 29471), (77, 29522), (78, 29531), (81, 29600), (85, 29675), (88, 29720), (90, 29735), (100, 29870), (104, 29924), (105, 29945), (106, 29978), (109, 30023), (112, 30077), (114, 30104), (116, 30161), (120, 30182), (122, 30224), (123, 30263), (127, 30323), (145, 30563), (146, 30596), (147, 30599), (149, 30632), (150, 30638), (151, 30701),

Gene: BobbyK\_28 Start: 28973, Stop: 31270, Start Num: 5

Candidate Starts for BobbyK\_28:

(Start: 1 @28286 has 1 MA's), (2, 28433), (Start: 5 @28973 has 296 MA's), (13, 29072), (14, 29090), (24, 29213), (27, 29276), (31, 29357), (35, 29423), (41, 29540), (42, 29579), (47, 29639), (52, 29696), (53, 29720), (54, 29723), (58, 29786), (63, 29828), (70, 29963), (71, 29987), (76, 30050), (80, 30089), (82, 30161), (83, 30182), (85, 30218), (86, 30239), (92, 30305), (93, 30317), (95, 30368), (96, 30371), (97, 30389), (99, 30413), (102, 30440), (104, 30473), (105, 30494), (106, 30527), (109, 30572), (117, 30713), (118, 30716), (120, 30728), (124, 30812), (132, 30926), (133, 30947), (134, 30971), (138, 31034), (141, 31064), (142, 31070), (145, 31118), (146, 31151), (147, 31154), (151, 31256), (152, 31259),

Gene: Boehler\_31 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Boehler\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: Briakila\_31 Start: 29378, Stop: 31603, Start Num: 4

Candidate Starts for Briakila\_31:

(Start: 4 @29378 has 44 MA's), (Start: 7 @29393 has 1 MA's), (10, 29438), (14, 29495), (21, 29573), (26, 29642), (27, 29654), (30, 29696), (32, 29732), (33, 29759), (34, 29771), (36, 29798), (39, 29888), (43, 29960), (51, 30044), (59, 30152), (60, 30173), (67, 30266), (68, 30281), (76, 30410), (81, 30491), (85, 30566), (87, 30608), (88, 30614), (95, 30713), (100, 30764), (101, 30776), (104, 30818), (105, 30839), (108, 30893), (109, 30917), (111, 30953), (116, 31049), (118, 31058), (122, 31112), (128,

31220), (129, 31247), (133, 31289), (137, 31361), (145, 31451), (147, 31487),

Gene: Brilliant\_31 Start: 28471, Stop: 30726, Start Num: 5

Candidate Starts for Brilliant\_31:

(Start: 5 @28471 has 296 MA's), (13, 28567), (19, 28645), (20, 28672), (27, 28771), (37, 28930), (44, 29110), (47, 29134), (56, 29230), (58, 29266), (62, 29305), (64, 29314), (66, 29347), (67, 29386), (69, 29431), (73, 29482), (77, 29533), (78, 29542), (81, 29611), (85, 29686), (88, 29731), (90, 29746), (100, 29881), (104, 29935), (105, 29956), (106, 29989), (109, 30034), (112, 30088), (114, 30115), (116, 30172), (120, 30193), (122, 30235), (123, 30274), (127, 30334), (145, 30574), (147, 30610), (149, 30643), (151, 30712),

Gene: BrownCNA\_29 Start: 29234, Stop: 31531, Start Num: 5

Candidate Starts for BrownCNA\_29:

(Start: 1 @28547 has 1 MA's), (2, 28694), (Start: 5 @29234 has 296 MA's), (13, 29333), (14, 29351), (24, 29474), (27, 29537), (31, 29618), (35, 29684), (41, 29801), (42, 29840), (45, 29891), (47, 29900), (52, 29957), (53, 29981), (54, 29984), (58, 30047), (63, 30089), (65, 30101), (70, 30224), (71, 30248), (74, 30278), (75, 30281), (76, 30311), (82, 30422), (83, 30443), (84, 30464), (85, 30479), (86, 30500), (92, 30566), (95, 30629), (96, 30632), (97, 30650), (99, 30674), (102, 30701), (104, 30734), (105, 30755), (106, 30788), (109, 30833), (117, 30974), (120, 30989), (124, 31073), (132, 31187), (133, 31208), (134, 31232), (138, 31295), (141, 31325), (145, 31379), (146, 31412), (147, 31415), (151, 31517), (152, 31520),

Gene: Buckeye\_31 Start: 28783, Stop: 31038, Start Num: 5

Candidate Starts for Buckeye\_31:

(Start: 5 @28783 has 296 MA's), (13, 28879), (19, 28957), (20, 28984), (27, 29083), (37, 29242), (44, 29422), (47, 29446), (55, 29536), (56, 29542), (58, 29578), (62, 29617), (64, 29626), (66, 29659), (67, 29698), (69, 29743), (73, 29794), (77, 29845), (78, 29854), (81, 29923), (85, 29998), (88, 30043), (90, 30058), (100, 30193), (104, 30247), (105, 30268), (106, 30301), (109, 30346), (112, 30400), (114, 30427), (116, 30484), (120, 30505), (122, 30547), (123, 30586), (127, 30646), (145, 30886), (146, 30919), (147, 30922), (149, 30955), (150, 30961), (151, 31024),

Gene: Burr\_30 Start: 28459, Stop: 30714, Start Num: 5

Candidate Starts for Burr\_30:

(Start: 5 @28459 has 296 MA's), (13, 28555), (19, 28633), (20, 28660), (27, 28759), (37, 28918), (44, 29098), (47, 29122), (55, 29212), (56, 29218), (58, 29254), (62, 29293), (64, 29302), (66, 29335), (67, 29374), (69, 29419), (73, 29470), (77, 29521), (78, 29530), (81, 29599), (85, 29674), (88, 29719), (90, 29734), (100, 29869), (104, 29923), (105, 29944), (106, 29977), (109, 30022), (112, 30076), (114, 30103), (116, 30160), (120, 30181), (122, 30223), (123, 30262), (127, 30322), (145, 30562), (146, 30595), (147, 30598), (149, 30631), (150, 30637), (151, 30700),

Gene: CamL\_31 Start: 28761, Stop: 31016, Start Num: 5

Candidate Starts for CamL\_31:

(Start: 5 @28761 has 296 MA's), (13, 28857), (19, 28935), (20, 28962), (27, 29061), (37, 29220), (44, 29400), (47, 29424), (55, 29514), (56, 29520), (58, 29556), (62, 29595), (64, 29604), (66, 29637), (67, 29676), (69, 29721), (73, 29772), (77, 29823), (78, 29832), (81, 29901), (85, 29976), (88, 30021), (90, 30036), (100, 30171), (104, 30225), (105, 30246), (106, 30279), (109, 30324), (112, 30378), (114, 30405), (116, 30462), (120, 30483), (122, 30525), (123, 30564), (127, 30624), (145, 30864), (146, 30897), (147, 30900), (149, 30933), (150, 30939), (151, 31002),

Gene: CampRoach\_31 Start: 28751, Stop: 31006, Start Num: 5

Candidate Starts for CampRoach\_31:

(Start: 5 @28751 has 296 MA's), (13, 28847), (19, 28925), (20, 28952), (27, 29051), (37, 29210), (44, 29390), (47, 29414), (55, 29504), (56, 29510), (58, 29546), (62, 29585), (64, 29594), (66, 29627), (67,



29666), (69, 29711), (73, 29762), (77, 29813), (78, 29822), (81, 29891), (85, 29966), (88, 30011), (90, 30026), (100, 30161), (104, 30215), (105, 30236), (106, 30269), (109, 30314), (112, 30368), (114, 30395), (116, 30452), (120, 30473), (122, 30515), (123, 30554), (127, 30614), (145, 30854), (146, 30887), (147, 30890), (149, 30923), (150, 30929), (151, 30992),

Gene: Cannibal\_31 Start: 28744, Stop: 30999, Start Num: 5

Candidate Starts for Cannibal\_31:

(Start: 5 @28744 has 296 MA's), (13, 28840), (19, 28918), (20, 28945), (27, 29044), (37, 29203), (44, 29383), (47, 29407), (55, 29497), (56, 29503), (58, 29539), (62, 29578), (64, 29587), (66, 29620), (67, 29659), (69, 29704), (73, 29755), (77, 29806), (78, 29815), (81, 29884), (85, 29959), (88, 30004), (90, 30019), (100, 30154), (104, 30208), (105, 30229), (106, 30262), (109, 30307), (112, 30361), (114, 30388), (116, 30445), (120, 30466), (122, 30508), (123, 30547), (127, 30607), (145, 30847), (147, 30883), (149, 30916), (151, 30985),

Gene: Carthage\_29 Start: 27670, Stop: 29928, Start Num: 5

Candidate Starts for Carthage\_29:

(Start: 5 @27670 has 296 MA's), (13, 27766), (19, 27844), (20, 27871), (27, 27973), (44, 28312), (47, 28336), (55, 28426), (56, 28432), (58, 28468), (62, 28507), (66, 28549), (67, 28588), (69, 28633), (73, 28684), (77, 28735), (78, 28744), (81, 28813), (85, 28888), (88, 28933), (90, 28948), (100, 29083), (104, 29137), (105, 29158), (106, 29191), (109, 29236), (112, 29290), (114, 29317), (116, 29374), (120, 29395), (122, 29437), (123, 29476), (127, 29536), (145, 29776), (146, 29809), (147, 29812), (149, 29845), (150, 29851), (151, 29914),

Gene: Casbah\_30 Start: 28465, Stop: 30690, Start Num: 4

Candidate Starts for Casbah\_30:

(Start: 4 @28465 has 44 MA's), (Start: 7 @28480 has 1 MA's), (10, 28525), (14, 28582), (21, 28660), (26, 28729), (27, 28741), (30, 28783), (32, 28819), (33, 28846), (34, 28858), (36, 28885), (39, 28975), (43, 29047), (51, 29131), (59, 29239), (60, 29260), (67, 29353), (68, 29368), (76, 29497), (81, 29578), (85, 29653), (87, 29695), (88, 29701), (92, 29737), (100, 29851), (101, 29863), (104, 29905), (105, 29926), (108, 29980), (109, 30004), (116, 30136), (118, 30145), (122, 30199), (128, 30307), (129, 30334), (133, 30376), (137, 30448), (145, 30538), (147, 30574),

Gene: ChaChing\_31 Start: 28628, Stop: 30853, Start Num: 4

Candidate Starts for ChaChing\_31:

(Start: 4 @28628 has 44 MA's), (Start: 7 @28643 has 1 MA's), (10, 28688), (14, 28745), (21, 28823), (26, 28892), (27, 28904), (30, 28946), (32, 28982), (33, 29009), (34, 29021), (36, 29048), (39, 29138), (43, 29210), (51, 29294), (59, 29402), (60, 29423), (67, 29516), (68, 29531), (76, 29660), (81, 29741), (85, 29816), (87, 29858), (88, 29864), (92, 29900), (100, 30014), (101, 30026), (104, 30068), (105, 30089), (108, 30143), (109, 30167), (111, 30203), (116, 30299), (118, 30308), (122, 30362), (128, 30470), (129, 30497), (133, 30539), (137, 30611), (145, 30701), (147, 30737),

Gene: Chaelin\_31 Start: 28458, Stop: 30713, Start Num: 5

Candidate Starts for Chaelin\_31:

(Start: 5 @28458 has 296 MA's), (13, 28554), (19, 28632), (20, 28659), (27, 28758), (37, 28917), (44, 29097), (47, 29121), (56, 29217), (58, 29253), (62, 29292), (64, 29301), (66, 29334), (67, 29373), (69, 29418), (73, 29469), (78, 29529), (81, 29598), (85, 29673), (88, 29718), (90, 29733), (100, 29868), (104, 29922), (105, 29943), (106, 29976), (109, 30021), (112, 30075), (114, 30102), (116, 30159), (120, 30180), (122, 30222), (123, 30261), (127, 30321), (145, 30561), (147, 30597), (149, 30630), (151, 30699),

Gene: Chah\_32 Start: 28778, Stop: 31033, Start Num: 5

Candidate Starts for Chah\_32:

(Start: 5 @28778 has 296 MA's), (13, 28874), (19, 28952), (20, 28979), (27, 29078), (37, 29237), (44, 29417), (47, 29441), (55, 29531), (56, 29537), (58, 29573), (62, 29612), (64, 29621), (66, 29654), (67, 29693), (69, 29738), (73, 29789), (77, 29840), (78, 29849), (81, 29918), (85, 29993), (88, 30038), (90, 30053), (100, 30188), (104, 30242), (105, 30263), (106, 30296), (109, 30341), (112, 30395), (114, 30422), (116, 30479), (120, 30500), (122, 30542), (123, 30581), (127, 30641), (145, 30881), (146, 30914), (147, 30917), (149, 30950), (150, 30956), (151, 31019),

Gene: Chandler\_31 Start: 29393, Stop: 31621, Start Num: 4

Candidate Starts for Chandler\_31:

(Start: 4 @29393 has 44 MA's), (Start: 7 @29408 has 1 MA's), (10, 29453), (14, 29510), (21, 29588), (26, 29657), (27, 29669), (30, 29711), (32, 29747), (33, 29774), (34, 29786), (36, 29813), (39, 29903), (43, 29975), (51, 30059), (59, 30167), (60, 30188), (67, 30281), (68, 30296), (76, 30425), (81, 30506), (85, 30581), (87, 30623), (88, 30629), (92, 30665), (100, 30779), (101, 30791), (104, 30833), (105, 30854), (108, 30908), (109, 30932), (111, 30968), (116, 31067), (118, 31076), (122, 31130), (128, 31238), (129, 31265), (133, 31307), (137, 31379), (145, 31469), (147, 31505),

Gene: Charles1\_31 Start: 28746, Stop: 31001, Start Num: 5

Candidate Starts for Charles1\_31:

(Start: 5 @28746 has 296 MA's), (13, 28842), (19, 28920), (20, 28947), (27, 29046), (37, 29205), (44, 29385), (47, 29409), (55, 29499), (56, 29505), (58, 29541), (62, 29580), (64, 29589), (66, 29622), (67, 29661), (69, 29706), (73, 29757), (77, 29808), (78, 29817), (81, 29886), (85, 29961), (88, 30006), (90, 30021), (100, 30156), (104, 30210), (105, 30231), (106, 30264), (109, 30309), (112, 30363), (114, 30390), (116, 30447), (120, 30468), (122, 30510), (123, 30549), (127, 30609), (145, 30849), (146, 30882), (147, 30885), (149, 30918), (150, 30924), (151, 30987),

Gene: CharlieGBrown\_30 Start: 28335, Stop: 30590, Start Num: 5

Candidate Starts for CharlieGBrown\_30:

(Start: 5 @28335 has 296 MA's), (13, 28431), (19, 28509), (20, 28536), (27, 28635), (37, 28794), (44, 28974), (47, 28998), (56, 29094), (58, 29130), (62, 29169), (64, 29178), (66, 29211), (67, 29250), (69, 29295), (73, 29346), (78, 29406), (81, 29475), (85, 29550), (88, 29595), (90, 29610), (100, 29745), (104, 29799), (105, 29820), (106, 29853), (109, 29898), (112, 29952), (114, 29979), (116, 30036), (120, 30057), (122, 30099), (123, 30138), (127, 30198), (145, 30438), (146, 30471), (147, 30474), (149, 30507), (151, 30576),

Gene: CheetO\_31 Start: 28760, Stop: 31015, Start Num: 5

Candidate Starts for CheetO\_31:

(Start: 5 @28760 has 296 MA's), (13, 28856), (19, 28934), (20, 28961), (27, 29060), (37, 29219), (44, 29399), (47, 29423), (56, 29519), (58, 29555), (62, 29594), (64, 29603), (66, 29636), (67, 29675), (69, 29720), (73, 29771), (77, 29822), (78, 29831), (81, 29900), (85, 29975), (88, 30020), (90, 30035), (100, 30170), (104, 30224), (105, 30245), (106, 30278), (109, 30323), (112, 30377), (114, 30404), (116, 30461), (120, 30482), (122, 30524), (123, 30563), (127, 30623), (145, 30863), (147, 30899), (149, 30932), (151, 31001),

Gene: Cher\_30 Start: 28483, Stop: 30738, Start Num: 5

Candidate Starts for Cher\_30:

(Start: 5 @28483 has 296 MA's), (13, 28579), (19, 28657), (20, 28684), (27, 28783), (37, 28942), (44, 29122), (47, 29146), (55, 29236), (56, 29242), (58, 29278), (62, 29317), (64, 29326), (66, 29359), (67, 29398), (69, 29443), (73, 29494), (77, 29545), (78, 29554), (81, 29623), (85, 29698), (88, 29743), (90, 29758), (100, 29893), (104, 29947), (105, 29968), (106, 30001), (109, 30046), (112, 30100), (114, 30127), (116, 30184), (120, 30205), (122, 30247), (123, 30286), (127, 30346), (145, 30586), (146, 30619), (147, 30622), (149, 30655), (150, 30661), (151, 30724),

Gene: Childish\_30 Start: 28486, Stop: 30741, Start Num: 5

Candidate Starts for Childish\_30:

(Start: 5 @28486 has 296 MA's), (13, 28582), (19, 28660), (20, 28687), (27, 28786), (37, 28945), (44, 29125), (47, 29149), (55, 29239), (56, 29245), (58, 29281), (62, 29320), (64, 29329), (66, 29362), (67, 29401), (69, 29446), (73, 29497), (77, 29548), (78, 29557), (81, 29626), (85, 29701), (88, 29746), (90, 29761), (100, 29896), (104, 29950), (105, 29971), (106, 30004), (109, 30049), (112, 30103), (114, 30130), (116, 30187), (120, 30208), (122, 30250), (123, 30289), (127, 30349), (145, 30589), (147, 30625), (149, 30658), (151, 30727),

Gene: Chorkpop\_31 Start: 28482, Stop: 30737, Start Num: 5

Candidate Starts for Chorkpop\_31:

(Start: 5 @28482 has 296 MA's), (13, 28578), (19, 28656), (20, 28683), (27, 28782), (37, 28941), (44, 29121), (47, 29145), (55, 29235), (56, 29241), (58, 29277), (62, 29316), (64, 29325), (66, 29358), (67, 29397), (69, 29442), (73, 29493), (77, 29544), (78, 29553), (81, 29622), (85, 29697), (88, 29742), (90, 29757), (100, 29892), (104, 29946), (105, 29967), (106, 30000), (109, 30045), (112, 30099), (114, 30126), (116, 30183), (120, 30204), (122, 30246), (123, 30285), (127, 30345), (145, 30585), (147, 30621), (149, 30654), (151, 30723),

Gene: ChrisnMich\_27 Start: 27933, Stop: 30230, Start Num: 5

Candidate Starts for ChrisnMich\_27:

(Start: 5 @27933 has 296 MA's), (13, 28032), (14, 28050), (24, 28173), (27, 28236), (31, 28317), (35, 28383), (37, 28395), (41, 28500), (42, 28539), (45, 28590), (47, 28599), (53, 28680), (54, 28683), (58, 28746), (63, 28788), (65, 28800), (70, 28923), (71, 28947), (76, 29010), (80, 29049), (82, 29121), (83, 29142), (85, 29178), (86, 29199), (92, 29265), (93, 29277), (95, 29328), (96, 29331), (97, 29349), (99, 29373), (102, 29400), (104, 29433), (105, 29454), (106, 29487), (109, 29532), (117, 29673), (118, 29676), (120, 29688), (124, 29772), (133, 29907), (134, 29931), (138, 29994), (141, 30024), (142, 30030), (145, 30078), (146, 30111), (147, 30114), (151, 30216), (152, 30219),

Gene: Chunky\_31 Start: 28766, Stop: 31024, Start Num: 5

Candidate Starts for Chunky\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29069), (37, 29228), (44, 29408), (47, 29432), (56, 29528), (58, 29564), (62, 29603), (64, 29612), (66, 29645), (67, 29684), (69, 29729), (73, 29780), (77, 29831), (78, 29840), (81, 29909), (85, 29984), (88, 30029), (90, 30044), (100, 30179), (104, 30233), (105, 30254), (106, 30287), (109, 30332), (112, 30386), (114, 30413), (116, 30470), (120, 30491), (122, 30533), (123, 30572), (127, 30632), (145, 30872), (146, 30905), (147, 30908), (149, 30941), (150, 30947), (151, 31010),

Gene: Chute\_30 Start: 28801, Stop: 31062, Start Num: 5

Candidate Starts for Chute\_30:

(Start: 5 @28801 has 296 MA's), (13, 28897), (19, 28975), (20, 29002), (25, 29077), (27, 29107), (37, 29266), (44, 29446), (47, 29470), (56, 29566), (58, 29602), (62, 29641), (64, 29650), (66, 29683), (67, 29722), (69, 29767), (73, 29818), (78, 29878), (81, 29947), (85, 30022), (88, 30067), (90, 30082), (100, 30217), (104, 30271), (105, 30292), (106, 30325), (109, 30370), (112, 30424), (114, 30451), (116, 30508), (120, 30529), (122, 30571), (123, 30610), (127, 30670), (145, 30910), (147, 30946), (149, 30979), (151, 31048),

Gene: Cobra\_31 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Cobra\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (114, 30410), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (147, 30905), (149, 30938), (151, 31007),

Gene: Colbert\_31 Start: 28819, Stop: 31077, Start Num: 5

Candidate Starts for Colbert\_31:

(Start: 5 @28819 has 296 MA's), (13, 28915), (19, 28993), (20, 29020), (27, 29122), (37, 29281), (44, 29461), (47, 29485), (56, 29581), (58, 29617), (62, 29656), (64, 29665), (66, 29698), (67, 29737), (69, 29782), (73, 29833), (77, 29884), (78, 29893), (81, 29962), (85, 30037), (88, 30082), (90, 30097), (100, 30232), (104, 30286), (105, 30307), (106, 30340), (109, 30385), (112, 30439), (114, 30466), (116, 30523), (120, 30544), (122, 30586), (123, 30625), (127, 30685), (145, 30925), (146, 30958), (147, 30961), (149, 30994), (150, 31000), (151, 31063),

Gene: Coletti\_30 Start: 28801, Stop: 31062, Start Num: 5

Candidate Starts for Coletti\_30:

(Start: 5 @28801 has 296 MA's), (13, 28897), (19, 28975), (20, 29002), (25, 29077), (27, 29107), (37, 29266), (44, 29446), (47, 29470), (56, 29566), (58, 29602), (62, 29641), (64, 29650), (66, 29683), (67, 29722), (69, 29767), (73, 29818), (78, 29878), (81, 29947), (85, 30022), (88, 30067), (90, 30082), (100, 30217), (104, 30271), (105, 30292), (106, 30325), (109, 30370), (112, 30424), (114, 30451), (116, 30508), (120, 30529), (122, 30571), (123, 30610), (127, 30670), (145, 30910), (147, 30946), (149, 30979), (151, 31048),

Gene: Compostia\_32 Start: 29043, Stop: 31268, Start Num: 4

Candidate Starts for Compostia\_32:

(Start: 4 @29043 has 44 MA's), (Start: 7 @29058 has 1 MA's), (10, 29103), (14, 29160), (21, 29238), (26, 29307), (27, 29319), (30, 29361), (32, 29397), (33, 29424), (34, 29436), (36, 29463), (39, 29553), (43, 29625), (51, 29709), (59, 29817), (60, 29838), (67, 29931), (68, 29946), (76, 30075), (81, 30156), (85, 30231), (87, 30273), (88, 30279), (95, 30378), (100, 30429), (101, 30441), (104, 30483), (105, 30504), (108, 30558), (109, 30582), (111, 30618), (116, 30714), (118, 30723), (122, 30777), (128, 30885), (129, 30912), (133, 30954), (137, 31026), (145, 31116), (147, 31152),

Gene: Cooper\_28 Start: 28155, Stop: 30443, Start Num: 5

Candidate Starts for Cooper\_28:

(Start: 5 @28155 has 296 MA's), (11, 28227), (13, 28254), (14, 28272), (27, 28458), (31, 28539), (35, 28605), (41, 28722), (42, 28761), (47, 28821), (53, 28902), (54, 28905), (58, 28968), (65, 29022), (70, 29145), (71, 29169), (76, 29232), (80, 29271), (82, 29343), (83, 29364), (84, 29385), (85, 29400), (86, 29421), (93, 29499), (95, 29550), (96, 29553), (97, 29571), (99, 29595), (102, 29622), (104, 29655), (105, 29676), (106, 29709), (109, 29754), (117, 29895), (118, 29898), (120, 29910), (124, 29994), (125, 30006), (132, 30108), (133, 30129), (135, 30159), (142, 30243), (145, 30291), (146, 30324), (147, 30327), (151, 30429), (152, 30432),

Gene: Cornobble\_30 Start: 28318, Stop: 30576, Start Num: 5

Candidate Starts for Cornobble\_30:

(Start: 5 @28318 has 296 MA's), (13, 28414), (19, 28492), (20, 28519), (27, 28621), (37, 28780), (44, 28960), (47, 28984), (56, 29080), (58, 29116), (62, 29155), (64, 29164), (66, 29197), (67, 29236), (69, 29281), (73, 29332), (77, 29383), (78, 29392), (81, 29461), (85, 29536), (88, 29581), (90, 29596), (100, 29731), (104, 29785), (105, 29806), (106, 29839), (109, 29884), (112, 29938), (116, 30022), (120, 30043), (122, 30085), (123, 30124), (127, 30184), (145, 30424), (146, 30457), (147, 30460), (149, 30493), (150, 30499), (151, 30562),

Gene: Corofin\_31 Start: 28638, Stop: 30863, Start Num: 4

Candidate Starts for Corofin\_31:

(Start: 4 @28638 has 44 MA's), (Start: 7 @28653 has 1 MA's), (10, 28698), (14, 28755), (21, 28833), (26, 28902), (27, 28914), (30, 28956), (32, 28992), (33, 29019), (34, 29031), (36, 29058), (39, 29148), (43, 29220), (51, 29304), (59, 29412), (60, 29433), (67, 29526), (68, 29541), (76, 29670), (81, 29751), (85, 29826), (87, 29868), (88, 29874), (92, 29910), (100, 30024), (101, 30036), (104, 30078), (105,

30099), (108, 30153), (109, 30177), (111, 30213), (116, 30309), (118, 30318), (122, 30372), (128, 30480), (129, 30507), (133, 30549), (137, 30621), (145, 30711), (147, 30747),

Gene: Cosmolli16\_30 Start: 28480, Stop: 30735, Start Num: 5

Candidate Starts for Cosmolli16\_30:

(Start: 5 @28480 has 296 MA's), (13, 28576), (19, 28654), (20, 28681), (27, 28780), (37, 28939), (44, 29119), (47, 29143), (55, 29233), (56, 29239), (58, 29275), (62, 29314), (64, 29323), (66, 29356), (67, 29395), (69, 29440), (73, 29491), (77, 29542), (78, 29551), (81, 29620), (85, 29695), (88, 29740), (90, 29755), (100, 29890), (104, 29944), (105, 29965), (106, 29998), (109, 30043), (112, 30097), (114, 30124), (116, 30181), (120, 30202), (122, 30244), (123, 30283), (127, 30343), (145, 30583), (146, 30616), (147, 30619), (149, 30652), (150, 30658), (151, 30721),

Gene: Craff\_31 Start: 28764, Stop: 31019, Start Num: 5

Candidate Starts for Craff\_31:

(Start: 5 @28764 has 296 MA's), (13, 28860), (19, 28938), (20, 28965), (27, 29064), (37, 29223), (44, 29403), (47, 29427), (55, 29517), (56, 29523), (58, 29559), (62, 29598), (64, 29607), (66, 29640), (67, 29679), (69, 29724), (73, 29775), (77, 29826), (78, 29835), (81, 29904), (85, 29979), (88, 30024), (90, 30039), (100, 30174), (104, 30228), (105, 30249), (106, 30282), (109, 30327), (112, 30381), (114, 30408), (116, 30465), (120, 30486), (122, 30528), (123, 30567), (127, 30627), (145, 30867), (146, 30900), (147, 30903), (149, 30936), (150, 30942), (151, 31005),

Gene: Crownjwl\_31 Start: 28533, Stop: 30791, Start Num: 5

Candidate Starts for Crownjwl\_31:

(Start: 5 @28533 has 296 MA's), (13, 28629), (19, 28707), (20, 28734), (27, 28836), (37, 28995), (44, 29175), (47, 29199), (49, 29211), (56, 29295), (58, 29331), (62, 29370), (64, 29379), (66, 29412), (67, 29451), (69, 29496), (73, 29547), (77, 29598), (78, 29607), (81, 29676), (85, 29751), (88, 29796), (90, 29811), (100, 29946), (104, 30000), (105, 30021), (106, 30054), (109, 30099), (112, 30153), (116, 30237), (120, 30258), (122, 30300), (123, 30339), (127, 30399), (145, 30639), (146, 30672), (147, 30675), (149, 30708), (150, 30714), (151, 30777),

Gene: DaddyDaniels\_31 Start: 28455, Stop: 30710, Start Num: 5

Candidate Starts for DaddyDaniels\_31:

(Start: 5 @28455 has 296 MA's), (13, 28551), (19, 28629), (20, 28656), (27, 28755), (37, 28914), (44, 29094), (47, 29118), (56, 29214), (58, 29250), (62, 29289), (64, 29298), (66, 29331), (67, 29370), (69, 29415), (73, 29466), (77, 29517), (78, 29526), (81, 29595), (85, 29670), (88, 29715), (90, 29730), (100, 29865), (104, 29919), (105, 29940), (106, 29973), (109, 30018), (112, 30072), (114, 30099), (116, 30156), (120, 30177), (122, 30219), (123, 30258), (127, 30318), (145, 30558), (147, 30594), (149, 30627), (151, 30696),

Gene: Daffy\_31 Start: 28486, Stop: 30741, Start Num: 5

Candidate Starts for Daffy\_31:

(Start: 5 @28486 has 296 MA's), (13, 28582), (19, 28660), (20, 28687), (27, 28786), (37, 28945), (44, 29125), (47, 29149), (55, 29239), (56, 29245), (58, 29281), (62, 29320), (64, 29329), (66, 29362), (67, 29401), (69, 29446), (73, 29497), (77, 29548), (78, 29557), (81, 29626), (85, 29701), (88, 29746), (90, 29761), (100, 29896), (104, 29950), (105, 29971), (106, 30004), (109, 30049), (112, 30103), (114, 30130), (116, 30187), (120, 30208), (122, 30250), (123, 30289), (127, 30349), (145, 30589), (147, 30625), (149, 30658), (151, 30727),

Gene: Daisy\_31 Start: 28640, Stop: 30865, Start Num: 4

Candidate Starts for Daisy\_31:

(Start: 4 @28640 has 44 MA's), (Start: 7 @28655 has 1 MA's), (10, 28700), (14, 28757), (21, 28835), (26, 28904), (27, 28916), (30, 28958), (32, 28994), (33, 29021), (34, 29033), (36, 29060), (39, 29150), (43, 29222), (51, 29306), (59, 29414), (60, 29435), (67, 29528), (68, 29543), (76, 29672), (81, 29753),

(85, 29828), (87, 29870), (88, 29876), (92, 29912), (100, 30026), (101, 30038), (104, 30080), (105, 30101), (108, 30155), (109, 30179), (111, 30215), (116, 30311), (118, 30320), (122, 30374), (128, 30482), (129, 30509), (133, 30551), (137, 30623), (145, 30713), (147, 30749),

Gene: Daka\_31 Start: 28760, Stop: 31015, Start Num: 5

Candidate Starts for Daka\_31:

(Start: 5 @28760 has 296 MA's), (13, 28856), (19, 28934), (20, 28961), (27, 29060), (37, 29219), (44, 29399), (47, 29423), (56, 29519), (58, 29555), (62, 29594), (64, 29603), (66, 29636), (67, 29675), (69, 29720), (73, 29771), (77, 29822), (78, 29831), (81, 29900), (85, 29975), (88, 30020), (90, 30035), (100, 30170), (104, 30224), (105, 30245), (106, 30278), (109, 30323), (112, 30377), (114, 30404), (116, 30461), (120, 30482), (122, 30524), (123, 30563), (127, 30623), (145, 30863), (147, 30899), (149, 30932), (151, 31001),

Gene: Dati\_31 Start: 28480, Stop: 30735, Start Num: 5

Candidate Starts for Dati\_31:

(Start: 5 @28480 has 296 MA's), (13, 28576), (19, 28654), (20, 28681), (27, 28780), (37, 28939), (44, 29119), (47, 29143), (55, 29233), (56, 29239), (58, 29275), (62, 29314), (64, 29323), (66, 29356), (67, 29395), (69, 29440), (73, 29491), (77, 29542), (78, 29551), (81, 29620), (85, 29695), (88, 29740), (90, 29755), (100, 29890), (104, 29944), (105, 29965), (106, 29998), (109, 30043), (112, 30097), (114, 30124), (116, 30181), (120, 30202), (122, 30244), (123, 30283), (127, 30343), (145, 30583), (146, 30616), (147, 30619), (149, 30652), (150, 30658), (151, 30721),

Gene: Deenasa\_31 Start: 29376, Stop: 31604, Start Num: 4

Candidate Starts for Deenasa\_31:

(Start: 4 @29376 has 44 MA's), (Start: 7 @29391 has 1 MA's), (10, 29436), (14, 29493), (21, 29571), (26, 29640), (27, 29652), (30, 29694), (32, 29730), (33, 29757), (34, 29769), (36, 29796), (39, 29886), (43, 29958), (51, 30042), (59, 30150), (60, 30171), (67, 30264), (68, 30279), (76, 30408), (81, 30489), (85, 30564), (87, 30606), (88, 30612), (92, 30648), (100, 30762), (101, 30774), (104, 30816), (105, 30837), (108, 30891), (109, 30915), (111, 30951), (116, 31050), (118, 31059), (122, 31113), (128, 31221), (129, 31248), (133, 31290), (137, 31362), (145, 31452), (147, 31488),

Gene: DelRivs\_30 Start: 28481, Stop: 30736, Start Num: 5

Candidate Starts for DelRivs\_30:

(Start: 5 @28481 has 296 MA's), (13, 28577), (19, 28655), (20, 28682), (27, 28781), (37, 28940), (44, 29120), (47, 29144), (55, 29234), (56, 29240), (58, 29276), (62, 29315), (64, 29324), (66, 29357), (67, 29396), (69, 29441), (73, 29492), (77, 29543), (78, 29552), (81, 29621), (85, 29696), (88, 29741), (90, 29756), (100, 29891), (104, 29945), (105, 29966), (106, 29999), (109, 30044), (112, 30098), (114, 30125), (116, 30182), (120, 30203), (122, 30245), (123, 30284), (127, 30344), (145, 30584), (146, 30617), (147, 30620), (149, 30653), (150, 30659), (151, 30722),

Gene: Derpp\_30 Start: 28325, Stop: 30580, Start Num: 5

Candidate Starts for Derpp\_30:

(Start: 5 @28325 has 296 MA's), (13, 28421), (19, 28499), (20, 28526), (27, 28625), (37, 28784), (44, 28964), (47, 28988), (56, 29084), (58, 29120), (62, 29159), (64, 29168), (66, 29201), (67, 29240), (69, 29285), (73, 29336), (78, 29396), (81, 29465), (85, 29540), (88, 29585), (90, 29600), (100, 29735), (104, 29789), (105, 29810), (106, 29843), (109, 29888), (112, 29942), (114, 29969), (116, 30026), (120, 30047), (122, 30089), (123, 30128), (127, 30188), (145, 30428), (146, 30461), (147, 30464), (149, 30497), (151, 30566),

Gene: Devonte\_31 Start: 28604, Stop: 30829, Start Num: 4

Candidate Starts for Devonte\_31:

(Start: 4 @28604 has 44 MA's), (Start: 7 @28619 has 1 MA's), (10, 28664), (14, 28721), (21, 28799), (26, 28868), (27, 28880), (30, 28922), (32, 28958), (33, 28985), (34, 28997), (36, 29024), (39, 29114),

(43, 29186), (51, 29270), (59, 29378), (60, 29399), (67, 29492), (68, 29507), (76, 29636), (81, 29717), (85, 29792), (87, 29834), (88, 29840), (92, 29876), (100, 29990), (101, 30002), (104, 30044), (105, 30065), (108, 30119), (109, 30143), (111, 30179), (116, 30275), (118, 30284), (122, 30338), (128, 30446), (129, 30473), (133, 30515), (137, 30587), (145, 30677), (147, 30713),

Gene: Dice\_30 Start: 28460, Stop: 30715, Start Num: 5

Candidate Starts for Dice\_30:

(Start: 5 @28460 has 296 MA's), (13, 28556), (19, 28634), (20, 28661), (27, 28760), (37, 28919), (44, 29099), (47, 29123), (55, 29213), (56, 29219), (58, 29255), (62, 29294), (64, 29303), (66, 29336), (67, 29375), (69, 29420), (73, 29471), (77, 29522), (78, 29531), (81, 29600), (85, 29675), (88, 29720), (90, 29735), (100, 29870), (104, 29924), (105, 29945), (106, 29978), (109, 30023), (112, 30077), (114, 30104), (116, 30161), (120, 30182), (122, 30224), (123, 30263), (127, 30323), (145, 30563), (147, 30599), (149, 30632), (151, 30701),

Gene: DigitDog\_30 Start: 28569, Stop: 30836, Start Num: 5

Candidate Starts for DigitDog\_30:

(Start: 5 @28569 has 296 MA's), (8, 28617), (12, 28647), (13, 28665), (15, 28701), (17, 28722), (18, 28740), (24, 28803), (28, 28908), (37, 29031), (38, 29037), (41, 29136), (48, 29238), (52, 29292), (62, 29412), (65, 29427), (66, 29454), (77, 29640), (80, 29676), (81, 29718), (85, 29793), (88, 29844), (92, 29880), (95, 29943), (98, 29967), (100, 29994), (108, 30123), (109, 30147), (116, 30282), (118, 30291), (120, 30303), (122, 30345), (123, 30384), (124, 30387), (126, 30441), (128, 30453), (130, 30483), (132, 30501), (136, 30567), (145, 30684), (151, 30822),

Gene: Dingo\_31 Start: 28743, Stop: 30998, Start Num: 5

Candidate Starts for Dingo\_31:

(Start: 5 @28743 has 296 MA's), (13, 28839), (19, 28917), (20, 28944), (27, 29043), (37, 29202), (44, 29382), (47, 29406), (56, 29502), (58, 29538), (62, 29577), (64, 29586), (66, 29619), (67, 29658), (69, 29703), (73, 29754), (77, 29805), (78, 29814), (81, 29883), (85, 29958), (88, 30003), (90, 30018), (100, 30153), (104, 30207), (105, 30228), (106, 30261), (109, 30306), (112, 30360), (114, 30387), (116, 30444), (120, 30465), (122, 30507), (123, 30546), (127, 30606), (131, 30657), (145, 30846), (147, 30882), (149, 30915), (151, 30984),

Gene: Dione\_30 Start: 28465, Stop: 30720, Start Num: 5

Candidate Starts for Dione\_30:

(Start: 5 @28465 has 296 MA's), (13, 28561), (19, 28639), (20, 28666), (27, 28765), (37, 28924), (44, 29104), (47, 29128), (55, 29218), (56, 29224), (58, 29260), (62, 29299), (64, 29308), (66, 29341), (67, 29380), (69, 29425), (73, 29476), (77, 29527), (78, 29536), (81, 29605), (85, 29680), (88, 29725), (90, 29740), (100, 29875), (104, 29929), (105, 29950), (106, 29983), (109, 30028), (112, 30082), (114, 30109), (116, 30166), (120, 30187), (122, 30229), (123, 30268), (127, 30328), (145, 30568), (147, 30604), (149, 30637), (151, 30706),

Gene: DirtJuice\_31 Start: 28749, Stop: 31004, Start Num: 5

Candidate Starts for DirtJuice\_31:

(Start: 5 @28749 has 296 MA's), (13, 28845), (19, 28923), (20, 28950), (27, 29049), (37, 29208), (44, 29388), (47, 29412), (56, 29508), (58, 29544), (62, 29583), (64, 29592), (66, 29625), (67, 29664), (69, 29709), (73, 29760), (77, 29811), (78, 29820), (81, 29889), (85, 29964), (88, 30009), (90, 30024), (100, 30159), (104, 30213), (105, 30234), (106, 30267), (109, 30312), (112, 30366), (114, 30393), (116, 30450), (120, 30471), (122, 30513), (123, 30552), (127, 30612), (145, 30852), (147, 30888), (149, 30921), (151, 30990),

Gene: Doddsville\_31 Start: 28479, Stop: 30734, Start Num: 5

Candidate Starts for Doddsville\_31:

(Start: 5 @28479 has 296 MA's), (13, 28575), (19, 28653), (20, 28680), (27, 28779), (37, 28938), (44, 29118), (47, 29142), (56, 29238), (58, 29274), (62, 29313), (64, 29322), (66, 29355), (67, 29394), (69, 29439), (73, 29490), (78, 29550), (81, 29619), (85, 29694), (88, 29739), (90, 29754), (100, 29889), (104, 29943), (105, 29964), (106, 29997), (109, 30042), (112, 30096), (114, 30123), (116, 30180), (120, 30201), (122, 30243), (123, 30282), (127, 30342), (145, 30582), (146, 30615), (147, 30618), (149, 30651), (151, 30720),

Gene: DoesntMatter\_31 Start: 28745, Stop: 31000, Start Num: 5

Candidate Starts for DoesntMatter\_31:

(Start: 5 @28745 has 296 MA's), (13, 28841), (19, 28919), (20, 28946), (27, 29045), (37, 29204), (44, 29384), (47, 29408), (55, 29498), (56, 29504), (58, 29540), (62, 29579), (64, 29588), (66, 29621), (67, 29660), (69, 29705), (73, 29756), (77, 29807), (78, 29816), (81, 29885), (85, 29960), (88, 30005), (90, 30020), (100, 30155), (104, 30209), (105, 30230), (106, 30263), (109, 30308), (112, 30362), (114, 30389), (116, 30446), (120, 30467), (122, 30509), (123, 30548), (127, 30608), (145, 30848), (146, 30881), (147, 30884), (149, 30917), (150, 30923), (151, 30986),

Gene: DonSanchon\_30 Start: 28459, Stop: 30714, Start Num: 5

Candidate Starts for DonSanchon\_30:

(Start: 5 @28459 has 296 MA's), (13, 28555), (19, 28633), (20, 28660), (27, 28759), (37, 28918), (44, 29098), (47, 29122), (55, 29212), (56, 29218), (58, 29254), (62, 29293), (64, 29302), (66, 29335), (67, 29374), (69, 29419), (73, 29470), (77, 29521), (78, 29530), (81, 29599), (85, 29674), (88, 29719), (90, 29734), (100, 29869), (104, 29923), (105, 29944), (106, 29977), (109, 30022), (112, 30076), (114, 30103), (116, 30160), (120, 30181), (122, 30223), (123, 30262), (127, 30322), (145, 30562), (147, 30598), (149, 30631), (151, 30700),

Gene: Donny\_30 Start: 28983, Stop: 31259, Start Num: 5

Candidate Starts for Donny\_30:

(Start: 5 @28983 has 296 MA's), (6, 28989), (8, 29031), (11, 29052), (12, 29061), (15, 29115), (17, 29136), (18, 29154), (19, 29157), (22, 29199), (23, 29205), (24, 29217), (27, 29286), (28, 29322), (37, 29445), (41, 29550), (52, 29706), (54, 29733), (57, 29784), (62, 29835), (65, 29850), (77, 30063), (80, 30099), (81, 30141), (85, 30216), (95, 30366), (98, 30390), (100, 30417), (105, 30492), (108, 30546), (116, 30705), (118, 30714), (120, 30726), (123, 30807), (124, 30810), (128, 30876), (132, 30924), (136, 30990), (145, 31107),

Gene: DuchessDung\_29 Start: 27616, Stop: 29871, Start Num: 5

Candidate Starts for DuchessDung\_29:

(Start: 5 @27616 has 296 MA's), (13, 27712), (19, 27790), (20, 27817), (27, 27916), (37, 28075), (44, 28255), (47, 28279), (56, 28375), (58, 28411), (62, 28450), (64, 28459), (66, 28492), (67, 28531), (69, 28576), (73, 28627), (77, 28678), (78, 28687), (81, 28756), (85, 28831), (88, 28876), (90, 28891), (100, 29026), (104, 29080), (105, 29101), (106, 29134), (109, 29179), (112, 29233), (114, 29260), (116, 29317), (120, 29338), (122, 29380), (123, 29419), (127, 29479), (145, 29719), (146, 29752), (147, 29755), (149, 29788), (150, 29794), (151, 29857),

Gene: Duggie\_30 Start: 28481, Stop: 30736, Start Num: 5

Candidate Starts for Duggie\_30:

(Start: 5 @28481 has 296 MA's), (13, 28577), (19, 28655), (20, 28682), (27, 28781), (37, 28940), (44, 29120), (47, 29144), (56, 29240), (58, 29276), (62, 29315), (64, 29324), (66, 29357), (67, 29396), (69, 29441), (73, 29492), (77, 29543), (78, 29552), (81, 29621), (85, 29696), (88, 29741), (90, 29756), (100, 29891), (104, 29945), (105, 29966), (106, 29999), (109, 30044), (112, 30098), (114, 30125), (116, 30182), (120, 30203), (122, 30245), (123, 30284), (127, 30344), (145, 30584), (147, 30620), (149, 30653), (151, 30722),

Gene: Durga\_31 Start: 28778, Stop: 31033, Start Num: 5



Candidate Starts for Durga\_31:

(Start: 5 @28778 has 296 MA's), (13, 28874), (19, 28952), (20, 28979), (27, 29078), (37, 29237), (44, 29417), (47, 29441), (56, 29537), (58, 29573), (62, 29612), (64, 29621), (66, 29654), (67, 29693), (69, 29738), (73, 29789), (77, 29840), (78, 29849), (81, 29918), (85, 29993), (88, 30038), (90, 30053), (100, 30188), (104, 30242), (105, 30263), (106, 30296), (109, 30341), (112, 30395), (114, 30422), (116, 30479), (120, 30500), (122, 30542), (123, 30581), (127, 30641), (145, 30881), (147, 30917), (149, 30950), (151, 31019),

Gene: EastView9101\_29 Start: 28633, Stop: 30909, Start Num: 5

Candidate Starts for EastView9101\_29:

(Start: 5 @28633 has 296 MA's), (6, 28639), (8, 28681), (11, 28702), (12, 28711), (15, 28765), (17, 28786), (18, 28804), (19, 28807), (22, 28849), (23, 28855), (24, 28867), (27, 28936), (28, 28972), (37, 29095), (41, 29200), (52, 29356), (54, 29383), (57, 29434), (62, 29485), (65, 29500), (77, 29713), (80, 29749), (81, 29791), (85, 29866), (95, 30016), (98, 30040), (100, 30067), (105, 30142), (108, 30196), (116, 30355), (118, 30364), (120, 30376), (123, 30457), (124, 30460), (128, 30526), (132, 30574), (136, 30640), (145, 30757),

Gene: Emiris\_31 Start: 28749, Stop: 31004, Start Num: 5

Candidate Starts for Emiris\_31:

(Start: 5 @28749 has 296 MA's), (13, 28845), (19, 28923), (20, 28950), (27, 29049), (37, 29208), (44, 29388), (47, 29412), (55, 29502), (56, 29508), (58, 29544), (62, 29583), (64, 29592), (66, 29625), (67, 29664), (69, 29709), (73, 29760), (77, 29811), (78, 29820), (81, 29889), (85, 29964), (88, 30009), (90, 30024), (100, 30159), (104, 30213), (105, 30234), (106, 30267), (109, 30312), (112, 30366), (114, 30393), (116, 30450), (120, 30471), (122, 30513), (123, 30552), (127, 30612), (145, 30852), (147, 30888), (149, 30921), (151, 30990),

Gene: EmpTee\_31 Start: 28759, Stop: 31014, Start Num: 5

Candidate Starts for EmpTee\_31:

(Start: 5 @28759 has 296 MA's), (13, 28855), (19, 28933), (20, 28960), (27, 29059), (37, 29218), (44, 29398), (47, 29422), (55, 29512), (56, 29518), (58, 29554), (62, 29593), (64, 29602), (66, 29635), (67, 29674), (69, 29719), (73, 29770), (77, 29821), (78, 29830), (81, 29899), (85, 29974), (88, 30019), (90, 30034), (100, 30169), (104, 30223), (105, 30244), (106, 30277), (109, 30322), (112, 30376), (116, 30460), (120, 30481), (122, 30523), (123, 30562), (127, 30622), (145, 30862), (146, 30895), (147, 30898), (149, 30931), (151, 31000),

Gene: Epah\_27 Start: 27941, Stop: 30238, Start Num: 5

Candidate Starts for Epah\_27:

(Start: 5 @27941 has 296 MA's), (13, 28040), (20, 28145), (24, 28181), (27, 28244), (31, 28325), (35, 28391), (37, 28403), (41, 28508), (42, 28547), (45, 28598), (47, 28607), (53, 28688), (54, 28691), (58, 28754), (63, 28796), (65, 28808), (70, 28931), (71, 28955), (76, 29018), (79, 29048), (80, 29057), (82, 29129), (83, 29150), (85, 29186), (86, 29207), (92, 29273), (93, 29285), (95, 29336), (96, 29339), (97, 29357), (99, 29381), (102, 29408), (104, 29441), (105, 29462), (106, 29495), (109, 29540), (117, 29681), (118, 29684), (120, 29696), (124, 29780), (133, 29915), (134, 29939), (138, 30002), (141, 30032), (142, 30038), (145, 30086), (146, 30119), (147, 30122), (151, 30224), (152, 30227),

Gene: Eremos\_31 Start: 28758, Stop: 31013, Start Num: 5

Candidate Starts for Eremos\_31:

(Start: 5 @28758 has 296 MA's), (13, 28854), (19, 28932), (20, 28959), (27, 29058), (37, 29217), (44, 29397), (47, 29421), (55, 29511), (56, 29517), (58, 29553), (62, 29592), (66, 29634), (67, 29673), (69, 29718), (73, 29769), (77, 29820), (78, 29829), (81, 29898), (85, 29973), (88, 30018), (90, 30033), (100, 30168), (104, 30222), (105, 30243), (106, 30276), (109, 30321), (112, 30375), (116, 30459), (120, 30480), (122, 30522), (123, 30561), (127, 30621), (145, 30861), (146, 30894), (147, 30897), (149, 30930), (150, 30936), (151, 30999),

Gene: Etaye\_31 Start: 28748, Stop: 31003, Start Num: 5

Candidate Starts for Etaye\_31:

(Start: 5 @28748 has 296 MA's), (13, 28844), (19, 28922), (20, 28949), (27, 29048), (37, 29207), (44, 29387), (47, 29411), (56, 29507), (58, 29543), (62, 29582), (64, 29591), (66, 29624), (67, 29663), (69, 29708), (73, 29759), (77, 29810), (78, 29819), (81, 29888), (85, 29963), (88, 30008), (90, 30023), (100, 30158), (104, 30212), (105, 30233), (106, 30266), (109, 30311), (112, 30365), (114, 30392), (116, 30449), (120, 30470), (122, 30512), (123, 30551), (127, 30611), (145, 30851), (147, 30887), (149, 30920), (151, 30989),

Gene: Eugenia\_31 Start: 28768, Stop: 31023, Start Num: 5

Candidate Starts for Eugenia\_31:

(Start: 5 @28768 has 296 MA's), (13, 28864), (19, 28942), (20, 28969), (27, 29068), (37, 29227), (44, 29407), (47, 29431), (55, 29521), (56, 29527), (58, 29563), (62, 29602), (64, 29611), (66, 29644), (67, 29683), (69, 29728), (73, 29779), (77, 29830), (78, 29839), (81, 29908), (85, 29983), (88, 30028), (90, 30043), (100, 30178), (104, 30232), (105, 30253), (106, 30286), (109, 30331), (112, 30385), (114, 30412), (116, 30469), (120, 30490), (122, 30532), (123, 30571), (127, 30631), (145, 30871), (147, 30907), (149, 30940), (151, 31009),

Gene: Fanaw\_27 Start: 28636, Stop: 30933, Start Num: 5

Candidate Starts for Fanaw\_27:

(Start: 1 @27949 has 1 MA's), (2, 28096), (Start: 5 @28636 has 296 MA's), (13, 28735), (14, 28753), (27, 28939), (31, 29020), (35, 29086), (41, 29203), (42, 29242), (45, 29293), (53, 29383), (54, 29386), (58, 29449), (61, 29485), (63, 29491), (65, 29503), (70, 29626), (71, 29650), (76, 29713), (80, 29752), (82, 29824), (83, 29845), (85, 29881), (86, 29902), (92, 29968), (93, 29980), (95, 30031), (96, 30034), (97, 30052), (99, 30076), (102, 30103), (104, 30136), (105, 30157), (106, 30190), (109, 30235), (117, 30376), (118, 30379), (120, 30391), (124, 30475), (132, 30589), (133, 30610), (134, 30634), (138, 30697), (141, 30727), (142, 30733), (145, 30781), (146, 30814), (147, 30817), (151, 30919), (152, 30922),

Gene: Fang\_31 Start: 28772, Stop: 31027, Start Num: 5

Candidate Starts for Fang\_31:

(Start: 5 @28772 has 296 MA's), (13, 28868), (19, 28946), (20, 28973), (27, 29072), (37, 29231), (44, 29411), (47, 29435), (55, 29525), (56, 29531), (58, 29567), (62, 29606), (64, 29615), (66, 29648), (67, 29687), (69, 29732), (73, 29783), (77, 29834), (78, 29843), (81, 29912), (85, 29987), (88, 30032), (90, 30047), (100, 30182), (104, 30236), (105, 30257), (106, 30290), (109, 30335), (112, 30389), (114, 30416), (116, 30473), (120, 30494), (122, 30536), (123, 30575), (127, 30635), (145, 30875), (147, 30911), (149, 30944), (151, 31013),

Gene: FluffyNinja\_31 Start: 28765, Stop: 31020, Start Num: 5

Candidate Starts for FluffyNinja\_31:

(Start: 5 @28765 has 296 MA's), (13, 28861), (19, 28939), (20, 28966), (27, 29065), (37, 29224), (44, 29404), (47, 29428), (55, 29518), (56, 29524), (58, 29560), (62, 29599), (64, 29608), (66, 29641), (67, 29680), (69, 29725), (73, 29776), (77, 29827), (78, 29836), (81, 29905), (85, 29980), (88, 30025), (90, 30040), (100, 30175), (104, 30229), (105, 30250), (106, 30283), (109, 30328), (112, 30382), (116, 30466), (120, 30487), (122, 30529), (123, 30568), (127, 30628), (145, 30868), (146, 30901), (147, 30904), (149, 30937), (150, 30943), (151, 31006),

Gene: Fortunato\_28 Start: 28277, Stop: 31261, Start Num: 1

Candidate Starts for Fortunato\_28:

(Start: 1 @28277 has 1 MA's), (2, 28424), (Start: 5 @28964 has 296 MA's), (13, 29063), (14, 29081), (20, 29168), (24, 29204), (27, 29267), (31, 29348), (35, 29414), (41, 29531), (42, 29570), (45, 29621), (47, 29630), (52, 29687), (53, 29711), (54, 29714), (58, 29777), (63, 29819), (65, 29831), (70, 29954),

(71, 29978), (76, 30041), (82, 30152), (83, 30173), (85, 30209), (86, 30230), (92, 30296), (93, 30308), (95, 30359), (96, 30362), (97, 30380), (99, 30404), (102, 30431), (104, 30464), (105, 30485), (106, 30518), (109, 30563), (117, 30704), (118, 30707), (120, 30719), (124, 30803), (132, 30917), (133, 30938), (134, 30962), (138, 31025), (141, 31055), (142, 31061), (145, 31109), (146, 31142), (147, 31145), (151, 31247), (152, 31250),

Gene: Fozzie\_30 Start: 28774, Stop: 31035, Start Num: 5

Candidate Starts for Fozzie\_30:

(Start: 5 @28774 has 296 MA's), (13, 28870), (19, 28948), (20, 28975), (25, 29050), (27, 29080), (37, 29239), (44, 29419), (47, 29443), (56, 29539), (58, 29575), (62, 29614), (64, 29623), (66, 29656), (67, 29695), (69, 29740), (73, 29791), (78, 29851), (81, 29920), (85, 29995), (88, 30040), (90, 30055), (100, 30190), (104, 30244), (105, 30265), (106, 30298), (109, 30343), (112, 30397), (114, 30424), (116, 30481), (120, 30502), (122, 30544), (123, 30583), (127, 30643), (145, 30883), (147, 30919), (149, 30952), (151, 31021),

Gene: Frankicide\_31 Start: 28777, Stop: 31032, Start Num: 5

Candidate Starts for Frankicide\_31:

(Start: 5 @28777 has 296 MA's), (13, 28873), (19, 28951), (20, 28978), (27, 29077), (37, 29236), (44, 29416), (47, 29440), (56, 29536), (58, 29572), (62, 29611), (64, 29620), (66, 29653), (67, 29692), (69, 29737), (73, 29788), (77, 29839), (78, 29848), (81, 29917), (85, 29992), (88, 30037), (90, 30052), (100, 30187), (104, 30241), (105, 30262), (106, 30295), (109, 30340), (112, 30394), (114, 30421), (116, 30478), (120, 30499), (122, 30541), (123, 30580), (127, 30640), (145, 30880), (146, 30913), (147, 30916), (149, 30949), (150, 30955), (151, 31018),

Gene: Frederick\_28 Start: 28973, Stop: 31270, Start Num: 5

Candidate Starts for Frederick\_28:

(Start: 5 @28973 has 296 MA's), (13, 29072), (14, 29090), (24, 29213), (27, 29276), (31, 29357), (35, 29423), (41, 29540), (42, 29579), (45, 29630), (47, 29639), (52, 29696), (53, 29720), (54, 29723), (58, 29786), (63, 29828), (65, 29840), (69, 29951), (71, 29987), (76, 30050), (82, 30161), (83, 30182), (85, 30218), (86, 30239), (92, 30305), (93, 30317), (95, 30368), (96, 30371), (97, 30389), (99, 30413), (102, 30440), (104, 30473), (105, 30494), (106, 30527), (109, 30572), (117, 30713), (118, 30716), (119, 30719), (120, 30728), (124, 30812), (132, 30926), (133, 30947), (134, 30971), (138, 31034), (141, 31064), (142, 31070), (145, 31118), (146, 31151), (147, 31154), (151, 31256), (152, 31259),

Gene: Freya\_30 Start: 28456, Stop: 30711, Start Num: 5

Candidate Starts for Freya\_30:

(Start: 5 @28456 has 296 MA's), (13, 28552), (19, 28630), (20, 28657), (27, 28756), (37, 28915), (44, 29095), (47, 29119), (55, 29209), (56, 29215), (58, 29251), (62, 29290), (64, 29299), (66, 29332), (67, 29371), (69, 29416), (73, 29467), (77, 29518), (78, 29527), (81, 29596), (88, 29716), (90, 29731), (100, 29866), (104, 29920), (105, 29941), (106, 29974), (109, 30019), (112, 30073), (114, 30100), (116, 30157), (120, 30178), (122, 30220), (123, 30259), (127, 30319), (145, 30559), (146, 30592), (147, 30595), (149, 30628), (150, 30634), (151, 30697),

Gene: FriarPreacher\_31 Start: 28783, Stop: 31038, Start Num: 5

Candidate Starts for FriarPreacher\_31:

(Start: 5 @28783 has 296 MA's), (13, 28879), (19, 28957), (20, 28984), (27, 29083), (37, 29242), (44, 29422), (47, 29446), (55, 29536), (56, 29542), (58, 29578), (62, 29617), (64, 29626), (66, 29659), (67, 29698), (69, 29743), (73, 29794), (77, 29845), (78, 29854), (81, 29923), (85, 29998), (88, 30043), (90, 30058), (100, 30193), (104, 30247), (105, 30268), (106, 30301), (109, 30346), (112, 30400), (114, 30427), (116, 30484), (120, 30505), (122, 30547), (123, 30586), (127, 30646), (145, 30886), (146, 30919), (147, 30922), (149, 30955), (150, 30961), (151, 31024),

Gene: Fringe\_31 Start: 28747, Stop: 31002, Start Num: 5

Candidate Starts for Fringe\_31:

(Start: 5 @28747 has 296 MA's), (13, 28843), (19, 28921), (20, 28948), (27, 29047), (37, 29206), (44, 29386), (47, 29410), (55, 29500), (56, 29506), (58, 29542), (62, 29581), (64, 29590), (66, 29623), (67, 29662), (69, 29707), (73, 29758), (77, 29809), (78, 29818), (81, 29887), (85, 29962), (88, 30007), (90, 30022), (100, 30157), (104, 30211), (105, 30232), (106, 30265), (109, 30310), (112, 30364), (114, 30391), (116, 30448), (120, 30469), (122, 30511), (123, 30550), (127, 30610), (145, 30850), (146, 30883), (147, 30886), (149, 30919), (150, 30925), (151, 30988),

Gene: FugateOSU\_30 Start: 28461, Stop: 30716, Start Num: 5

Candidate Starts for FugateOSU\_30:

(Start: 5 @28461 has 296 MA's), (13, 28557), (19, 28635), (20, 28662), (27, 28761), (37, 28920), (44, 29100), (47, 29124), (55, 29214), (56, 29220), (58, 29256), (62, 29295), (64, 29304), (66, 29337), (67, 29376), (69, 29421), (73, 29472), (77, 29523), (78, 29532), (81, 29601), (85, 29676), (88, 29721), (90, 29736), (100, 29871), (104, 29925), (105, 29946), (106, 29979), (109, 30024), (112, 30078), (114, 30105), (116, 30162), (120, 30183), (122, 30225), (123, 30264), (127, 30324), (145, 30564), (146, 30597), (147, 30600), (149, 30633), (150, 30639), (151, 30702),

Gene: Gadget\_32 Start: 28620, Stop: 30848, Start Num: 4

Candidate Starts for Gadget\_32:

(Start: 4 @28620 has 44 MA's), (Start: 7 @28635 has 1 MA's), (10, 28680), (14, 28737), (21, 28815), (26, 28884), (27, 28896), (30, 28938), (32, 28974), (33, 29001), (34, 29013), (36, 29040), (39, 29130), (43, 29202), (51, 29286), (59, 29394), (60, 29415), (67, 29508), (68, 29523), (76, 29652), (81, 29733), (85, 29808), (87, 29850), (88, 29856), (92, 29892), (100, 30006), (101, 30018), (104, 30060), (105, 30081), (108, 30135), (109, 30159), (116, 30294), (118, 30303), (122, 30357), (128, 30465), (129, 30492), (133, 30534), (137, 30606), (145, 30696), (147, 30732),

Gene: Gareth\_30 Start: 28463, Stop: 30718, Start Num: 5

Candidate Starts for Gareth\_30:

(Start: 5 @28463 has 296 MA's), (13, 28559), (19, 28637), (20, 28664), (27, 28763), (37, 28922), (44, 29102), (47, 29126), (55, 29216), (56, 29222), (58, 29258), (62, 29297), (64, 29306), (66, 29339), (67, 29378), (69, 29423), (73, 29474), (77, 29525), (78, 29534), (81, 29603), (85, 29678), (88, 29723), (90, 29738), (100, 29873), (104, 29927), (105, 29948), (106, 29981), (109, 30026), (112, 30080), (114, 30107), (116, 30164), (120, 30185), (122, 30227), (123, 30266), (127, 30326), (145, 30566), (146, 30599), (147, 30602), (149, 30635), (150, 30641), (151, 30704),

Gene: GeneCoco\_31 Start: 28773, Stop: 31028, Start Num: 5

Candidate Starts for GeneCoco\_31:

(Start: 5 @28773 has 296 MA's), (13, 28869), (19, 28947), (20, 28974), (27, 29073), (37, 29232), (44, 29412), (47, 29436), (56, 29532), (58, 29568), (62, 29607), (64, 29616), (66, 29649), (67, 29688), (69, 29733), (73, 29784), (77, 29835), (78, 29844), (81, 29913), (85, 29988), (88, 30033), (90, 30048), (100, 30183), (104, 30237), (105, 30258), (106, 30291), (109, 30336), (112, 30390), (114, 30417), (116, 30474), (120, 30495), (122, 30537), (123, 30576), (127, 30636), (145, 30876), (147, 30912), (149, 30945), (151, 31014),

Gene: Gervas\_31 Start: 28594, Stop: 30819, Start Num: 4

Candidate Starts for Gervas\_31:

(Start: 4 @28594 has 44 MA's), (10, 28654), (14, 28711), (26, 28858), (27, 28870), (30, 28912), (32, 28948), (33, 28975), (34, 28987), (36, 29014), (39, 29104), (43, 29176), (51, 29260), (59, 29368), (60, 29389), (67, 29482), (68, 29497), (76, 29626), (81, 29707), (85, 29782), (87, 29824), (88, 29830), (92, 29866), (100, 29980), (101, 29992), (104, 30034), (105, 30055), (108, 30109), (109, 30133), (111, 30169), (116, 30265), (118, 30274), (122, 30328), (128, 30436), (129, 30463), (133, 30505), (137, 30577), (145, 30667), (147, 30703),

Gene: GinPorsche\_27 Start: 27941, Stop: 30238, Start Num: 5

Candidate Starts for GinPorsche\_27:

(Start: 5 @27941 has 296 MA's), (13, 28040), (20, 28145), (24, 28181), (27, 28244), (31, 28325), (35, 28391), (37, 28403), (41, 28508), (42, 28547), (45, 28598), (47, 28607), (53, 28688), (54, 28691), (58, 28754), (63, 28796), (65, 28808), (70, 28931), (71, 28955), (76, 29018), (79, 29048), (80, 29057), (82, 29129), (83, 29150), (85, 29186), (86, 29207), (92, 29273), (93, 29285), (95, 29336), (96, 29339), (97, 29357), (99, 29381), (102, 29408), (104, 29441), (105, 29462), (106, 29495), (109, 29540), (117, 29681), (118, 29684), (120, 29696), (124, 29780), (133, 29915), (134, 29939), (138, 30002), (141, 30032), (142, 30038), (145, 30086), (146, 30119), (147, 30122), (151, 30224), (152, 30227),

Gene: Giraffe\_31 Start: 28467, Stop: 30722, Start Num: 5

Candidate Starts for Giraffe\_31:

(Start: 5 @28467 has 296 MA's), (13, 28563), (19, 28641), (20, 28668), (27, 28767), (37, 28926), (44, 29106), (47, 29130), (55, 29220), (56, 29226), (58, 29262), (62, 29301), (64, 29310), (66, 29343), (67, 29382), (69, 29427), (73, 29478), (77, 29529), (78, 29538), (81, 29607), (85, 29682), (88, 29727), (90, 29742), (100, 29877), (104, 29931), (105, 29952), (106, 29985), (109, 30030), (112, 30084), (114, 30111), (116, 30168), (120, 30189), (122, 30231), (123, 30270), (127, 30330), (145, 30570), (146, 30603), (147, 30606), (149, 30639), (150, 30645), (151, 30708),

Gene: GlenHope\_32 Start: 28606, Stop: 30831, Start Num: 4

Candidate Starts for GlenHope\_32:

(Start: 4 @28606 has 44 MA's), (Start: 7 @28621 has 1 MA's), (10, 28666), (14, 28723), (21, 28801), (26, 28870), (27, 28882), (30, 28924), (32, 28960), (33, 28987), (34, 28999), (36, 29026), (39, 29116), (43, 29188), (51, 29272), (59, 29380), (60, 29401), (67, 29494), (68, 29509), (76, 29638), (81, 29719), (85, 29794), (87, 29836), (88, 29842), (92, 29878), (95, 29941), (100, 29992), (101, 30004), (104, 30046), (105, 30067), (108, 30121), (109, 30145), (111, 30181), (116, 30277), (118, 30286), (122, 30340), (128, 30448), (129, 30475), (133, 30517), (137, 30589), (145, 30679), (147, 30715),

Gene: Gophee\_31 Start: 28749, Stop: 31004, Start Num: 5

Candidate Starts for Gophee\_31:

(Start: 5 @28749 has 296 MA's), (13, 28845), (19, 28923), (20, 28950), (27, 29049), (37, 29208), (44, 29388), (47, 29412), (55, 29502), (56, 29508), (58, 29544), (62, 29583), (64, 29592), (66, 29625), (67, 29664), (69, 29709), (73, 29760), (77, 29811), (78, 29820), (81, 29889), (85, 29964), (88, 30009), (90, 30024), (100, 30159), (104, 30213), (105, 30234), (106, 30267), (109, 30312), (112, 30366), (114, 30393), (116, 30450), (120, 30471), (122, 30513), (123, 30552), (127, 30612), (145, 30852), (146, 30885), (147, 30888), (149, 30921), (150, 30927), (151, 30990),

Gene: Grand2040\_30 Start: 28482, Stop: 30737, Start Num: 5

Candidate Starts for Grand2040\_30:

(Start: 5 @28482 has 296 MA's), (13, 28578), (19, 28656), (20, 28683), (27, 28782), (37, 28941), (44, 29121), (47, 29145), (55, 29235), (56, 29241), (58, 29277), (62, 29316), (64, 29325), (66, 29358), (67, 29397), (69, 29442), (73, 29493), (77, 29544), (78, 29553), (81, 29622), (85, 29697), (88, 29742), (90, 29757), (100, 29892), (104, 29946), (105, 29967), (106, 30000), (109, 30045), (112, 30099), (114, 30126), (116, 30183), (120, 30204), (122, 30246), (123, 30285), (127, 30345), (145, 30585), (147, 30621), (149, 30654), (151, 30723),

Gene: Gwilliam\_31 Start: 28761, Stop: 31016, Start Num: 5

Candidate Starts for Gwilliam\_31:

(Start: 5 @28761 has 296 MA's), (13, 28857), (19, 28935), (20, 28962), (27, 29061), (37, 29220), (44, 29400), (47, 29424), (55, 29514), (56, 29520), (58, 29556), (62, 29595), (64, 29604), (66, 29637), (67, 29676), (69, 29721), (73, 29772), (77, 29823), (78, 29832), (81, 29901), (85, 29976), (88, 30021), (90, 30036), (100, 30171), (104, 30225), (105, 30246), (106, 30279), (109, 30324), (112, 30378), (114, 30405), (116, 30462), (120, 30483), (122, 30525), (123, 30564), (127, 30624), (145, 30864), (146,

30897), (147, 30900), (149, 30933), (150, 30939), (151, 31002),

Gene: Gyarad\_0031 Start: 28763, Stop: 31018, Start Num: 5

Candidate Starts for Gyarad\_0031:

(Start: 5 @28763 has 296 MA's), (13, 28859), (19, 28937), (20, 28964), (27, 29063), (37, 29222), (44, 29402), (47, 29426), (55, 29516), (56, 29522), (58, 29558), (62, 29597), (64, 29606), (66, 29639), (67, 29678), (69, 29723), (73, 29774), (77, 29825), (78, 29834), (81, 29903), (85, 29978), (88, 30023), (90, 30038), (100, 30173), (104, 30227), (105, 30248), (106, 30281), (109, 30326), (112, 30380), (114, 30407), (116, 30464), (120, 30485), (122, 30527), (123, 30566), (127, 30626), (145, 30866), (146, 30899), (147, 30902), (149, 30935), (150, 30941), (151, 31004),

Gene: HSavage\_31 Start: 28768, Stop: 31023, Start Num: 5

Candidate Starts for HSavage\_31:

(Start: 5 @28768 has 296 MA's), (13, 28864), (19, 28942), (20, 28969), (27, 29068), (37, 29227), (44, 29407), (47, 29431), (55, 29521), (56, 29527), (58, 29563), (62, 29602), (64, 29611), (66, 29644), (67, 29683), (69, 29728), (73, 29779), (77, 29830), (78, 29839), (81, 29908), (85, 29983), (88, 30028), (90, 30043), (100, 30178), (104, 30232), (105, 30253), (106, 30286), (109, 30331), (112, 30385), (114, 30412), (116, 30469), (120, 30490), (122, 30532), (123, 30571), (127, 30631), (145, 30871), (146, 30904), (147, 30907), (149, 30940), (150, 30946), (151, 31009),

Gene: Haimas\_31 Start: 28759, Stop: 31014, Start Num: 5

Candidate Starts for Haimas\_31:

(Start: 5 @28759 has 296 MA's), (13, 28855), (19, 28933), (20, 28960), (27, 29059), (37, 29218), (44, 29398), (47, 29422), (55, 29512), (56, 29518), (58, 29554), (62, 29593), (64, 29602), (66, 29635), (67, 29674), (69, 29719), (73, 29770), (77, 29821), (78, 29830), (81, 29899), (85, 29974), (88, 30019), (90, 30034), (100, 30169), (104, 30223), (105, 30244), (106, 30277), (109, 30322), (112, 30376), (114, 30403), (116, 30460), (120, 30481), (122, 30523), (123, 30562), (127, 30622), (145, 30862), (146, 30895), (147, 30898), (149, 30931), (150, 30937), (151, 31000),

Gene: Haleema\_30 Start: 28482, Stop: 30737, Start Num: 5

Candidate Starts for Haleema\_30:

(Start: 5 @28482 has 296 MA's), (13, 28578), (19, 28656), (20, 28683), (27, 28782), (37, 28941), (44, 29121), (47, 29145), (55, 29235), (56, 29241), (58, 29277), (62, 29316), (64, 29325), (66, 29358), (67, 29397), (69, 29442), (73, 29493), (77, 29544), (78, 29553), (81, 29622), (85, 29697), (88, 29742), (90, 29757), (100, 29892), (104, 29946), (105, 29967), (106, 30000), (109, 30045), (112, 30099), (114, 30126), (116, 30183), (120, 30204), (122, 30246), (123, 30285), (127, 30345), (145, 30585), (146, 30618), (147, 30621), (149, 30654), (150, 30660), (151, 30723),

Gene: Halfpint\_30 Start: 28429, Stop: 30654, Start Num: 4

Candidate Starts for Halfpint\_30:

(Start: 4 @28429 has 44 MA's), (Start: 7 @28444 has 1 MA's), (10, 28489), (14, 28546), (21, 28624), (26, 28693), (27, 28705), (30, 28747), (32, 28783), (33, 28810), (34, 28822), (36, 28849), (39, 28939), (40, 28963), (43, 29011), (51, 29095), (59, 29203), (60, 29224), (67, 29317), (68, 29332), (76, 29461), (81, 29542), (85, 29617), (87, 29659), (88, 29665), (95, 29764), (100, 29815), (101, 29827), (104, 29869), (105, 29890), (108, 29944), (109, 29968), (111, 30004), (116, 30100), (118, 30109), (122, 30163), (128, 30271), (129, 30298), (133, 30340), (137, 30412), (145, 30502), (147, 30538),

Gene: Hally898\_27 Start: 27953, Stop: 30250, Start Num: 5

Candidate Starts for Hally898\_27:

(Start: 5 @27953 has 296 MA's), (13, 28052), (20, 28157), (24, 28193), (27, 28256), (31, 28337), (35, 28403), (37, 28415), (41, 28520), (42, 28559), (45, 28610), (47, 28619), (53, 28700), (54, 28703), (58, 28766), (63, 28808), (65, 28820), (70, 28943), (71, 28967), (76, 29030), (79, 29060), (80, 29069), (82, 29141), (83, 29162), (85, 29198), (86, 29219), (92, 29285), (93, 29297), (95, 29348), (96, 29351), (97,

29369), (99, 29393), (102, 29420), (104, 29453), (105, 29474), (106, 29507), (109, 29552), (117, 29693), (118, 29696), (120, 29708), (124, 29792), (133, 29927), (134, 29951), (138, 30014), (141, 30044), (142, 30050), (145, 30098), (146, 30131), (147, 30134), (151, 30236), (152, 30239),

Gene: Hamish\_31 Start: 28751, Stop: 31006, Start Num: 5

Candidate Starts for Hamish\_31:

(Start: 5 @28751 has 296 MA's), (13, 28847), (19, 28925), (20, 28952), (27, 29051), (37, 29210), (44, 29390), (47, 29414), (55, 29504), (56, 29510), (58, 29546), (62, 29585), (64, 29594), (66, 29627), (67, 29666), (69, 29711), (73, 29762), (77, 29813), (78, 29822), (81, 29891), (85, 29966), (88, 30011), (90, 30026), (100, 30161), (104, 30215), (105, 30236), (106, 30269), (109, 30314), (112, 30368), (114, 30395), (116, 30452), (120, 30473), (122, 30515), (123, 30554), (127, 30614), (145, 30854), (146, 30887), (147, 30890), (149, 30923), (150, 30929), (151, 30992),

Gene: Hangman\_28 Start: 28965, Stop: 31262, Start Num: 5

Candidate Starts for Hangman\_28:

(Start: 1 @28278 has 1 MA's), (2, 28425), (Start: 5 @28965 has 296 MA's), (13, 29064), (14, 29082), (24, 29205), (27, 29268), (31, 29349), (35, 29415), (41, 29532), (42, 29571), (45, 29622), (47, 29631), (52, 29688), (53, 29712), (54, 29715), (58, 29778), (63, 29820), (65, 29832), (70, 29955), (71, 29979), (76, 30042), (82, 30153), (83, 30174), (85, 30210), (86, 30231), (92, 30297), (93, 30309), (94, 30351), (95, 30360), (96, 30363), (97, 30381), (98, 30384), (99, 30405), (102, 30432), (104, 30465), (105, 30486), (106, 30519), (109, 30564), (117, 30705), (118, 30708), (120, 30720), (124, 30804), (132, 30918), (133, 30939), (134, 30963), (138, 31026), (141, 31056), (145, 31110), (146, 31143), (147, 31146), (151, 31248), (152, 31251),

Gene: Hartsy\_31 Start: 28802, Stop: 31057, Start Num: 5

Candidate Starts for Hartsy\_31:

(Start: 5 @28802 has 296 MA's), (13, 28898), (19, 28976), (20, 29003), (27, 29102), (37, 29261), (44, 29441), (47, 29465), (55, 29555), (56, 29561), (58, 29597), (62, 29636), (64, 29645), (66, 29678), (67, 29717), (69, 29762), (73, 29813), (77, 29864), (78, 29873), (81, 29942), (85, 30017), (88, 30062), (90, 30077), (100, 30212), (104, 30266), (105, 30287), (106, 30320), (109, 30365), (112, 30419), (114, 30446), (116, 30503), (120, 30524), (122, 30566), (123, 30605), (127, 30665), (145, 30905), (146, 30938), (147, 30941), (149, 30974), (150, 30980), (151, 31043),

Gene: Harvey\_31 Start: 28777, Stop: 31032, Start Num: 5

Candidate Starts for Harvey\_31:

(Start: 5 @28777 has 296 MA's), (13, 28873), (19, 28951), (20, 28978), (27, 29077), (37, 29236), (44, 29416), (47, 29440), (55, 29530), (56, 29536), (58, 29572), (62, 29611), (64, 29620), (66, 29653), (67, 29692), (69, 29737), (73, 29788), (77, 29839), (78, 29848), (81, 29917), (85, 29992), (88, 30037), (90, 30052), (100, 30187), (104, 30241), (105, 30262), (106, 30295), (109, 30340), (112, 30394), (114, 30421), (116, 30478), (120, 30499), (122, 30541), (123, 30580), (127, 30640), (145, 30880), (146, 30913), (147, 30916), (149, 30949), (150, 30955), (151, 31018),

Gene: HarveySr\_31 Start: 28593, Stop: 30821, Start Num: 4

Candidate Starts for HarveySr\_31:

(Start: 4 @28593 has 44 MA's), (Start: 7 @28608 has 1 MA's), (10, 28653), (14, 28710), (21, 28788), (26, 28857), (27, 28869), (30, 28911), (32, 28947), (33, 28974), (34, 28986), (36, 29013), (39, 29103), (43, 29175), (51, 29259), (59, 29367), (60, 29388), (67, 29481), (68, 29496), (76, 29625), (81, 29706), (85, 29781), (87, 29823), (88, 29829), (92, 29865), (100, 29979), (101, 29991), (104, 30033), (105, 30054), (108, 30108), (109, 30132), (111, 30168), (116, 30267), (118, 30276), (122, 30330), (128, 30438), (129, 30465), (133, 30507), (137, 30579), (145, 30669), (147, 30705),

Gene: Heath\_27 Start: 28566, Stop: 30863, Start Num: 5

Candidate Starts for Heath\_27:

(Start: 1 @27879 has 1 MA's), (2, 28026), (3, 28437), (Start: 5 @28566 has 296 MA's), (13, 28665), (20, 28770), (24, 28806), (27, 28869), (31, 28950), (35, 29016), (41, 29133), (42, 29172), (45, 29223), (47, 29232), (52, 29289), (53, 29313), (54, 29316), (58, 29379), (63, 29421), (65, 29433), (70, 29556), (71, 29580), (76, 29643), (82, 29754), (83, 29775), (85, 29811), (86, 29832), (92, 29898), (93, 29910), (95, 29961), (96, 29964), (97, 29982), (99, 30006), (102, 30033), (104, 30066), (105, 30087), (106, 30120), (109, 30165), (117, 30306), (118, 30309), (120, 30321), (124, 30405), (132, 30519), (133, 30540), (134, 30564), (138, 30627), (141, 30657), (142, 30663), (145, 30711), (146, 30744), (147, 30747), (151, 30849), (152, 30852),

Gene: Heathcliff\_31 Start: 28575, Stop: 30803, Start Num: 4

Candidate Starts for Heathcliff\_31:

(Start: 4 @28575 has 44 MA's), (Start: 7 @28590 has 1 MA's), (10, 28635), (14, 28692), (21, 28770), (26, 28839), (27, 28851), (30, 28893), (32, 28929), (33, 28956), (34, 28968), (36, 28995), (39, 29085), (43, 29157), (51, 29241), (59, 29349), (60, 29370), (67, 29463), (68, 29478), (76, 29607), (81, 29688), (85, 29763), (87, 29805), (88, 29811), (100, 29961), (101, 29973), (104, 30015), (105, 30036), (108, 30090), (109, 30114), (116, 30249), (118, 30258), (122, 30312), (128, 30420), (129, 30447), (133, 30489), (137, 30561), (145, 30651), (147, 30687),

Gene: Held\_31 Start: 28466, Stop: 30721, Start Num: 5

Candidate Starts for Held\_31:

(Start: 5 @28466 has 296 MA's), (13, 28562), (19, 28640), (20, 28667), (27, 28766), (37, 28925), (44, 29105), (47, 29129), (55, 29219), (56, 29225), (58, 29261), (62, 29300), (64, 29309), (66, 29342), (67, 29381), (69, 29426), (73, 29477), (77, 29528), (78, 29537), (81, 29606), (85, 29681), (88, 29726), (90, 29741), (100, 29876), (104, 29930), (105, 29951), (106, 29984), (109, 30029), (112, 30083), (114, 30110), (116, 30167), (120, 30188), (122, 30230), (123, 30269), (127, 30329), (145, 30569), (147, 30605), (149, 30638), (151, 30707),

Gene: HenryJackson\_30 Start: 28482, Stop: 30737, Start Num: 5

Candidate Starts for HenryJackson\_30:

(Start: 5 @28482 has 296 MA's), (13, 28578), (19, 28656), (20, 28683), (27, 28782), (37, 28941), (44, 29121), (47, 29145), (55, 29235), (56, 29241), (58, 29277), (62, 29316), (64, 29325), (66, 29358), (67, 29397), (69, 29442), (73, 29493), (77, 29544), (78, 29553), (81, 29622), (85, 29697), (88, 29742), (90, 29757), (100, 29892), (104, 29946), (105, 29967), (106, 30000), (109, 30045), (112, 30099), (114, 30126), (116, 30183), (120, 30204), (122, 30246), (123, 30285), (127, 30345), (145, 30585), (146, 30618), (147, 30621), (149, 30654), (150, 30660), (151, 30723),

Gene: Hertubise\_31 Start: 28773, Stop: 31028, Start Num: 5

Candidate Starts for Hertubise\_31:

(Start: 5 @28773 has 296 MA's), (13, 28869), (19, 28947), (20, 28974), (27, 29073), (37, 29232), (44, 29412), (47, 29436), (55, 29526), (56, 29532), (58, 29568), (62, 29607), (64, 29616), (66, 29649), (67, 29688), (69, 29733), (73, 29784), (77, 29835), (78, 29844), (81, 29913), (85, 29988), (88, 30033), (90, 30048), (100, 30183), (104, 30237), (105, 30258), (106, 30291), (109, 30336), (112, 30390), (116, 30474), (120, 30495), (122, 30537), (123, 30576), (127, 30636), (145, 30876), (146, 30909), (147, 30912), (149, 30945), (150, 30951), (151, 31014),

Gene: Hetaeria\_31 Start: 28775, Stop: 31030, Start Num: 5

Candidate Starts for Hetaeria\_31:

(Start: 5 @28775 has 296 MA's), (13, 28871), (19, 28949), (20, 28976), (27, 29075), (37, 29234), (44, 29414), (47, 29438), (55, 29528), (56, 29534), (58, 29570), (62, 29609), (64, 29618), (66, 29651), (67, 29690), (69, 29735), (73, 29786), (77, 29837), (78, 29846), (81, 29915), (85, 29990), (88, 30035), (90, 30050), (100, 30185), (104, 30239), (105, 30260), (106, 30293), (109, 30338), (112, 30392), (116, 30476), (120, 30497), (122, 30539), (123, 30578), (127, 30638), (145, 30878), (146, 30911), (147, 30914), (149, 30947), (150, 30953), (151, 31016),



Gene: HighStump\_30 Start: 28465, Stop: 30720, Start Num: 5

Candidate Starts for HighStump\_30:

(Start: 5 @28465 has 296 MA's), (13, 28561), (19, 28639), (20, 28666), (27, 28765), (37, 28924), (44, 29104), (47, 29128), (55, 29218), (56, 29224), (58, 29260), (62, 29299), (64, 29308), (66, 29341), (67, 29380), (69, 29425), (73, 29476), (77, 29527), (78, 29536), (81, 29605), (85, 29680), (88, 29725), (90, 29740), (100, 29875), (104, 29929), (105, 29950), (106, 29983), (109, 30028), (112, 30082), (114, 30109), (116, 30166), (120, 30187), (122, 30229), (123, 30268), (127, 30328), (145, 30568), (146, 30601), (147, 30604), (149, 30637), (150, 30643), (151, 30706),

Gene: Hocus\_30 Start: 28474, Stop: 30729, Start Num: 5

Candidate Starts for Hocus\_30:

(Start: 5 @28474 has 296 MA's), (13, 28570), (19, 28648), (20, 28675), (27, 28774), (37, 28933), (44, 29113), (47, 29137), (55, 29227), (56, 29233), (58, 29269), (62, 29308), (64, 29317), (66, 29350), (67, 29389), (69, 29434), (73, 29485), (77, 29536), (78, 29545), (81, 29614), (85, 29689), (88, 29734), (90, 29749), (100, 29884), (104, 29938), (105, 29959), (106, 29992), (109, 30037), (112, 30091), (114, 30118), (116, 30175), (120, 30196), (122, 30238), (123, 30277), (127, 30337), (145, 30577), (146, 30610), (147, 30613), (149, 30646), (150, 30652), (151, 30715),

Gene: Horchata\_31 Start: 28753, Stop: 31008, Start Num: 5

Candidate Starts for Horchata\_31:

(Start: 5 @28753 has 296 MA's), (13, 28849), (19, 28927), (20, 28954), (27, 29053), (37, 29212), (44, 29392), (47, 29416), (56, 29512), (58, 29548), (62, 29587), (64, 29596), (66, 29629), (67, 29668), (69, 29713), (73, 29764), (77, 29815), (78, 29824), (81, 29893), (85, 29968), (88, 30013), (90, 30028), (100, 30163), (104, 30217), (105, 30238), (106, 30271), (109, 30316), (112, 30370), (114, 30397), (116, 30454), (120, 30475), (122, 30517), (123, 30556), (127, 30616), (145, 30856), (147, 30892), (149, 30925), (151, 30994),

Gene: Hydro\_28 Start: 28982, Stop: 31279, Start Num: 5

Candidate Starts for Hydro\_28:

(Start: 1 @28295 has 1 MA's), (2, 28442), (Start: 5 @28982 has 296 MA's), (13, 29081), (14, 29099), (24, 29222), (27, 29285), (31, 29366), (35, 29432), (41, 29549), (42, 29588), (47, 29648), (52, 29705), (53, 29729), (54, 29732), (58, 29795), (63, 29837), (70, 29972), (71, 29996), (76, 30059), (80, 30098), (82, 30170), (83, 30191), (85, 30227), (86, 30248), (92, 30314), (93, 30326), (95, 30377), (96, 30380), (97, 30398), (99, 30422), (102, 30449), (104, 30482), (105, 30503), (106, 30536), (109, 30581), (117, 30722), (118, 30725), (120, 30737), (124, 30821), (132, 30935), (133, 30956), (134, 30980), (138, 31043), (141, 31073), (142, 31079), (145, 31127), (146, 31160), (147, 31163), (148, 31187), (151, 31265), (152, 31268),

Gene: ImtiyazSitla\_30 Start: 28315, Stop: 30570, Start Num: 5

Candidate Starts for ImtiyazSitla\_30:

(Start: 5 @28315 has 296 MA's), (13, 28411), (19, 28489), (20, 28516), (27, 28615), (37, 28774), (44, 28954), (47, 28978), (56, 29074), (58, 29110), (62, 29149), (64, 29158), (66, 29191), (67, 29230), (69, 29275), (73, 29326), (77, 29377), (78, 29386), (81, 29455), (85, 29530), (88, 29575), (90, 29590), (100, 29725), (104, 29779), (105, 29800), (106, 29833), (109, 29878), (112, 29932), (114, 29959), (116, 30016), (120, 30037), (122, 30079), (123, 30118), (127, 30178), (145, 30418), (147, 30454), (149, 30487), (151, 30556),

Gene: Inchworm\_31 Start: 28751, Stop: 31006, Start Num: 5

Candidate Starts for Inchworm\_31:

(Start: 5 @28751 has 296 MA's), (13, 28847), (19, 28925), (20, 28952), (27, 29051), (37, 29210), (44, 29390), (47, 29414), (55, 29504), (56, 29510), (58, 29546), (62, 29585), (64, 29594), (66, 29627), (67, 29666), (69, 29711), (73, 29762), (77, 29813), (78, 29822), (81, 29891), (85, 29966), (88, 30011), (90,

30026), (100, 30161), (104, 30215), (105, 30236), (106, 30269), (109, 30314), (112, 30368), (114, 30395), (116, 30452), (120, 30473), (122, 30515), (123, 30554), (127, 30614), (145, 30854), (147, 30890), (149, 30923), (151, 30992),

Gene: Inverness\_31 Start: 28765, Stop: 31020, Start Num: 5

Candidate Starts for Inverness\_31:

(Start: 5 @28765 has 296 MA's), (13, 28861), (19, 28939), (20, 28966), (27, 29065), (37, 29224), (44, 29404), (47, 29428), (56, 29524), (58, 29560), (62, 29599), (64, 29608), (66, 29641), (67, 29680), (69, 29725), (73, 29776), (77, 29827), (78, 29836), (81, 29905), (85, 29980), (88, 30025), (90, 30040), (100, 30175), (104, 30229), (105, 30250), (106, 30283), (109, 30328), (112, 30382), (114, 30409), (116, 30466), (120, 30487), (122, 30529), (123, 30568), (127, 30628), (145, 30868), (147, 30904), (149, 30937), (151, 31006),

Gene: Iridoclysis\_31 Start: 28745, Stop: 31000, Start Num: 5

Candidate Starts for Iridoclysis\_31:

(Start: 5 @28745 has 296 MA's), (13, 28841), (19, 28919), (20, 28946), (27, 29045), (37, 29204), (44, 29384), (47, 29408), (55, 29498), (56, 29504), (58, 29540), (62, 29579), (64, 29588), (66, 29621), (67, 29660), (69, 29705), (73, 29756), (77, 29807), (78, 29816), (81, 29885), (85, 29960), (88, 30005), (90, 30020), (100, 30155), (104, 30209), (105, 30230), (106, 30263), (109, 30308), (112, 30362), (114, 30389), (116, 30446), (120, 30467), (122, 30509), (123, 30548), (127, 30608), (145, 30848), (146, 30881), (147, 30884), (149, 30917), (150, 30923), (151, 30986),

Gene: IsaacEli\_31 Start: 28769, Stop: 31024, Start Num: 5

Candidate Starts for IsaacEli\_31:

(Start: 5 @28769 has 296 MA's), (13, 28865), (19, 28943), (20, 28970), (27, 29069), (37, 29228), (44, 29408), (47, 29432), (55, 29522), (56, 29528), (58, 29564), (62, 29603), (64, 29612), (66, 29645), (67, 29684), (69, 29729), (73, 29780), (77, 29831), (78, 29840), (81, 29909), (85, 29984), (88, 30029), (90, 30044), (100, 30179), (104, 30233), (105, 30254), (106, 30287), (109, 30332), (112, 30386), (116, 30470), (120, 30491), (122, 30533), (123, 30572), (127, 30632), (145, 30872), (146, 30905), (147, 30908), (149, 30941), (150, 30947), (151, 31010),

Gene: JAMaL\_28 Start: 29152, Stop: 31449, Start Num: 5

Candidate Starts for JAMaL\_28:

(Start: 5 @29152 has 296 MA's), (13, 29251), (14, 29269), (24, 29392), (27, 29455), (31, 29536), (35, 29602), (41, 29719), (42, 29758), (45, 29809), (47, 29818), (53, 29899), (54, 29902), (58, 29965), (63, 30007), (65, 30019), (70, 30142), (71, 30166), (76, 30229), (80, 30268), (82, 30340), (83, 30361), (85, 30397), (86, 30418), (92, 30484), (93, 30496), (95, 30547), (96, 30550), (97, 30568), (99, 30592), (102, 30619), (104, 30652), (105, 30673), (106, 30706), (109, 30751), (117, 30892), (118, 30895), (120, 30907), (124, 30991), (133, 31126), (134, 31150), (138, 31213), (141, 31243), (142, 31249), (145, 31297), (146, 31330), (147, 31333), (151, 31435), (152, 31438),

Gene: JDog\_30 Start: 28478, Stop: 30736, Start Num: 5

Candidate Starts for JDog\_30:

(Start: 5 @28478 has 296 MA's), (13, 28574), (19, 28652), (20, 28679), (27, 28781), (37, 28940), (44, 29120), (47, 29144), (55, 29234), (56, 29240), (58, 29276), (62, 29315), (64, 29324), (66, 29357), (67, 29396), (69, 29441), (73, 29492), (77, 29543), (78, 29552), (81, 29621), (85, 29696), (88, 29741), (90, 29756), (100, 29891), (104, 29945), (105, 29966), (106, 29999), (109, 30044), (112, 30098), (114, 30125), (116, 30182), (120, 30203), (122, 30245), (123, 30284), (127, 30344), (145, 30584), (147, 30620), (149, 30653), (151, 30722),

Gene: JacAttac\_31 Start: 28751, Stop: 31006, Start Num: 5

Candidate Starts for JacAttac\_31:

(Start: 5 @28751 has 296 MA's), (13, 28847), (19, 28925), (20, 28952), (27, 29051), (37, 29210), (44, 29390), (47, 29414), (55, 29504), (56, 29510), (58, 29546), (62, 29585), (64, 29594), (66, 29627), (67, 29666), (69, 29711), (73, 29762), (77, 29813), (78, 29822), (81, 29891), (85, 29966), (88, 30011), (90, 30026), (100, 30161), (104, 30215), (105, 30236), (106, 30269), (109, 30314), (112, 30368), (116, 30452), (120, 30473), (122, 30515), (123, 30554), (127, 30614), (145, 30854), (146, 30887), (147, 30890), (149, 30923), (150, 30929), (151, 30992),

Gene: Jackstina\_28 Start: 28536, Stop: 30761, Start Num: 4

Candidate Starts for Jackstina\_28:

(Start: 4 @28536 has 44 MA's), (Start: 7 @28551 has 1 MA's), (10, 28596), (14, 28653), (21, 28731), (26, 28800), (27, 28812), (30, 28854), (32, 28890), (33, 28917), (34, 28929), (36, 28956), (39, 29046), (43, 29118), (51, 29202), (59, 29310), (60, 29331), (67, 29424), (68, 29439), (76, 29568), (81, 29649), (85, 29724), (87, 29766), (88, 29772), (92, 29808), (100, 29922), (101, 29934), (104, 29976), (105, 29997), (108, 30051), (109, 30075), (111, 30111), (116, 30207), (118, 30216), (122, 30270), (128, 30378), (129, 30405), (133, 30447), (137, 30519), (145, 30609), (147, 30645),

Gene: JaguarMi\_28 Start: 28450, Stop: 30738, Start Num: 5

Candidate Starts for JaguarMi\_28:

(Start: 5 @28450 has 296 MA's), (13, 28549), (14, 28567), (20, 28654), (24, 28690), (27, 28753), (31, 28834), (35, 28900), (41, 29017), (42, 29056), (45, 29107), (47, 29116), (52, 29173), (53, 29197), (54, 29200), (58, 29263), (71, 29464), (74, 29494), (75, 29497), (76, 29527), (82, 29638), (83, 29659), (85, 29695), (86, 29716), (92, 29782), (93, 29794), (95, 29845), (96, 29848), (99, 29890), (102, 29917), (104, 29950), (105, 29971), (106, 30004), (107, 30007), (109, 30049), (110, 30061), (116, 30184), (118, 30193), (120, 30205), (121, 30229), (122, 30247), (123, 30286), (124, 30289), (126, 30343), (128, 30355), (132, 30403), (133, 30424), (145, 30586), (146, 30619), (147, 30622), (151, 30724),

Gene: JakeO\_30 Start: 28481, Stop: 30739, Start Num: 5

Candidate Starts for JakeO\_30:

(Start: 5 @28481 has 296 MA's), (13, 28577), (19, 28655), (20, 28682), (27, 28784), (37, 28943), (44, 29123), (47, 29147), (49, 29159), (56, 29243), (58, 29279), (62, 29318), (64, 29327), (66, 29360), (67, 29399), (69, 29444), (73, 29495), (77, 29546), (78, 29555), (81, 29624), (85, 29699), (88, 29744), (90, 29759), (100, 29894), (104, 29948), (105, 29969), (106, 30002), (109, 30047), (112, 30101), (114, 30128), (116, 30185), (120, 30206), (122, 30248), (123, 30287), (127, 30347), (145, 30587), (147, 30623), (149, 30656), (151, 30725),

Gene: JangoPhett\_31 Start: 28752, Stop: 31007, Start Num: 5

Candidate Starts for JangoPhett\_31:

(Start: 5 @28752 has 296 MA's), (13, 28848), (19, 28926), (20, 28953), (27, 29052), (37, 29211), (44, 29391), (47, 29415), (55, 29505), (56, 29511), (58, 29547), (62, 29586), (64, 29595), (66, 29628), (67, 29667), (69, 29712), (73, 29763), (77, 29814), (78, 29823), (81, 29892), (85, 29967), (88, 30012), (90, 30027), (100, 30162), (104, 30216), (105, 30237), (106, 30270), (109, 30315), (112, 30369), (114, 30396), (116, 30453), (120, 30474), (122, 30516), (123, 30555), (127, 30615), (145, 30855), (146, 30888), (147, 30891), (149, 30924), (150, 30930), (151, 30993),

Gene: Jillium\_30 Start: 28475, Stop: 30730, Start Num: 5

Candidate Starts for Jillium\_30:

(Start: 5 @28475 has 296 MA's), (13, 28571), (19, 28649), (20, 28676), (27, 28775), (37, 28934), (44, 29114), (47, 29138), (55, 29228), (56, 29234), (58, 29270), (62, 29309), (64, 29318), (66, 29351), (67, 29390), (69, 29435), (73, 29486), (77, 29537), (78, 29546), (81, 29615), (85, 29690), (88, 29735), (90, 29750), (100, 29885), (104, 29939), (105, 29960), (106, 29993), (109, 30038), (112, 30092), (114, 30119), (116, 30176), (120, 30197), (122, 30239), (123, 30278), (127, 30338), (145, 30578), (146, 30611), (147, 30614), (149, 30647), (150, 30653), (151, 30716),

Gene: Jiminy\_30 Start: 28319, Stop: 30574, Start Num: 5

Candidate Starts for Jiminy\_30:

(Start: 5 @28319 has 296 MA's), (13, 28415), (19, 28493), (20, 28520), (27, 28619), (37, 28778), (44, 28958), (47, 28982), (56, 29078), (58, 29114), (62, 29153), (64, 29162), (66, 29195), (67, 29234), (69, 29279), (73, 29330), (78, 29390), (81, 29459), (85, 29534), (88, 29579), (90, 29594), (100, 29729), (104, 29783), (105, 29804), (106, 29837), (109, 29882), (112, 29936), (114, 29963), (116, 30020), (120, 30041), (122, 30083), (123, 30122), (127, 30182), (145, 30422), (146, 30455), (147, 30458), (149, 30491), (151, 30560),

Gene: Jiraiya\_31 Start: 28472, Stop: 30727, Start Num: 5

Candidate Starts for Jiraiya\_31:

(Start: 5 @28472 has 296 MA's), (13, 28568), (19, 28646), (20, 28673), (27, 28772), (37, 28931), (44, 29111), (47, 29135), (55, 29225), (56, 29231), (58, 29267), (62, 29306), (64, 29315), (66, 29348), (67, 29387), (69, 29432), (73, 29483), (77, 29534), (78, 29543), (81, 29612), (85, 29687), (88, 29732), (90, 29747), (100, 29882), (104, 29936), (105, 29957), (106, 29990), (109, 30035), (112, 30089), (114, 30116), (116, 30173), (120, 30194), (122, 30236), (123, 30275), (127, 30335), (145, 30575), (147, 30611), (149, 30644), (151, 30713),

Gene: KLucky39\_31 Start: 28763, Stop: 31018, Start Num: 5

Candidate Starts for KLucky39\_31:

(Start: 5 @28763 has 296 MA's), (13, 28859), (19, 28937), (20, 28964), (27, 29063), (37, 29222), (44, 29402), (47, 29426), (55, 29516), (56, 29522), (58, 29558), (62, 29597), (64, 29606), (66, 29639), (67, 29678), (69, 29723), (73, 29774), (77, 29825), (78, 29834), (81, 29903), (85, 29978), (88, 30023), (90, 30038), (100, 30173), (104, 30227), (105, 30248), (106, 30281), (109, 30326), (112, 30380), (114, 30407), (116, 30464), (120, 30485), (122, 30527), (123, 30566), (127, 30626), (145, 30866), (146, 30899), (147, 30902), (149, 30935), (150, 30941), (151, 31004),

Gene: Kahve\_30 Start: 28479, Stop: 30734, Start Num: 5

Candidate Starts for Kahve\_30:

(Start: 5 @28479 has 296 MA's), (13, 28575), (19, 28653), (20, 28680), (27, 28779), (37, 28938), (44, 29118), (47, 29142), (55, 29232), (56, 29238), (58, 29274), (62, 29313), (64, 29322), (66, 29355), (67, 29394), (69, 29439), (73, 29490), (77, 29541), (78, 29550), (81, 29619), (85, 29694), (88, 29739), (90, 29754), (100, 29889), (104, 29943), (105, 29964), (106, 29997), (109, 30042), (112, 30096), (114, 30123), (116, 30180), (120, 30201), (122, 30243), (123, 30282), (127, 30342), (145, 30582), (146, 30615), (147, 30618), (149, 30651), (150, 30657), (151, 30720),

Gene: Kailash\_31 Start: 28817, Stop: 31072, Start Num: 5

Candidate Starts for Kailash\_31:

(Start: 5 @28817 has 296 MA's), (13, 28913), (19, 28991), (20, 29018), (27, 29117), (37, 29276), (44, 29456), (47, 29480), (55, 29570), (56, 29576), (58, 29612), (62, 29651), (64, 29660), (66, 29693), (67, 29732), (69, 29777), (73, 29828), (77, 29879), (78, 29888), (81, 29957), (85, 30032), (88, 30077), (90, 30092), (100, 30227), (104, 30281), (105, 30302), (106, 30335), (109, 30380), (112, 30434), (114, 30461), (116, 30518), (120, 30539), (122, 30581), (123, 30620), (127, 30680), (145, 30920), (146, 30953), (147, 30956), (149, 30989), (150, 30995), (151, 31058),

Gene: Kamiyu\_31 Start: 28582, Stop: 30807, Start Num: 4

Candidate Starts for Kamiyu\_31:

(Start: 4 @28582 has 44 MA's), (Start: 7 @28597 has 1 MA's), (10, 28642), (14, 28699), (21, 28777), (26, 28846), (27, 28858), (30, 28900), (32, 28936), (33, 28963), (34, 28975), (36, 29002), (39, 29092), (43, 29164), (51, 29248), (59, 29356), (60, 29377), (67, 29470), (68, 29485), (76, 29614), (81, 29695), (85, 29770), (87, 29812), (88, 29818), (95, 29917), (100, 29968), (101, 29980), (104, 30022), (105, 30043), (108, 30097), (109, 30121), (111, 30157), (116, 30253), (118, 30262), (122, 30316), (128, 30424), (129, 30451), (133, 30493), (137, 30565), (145, 30655), (147, 30691),

Gene: KarasumaRum\_32 Start: 29124, Stop: 31391, Start Num: 5

Candidate Starts for KarasumaRum\_32:

(Start: 5 @29124 has 296 MA's), (8, 29172), (12, 29202), (13, 29220), (15, 29256), (17, 29277), (18, 29295), (24, 29358), (28, 29463), (37, 29586), (38, 29592), (41, 29691), (48, 29793), (52, 29847), (62, 29967), (65, 29982), (66, 30009), (77, 30195), (80, 30231), (81, 30273), (85, 30348), (88, 30399), (92, 30435), (95, 30498), (98, 30522), (100, 30549), (108, 30678), (109, 30702), (116, 30837), (118, 30846), (120, 30858), (122, 30900), (123, 30939), (124, 30942), (126, 30996), (128, 31008), (130, 31038), (132, 31056), (136, 31122), (145, 31239), (151, 31377),

Gene: Katniss\_31 Start: 28778, Stop: 31033, Start Num: 5

Candidate Starts for Katniss\_31:

(Start: 5 @28778 has 296 MA's), (13, 28874), (19, 28952), (20, 28979), (27, 29078), (37, 29237), (44, 29417), (47, 29441), (55, 29531), (56, 29537), (58, 29573), (62, 29612), (64, 29621), (66, 29654), (67, 29693), (69, 29738), (73, 29789), (77, 29840), (78, 29849), (81, 29918), (85, 29993), (88, 30038), (90, 30053), (100, 30188), (104, 30242), (105, 30263), (106, 30296), (109, 30341), (112, 30395), (116, 30479), (120, 30500), (122, 30542), (123, 30581), (127, 30641), (145, 30881), (146, 30914), (147, 30917), (149, 30950), (150, 30956), (151, 31019),

Gene: Keitherie\_31 Start: 28810, Stop: 31071, Start Num: 5

Candidate Starts for Keitherie\_31:

(Start: 5 @28810 has 296 MA's), (13, 28906), (19, 28984), (20, 29011), (25, 29086), (27, 29116), (37, 29275), (44, 29455), (47, 29479), (56, 29575), (58, 29611), (62, 29650), (64, 29659), (66, 29692), (67, 29731), (69, 29776), (73, 29827), (78, 29887), (81, 29956), (85, 30031), (88, 30076), (90, 30091), (100, 30226), (104, 30280), (105, 30301), (106, 30334), (109, 30379), (112, 30433), (114, 30460), (116, 30517), (120, 30538), (122, 30580), (123, 30619), (127, 30679), (145, 30919), (147, 30955), (149, 30988), (151, 31057),

Gene: Kikipoo\_31 Start: 28769, Stop: 31024, Start Num: 5

Candidate Starts for Kikipoo\_31:

(Start: 5 @28769 has 296 MA's), (13, 28865), (19, 28943), (20, 28970), (27, 29069), (37, 29228), (44, 29408), (47, 29432), (55, 29522), (56, 29528), (58, 29564), (62, 29603), (64, 29612), (66, 29645), (67, 29684), (69, 29729), (73, 29780), (77, 29831), (78, 29840), (81, 29909), (85, 29984), (88, 30029), (90, 30044), (100, 30179), (104, 30233), (105, 30254), (106, 30287), (109, 30332), (112, 30386), (116, 30470), (120, 30491), (122, 30533), (123, 30572), (127, 30632), (145, 30872), (146, 30905), (147, 30908), (149, 30941), (150, 30947), (151, 31010),

Gene: Kimbrough\_31 Start: 28471, Stop: 30726, Start Num: 5

Candidate Starts for Kimbrough\_31:

(Start: 5 @28471 has 296 MA's), (13, 28567), (19, 28645), (20, 28672), (27, 28771), (37, 28930), (44, 29110), (47, 29134), (55, 29224), (56, 29230), (58, 29266), (62, 29305), (64, 29314), (66, 29347), (67, 29386), (69, 29431), (73, 29482), (77, 29533), (78, 29542), (81, 29611), (85, 29686), (88, 29731), (90, 29746), (100, 29881), (104, 29935), (105, 29956), (106, 29989), (109, 30034), (112, 30088), (114, 30115), (116, 30172), (120, 30193), (122, 30235), (123, 30274), (127, 30334), (145, 30574), (146, 30607), (147, 30610), (149, 30643), (150, 30649), (151, 30712),

Gene: KingTut\_22 Start: 24140, Stop: 26395, Start Num: 5

Candidate Starts for KingTut\_22:

(Start: 5 @24140 has 296 MA's), (13, 24236), (19, 24314), (20, 24341), (27, 24440), (37, 24599), (44, 24779), (47, 24803), (56, 24899), (58, 24935), (62, 24974), (64, 24983), (66, 25016), (67, 25055), (69, 25100), (73, 25151), (77, 25202), (78, 25211), (81, 25280), (85, 25355), (88, 25400), (90, 25415), (100, 25550), (104, 25604), (105, 25625), (106, 25658), (109, 25703), (112, 25757), (114, 25784), (116, 25841), (120, 25862), (122, 25904), (123, 25943), (127, 26003), (145, 26243), (147, 26279),

(149, 26312), (151, 26381),

Gene: KingVeVeVe\_31 Start: 28744, Stop: 30999, Start Num: 5

Candidate Starts for KingVeVeVe\_31:

(Start: 5 @28744 has 296 MA's), (13, 28840), (19, 28918), (20, 28945), (27, 29044), (37, 29203), (44, 29383), (47, 29407), (56, 29503), (58, 29539), (62, 29578), (64, 29587), (66, 29620), (67, 29659), (69, 29704), (73, 29755), (77, 29806), (78, 29815), (81, 29884), (85, 29959), (88, 30004), (90, 30019), (100, 30154), (104, 30208), (105, 30229), (106, 30262), (109, 30307), (112, 30361), (114, 30388), (116, 30445), (120, 30466), (122, 30508), (123, 30547), (127, 30607), (145, 30847), (147, 30883), (149, 30916), (151, 30985),

Gene: KlimbOn\_31 Start: 28757, Stop: 31012, Start Num: 5

Candidate Starts for KlimbOn\_31:

(Start: 5 @28757 has 296 MA's), (13, 28853), (19, 28931), (20, 28958), (27, 29057), (37, 29216), (44, 29396), (47, 29420), (56, 29516), (58, 29552), (62, 29591), (64, 29600), (66, 29633), (67, 29672), (69, 29717), (73, 29768), (77, 29819), (78, 29828), (81, 29897), (85, 29972), (88, 30017), (90, 30032), (100, 30167), (104, 30221), (105, 30242), (106, 30275), (109, 30320), (112, 30374), (114, 30401), (116, 30458), (120, 30479), (122, 30521), (123, 30560), (127, 30620), (145, 30860), (147, 30896), (149, 30929), (151, 30998),

Gene: Kloppinator\_31 Start: 28780, Stop: 31035, Start Num: 5

Candidate Starts for Kloppinator\_31:

(Start: 5 @28780 has 296 MA's), (13, 28876), (19, 28954), (20, 28981), (27, 29080), (37, 29239), (44, 29419), (47, 29443), (55, 29533), (56, 29539), (58, 29575), (62, 29614), (64, 29623), (66, 29656), (67, 29695), (69, 29740), (73, 29791), (77, 29842), (78, 29851), (81, 29920), (85, 29995), (88, 30040), (90, 30055), (100, 30190), (104, 30244), (105, 30265), (106, 30298), (109, 30343), (112, 30397), (116, 30481), (120, 30502), (122, 30544), (123, 30583), (127, 30643), (145, 30883), (146, 30916), (147, 30919), (149, 30952), (150, 30958), (151, 31021),

Gene: Kronus\_30 Start: 29196, Stop: 31421, Start Num: 4

Candidate Starts for Kronus\_30:

(Start: 4 @29196 has 44 MA's), (10, 29256), (14, 29313), (26, 29460), (27, 29472), (30, 29514), (32, 29550), (33, 29577), (34, 29589), (36, 29616), (39, 29706), (43, 29778), (51, 29862), (59, 29970), (60, 29991), (67, 30084), (68, 30099), (76, 30228), (81, 30309), (85, 30384), (87, 30426), (88, 30432), (92, 30468), (100, 30582), (101, 30594), (104, 30636), (105, 30657), (108, 30711), (109, 30735), (111, 30771), (116, 30867), (118, 30876), (122, 30930), (128, 31038), (129, 31065), (133, 31107), (137, 31179), (145, 31269), (147, 31305),

Gene: Kwadwo\_30 Start: 28461, Stop: 30716, Start Num: 5

Candidate Starts for Kwadwo\_30:

(Start: 5 @28461 has 296 MA's), (13, 28557), (19, 28635), (20, 28662), (27, 28761), (37, 28920), (44, 29100), (47, 29124), (55, 29214), (56, 29220), (58, 29256), (62, 29295), (64, 29304), (66, 29337), (67, 29376), (69, 29421), (73, 29472), (77, 29523), (78, 29532), (81, 29601), (85, 29676), (88, 29721), (90, 29736), (100, 29871), (104, 29925), (105, 29946), (106, 29979), (109, 30024), (112, 30078), (114, 30105), (116, 30162), (120, 30183), (122, 30225), (123, 30264), (127, 30324), (145, 30564), (146, 30597), (147, 30600), (149, 30633), (150, 30639), (151, 30702),

Gene: Kwksand96\_30 Start: 28329, Stop: 30584, Start Num: 5

Candidate Starts for Kwksand96\_30:

(Start: 5 @28329 has 296 MA's), (13, 28425), (19, 28503), (20, 28530), (27, 28629), (37, 28788), (44, 28968), (47, 28992), (56, 29088), (58, 29124), (62, 29163), (64, 29172), (66, 29205), (67, 29244), (69, 29289), (73, 29340), (77, 29391), (78, 29400), (81, 29469), (85, 29544), (88, 29589), (90, 29604), (100, 29739), (104, 29793), (105, 29814), (106, 29847), (109, 29892), (112, 29946), (114, 29973),

(116, 30030), (120, 30051), (122, 30093), (123, 30132), (127, 30192), (145, 30432), (147, 30468), (149, 30501), (151, 30570),

Gene: Labeouficaum\_30 Start: 28325, Stop: 30580, Start Num: 5

Candidate Starts for Labeouficaum\_30:

(Start: 5 @28325 has 296 MA's), (13, 28421), (19, 28499), (20, 28526), (27, 28625), (37, 28784), (44, 28964), (47, 28988), (56, 29084), (58, 29120), (62, 29159), (64, 29168), (66, 29201), (67, 29240), (69, 29285), (73, 29336), (78, 29396), (81, 29465), (85, 29540), (88, 29585), (90, 29600), (100, 29735), (104, 29789), (105, 29810), (106, 29843), (109, 29888), (112, 29942), (114, 29969), (116, 30026), (120, 30047), (122, 30089), (123, 30128), (127, 30188), (145, 30428), (146, 30461), (147, 30464), (149, 30497), (151, 30566),

Gene: Lambano\_27 Start: 27953, Stop: 30250, Start Num: 5

Candidate Starts for Lambano\_27:

(Start: 5 @27953 has 296 MA's), (13, 28052), (20, 28157), (24, 28193), (27, 28256), (31, 28337), (35, 28403), (37, 28415), (41, 28520), (42, 28559), (45, 28610), (47, 28619), (53, 28700), (54, 28703), (58, 28766), (63, 28808), (65, 28820), (70, 28943), (71, 28967), (76, 29030), (79, 29060), (80, 29069), (82, 29141), (83, 29162), (85, 29198), (86, 29219), (92, 29285), (93, 29297), (95, 29348), (96, 29351), (97, 29369), (99, 29393), (102, 29420), (104, 29453), (105, 29474), (106, 29507), (109, 29552), (117, 29693), (118, 29696), (120, 29708), (124, 29792), (133, 29927), (134, 29951), (138, 30014), (141, 30044), (142, 30050), (145, 30098), (146, 30131), (147, 30134), (151, 30236), (152, 30239),

Gene: LasagnaCat\_31 Start: 28763, Stop: 31018, Start Num: 5

Candidate Starts for LasagnaCat\_31:

(Start: 5 @28763 has 296 MA's), (13, 28859), (19, 28937), (20, 28964), (27, 29063), (37, 29222), (44, 29402), (47, 29426), (55, 29516), (56, 29522), (58, 29558), (62, 29597), (64, 29606), (66, 29639), (67, 29678), (69, 29723), (73, 29774), (77, 29825), (78, 29834), (81, 29903), (85, 29978), (88, 30023), (90, 30038), (100, 30173), (104, 30227), (105, 30248), (106, 30281), (109, 30326), (112, 30380), (114, 30407), (116, 30464), (120, 30485), (122, 30527), (123, 30566), (127, 30626), (145, 30866), (146, 30899), (147, 30902), (149, 30935), (150, 30941), (151, 31004),

Gene: Lasso\_31 Start: 28736, Stop: 30991, Start Num: 5

Candidate Starts for Lasso\_31:

(Start: 5 @28736 has 296 MA's), (13, 28832), (19, 28910), (20, 28937), (27, 29036), (37, 29195), (44, 29375), (47, 29399), (55, 29489), (56, 29495), (58, 29531), (62, 29570), (64, 29579), (66, 29612), (67, 29651), (69, 29696), (73, 29747), (77, 29798), (78, 29807), (81, 29876), (85, 29951), (88, 29996), (90, 30011), (100, 30146), (104, 30200), (105, 30221), (106, 30254), (109, 30299), (112, 30353), (114, 30380), (116, 30437), (120, 30458), (122, 30500), (123, 30539), (127, 30599), (145, 30839), (147, 30875), (149, 30908), (151, 30977),

Gene: LeeLot\_31 Start: 28767, Stop: 31022, Start Num: 5

Candidate Starts for LeeLot\_31:

(Start: 5 @28767 has 296 MA's), (13, 28863), (19, 28941), (20, 28968), (27, 29067), (37, 29226), (44, 29406), (47, 29430), (55, 29520), (56, 29526), (58, 29562), (62, 29601), (64, 29610), (66, 29643), (67, 29682), (69, 29727), (73, 29778), (77, 29829), (78, 29838), (81, 29907), (85, 29982), (88, 30027), (90, 30042), (100, 30177), (104, 30231), (105, 30252), (106, 30285), (109, 30330), (112, 30384), (114, 30411), (116, 30468), (120, 30489), (122, 30531), (123, 30570), (127, 30630), (145, 30870), (147, 30906), (149, 30939), (151, 31008),

Gene: Lego3393\_31 Start: 28772, Stop: 31027, Start Num: 5

Candidate Starts for Lego3393\_31:

(Start: 5 @28772 has 296 MA's), (13, 28868), (19, 28946), (20, 28973), (27, 29072), (37, 29231), (44, 29411), (47, 29435), (55, 29525), (56, 29531), (58, 29567), (62, 29606), (64, 29615), (66, 29648), (67,

29687), (69, 29732), (73, 29783), (77, 29834), (78, 29843), (81, 29912), (85, 29987), (88, 30032), (90, 30047), (100, 30182), (104, 30236), (105, 30257), (106, 30290), (109, 30335), (112, 30389), (114, 30416), (116, 30473), (120, 30494), (122, 30536), (123, 30575), (127, 30635), (145, 30875), (146, 30908), (147, 30911), (149, 30944), (150, 30950), (151, 31013),

Gene: Legolas\_30 Start: 28477, Stop: 30732, Start Num: 5

Candidate Starts for Legolas\_30:

(Start: 5 @28477 has 296 MA's), (13, 28573), (19, 28651), (20, 28678), (27, 28777), (37, 28936), (44, 29116), (47, 29140), (55, 29230), (56, 29236), (58, 29272), (62, 29311), (64, 29320), (66, 29353), (67, 29392), (69, 29437), (73, 29488), (77, 29539), (78, 29548), (81, 29617), (85, 29692), (88, 29737), (90, 29752), (100, 29887), (104, 29941), (105, 29962), (106, 29995), (109, 30040), (112, 30094), (114, 30121), (116, 30178), (120, 30199), (122, 30241), (123, 30280), (127, 30340), (145, 30580), (146, 30613), (147, 30616), (149, 30649), (150, 30655), (151, 30718),

Gene: LeiMonet\_31 Start: 28468, Stop: 30723, Start Num: 5

Candidate Starts for LeiMonet\_31:

(Start: 5 @28468 has 296 MA's), (13, 28564), (19, 28642), (20, 28669), (27, 28768), (37, 28927), (44, 29107), (47, 29131), (55, 29221), (56, 29227), (58, 29263), (62, 29302), (64, 29311), (66, 29344), (67, 29383), (69, 29428), (73, 29479), (77, 29530), (78, 29539), (81, 29608), (85, 29683), (88, 29728), (90, 29743), (100, 29878), (104, 29932), (105, 29953), (106, 29986), (109, 30031), (112, 30085), (114, 30112), (116, 30169), (120, 30190), (122, 30232), (123, 30271), (127, 30331), (145, 30571), (147, 30607), (149, 30640), (151, 30709),

Gene: LemonSlice\_31 Start: 28464, Stop: 30719, Start Num: 5

Candidate Starts for LemonSlice\_31:

(Start: 5 @28464 has 296 MA's), (13, 28560), (19, 28638), (20, 28665), (27, 28764), (37, 28923), (44, 29103), (47, 29127), (55, 29217), (56, 29223), (58, 29259), (62, 29298), (64, 29307), (66, 29340), (67, 29379), (69, 29424), (73, 29475), (77, 29526), (78, 29535), (81, 29604), (85, 29679), (88, 29724), (90, 29739), (100, 29874), (104, 29928), (105, 29949), (106, 29982), (109, 30027), (112, 30081), (114, 30108), (116, 30165), (120, 30186), (122, 30228), (123, 30267), (127, 30327), (145, 30567), (146, 30600), (147, 30603), (149, 30636), (150, 30642), (151, 30705),

Gene: LestyG\_31 Start: 28617, Stop: 30842, Start Num: 4

Candidate Starts for LestyG\_31:

(Start: 4 @28617 has 44 MA's), (Start: 7 @28632 has 1 MA's), (10, 28677), (14, 28734), (21, 28812), (26, 28881), (27, 28893), (30, 28935), (32, 28971), (33, 28998), (34, 29010), (36, 29037), (39, 29127), (43, 29199), (51, 29283), (59, 29391), (60, 29412), (67, 29505), (68, 29520), (76, 29649), (81, 29730), (85, 29805), (87, 29847), (88, 29853), (92, 29889), (100, 30003), (101, 30015), (104, 30057), (105, 30078), (108, 30132), (109, 30156), (111, 30192), (116, 30288), (118, 30297), (122, 30351), (128, 30459), (129, 30486), (133, 30528), (137, 30600), (145, 30690), (147, 30726),

Gene: Lolalove\_28 Start: 28979, Stop: 31276, Start Num: 5

Candidate Starts for Lolalove\_28:

(Start: 1 @28292 has 1 MA's), (2, 28439), (Start: 5 @28979 has 296 MA's), (13, 29078), (14, 29096), (24, 29219), (27, 29282), (31, 29363), (35, 29429), (41, 29546), (42, 29585), (45, 29636), (47, 29645), (52, 29702), (53, 29726), (54, 29729), (58, 29792), (63, 29834), (65, 29846), (70, 29969), (71, 29993), (74, 30023), (75, 30026), (76, 30056), (82, 30167), (83, 30188), (84, 30209), (85, 30224), (86, 30245), (92, 30311), (95, 30374), (96, 30377), (97, 30395), (99, 30419), (102, 30446), (104, 30479), (105, 30500), (106, 30533), (109, 30578), (117, 30719), (120, 30734), (124, 30818), (132, 30932), (133, 30953), (134, 30977), (138, 31040), (141, 31070), (145, 31124), (146, 31157), (147, 31160), (151, 31262), (152, 31265),

Gene: Longacauda\_30 Start: 28469, Stop: 30724, Start Num: 5



Candidate Starts for Longacauda\_30:

(Start: 5 @28469 has 296 MA's), (13, 28565), (19, 28643), (20, 28670), (27, 28769), (37, 28928), (44, 29108), (47, 29132), (56, 29228), (58, 29264), (62, 29303), (64, 29312), (66, 29345), (67, 29384), (69, 29429), (73, 29480), (77, 29531), (78, 29540), (81, 29609), (85, 29684), (88, 29729), (90, 29744), (100, 29879), (104, 29933), (105, 29954), (106, 29987), (109, 30032), (112, 30086), (114, 30113), (116, 30170), (120, 30191), (122, 30233), (123, 30272), (127, 30332), (145, 30572), (147, 30608), (149, 30641), (151, 30710),

Gene: Lopsy\_30 Start: 28319, Stop: 30574, Start Num: 5

Candidate Starts for Lopsy\_30:

(Start: 5 @28319 has 296 MA's), (13, 28415), (19, 28493), (20, 28520), (27, 28619), (37, 28778), (44, 28958), (47, 28982), (56, 29078), (58, 29114), (62, 29153), (64, 29162), (66, 29195), (67, 29234), (69, 29279), (73, 29330), (77, 29381), (78, 29390), (81, 29459), (85, 29534), (88, 29579), (90, 29594), (100, 29729), (104, 29783), (105, 29804), (106, 29837), (109, 29882), (112, 29936), (114, 29963), (116, 30020), (120, 30041), (122, 30083), (123, 30122), (127, 30182), (145, 30422), (147, 30458), (149, 30491), (151, 30560),

Gene: LostAndPhound\_30 Start: 28470, Stop: 30725, Start Num: 5

Candidate Starts for LostAndPhound\_30:

(Start: 5 @28470 has 296 MA's), (13, 28566), (19, 28644), (20, 28671), (27, 28770), (37, 28929), (44, 29109), (47, 29133), (55, 29223), (56, 29229), (58, 29265), (62, 29304), (64, 29313), (66, 29346), (67, 29385), (69, 29430), (73, 29481), (77, 29532), (78, 29541), (81, 29610), (85, 29685), (88, 29730), (90, 29745), (100, 29880), (104, 29934), (105, 29955), (106, 29988), (109, 30033), (112, 30087), (114, 30114), (116, 30171), (120, 30192), (122, 30234), (123, 30273), (127, 30333), (145, 30573), (147, 30609), (149, 30642), (151, 30711),

Gene: LuckyMarjie\_30 Start: 28479, Stop: 30734, Start Num: 5

Candidate Starts for LuckyMarjie\_30:

(Start: 5 @28479 has 296 MA's), (13, 28575), (19, 28653), (20, 28680), (27, 28779), (37, 28938), (44, 29118), (47, 29142), (55, 29232), (56, 29238), (58, 29274), (62, 29313), (64, 29322), (66, 29355), (67, 29394), (69, 29439), (73, 29490), (77, 29541), (78, 29550), (81, 29619), (85, 29694), (88, 29739), (90, 29754), (100, 29889), (104, 29943), (105, 29964), (106, 29997), (109, 30042), (112, 30096), (114, 30123), (116, 30180), (120, 30201), (122, 30243), (123, 30282), (127, 30342), (145, 30582), (147, 30618), (149, 30651), (151, 30720),

Gene: Lulumae\_30 Start: 28461, Stop: 30716, Start Num: 5

Candidate Starts for Lulumae\_30:

(Start: 5 @28461 has 296 MA's), (13, 28557), (19, 28635), (20, 28662), (27, 28761), (37, 28920), (44, 29100), (47, 29124), (55, 29214), (56, 29220), (58, 29256), (62, 29295), (64, 29304), (66, 29337), (67, 29376), (69, 29421), (73, 29472), (77, 29523), (78, 29532), (81, 29601), (85, 29676), (88, 29721), (90, 29736), (100, 29871), (104, 29925), (105, 29946), (106, 29979), (109, 30024), (112, 30078), (116, 30162), (120, 30183), (122, 30225), (123, 30264), (127, 30324), (145, 30564), (146, 30597), (147, 30600), (149, 30633), (150, 30639), (151, 30702),

Gene: Lulwa\_31 Start: 28748, Stop: 31003, Start Num: 5

Candidate Starts for Lulwa\_31:

(Start: 5 @28748 has 296 MA's), (13, 28844), (19, 28922), (20, 28949), (27, 29048), (37, 29207), (44, 29387), (47, 29411), (55, 29501), (56, 29507), (58, 29543), (62, 29582), (64, 29591), (66, 29624), (67, 29663), (69, 29708), (73, 29759), (77, 29810), (78, 29819), (81, 29888), (85, 29963), (88, 30008), (90, 30023), (100, 30158), (104, 30212), (105, 30233), (106, 30266), (109, 30311), (112, 30365), (114, 30392), (116, 30449), (120, 30470), (122, 30512), (123, 30551), (127, 30611), (145, 30851), (147, 30887), (149, 30920), (151, 30989),

Gene: Lumine\_30 Start: 28457, Stop: 30712, Start Num: 5

Candidate Starts for Lumine\_30:

(Start: 5 @28457 has 296 MA's), (13, 28553), (19, 28631), (20, 28658), (27, 28757), (37, 28916), (44, 29096), (47, 29120), (55, 29210), (56, 29216), (58, 29252), (62, 29291), (64, 29300), (66, 29333), (67, 29372), (69, 29417), (73, 29468), (77, 29519), (78, 29528), (81, 29597), (85, 29672), (88, 29717), (90, 29732), (100, 29867), (104, 29921), (105, 29942), (106, 29975), (109, 30020), (112, 30074), (114, 30101), (116, 30158), (120, 30179), (122, 30221), (123, 30260), (127, 30320), (145, 30560), (146, 30593), (147, 30596), (149, 30629), (150, 30635), (151, 30698),

Gene: MRabcd\_30 Start: 28461, Stop: 30716, Start Num: 5

Candidate Starts for MRabcd\_30:

(Start: 5 @28461 has 296 MA's), (13, 28557), (19, 28635), (20, 28662), (27, 28761), (37, 28920), (44, 29100), (47, 29124), (55, 29214), (56, 29220), (58, 29256), (62, 29295), (64, 29304), (66, 29337), (67, 29376), (69, 29421), (73, 29472), (77, 29523), (78, 29532), (81, 29601), (85, 29676), (88, 29721), (90, 29736), (100, 29871), (104, 29925), (105, 29946), (106, 29979), (109, 30024), (112, 30078), (114, 30105), (116, 30162), (120, 30183), (122, 30225), (123, 30264), (127, 30324), (145, 30564), (146, 30597), (147, 30600), (149, 30633), (150, 30639), (151, 30702),

Gene: Mag7\_30 Start: 28367, Stop: 30622, Start Num: 5

Candidate Starts for Mag7\_30:

(Start: 5 @28367 has 296 MA's), (13, 28463), (19, 28541), (20, 28568), (27, 28667), (37, 28826), (44, 29006), (47, 29030), (55, 29120), (56, 29126), (58, 29162), (62, 29201), (64, 29210), (66, 29243), (67, 29282), (69, 29327), (73, 29378), (77, 29429), (78, 29438), (81, 29507), (85, 29582), (88, 29627), (90, 29642), (100, 29777), (104, 29831), (105, 29852), (106, 29885), (109, 29930), (112, 29984), (114, 30011), (116, 30068), (120, 30089), (122, 30131), (123, 30170), (127, 30230), (145, 30470), (146, 30503), (147, 30506), (149, 30539), (150, 30545), (151, 30608),

Gene: Magic8\_31 Start: 28802, Stop: 31057, Start Num: 5

Candidate Starts for Magic8\_31:

(Start: 5 @28802 has 296 MA's), (13, 28898), (19, 28976), (20, 29003), (27, 29102), (37, 29261), (44, 29441), (47, 29465), (55, 29555), (56, 29561), (58, 29597), (62, 29636), (64, 29645), (66, 29678), (67, 29717), (69, 29762), (73, 29813), (77, 29864), (78, 29873), (81, 29942), (85, 30017), (88, 30062), (90, 30077), (100, 30212), (104, 30266), (105, 30287), (106, 30320), (109, 30365), (112, 30419), (114, 30446), (116, 30503), (120, 30524), (122, 30566), (123, 30605), (127, 30665), (145, 30905), (147, 30941), (149, 30974), (151, 31043),

Gene: Magpie\_27 Start: 28808, Stop: 31105, Start Num: 5

Candidate Starts for Magpie\_27:

(Start: 5 @28808 has 296 MA's), (13, 28907), (14, 28925), (27, 29111), (31, 29192), (35, 29258), (41, 29375), (42, 29414), (45, 29465), (47, 29474), (52, 29531), (53, 29555), (58, 29621), (63, 29663), (65, 29675), (71, 29822), (76, 29885), (82, 29996), (83, 30017), (86, 30074), (92, 30140), (93, 30152), (95, 30203), (96, 30206), (97, 30224), (99, 30248), (102, 30275), (104, 30308), (105, 30329), (106, 30362), (109, 30407), (117, 30548), (118, 30551), (120, 30563), (124, 30647), (132, 30761), (133, 30782), (134, 30806), (138, 30869), (141, 30899), (142, 30905), (145, 30953), (146, 30986), (147, 30989), (151, 31091), (152, 31094),

Gene: Mana\_30 Start: 28476, Stop: 30731, Start Num: 5

Candidate Starts for Mana\_30:

(Start: 5 @28476 has 296 MA's), (13, 28572), (19, 28650), (20, 28677), (27, 28776), (37, 28935), (44, 29115), (47, 29139), (55, 29229), (56, 29235), (58, 29271), (62, 29310), (64, 29319), (66, 29352), (67, 29391), (69, 29436), (73, 29487), (77, 29538), (78, 29547), (81, 29616), (85, 29691), (88, 29736), (90, 29751), (100, 29886), (104, 29940), (105, 29961), (106, 29994), (109, 30039), (112, 30093), (114, 30120), (116, 30177), (120, 30198), (122, 30240), (123, 30279), (127, 30339), (145, 30579), (147,

30615), (149, 30648), (151, 30717),

Gene: Manad\_30 Start: 28315, Stop: 30573, Start Num: 5

Candidate Starts for Manad\_30:

(Start: 5 @28315 has 296 MA's), (13, 28411), (19, 28489), (20, 28516), (27, 28618), (37, 28777), (44, 28957), (47, 28981), (56, 29077), (58, 29113), (62, 29152), (64, 29161), (66, 29194), (67, 29233), (69, 29278), (73, 29329), (77, 29380), (78, 29389), (81, 29458), (85, 29533), (88, 29578), (90, 29593), (100, 29728), (104, 29782), (105, 29803), (106, 29836), (109, 29881), (112, 29935), (116, 30019), (120, 30040), (122, 30082), (123, 30121), (127, 30181), (145, 30421), (146, 30454), (147, 30457), (149, 30490), (150, 30496), (151, 30559),

Gene: Marley1013\_31 Start: 29395, Stop: 31620, Start Num: 4

Candidate Starts for Marley1013\_31:

(Start: 4 @29395 has 44 MA's), (Start: 7 @29410 has 1 MA's), (10, 29455), (14, 29512), (21, 29590), (26, 29659), (27, 29671), (30, 29713), (32, 29749), (33, 29776), (34, 29788), (36, 29815), (39, 29905), (43, 29977), (51, 30061), (59, 30169), (60, 30190), (67, 30283), (68, 30298), (76, 30427), (81, 30508), (85, 30583), (87, 30625), (88, 30631), (92, 30667), (100, 30781), (101, 30793), (104, 30835), (105, 30856), (108, 30910), (109, 30934), (116, 31066), (118, 31075), (122, 31129), (128, 31237), (129, 31264), (133, 31306), (137, 31378), (145, 31468), (147, 31504),

Gene: Maru\_30 Start: 28469, Stop: 30724, Start Num: 5

Candidate Starts for Maru\_30:

(Start: 5 @28469 has 296 MA's), (13, 28565), (19, 28643), (20, 28670), (27, 28769), (37, 28928), (44, 29108), (47, 29132), (55, 29222), (56, 29228), (58, 29264), (62, 29303), (64, 29312), (66, 29345), (67, 29384), (69, 29429), (73, 29480), (77, 29531), (78, 29540), (81, 29609), (85, 29684), (88, 29729), (90, 29744), (100, 29879), (104, 29933), (105, 29954), (106, 29987), (109, 30032), (112, 30086), (114, 30113), (116, 30170), (120, 30191), (122, 30233), (123, 30272), (127, 30332), (145, 30572), (147, 30608), (149, 30641), (151, 30710),

Gene: Maskar\_30 Start: 28315, Stop: 30570, Start Num: 5

Candidate Starts for Maskar\_30:

(Start: 5 @28315 has 296 MA's), (13, 28411), (19, 28489), (20, 28516), (27, 28615), (37, 28774), (44, 28954), (47, 28978), (56, 29074), (58, 29110), (62, 29149), (64, 29158), (66, 29191), (67, 29230), (69, 29275), (73, 29326), (77, 29377), (78, 29386), (81, 29455), (85, 29530), (88, 29575), (90, 29590), (100, 29725), (104, 29779), (105, 29800), (106, 29833), (109, 29878), (112, 29932), (114, 29959), (116, 30016), (120, 30037), (122, 30079), (123, 30118), (127, 30178), (145, 30418), (147, 30454), (149, 30487), (151, 30556),

Gene: Matalotodo\_31 Start: 28762, Stop: 31017, Start Num: 5

Candidate Starts for Matalotodo\_31:

(Start: 5 @28762 has 296 MA's), (13, 28858), (19, 28936), (20, 28963), (27, 29062), (37, 29221), (44, 29401), (47, 29425), (55, 29515), (56, 29521), (58, 29557), (62, 29596), (64, 29605), (66, 29638), (67, 29677), (69, 29722), (73, 29773), (77, 29824), (78, 29833), (81, 29902), (85, 29977), (88, 30022), (90, 30037), (100, 30172), (104, 30226), (105, 30247), (106, 30280), (109, 30325), (112, 30379), (114, 30406), (116, 30463), (120, 30484), (122, 30526), (123, 30565), (127, 30625), (145, 30865), (147, 30901), (149, 30934), (151, 31003),

Gene: Mcshane\_30 Start: 28459, Stop: 30714, Start Num: 5

Candidate Starts for Mcshane\_30:

(Start: 5 @28459 has 296 MA's), (13, 28555), (19, 28633), (20, 28660), (27, 28759), (37, 28918), (44, 29098), (47, 29122), (55, 29212), (56, 29218), (58, 29254), (62, 29293), (64, 29302), (66, 29335), (67, 29374), (69, 29419), (73, 29470), (77, 29521), (78, 29530), (81, 29599), (85, 29674), (88, 29719), (90, 29734), (100, 29869), (104, 29923), (105, 29944), (106, 29977), (109, 30022), (112, 30076), (114,

30103), (116, 30160), (120, 30181), (122, 30223), (123, 30262), (127, 30322), (145, 30562), (147, 30598), (149, 30631), (151, 30700),

Gene: Mecca\_30 Start: 28462, Stop: 30717, Start Num: 5

Candidate Starts for Mecca\_30:

(Start: 5 @28462 has 296 MA's), (13, 28558), (19, 28636), (20, 28663), (27, 28762), (37, 28921), (44, 29101), (47, 29125), (55, 29215), (56, 29221), (58, 29257), (62, 29296), (64, 29305), (66, 29338), (67, 29377), (69, 29422), (73, 29473), (77, 29524), (78, 29533), (81, 29602), (85, 29677), (88, 29722), (90, 29737), (100, 29872), (104, 29926), (105, 29947), (106, 29980), (109, 30025), (112, 30079), (114, 30106), (116, 30163), (120, 30184), (122, 30226), (123, 30265), (127, 30325), (145, 30565), (146, 30598), (147, 30601), (149, 30634), (150, 30640), (151, 30703),

Gene: Megamind20\_31 Start: 28484, Stop: 30739, Start Num: 5

Candidate Starts for Megamind20\_31:

(Start: 5 @28484 has 296 MA's), (13, 28580), (19, 28658), (20, 28685), (27, 28784), (37, 28943), (44, 29123), (47, 29147), (55, 29237), (56, 29243), (58, 29279), (62, 29318), (64, 29327), (66, 29360), (67, 29399), (69, 29444), (73, 29495), (77, 29546), (78, 29555), (81, 29624), (85, 29699), (88, 29744), (90, 29759), (100, 29894), (104, 29948), (105, 29969), (106, 30002), (109, 30047), (112, 30101), (114, 30128), (116, 30185), (120, 30206), (122, 30248), (123, 30287), (127, 30347), (145, 30587), (146, 30620), (147, 30623), (149, 30656), (150, 30662), (151, 30725),

Gene: Megatron\_31 Start: 28760, Stop: 31015, Start Num: 5

Candidate Starts for Megatron\_31:

(Start: 5 @28760 has 296 MA's), (13, 28856), (19, 28934), (20, 28961), (27, 29060), (37, 29219), (44, 29399), (47, 29423), (55, 29513), (56, 29519), (58, 29555), (62, 29594), (64, 29603), (66, 29636), (67, 29675), (69, 29720), (73, 29771), (77, 29822), (78, 29831), (81, 29900), (85, 29975), (88, 30020), (90, 30035), (100, 30170), (104, 30224), (105, 30245), (106, 30278), (109, 30323), (112, 30377), (114, 30404), (116, 30461), (120, 30482), (122, 30524), (123, 30563), (127, 30623), (145, 30863), (146, 30896), (147, 30899), (149, 30932), (150, 30938), (151, 31001),

Gene: Melc17\_31 Start: 28757, Stop: 31012, Start Num: 5

Candidate Starts for Melc17\_31:

(Start: 5 @28757 has 296 MA's), (13, 28853), (19, 28931), (20, 28958), (27, 29057), (37, 29216), (44, 29396), (47, 29420), (55, 29510), (56, 29516), (58, 29552), (62, 29591), (64, 29600), (66, 29633), (67, 29672), (69, 29717), (73, 29768), (77, 29819), (78, 29828), (81, 29897), (85, 29972), (88, 30017), (90, 30032), (100, 30167), (104, 30221), (105, 30242), (106, 30275), (109, 30320), (112, 30374), (114, 30401), (116, 30458), (120, 30479), (122, 30521), (123, 30560), (127, 30620), (145, 30860), (146, 30893), (147, 30896), (149, 30929), (150, 30935), (151, 30998),

Gene: MelsMeow\_30 Start: 28361, Stop: 30619, Start Num: 5

Candidate Starts for MelsMeow\_30:

(Start: 5 @28361 has 296 MA's), (13, 28457), (19, 28535), (20, 28562), (27, 28664), (37, 28823), (44, 29003), (47, 29027), (49, 29039), (56, 29123), (58, 29159), (62, 29198), (64, 29207), (66, 29240), (67, 29279), (69, 29324), (73, 29375), (77, 29426), (78, 29435), (81, 29504), (85, 29579), (88, 29624), (90, 29639), (100, 29774), (104, 29828), (105, 29849), (106, 29882), (109, 29927), (112, 29981), (114, 30008), (116, 30065), (120, 30086), (122, 30128), (123, 30167), (127, 30227), (145, 30467), (147, 30503), (149, 30536), (151, 30605),

Gene: Mesh1\_31 Start: 28774, Stop: 31029, Start Num: 5

Candidate Starts for Mesh1\_31:

(Start: 5 @28774 has 296 MA's), (13, 28870), (19, 28948), (20, 28975), (27, 29074), (37, 29233), (44, 29413), (47, 29437), (55, 29527), (56, 29533), (58, 29569), (62, 29608), (64, 29617), (66, 29650), (67, 29689), (69, 29734), (73, 29785), (77, 29836), (78, 29845), (81, 29914), (85, 29989), (88, 30034), (90,

30049), (100, 30184), (104, 30238), (105, 30259), (106, 30292), (109, 30337), (112, 30391), (114, 30418), (116, 30475), (120, 30496), (122, 30538), (123, 30577), (127, 30637), (145, 30877), (146, 30910), (147, 30913), (149, 30946), (150, 30952), (151, 31015),

Gene: MichaelPhcott\_30 Start: 28364, Stop: 30619, Start Num: 5

Candidate Starts for MichaelPhcott\_30:

(Start: 5 @28364 has 296 MA's), (13, 28460), (19, 28538), (20, 28565), (27, 28664), (37, 28823), (44, 29003), (47, 29027), (55, 29117), (56, 29123), (58, 29159), (62, 29198), (64, 29207), (66, 29240), (67, 29279), (69, 29324), (73, 29375), (77, 29426), (78, 29435), (81, 29504), (85, 29579), (88, 29624), (90, 29639), (100, 29774), (104, 29828), (105, 29849), (106, 29882), (109, 29927), (112, 29981), (114, 30008), (116, 30065), (120, 30086), (122, 30128), (123, 30167), (127, 30227), (145, 30467), (146, 30500), (147, 30503), (149, 30536), (150, 30542), (151, 30605),

Gene: Mikota\_31 Start: 28747, Stop: 31002, Start Num: 5

Candidate Starts for Mikota\_31:

(Start: 5 @28747 has 296 MA's), (13, 28843), (19, 28921), (20, 28948), (27, 29047), (37, 29206), (44, 29386), (47, 29410), (56, 29506), (58, 29542), (62, 29581), (64, 29590), (66, 29623), (67, 29662), (69, 29707), (73, 29758), (77, 29809), (78, 29818), (81, 29887), (85, 29962), (88, 30007), (90, 30022), (100, 30157), (104, 30211), (105, 30232), (106, 30265), (109, 30310), (112, 30364), (114, 30391), (116, 30448), (120, 30469), (122, 30511), (123, 30550), (127, 30610), (145, 30850), (146, 30883), (147, 30886), (149, 30919), (150, 30925), (151, 30988),

Gene: MiniBoss\_31 Start: 28753, Stop: 31008, Start Num: 5

Candidate Starts for MiniBoss\_31:

(Start: 5 @28753 has 296 MA's), (13, 28849), (19, 28927), (20, 28954), (27, 29053), (37, 29212), (44, 29392), (47, 29416), (56, 29512), (58, 29548), (62, 29587), (64, 29596), (66, 29629), (67, 29668), (69, 29713), (73, 29764), (77, 29815), (78, 29824), (81, 29893), (85, 29968), (88, 30013), (90, 30028), (100, 30163), (104, 30217), (105, 30238), (106, 30271), (109, 30316), (112, 30370), (114, 30397), (116, 30454), (120, 30475), (122, 30517), (123, 30556), (127, 30616), (145, 30856), (147, 30892), (149, 30925), (151, 30994),

Gene: MitKao\_31 Start: 28468, Stop: 30723, Start Num: 5

Candidate Starts for MitKao\_31:

(Start: 5 @28468 has 296 MA's), (13, 28564), (19, 28642), (20, 28669), (27, 28768), (37, 28927), (44, 29107), (47, 29131), (55, 29221), (56, 29227), (58, 29263), (62, 29302), (64, 29311), (66, 29344), (67, 29383), (69, 29428), (73, 29479), (77, 29530), (78, 29539), (81, 29608), (85, 29683), (88, 29728), (90, 29743), (100, 29878), (104, 29932), (105, 29953), (106, 29986), (109, 30031), (112, 30085), (114, 30112), (116, 30169), (120, 30190), (122, 30232), (123, 30271), (127, 30331), (145, 30571), (146, 30604), (147, 30607), (149, 30640), (150, 30646), (151, 30709),

Gene: Mithril\_28 Start: 28983, Stop: 31280, Start Num: 5

Candidate Starts for Mithril\_28:

(Start: 1 @28296 has 1 MA's), (2, 28443), (Start: 5 @28983 has 296 MA's), (13, 29082), (14, 29100), (24, 29223), (27, 29286), (31, 29367), (35, 29433), (41, 29550), (42, 29589), (45, 29640), (47, 29649), (52, 29706), (53, 29730), (54, 29733), (58, 29796), (63, 29838), (65, 29850), (70, 29973), (71, 29997), (74, 30027), (75, 30030), (76, 30060), (82, 30171), (83, 30192), (84, 30213), (85, 30228), (86, 30249), (92, 30315), (93, 30327), (95, 30378), (96, 30381), (97, 30399), (99, 30423), (102, 30450), (104, 30483), (105, 30504), (106, 30537), (109, 30582), (117, 30723), (118, 30726), (120, 30738), (124, 30822), (132, 30936), (133, 30957), (134, 30981), (138, 31044), (141, 31074), (142, 31080), (145, 31128), (146, 31161), (147, 31164), (151, 31266), (152, 31269),

Gene: MmasiCarm\_31 Start: 28599, Stop: 30824, Start Num: 4

Candidate Starts for MmasiCarm\_31:

(Start: 4 @28599 has 44 MA's), (Start: 7 @28614 has 1 MA's), (10, 28659), (14, 28716), (21, 28794), (26, 28863), (27, 28875), (30, 28917), (32, 28953), (33, 28980), (34, 28992), (36, 29019), (39, 29109), (43, 29181), (51, 29265), (59, 29373), (60, 29394), (67, 29487), (68, 29502), (76, 29631), (81, 29712), (85, 29787), (87, 29829), (88, 29835), (92, 29871), (100, 29985), (101, 29997), (104, 30039), (105, 30060), (108, 30114), (109, 30138), (111, 30174), (116, 30270), (118, 30279), (122, 30333), (128, 30441), (129, 30468), (133, 30510), (137, 30582), (145, 30672), (147, 30708),

Gene: Morgushi\_31 Start: 28469, Stop: 30724, Start Num: 5

Candidate Starts for Morgushi\_31:

(Start: 5 @28469 has 296 MA's), (13, 28565), (19, 28643), (20, 28670), (27, 28769), (37, 28928), (44, 29108), (47, 29132), (56, 29228), (58, 29264), (62, 29303), (64, 29312), (66, 29345), (67, 29384), (69, 29429), (73, 29480), (77, 29531), (78, 29540), (81, 29609), (85, 29684), (88, 29729), (90, 29744), (100, 29879), (104, 29933), (105, 29954), (106, 29987), (109, 30032), (112, 30086), (114, 30113), (116, 30170), (120, 30191), (122, 30233), (123, 30272), (127, 30332), (145, 30572), (147, 30608), (149, 30641), (151, 30710),

Gene: Mortcellus\_30 Start: 29251, Stop: 31476, Start Num: 4

Candidate Starts for Mortcellus\_30:

(Start: 4 @29251 has 44 MA's), (Start: 7 @29266 has 1 MA's), (10, 29311), (14, 29368), (21, 29446), (26, 29515), (27, 29527), (30, 29569), (32, 29605), (33, 29632), (34, 29644), (36, 29671), (39, 29761), (43, 29833), (51, 29917), (59, 30025), (60, 30046), (67, 30139), (68, 30154), (76, 30283), (81, 30364), (85, 30439), (87, 30481), (88, 30487), (92, 30523), (100, 30637), (101, 30649), (104, 30691), (105, 30712), (108, 30766), (109, 30790), (111, 30826), (116, 30922), (118, 30931), (122, 30985), (128, 31093), (129, 31120), (133, 31162), (137, 31234), (145, 31324), (147, 31360),

Gene: Morty\_31 Start: 28769, Stop: 31024, Start Num: 5

Candidate Starts for Morty\_31:

(Start: 5 @28769 has 296 MA's), (13, 28865), (19, 28943), (20, 28970), (27, 29069), (37, 29228), (44, 29408), (47, 29432), (55, 29522), (56, 29528), (58, 29564), (62, 29603), (64, 29612), (66, 29645), (67, 29684), (69, 29729), (73, 29780), (77, 29831), (78, 29840), (81, 29909), (85, 29984), (88, 30029), (90, 30044), (100, 30179), (104, 30233), (105, 30254), (106, 30287), (109, 30332), (112, 30386), (114, 30413), (116, 30470), (120, 30491), (122, 30533), (123, 30572), (127, 30632), (145, 30872), (146, 30905), (147, 30908), (149, 30941), (150, 30947), (151, 31010),

Gene: Morty007\_31 Start: 29395, Stop: 31620, Start Num: 4

Candidate Starts for Morty007\_31:

(Start: 4 @29395 has 44 MA's), (Start: 7 @29410 has 1 MA's), (10, 29455), (14, 29512), (21, 29590), (26, 29659), (27, 29671), (30, 29713), (32, 29749), (33, 29776), (34, 29788), (36, 29815), (39, 29905), (43, 29977), (51, 30061), (59, 30169), (60, 30190), (67, 30283), (68, 30298), (76, 30427), (81, 30508), (85, 30583), (87, 30625), (88, 30631), (92, 30667), (100, 30781), (101, 30793), (104, 30835), (105, 30856), (108, 30910), (109, 30934), (116, 31066), (118, 31075), (122, 31129), (128, 31237), (129, 31264), (133, 31306), (137, 31378), (145, 31468), (147, 31504),

Gene: Mosaic\_30 Start: 28474, Stop: 30729, Start Num: 5

Candidate Starts for Mosaic\_30:

(Start: 5 @28474 has 296 MA's), (13, 28570), (19, 28648), (20, 28675), (27, 28774), (37, 28933), (44, 29113), (47, 29137), (55, 29227), (56, 29233), (58, 29269), (62, 29308), (64, 29317), (66, 29350), (67, 29389), (69, 29434), (73, 29485), (77, 29536), (78, 29545), (81, 29614), (85, 29689), (88, 29734), (90, 29749), (100, 29884), (104, 29938), (105, 29959), (106, 29992), (109, 30037), (112, 30091), (114, 30118), (116, 30175), (120, 30196), (122, 30238), (123, 30277), (127, 30337), (145, 30577), (146, 30610), (147, 30613), (149, 30646), (150, 30652), (151, 30715),

Gene: MrPhizzler\_30 Start: 28476, Stop: 30731, Start Num: 5

Candidate Starts for MrPhizzler\_30:

(Start: 5 @28476 has 296 MA's), (13, 28572), (19, 28650), (20, 28677), (27, 28776), (37, 28935), (44, 29115), (47, 29139), (56, 29235), (58, 29271), (62, 29310), (64, 29319), (66, 29352), (67, 29391), (69, 29436), (73, 29487), (77, 29538), (78, 29547), (81, 29616), (85, 29691), (88, 29736), (90, 29751), (100, 29886), (104, 29940), (105, 29961), (106, 29994), (109, 30039), (112, 30093), (114, 30120), (116, 30177), (120, 30198), (122, 30240), (123, 30279), (127, 30339), (145, 30579), (147, 30615), (149, 30648), (151, 30717),

Gene: Mudslide\_28 Start: 29215, Stop: 31512, Start Num: 5

Candidate Starts for Mudslide\_28:

(Start: 1 @28528 has 1 MA's), (2, 28675), (Start: 5 @29215 has 296 MA's), (13, 29314), (14, 29332), (24, 29455), (27, 29518), (31, 29599), (35, 29665), (41, 29782), (42, 29821), (45, 29872), (47, 29881), (52, 29938), (53, 29962), (54, 29965), (58, 30028), (63, 30070), (65, 30082), (69, 30193), (70, 30205), (71, 30229), (76, 30292), (82, 30403), (83, 30424), (85, 30460), (86, 30481), (92, 30547), (93, 30559), (95, 30610), (96, 30613), (97, 30631), (99, 30655), (102, 30682), (104, 30715), (105, 30736), (106, 30769), (109, 30814), (117, 30955), (118, 30958), (119, 30961), (120, 30970), (124, 31054), (132, 31168), (133, 31189), (134, 31213), (138, 31276), (141, 31306), (142, 31312), (145, 31360), (146, 31393), (147, 31396), (151, 31498), (152, 31501),

Gene: Mulan\_30 Start: 28486, Stop: 30741, Start Num: 5

Candidate Starts for Mulan\_30:

(Start: 5 @28486 has 296 MA's), (13, 28582), (19, 28660), (20, 28687), (27, 28786), (37, 28945), (44, 29125), (47, 29149), (55, 29239), (56, 29245), (58, 29281), (62, 29320), (64, 29329), (66, 29362), (67, 29401), (69, 29446), (73, 29497), (77, 29548), (78, 29557), (81, 29626), (85, 29701), (88, 29746), (90, 29761), (100, 29896), (104, 29950), (105, 29971), (106, 30004), (109, 30049), (112, 30103), (116, 30187), (120, 30208), (122, 30250), (123, 30289), (127, 30349), (145, 30589), (146, 30622), (147, 30625), (149, 30658), (150, 30664), (151, 30727),

Gene: Murdoc\_31 Start: 28761, Stop: 31016, Start Num: 5

Candidate Starts for Murdoc\_31:

(Start: 5 @28761 has 296 MA's), (13, 28857), (19, 28935), (20, 28962), (27, 29061), (37, 29220), (44, 29400), (47, 29424), (55, 29514), (56, 29520), (58, 29556), (62, 29595), (64, 29604), (66, 29637), (67, 29676), (69, 29721), (73, 29772), (77, 29823), (78, 29832), (81, 29901), (85, 29976), (88, 30021), (90, 30036), (100, 30171), (104, 30225), (105, 30246), (106, 30279), (109, 30324), (112, 30378), (114, 30405), (116, 30462), (120, 30483), (122, 30525), (123, 30564), (127, 30624), (145, 30864), (147, 30900), (149, 30933), (151, 31002),

Gene: Mutante\_30 Start: 28468, Stop: 30723, Start Num: 5

Candidate Starts for Mutante\_30:

(Start: 5 @28468 has 296 MA's), (13, 28564), (19, 28642), (20, 28669), (27, 28768), (37, 28927), (44, 29107), (47, 29131), (55, 29221), (56, 29227), (58, 29263), (62, 29302), (64, 29311), (66, 29344), (67, 29383), (69, 29428), (73, 29479), (77, 29530), (78, 29539), (81, 29608), (85, 29683), (88, 29728), (90, 29743), (100, 29878), (104, 29932), (105, 29953), (106, 29986), (109, 30031), (112, 30085), (114, 30112), (116, 30169), (120, 30190), (122, 30232), (123, 30271), (127, 30331), (145, 30571), (147, 30607), (149, 30640), (151, 30709),

Gene: Mysterious\_31 Start: 29235, Stop: 31496, Start Num: 5

Candidate Starts for Mysterious\_31:

(Start: 5 @29235 has 296 MA's), (13, 29331), (17, 29388), (18, 29406), (22, 29451), (41, 29799), (48, 29901), (51, 29931), (52, 29955), (53, 29979), (54, 29982), (62, 30072), (65, 30087), (74, 30264), (77, 30300), (80, 30336), (81, 30378), (85, 30453), (88, 30504), (98, 30627), (100, 30654), (104, 30708), (105, 30729), (106, 30762), (116, 30942), (118, 30951), (120, 30963), (123, 31044), (124, 31047), (126, 31101), (128, 31113), (130, 31143), (132, 31161), (136, 31227), (140, 31275), (145, 31344),

(151, 31482), (152, 31485),

Gene: Nacho\_0031 Start: 28760, Stop: 31018, Start Num: 5

Candidate Starts for Nacho\_0031:

(Start: 5 @28760 has 296 MA's), (13, 28856), (19, 28934), (20, 28961), (27, 29063), (37, 29222), (44, 29402), (47, 29426), (56, 29522), (58, 29558), (62, 29597), (64, 29606), (66, 29639), (67, 29678), (69, 29723), (73, 29774), (77, 29825), (78, 29834), (81, 29903), (85, 29978), (88, 30023), (90, 30038), (100, 30173), (104, 30227), (105, 30248), (106, 30281), (109, 30326), (112, 30380), (116, 30464), (120, 30485), (122, 30527), (123, 30566), (127, 30626), (145, 30866), (146, 30899), (147, 30902), (149, 30935), (150, 30941), (151, 31004),

Gene: Nanao\_27 Start: 27940, Stop: 30237, Start Num: 5

Candidate Starts for Nanao\_27:

(Start: 5 @27940 has 296 MA's), (13, 28039), (20, 28144), (24, 28180), (27, 28243), (31, 28324), (35, 28390), (37, 28402), (41, 28507), (42, 28546), (45, 28597), (47, 28606), (53, 28687), (54, 28690), (58, 28753), (63, 28795), (65, 28807), (70, 28930), (71, 28954), (76, 29017), (79, 29047), (80, 29056), (82, 29128), (83, 29149), (85, 29185), (86, 29206), (92, 29272), (93, 29284), (95, 29335), (96, 29338), (97, 29356), (99, 29380), (102, 29407), (104, 29440), (105, 29461), (106, 29494), (109, 29539), (117, 29680), (118, 29683), (120, 29695), (124, 29779), (133, 29914), (134, 29938), (138, 30001), (141, 30031), (142, 30037), (145, 30085), (146, 30118), (147, 30121), (151, 30223), (152, 30226),

Gene: Nangang\_30 Start: 28934, Stop: 31201, Start Num: 5

Candidate Starts for Nangang\_30:

(Start: 5 @28934 has 296 MA's), (8, 28982), (12, 29012), (13, 29030), (15, 29066), (17, 29087), (18, 29105), (24, 29168), (28, 29273), (37, 29396), (38, 29402), (41, 29501), (48, 29603), (52, 29657), (62, 29777), (65, 29792), (66, 29819), (77, 30005), (80, 30041), (81, 30083), (85, 30158), (88, 30209), (92, 30245), (95, 30308), (98, 30332), (100, 30359), (108, 30488), (109, 30512), (116, 30647), (118, 30656), (120, 30668), (122, 30710), (123, 30749), (124, 30752), (126, 30806), (128, 30818), (130, 30848), (132, 30866), (136, 30932), (145, 31049), (151, 31187),

Gene: Nehemiah\_29 Start: 29235, Stop: 31499, Start Num: 5

Candidate Starts for Nehemiah\_29:

(Start: 5 @29235 has 296 MA's), (9, 29286), (13, 29331), (17, 29388), (18, 29406), (22, 29451), (41, 29802), (48, 29904), (51, 29934), (52, 29958), (53, 29982), (54, 29985), (62, 30075), (65, 30090), (74, 30267), (77, 30303), (80, 30339), (81, 30381), (85, 30456), (88, 30507), (98, 30630), (100, 30657), (104, 30711), (105, 30732), (106, 30765), (116, 30945), (118, 30954), (120, 30966), (123, 31047), (124, 31050), (126, 31104), (128, 31116), (130, 31146), (132, 31164), (136, 31230), (140, 31278), (145, 31347), (151, 31485), (152, 31488),

Gene: Neos5\_31 Start: 29411, Stop: 31639, Start Num: 4

Candidate Starts for Neos5\_31:

(Start: 4 @29411 has 44 MA's), (Start: 7 @29426 has 1 MA's), (10, 29471), (14, 29528), (21, 29606), (26, 29675), (27, 29687), (30, 29729), (32, 29765), (33, 29792), (34, 29804), (36, 29831), (39, 29921), (40, 29945), (43, 29993), (51, 30077), (59, 30185), (60, 30206), (67, 30299), (68, 30314), (76, 30443), (81, 30524), (85, 30599), (88, 30647), (95, 30746), (100, 30797), (101, 30809), (104, 30851), (105, 30872), (108, 30926), (109, 30950), (111, 30986), (116, 31085), (118, 31094), (122, 31148), (128, 31256), (129, 31283), (133, 31325), (137, 31397), (145, 31487), (147, 31523),

Gene: Newman\_31 Start: 28756, Stop: 31014, Start Num: 5

Candidate Starts for Newman\_31:

(Start: 5 @28756 has 296 MA's), (13, 28852), (19, 28930), (20, 28957), (27, 29059), (37, 29218), (44, 29398), (47, 29422), (56, 29518), (58, 29554), (62, 29593), (64, 29602), (66, 29635), (67, 29674), (69, 29719), (73, 29770), (77, 29821), (78, 29830), (81, 29899), (85, 29974), (88, 30019), (90, 30034),



(100, 30169), (104, 30223), (105, 30244), (106, 30277), (109, 30322), (112, 30376), (116, 30460), (120, 30481), (122, 30523), (123, 30562), (127, 30622), (145, 30862), (146, 30895), (147, 30898), (149, 30931), (150, 30937), (151, 31000),

Gene: Nicole21\_31 Start: 28758, Stop: 31013, Start Num: 5

Candidate Starts for Nicole21\_31:

(Start: 5 @28758 has 296 MA's), (13, 28854), (19, 28932), (20, 28959), (27, 29058), (37, 29217), (44, 29397), (47, 29421), (55, 29511), (56, 29517), (58, 29553), (62, 29592), (64, 29601), (66, 29634), (67, 29673), (69, 29718), (73, 29769), (77, 29820), (78, 29829), (81, 29898), (85, 29973), (88, 30018), (90, 30033), (100, 30168), (104, 30222), (105, 30243), (106, 30276), (109, 30321), (112, 30375), (114, 30402), (116, 30459), (120, 30480), (122, 30522), (123, 30561), (127, 30621), (145, 30861), (146, 30894), (147, 30897), (149, 30930), (150, 30936), (151, 30999),

Gene: Nigel\_26 Start: 27851, Stop: 30148, Start Num: 5

Candidate Starts for Nigel\_26:

(3, 27722), (Start: 5 @27851 has 296 MA's), (13, 27950), (14, 27968), (27, 28154), (29, 28199), (31, 28235), (35, 28301), (41, 28418), (42, 28457), (43, 28463), (53, 28598), (54, 28601), (58, 28664), (63, 28706), (65, 28718), (71, 28865), (76, 28928), (80, 28967), (82, 29039), (83, 29060), (84, 29081), (85, 29096), (86, 29117), (88, 29147), (92, 29183), (93, 29195), (95, 29246), (96, 29249), (97, 29267), (99, 29291), (100, 29297), (104, 29351), (105, 29372), (108, 29426), (109, 29450), (116, 29585), (117, 29591), (118, 29594), (119, 29597), (120, 29606), (133, 29825), (134, 29849), (138, 29912), (142, 29948), (143, 29981), (145, 29996), (146, 30029), (147, 30032), (151, 30134), (152, 30137),

Gene: Nozo\_31 Start: 29375, Stop: 31600, Start Num: 4

Candidate Starts for Nozo\_31:

(Start: 4 @29375 has 44 MA's), (Start: 7 @29390 has 1 MA's), (10, 29435), (14, 29492), (21, 29570), (26, 29639), (27, 29651), (30, 29693), (32, 29729), (33, 29756), (34, 29768), (36, 29795), (39, 29885), (43, 29957), (51, 30041), (59, 30149), (60, 30170), (67, 30263), (68, 30278), (76, 30407), (81, 30488), (85, 30563), (87, 30605), (88, 30611), (95, 30710), (100, 30761), (101, 30773), (104, 30815), (105, 30836), (108, 30890), (109, 30914), (111, 30950), (116, 31046), (118, 31055), (122, 31109), (128, 31217), (129, 31244), (133, 31286), (137, 31358), (145, 31448), (147, 31484),

Gene: Numberten\_31 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Numberten\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (114, 30410), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: Nyala\_30 Start: 28460, Stop: 30715, Start Num: 5

Candidate Starts for Nyala\_30:

(Start: 5 @28460 has 296 MA's), (13, 28556), (19, 28634), (20, 28661), (27, 28760), (37, 28919), (44, 29099), (47, 29123), (55, 29213), (56, 29219), (58, 29255), (62, 29294), (64, 29303), (66, 29336), (67, 29375), (69, 29420), (73, 29471), (77, 29522), (78, 29531), (81, 29600), (85, 29675), (88, 29720), (90, 29735), (100, 29870), (104, 29924), (105, 29945), (106, 29978), (109, 30023), (112, 30077), (114, 30104), (116, 30161), (120, 30182), (122, 30224), (123, 30263), (127, 30323), (145, 30563), (146, 30596), (147, 30599), (149, 30632), (150, 30638), (151, 30701),

Gene: OSmaximus\_31 Start: 28795, Stop: 31056, Start Num: 5

Candidate Starts for OSmaximus\_31:

(Start: 5 @28795 has 296 MA's), (13, 28891), (19, 28969), (20, 28996), (25, 29071), (27, 29101), (37, 29260), (44, 29440), (47, 29464), (56, 29560), (58, 29596), (62, 29635), (64, 29644), (66, 29677), (67, 29716), (69, 29761), (73, 29812), (78, 29872), (81, 29941), (85, 30016), (88, 30061), (90, 30076), (100, 30211), (104, 30265), (105, 30286), (106, 30319), (109, 30364), (112, 30418), (114, 30445), (116, 30502), (120, 30523), (122, 30565), (123, 30604), (127, 30664), (145, 30904), (147, 30940), (149, 30973), (151, 31042),

Gene: Obutu\_31 Start: 28599, Stop: 30824, Start Num: 4

Candidate Starts for Obutu\_31:

(Start: 4 @28599 has 44 MA's), (10, 28659), (14, 28716), (26, 28863), (27, 28875), (30, 28917), (32, 28953), (33, 28980), (34, 28992), (36, 29019), (39, 29109), (43, 29181), (51, 29265), (59, 29373), (60, 29394), (67, 29487), (68, 29502), (76, 29631), (81, 29712), (85, 29787), (87, 29829), (88, 29835), (92, 29871), (100, 29985), (101, 29997), (104, 30039), (105, 30060), (108, 30114), (109, 30138), (111, 30174), (116, 30270), (118, 30279), (122, 30333), (128, 30441), (129, 30468), (133, 30510), (137, 30582), (145, 30672), (147, 30708),

Gene: Olak\_30 Start: 28464, Stop: 30719, Start Num: 5

Candidate Starts for Olak\_30:

(Start: 5 @28464 has 296 MA's), (13, 28560), (19, 28638), (20, 28665), (27, 28764), (37, 28923), (44, 29103), (47, 29127), (55, 29217), (56, 29223), (58, 29259), (62, 29298), (64, 29307), (66, 29340), (67, 29379), (69, 29424), (73, 29475), (77, 29526), (78, 29535), (81, 29604), (85, 29679), (88, 29724), (90, 29739), (100, 29874), (104, 29928), (105, 29949), (106, 29982), (109, 30027), (112, 30081), (116, 30165), (120, 30186), (122, 30228), (123, 30267), (127, 30327), (145, 30567), (146, 30600), (147, 30603), (149, 30636), (150, 30642), (151, 30705),

Gene: Oline\_30 Start: 28329, Stop: 30584, Start Num: 5

Candidate Starts for Oline\_30:

(Start: 5 @28329 has 296 MA's), (13, 28425), (19, 28503), (20, 28530), (27, 28629), (37, 28788), (44, 28968), (47, 28992), (56, 29088), (58, 29124), (62, 29163), (64, 29172), (66, 29205), (67, 29244), (69, 29289), (73, 29340), (77, 29391), (78, 29400), (81, 29469), (85, 29544), (88, 29589), (90, 29604), (100, 29739), (104, 29793), (105, 29814), (106, 29847), (109, 29892), (112, 29946), (114, 29973), (116, 30030), (120, 30051), (122, 30093), (123, 30132), (127, 30192), (145, 30432), (146, 30465), (147, 30468), (149, 30501), (150, 30507), (151, 30570),

Gene: Olive\_31 Start: 28750, Stop: 31005, Start Num: 5

Candidate Starts for Olive\_31:

(Start: 5 @28750 has 296 MA's), (13, 28846), (19, 28924), (20, 28951), (27, 29050), (37, 29209), (44, 29389), (47, 29413), (55, 29503), (56, 29509), (58, 29545), (62, 29584), (64, 29593), (66, 29626), (67, 29665), (69, 29710), (73, 29761), (77, 29812), (78, 29821), (81, 29890), (85, 29965), (88, 30010), (90, 30025), (100, 30160), (104, 30214), (105, 30235), (106, 30268), (109, 30313), (112, 30367), (116, 30451), (120, 30472), (122, 30514), (123, 30553), (127, 30613), (145, 30853), (146, 30886), (147, 30889), (149, 30922), (150, 30928), (151, 30991),

Gene: OliverWalter\_31 Start: 28769, Stop: 31027, Start Num: 5

Candidate Starts for OliverWalter\_31:

(Start: 5 @28769 has 296 MA's), (13, 28865), (19, 28943), (20, 28970), (27, 29072), (37, 29231), (44, 29411), (47, 29435), (56, 29531), (58, 29567), (62, 29606), (64, 29615), (66, 29648), (67, 29687), (69, 29732), (73, 29783), (77, 29834), (78, 29843), (81, 29912), (85, 29987), (88, 30032), (90, 30047), (100, 30182), (104, 30236), (105, 30257), (106, 30290), (109, 30335), (112, 30389), (116, 30473), (120, 30494), (122, 30536), (123, 30575), (127, 30635), (145, 30875), (146, 30908), (147, 30911), (149, 30944), (150, 30950), (151, 31013),

Gene: Omniscient\_31 Start: 28769, Stop: 31024, Start Num: 5

Candidate Starts for Omniscient\_31:

(Start: 5 @28769 has 296 MA's), (13, 28865), (19, 28943), (20, 28970), (27, 29069), (37, 29228), (44, 29408), (47, 29432), (55, 29522), (56, 29528), (58, 29564), (62, 29603), (64, 29612), (66, 29645), (67, 29684), (69, 29729), (73, 29780), (77, 29831), (78, 29840), (81, 29909), (85, 29984), (88, 30029), (90, 30044), (100, 30179), (104, 30233), (105, 30254), (106, 30287), (109, 30332), (112, 30386), (114, 30413), (116, 30470), (120, 30491), (122, 30533), (123, 30572), (127, 30632), (145, 30872), (146, 30905), (147, 30908), (149, 30941), (150, 30947), (151, 31010),

Gene: Oosterbaan\_31 Start: 28760, Stop: 31015, Start Num: 5

Candidate Starts for Oosterbaan\_31:

(Start: 5 @28760 has 296 MA's), (13, 28856), (19, 28934), (20, 28961), (27, 29060), (37, 29219), (44, 29399), (47, 29423), (55, 29513), (56, 29519), (58, 29555), (62, 29594), (64, 29603), (66, 29636), (67, 29675), (69, 29720), (73, 29771), (77, 29822), (78, 29831), (81, 29900), (85, 29975), (88, 30020), (90, 30035), (100, 30170), (104, 30224), (105, 30245), (106, 30278), (109, 30323), (112, 30377), (114, 30404), (116, 30461), (120, 30482), (122, 30524), (123, 30563), (127, 30623), (145, 30863), (147, 30899), (149, 30932), (151, 31001),

Gene: OrangeOswald\_31 Start: 28613, Stop: 30841, Start Num: 4

Candidate Starts for OrangeOswald\_31:

(Start: 4 @28613 has 44 MA's), (Start: 7 @28628 has 1 MA's), (10, 28673), (14, 28730), (21, 28808), (26, 28877), (27, 28889), (30, 28931), (32, 28967), (33, 28994), (34, 29006), (36, 29033), (39, 29123), (43, 29195), (51, 29279), (59, 29387), (60, 29408), (67, 29501), (68, 29516), (76, 29645), (81, 29726), (85, 29801), (87, 29843), (88, 29849), (100, 29999), (101, 30011), (104, 30053), (105, 30074), (108, 30128), (109, 30152), (116, 30287), (118, 30296), (122, 30350), (128, 30458), (129, 30485), (133, 30527), (137, 30599), (145, 30689), (147, 30725),

Gene: Orfeu\_30 Start: 28468, Stop: 30723, Start Num: 5

Candidate Starts for Orfeu\_30:

(Start: 5 @28468 has 296 MA's), (13, 28564), (19, 28642), (20, 28669), (27, 28768), (37, 28927), (44, 29107), (47, 29131), (55, 29221), (56, 29227), (58, 29263), (62, 29302), (64, 29311), (66, 29344), (67, 29383), (69, 29428), (73, 29479), (77, 29530), (78, 29539), (81, 29608), (85, 29683), (88, 29728), (90, 29743), (100, 29878), (104, 29932), (105, 29953), (106, 29986), (109, 30031), (112, 30085), (114, 30112), (116, 30169), (120, 30190), (122, 30232), (123, 30271), (127, 30331), (145, 30571), (146, 30604), (147, 30607), (149, 30640), (150, 30646), (151, 30709),

Gene: Orion\_31 Start: 28758, Stop: 31013, Start Num: 5

Candidate Starts for Orion\_31:

(Start: 5 @28758 has 296 MA's), (13, 28854), (19, 28932), (20, 28959), (27, 29058), (37, 29217), (44, 29397), (47, 29421), (55, 29511), (56, 29517), (58, 29553), (62, 29592), (64, 29601), (66, 29634), (67, 29673), (69, 29718), (73, 29769), (77, 29820), (78, 29829), (81, 29898), (85, 29973), (88, 30018), (90, 30033), (100, 30168), (104, 30222), (105, 30243), (106, 30276), (109, 30321), (112, 30375), (116, 30459), (120, 30480), (122, 30522), (123, 30561), (127, 30621), (145, 30861), (146, 30894), (147, 30897), (149, 30930), (150, 30936), (151, 30999),

Gene: Orwigg\_31 Start: 28456, Stop: 30711, Start Num: 5

Candidate Starts for Orwigg\_31:

(Start: 5 @28456 has 296 MA's), (13, 28552), (19, 28630), (20, 28657), (27, 28756), (37, 28915), (44, 29095), (47, 29119), (55, 29209), (56, 29215), (58, 29251), (62, 29290), (64, 29299), (66, 29332), (67, 29371), (69, 29416), (73, 29467), (77, 29518), (78, 29527), (81, 29596), (85, 29671), (88, 29716), (90, 29731), (100, 29866), (104, 29920), (105, 29941), (106, 29974), (109, 30019), (112, 30073), (114, 30100), (116, 30157), (120, 30178), (122, 30220), (123, 30259), (127, 30319), (145, 30559), (146, 30592), (147, 30595), (149, 30628), (150, 30634), (151, 30697),

Gene: PG1\_31 Start: 28771, Stop: 31026, Start Num: 5

Candidate Starts for PG1\_31:

(Start: 5 @28771 has 296 MA's), (13, 28867), (19, 28945), (20, 28972), (27, 29071), (37, 29230), (44, 29410), (47, 29434), (55, 29524), (56, 29530), (58, 29566), (62, 29605), (64, 29614), (66, 29647), (67, 29686), (69, 29731), (73, 29782), (77, 29833), (78, 29842), (81, 29911), (85, 29986), (88, 30031), (90, 30046), (100, 30181), (104, 30235), (105, 30256), (106, 30289), (109, 30334), (112, 30388), (116, 30472), (120, 30493), (122, 30535), (123, 30574), (127, 30634), (145, 30874), (146, 30907), (147, 30910), (149, 30943), (150, 30949), (151, 31012),

Gene: Pacifista\_30 Start: 28462, Stop: 30717, Start Num: 5

Candidate Starts for Pacifista\_30:

(Start: 5 @28462 has 296 MA's), (13, 28558), (19, 28636), (20, 28663), (27, 28762), (37, 28921), (44, 29101), (47, 29125), (55, 29215), (56, 29221), (58, 29257), (62, 29296), (64, 29305), (66, 29338), (67, 29377), (69, 29422), (73, 29473), (77, 29524), (78, 29533), (81, 29602), (85, 29677), (88, 29722), (90, 29737), (100, 29872), (104, 29926), (105, 29947), (106, 29980), (109, 30025), (112, 30079), (114, 30106), (116, 30163), (120, 30184), (122, 30226), (123, 30265), (127, 30325), (145, 30565), (146, 30598), (147, 30601), (149, 30634), (150, 30640), (151, 30703),

Gene: Phaedrus\_29 Start: 28532, Stop: 30757, Start Num: 4

Candidate Starts for Phaedrus\_29:

(Start: 4 @28532 has 44 MA's), (Start: 7 @28547 has 1 MA's), (10, 28592), (14, 28649), (21, 28727), (26, 28796), (27, 28808), (30, 28850), (32, 28886), (33, 28913), (34, 28925), (36, 28952), (39, 29042), (43, 29114), (51, 29198), (59, 29306), (60, 29327), (67, 29420), (68, 29435), (76, 29564), (81, 29645), (85, 29720), (87, 29762), (88, 29768), (92, 29804), (100, 29918), (101, 29930), (104, 29972), (105, 29993), (108, 30047), (109, 30071), (111, 30107), (116, 30203), (118, 30212), (122, 30266), (128, 30374), (129, 30401), (133, 30443), (137, 30515), (144, 30596), (145, 30605), (147, 30641),

Gene: Phamished\_31 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Phamished\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (114, 30410), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: Phareon\_31 Start: 28470, Stop: 30725, Start Num: 5

Candidate Starts for Phareon\_31:

(Start: 5 @28470 has 296 MA's), (13, 28566), (19, 28644), (20, 28671), (27, 28770), (37, 28929), (44, 29109), (47, 29133), (55, 29223), (56, 29229), (58, 29265), (62, 29304), (64, 29313), (66, 29346), (67, 29385), (69, 29430), (73, 29481), (77, 29532), (78, 29541), (81, 29610), (85, 29685), (88, 29730), (90, 29745), (100, 29880), (104, 29934), (105, 29955), (106, 29988), (109, 30033), (112, 30087), (114, 30114), (116, 30171), (120, 30192), (122, 30234), (123, 30273), (127, 30333), (145, 30573), (146, 30606), (147, 30609), (149, 30642), (150, 30648), (151, 30711),

Gene: PhatCats2014\_31 Start: 28775, Stop: 31030, Start Num: 5

Candidate Starts for PhatCats2014\_31:

(Start: 5 @28775 has 296 MA's), (13, 28871), (19, 28949), (20, 28976), (27, 29075), (37, 29234), (44, 29414), (47, 29438), (55, 29528), (56, 29534), (58, 29570), (62, 29609), (64, 29618), (66, 29651), (67, 29690), (69, 29735), (73, 29786), (77, 29837), (78, 29846), (81, 29915), (85, 29990), (88, 30035), (90, 30050), (100, 30185), (104, 30239), (105, 30260), (106, 30293), (109, 30338), (112, 30392), (116, 30476), (120, 30497), (122, 30539), (123, 30578), (127, 30638), (145, 30878), (146, 30911), (147, 30914), (149, 30947), (150, 30953), (151, 31016),

Gene: PhatLouie\_31 Start: 28764, Stop: 31019, Start Num: 5

Candidate Starts for PhatLouie\_31:

(Start: 5 @28764 has 296 MA's), (13, 28860), (19, 28938), (20, 28965), (27, 29064), (37, 29223), (44, 29403), (47, 29427), (55, 29517), (56, 29523), (58, 29559), (62, 29598), (64, 29607), (66, 29640), (67, 29679), (69, 29724), (73, 29775), (77, 29826), (78, 29835), (81, 29904), (85, 29979), (88, 30024), (90, 30039), (100, 30174), (104, 30228), (105, 30249), (106, 30282), (109, 30327), (112, 30381), (114, 30408), (116, 30465), (120, 30486), (122, 30528), (123, 30567), (127, 30627), (145, 30867), (146, 30900), (147, 30903), (149, 30936), (150, 30942), (151, 31005),

Gene: Phayeta\_31 Start: 28480, Stop: 30705, Start Num: 4

Candidate Starts for Phayeta\_31:

(Start: 4 @28480 has 44 MA's), (Start: 7 @28495 has 1 MA's), (10, 28540), (14, 28597), (21, 28675), (26, 28744), (27, 28756), (30, 28798), (32, 28834), (33, 28861), (34, 28873), (36, 28900), (39, 28990), (43, 29062), (51, 29146), (59, 29254), (60, 29275), (67, 29368), (68, 29383), (76, 29512), (81, 29593), (85, 29668), (87, 29710), (88, 29716), (92, 29752), (95, 29815), (100, 29866), (101, 29878), (104, 29920), (105, 29941), (108, 29995), (109, 30019), (111, 30055), (116, 30151), (118, 30160), (122, 30214), (128, 30322), (129, 30349), (133, 30391), (137, 30463), (145, 30553), (147, 30589),

Gene: Phelemich\_30 Start: 29231, Stop: 31498, Start Num: 5

Candidate Starts for Phelemich\_30:

(Start: 5 @29231 has 296 MA's), (13, 29327), (17, 29384), (18, 29402), (22, 29447), (41, 29798), (46, 29894), (48, 29900), (51, 29930), (52, 29954), (54, 29981), (62, 30071), (65, 30086), (74, 30266), (77, 30302), (80, 30338), (81, 30380), (85, 30455), (86, 30476), (88, 30506), (95, 30605), (98, 30629), (100, 30656), (104, 30710), (105, 30731), (106, 30764), (113, 30866), (116, 30944), (118, 30953), (120, 30965), (123, 31046), (124, 31049), (126, 31103), (128, 31115), (130, 31145), (132, 31163), (136, 31229), (140, 31277), (145, 31346), (151, 31484), (152, 31487),

Gene: PhenghisKhan\_30 Start: 28370, Stop: 30625, Start Num: 5

Candidate Starts for PhenghisKhan\_30:

(Start: 5 @28370 has 296 MA's), (13, 28466), (19, 28544), (20, 28571), (27, 28670), (37, 28829), (44, 29009), (47, 29033), (55, 29123), (56, 29129), (58, 29165), (62, 29204), (64, 29213), (66, 29246), (67, 29285), (69, 29330), (73, 29381), (77, 29432), (78, 29441), (81, 29510), (85, 29585), (88, 29630), (90, 29645), (100, 29780), (104, 29834), (105, 29855), (106, 29888), (109, 29933), (112, 29987), (114, 30014), (116, 30071), (120, 30092), (122, 30134), (123, 30173), (127, 30233), (145, 30473), (146, 30506), (147, 30509), (149, 30542), (150, 30548), (151, 30611),

Gene: Pherdinand\_31 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Pherdinand\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: Phergie\_30 Start: 28361, Stop: 30616, Start Num: 5

Candidate Starts for Phergie\_30:

(Start: 5 @28361 has 296 MA's), (13, 28457), (19, 28535), (20, 28562), (27, 28661), (37, 28820), (44, 29000), (47, 29024), (55, 29114), (56, 29120), (58, 29156), (62, 29195), (64, 29204), (66, 29237), (67, 29276), (69, 29321), (73, 29372), (77, 29423), (78, 29432), (81, 29501), (85, 29576), (88, 29621), (90, 29636), (100, 29771), (104, 29825), (105, 29846), (106, 29879), (109, 29924), (112, 29978), (114, 30005), (116, 30062), (120, 30083), (122, 30125), (123, 30164), (127, 30224), (145, 30464), (146,

30497), (147, 30500), (149, 30533), (150, 30539), (151, 30602),

Gene: Philly\_30 Start: 28467, Stop: 30692, Start Num: 4

Candidate Starts for Philly\_30:

(Start: 4 @28467 has 44 MA's), (Start: 7 @28482 has 1 MA's), (10, 28527), (14, 28584), (21, 28662), (26, 28731), (27, 28743), (30, 28785), (32, 28821), (33, 28848), (34, 28860), (36, 28887), (39, 28977), (43, 29049), (51, 29133), (59, 29241), (60, 29262), (67, 29355), (68, 29370), (76, 29499), (81, 29580), (85, 29655), (88, 29703), (95, 29802), (100, 29853), (101, 29865), (104, 29907), (105, 29928), (108, 29982), (109, 30006), (111, 30042), (116, 30138), (118, 30147), (122, 30201), (128, 30309), (129, 30336), (133, 30378), (137, 30450), (145, 30540), (147, 30576),

Gene: Phipps\_31 Start: 28736, Stop: 30991, Start Num: 5

Candidate Starts for Phipps\_31:

(Start: 5 @28736 has 296 MA's), (13, 28832), (19, 28910), (20, 28937), (27, 29036), (37, 29195), (44, 29375), (47, 29399), (55, 29489), (56, 29495), (58, 29531), (62, 29570), (64, 29579), (66, 29612), (67, 29651), (69, 29696), (73, 29747), (77, 29798), (78, 29807), (81, 29876), (85, 29951), (88, 29996), (90, 30011), (100, 30146), (104, 30200), (105, 30221), (106, 30254), (109, 30299), (112, 30353), (114, 30380), (116, 30437), (120, 30458), (122, 30500), (123, 30539), (127, 30599), (145, 30839), (146, 30872), (147, 30875), (149, 30908), (150, 30914), (151, 30977),

Gene: Phleuron\_30 Start: 28367, Stop: 30622, Start Num: 5

Candidate Starts for Phleuron\_30:

(Start: 5 @28367 has 296 MA's), (13, 28463), (19, 28541), (20, 28568), (27, 28667), (37, 28826), (44, 29006), (47, 29030), (56, 29126), (58, 29162), (62, 29201), (64, 29210), (66, 29243), (67, 29282), (69, 29327), (73, 29378), (77, 29429), (78, 29438), (81, 29507), (85, 29582), (88, 29627), (90, 29642), (100, 29777), (104, 29831), (105, 29852), (106, 29885), (109, 29930), (112, 29984), (114, 30011), (116, 30068), (120, 30089), (122, 30131), (123, 30170), (127, 30230), (145, 30470), (146, 30503), (147, 30506), (149, 30539), (150, 30545), (151, 30608),

Gene: Phlyer\_31 Start: 29348, Stop: 31576, Start Num: 4

Candidate Starts for Phlyer\_31:

(Start: 4 @29348 has 44 MA's), (Start: 7 @29363 has 1 MA's), (10, 29408), (14, 29465), (21, 29543), (26, 29612), (27, 29624), (30, 29666), (32, 29702), (33, 29729), (34, 29741), (36, 29768), (39, 29858), (43, 29930), (51, 30014), (59, 30122), (60, 30143), (67, 30236), (68, 30251), (76, 30380), (81, 30461), (85, 30536), (87, 30578), (88, 30584), (92, 30620), (100, 30734), (101, 30746), (104, 30788), (105, 30809), (108, 30863), (109, 30887), (111, 30923), (116, 31022), (118, 31031), (122, 31085), (128, 31193), (129, 31220), (133, 31262), (137, 31334), (145, 31424), (147, 31460),

Gene: PhrankReynolds\_30 Start: 28367, Stop: 30622, Start Num: 5

Candidate Starts for PhrankReynolds\_30:

(Start: 5 @28367 has 296 MA's), (13, 28463), (19, 28541), (20, 28568), (27, 28667), (37, 28826), (44, 29006), (47, 29030), (55, 29120), (56, 29126), (58, 29162), (62, 29201), (64, 29210), (66, 29243), (67, 29282), (69, 29327), (73, 29378), (77, 29429), (78, 29438), (81, 29507), (85, 29582), (88, 29627), (90, 29642), (100, 29777), (104, 29831), (105, 29852), (106, 29885), (109, 29930), (112, 29984), (114, 30011), (116, 30068), (120, 30089), (122, 30131), (123, 30170), (127, 30230), (145, 30470), (146, 30503), (147, 30506), (149, 30539), (150, 30545), (151, 30608),

Gene: PhrodoBaggins\_30 Start: 28754, Stop: 31009, Start Num: 5

Candidate Starts for PhrodoBaggins\_30:

(Start: 5 @28754 has 296 MA's), (13, 28850), (19, 28928), (20, 28955), (27, 29054), (37, 29213), (44, 29393), (47, 29417), (55, 29507), (56, 29513), (58, 29549), (62, 29588), (64, 29597), (66, 29630), (67, 29669), (69, 29714), (73, 29765), (77, 29816), (78, 29825), (81, 29894), (85, 29969), (88, 30014), (90, 30029), (100, 30164), (104, 30218), (105, 30239), (106, 30272), (109, 30317), (112, 30371), (114,

30398), (116, 30455), (120, 30476), (122, 30518), (123, 30557), (127, 30617), (145, 30857), (146, 30890), (147, 30893), (149, 30926), (150, 30932), (151, 30995),

Gene: Phunky\_31 Start: 28767, Stop: 31022, Start Num: 5

Candidate Starts for Phunky\_31:

(Start: 5 @28767 has 296 MA's), (13, 28863), (19, 28941), (20, 28968), (27, 29067), (37, 29226), (44, 29406), (47, 29430), (55, 29520), (56, 29526), (58, 29562), (62, 29601), (64, 29610), (66, 29643), (67, 29682), (69, 29727), (73, 29778), (77, 29829), (78, 29838), (81, 29907), (85, 29982), (88, 30027), (90, 30042), (100, 30177), (104, 30231), (105, 30252), (106, 30285), (109, 30330), (112, 30384), (114, 30411), (116, 30468), (120, 30489), (122, 30531), (123, 30570), (127, 30630), (145, 30870), (146, 30903), (147, 30906), (149, 30939), (150, 30945), (151, 31008),

Gene: Piglet\_0030 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Piglet\_0030:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (114, 30410), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: PinheadLarry\_31 Start: 28480, Stop: 30735, Start Num: 5

Candidate Starts for PinheadLarry\_31:

(Start: 5 @28480 has 296 MA's), (13, 28576), (19, 28654), (20, 28681), (27, 28780), (37, 28939), (44, 29119), (47, 29143), (55, 29233), (56, 29239), (58, 29275), (62, 29314), (64, 29323), (66, 29356), (67, 29395), (69, 29440), (73, 29491), (77, 29542), (78, 29551), (81, 29620), (85, 29695), (88, 29740), (90, 29755), (100, 29890), (104, 29944), (105, 29965), (106, 29998), (109, 30043), (112, 30097), (114, 30124), (116, 30181), (120, 30202), (122, 30244), (123, 30283), (127, 30343), (145, 30583), (147, 30619), (149, 30652), (151, 30721),

Gene: Pinkman\_30 Start: 28323, Stop: 30578, Start Num: 5

Candidate Starts for Pinkman\_30:

(Start: 5 @28323 has 296 MA's), (13, 28419), (19, 28497), (20, 28524), (27, 28623), (37, 28782), (44, 28962), (47, 28986), (56, 29082), (58, 29118), (62, 29157), (64, 29166), (66, 29199), (67, 29238), (69, 29283), (73, 29334), (77, 29385), (78, 29394), (81, 29463), (85, 29538), (88, 29583), (90, 29598), (100, 29733), (104, 29787), (105, 29808), (106, 29841), (109, 29886), (112, 29940), (114, 29967), (116, 30024), (120, 30045), (122, 30087), (123, 30126), (127, 30186), (145, 30426), (147, 30462), (149, 30495), (151, 30564),

Gene: Pipefish\_32 Start: 30005, Stop: 32233, Start Num: 4

Candidate Starts for Pipefish\_32:

(Start: 4 @30005 has 44 MA's), (10, 30068), (14, 30125), (21, 30203), (26, 30272), (27, 30284), (30, 30326), (32, 30362), (34, 30401), (36, 30428), (39, 30518), (40, 30542), (43, 30590), (51, 30674), (59, 30782), (60, 30803), (67, 30896), (68, 30911), (76, 31040), (81, 31121), (85, 31196), (87, 31238), (88, 31244), (95, 31343), (100, 31394), (101, 31406), (104, 31448), (105, 31469), (108, 31523), (109, 31547), (111, 31583), (116, 31679), (118, 31688), (122, 31742), (128, 31850), (129, 31877), (133, 31919), (137, 31991), (145, 32081), (147, 32117),

Gene: Pipsqueak\_31 Start: 28765, Stop: 31020, Start Num: 5

Candidate Starts for Pipsqueak\_31:

(Start: 5 @28765 has 296 MA's), (13, 28861), (19, 28939), (20, 28966), (27, 29065), (37, 29224), (44, 29404), (47, 29428), (55, 29518), (56, 29524), (58, 29560), (62, 29599), (64, 29608), (66, 29641), (67, 29680), (69, 29725), (73, 29776), (77, 29827), (78, 29836), (81, 29905), (85, 29980), (88, 30025), (90,

30040), (100, 30175), (104, 30229), (105, 30250), (106, 30283), (109, 30328), (112, 30382), (114, 30409), (116, 30466), (120, 30487), (122, 30529), (123, 30568), (127, 30628), (145, 30868), (147, 30904), (149, 30937), (151, 31006),

Gene: Placalicious\_30 Start: 28458, Stop: 30713, Start Num: 5

Candidate Starts for Placalicious\_30:

(Start: 5 @28458 has 296 MA's), (13, 28554), (19, 28632), (20, 28659), (27, 28758), (37, 28917), (44, 29097), (47, 29121), (55, 29211), (56, 29217), (58, 29253), (62, 29292), (64, 29301), (66, 29334), (67, 29373), (69, 29418), (73, 29469), (77, 29520), (78, 29529), (81, 29598), (85, 29673), (88, 29718), (90, 29733), (100, 29868), (104, 29922), (105, 29943), (106, 29976), (109, 30021), (112, 30075), (114, 30102), (116, 30159), (120, 30180), (122, 30222), (123, 30261), (127, 30321), (145, 30561), (146, 30594), (147, 30597), (149, 30630), (150, 30636), (151, 30699),

Gene: Plmatters\_31 Start: 28763, Stop: 31018, Start Num: 5

Candidate Starts for Plmatters\_31:

(Start: 5 @28763 has 296 MA's), (13, 28859), (19, 28937), (20, 28964), (27, 29063), (37, 29222), (44, 29402), (47, 29426), (55, 29516), (56, 29522), (58, 29558), (62, 29597), (64, 29606), (66, 29639), (67, 29678), (69, 29723), (73, 29774), (77, 29825), (78, 29834), (81, 29903), (85, 29978), (88, 30023), (90, 30038), (100, 30173), (104, 30227), (105, 30248), (106, 30281), (109, 30326), (112, 30380), (114, 30407), (116, 30464), (120, 30485), (122, 30527), (123, 30566), (127, 30626), (145, 30866), (146, 30899), (147, 30902), (149, 30935), (150, 30941), (151, 31004),

Gene: Podrick\_31 Start: 28755, Stop: 31010, Start Num: 5

Candidate Starts for Podrick\_31:

(Start: 5 @28755 has 296 MA's), (13, 28851), (19, 28929), (20, 28956), (27, 29055), (37, 29214), (44, 29394), (47, 29418), (55, 29508), (56, 29514), (58, 29550), (62, 29589), (64, 29598), (66, 29631), (67, 29670), (69, 29715), (73, 29766), (77, 29817), (78, 29826), (81, 29895), (85, 29970), (88, 30015), (90, 30030), (100, 30165), (104, 30219), (105, 30240), (106, 30273), (109, 30318), (112, 30372), (114, 30399), (116, 30456), (120, 30477), (122, 30519), (123, 30558), (127, 30618), (145, 30858), (146, 30891), (147, 30894), (149, 30927), (150, 30933), (151, 30996),

Gene: Pops\_31 Start: 28775, Stop: 31033, Start Num: 5

Candidate Starts for Pops\_31:

(Start: 5 @28775 has 296 MA's), (13, 28871), (19, 28949), (20, 28976), (27, 29078), (37, 29237), (44, 29417), (47, 29441), (56, 29537), (58, 29573), (62, 29612), (64, 29621), (66, 29654), (67, 29693), (69, 29738), (73, 29789), (77, 29840), (78, 29849), (81, 29918), (85, 29993), (88, 30038), (90, 30053), (100, 30188), (104, 30242), (105, 30263), (106, 30296), (109, 30341), (112, 30395), (114, 30422), (116, 30479), (120, 30500), (122, 30542), (123, 30581), (127, 30641), (145, 30881), (147, 30917), (149, 30950), (151, 31019),

Gene: Poster\_27 Start: 27941, Stop: 30238, Start Num: 5

Candidate Starts for Poster\_27:

(Start: 5 @27941 has 296 MA's), (13, 28040), (20, 28145), (24, 28181), (27, 28244), (31, 28325), (35, 28391), (37, 28403), (41, 28508), (42, 28547), (45, 28598), (47, 28607), (53, 28688), (54, 28691), (58, 28754), (63, 28796), (65, 28808), (70, 28931), (71, 28955), (76, 29018), (79, 29048), (80, 29057), (82, 29129), (83, 29150), (85, 29186), (86, 29207), (92, 29273), (93, 29285), (95, 29336), (96, 29339), (97, 29357), (99, 29381), (102, 29408), (104, 29441), (105, 29462), (106, 29495), (109, 29540), (117, 29681), (118, 29684), (120, 29696), (124, 29780), (133, 29915), (134, 29939), (138, 30002), (141, 30032), (142, 30038), (145, 30086), (146, 30119), (147, 30122), (151, 30224), (152, 30227),

Gene: Potter\_30 Start: 28479, Stop: 30734, Start Num: 5

Candidate Starts for Potter\_30:



(Start: 5 @28479 has 296 MA's), (13, 28575), (19, 28653), (20, 28680), (27, 28779), (37, 28938), (44, 29118), (47, 29142), (55, 29232), (56, 29238), (58, 29274), (62, 29313), (64, 29322), (66, 29355), (67, 29394), (69, 29439), (73, 29490), (77, 29541), (78, 29550), (81, 29619), (85, 29694), (88, 29739), (90, 29754), (100, 29889), (104, 29943), (105, 29964), (106, 29997), (109, 30042), (112, 30096), (114, 30123), (116, 30180), (120, 30201), (122, 30243), (123, 30282), (127, 30342), (145, 30582), (146, 30615), (147, 30618), (149, 30651), (150, 30657), (151, 30720),

Gene: Prickles\_31 Start: 28755, Stop: 31010, Start Num: 5

Candidate Starts for Prickles\_31:

(Start: 5 @28755 has 296 MA's), (13, 28851), (19, 28929), (20, 28956), (27, 29055), (37, 29214), (44, 29394), (47, 29418), (56, 29514), (58, 29550), (62, 29589), (64, 29598), (66, 29631), (67, 29670), (69, 29715), (73, 29766), (77, 29817), (78, 29826), (81, 29895), (85, 29970), (88, 30015), (90, 30030), (100, 30165), (104, 30219), (105, 30240), (106, 30273), (109, 30318), (112, 30372), (114, 30399), (116, 30456), (120, 30477), (122, 30519), (123, 30558), (127, 30618), (145, 30858), (147, 30894), (149, 30927), (151, 30996),

Gene: Prince\_28 Start: 29124, Stop: 31421, Start Num: 5

Candidate Starts for Prince\_28:

(Start: 1 @28437 has 1 MA's), (2, 28584), (Start: 5 @29124 has 296 MA's), (13, 29223), (20, 29328), (24, 29364), (27, 29427), (31, 29508), (35, 29574), (37, 29586), (41, 29691), (42, 29730), (45, 29781), (47, 29790), (53, 29871), (54, 29874), (58, 29937), (63, 29979), (65, 29991), (70, 30114), (71, 30138), (76, 30201), (82, 30312), (83, 30333), (85, 30369), (86, 30390), (92, 30456), (93, 30468), (95, 30519), (96, 30522), (97, 30540), (99, 30564), (102, 30591), (104, 30624), (105, 30645), (106, 30678), (109, 30723), (117, 30864), (118, 30867), (119, 30870), (120, 30879), (124, 30963), (132, 31077), (133, 31098), (134, 31122), (138, 31185), (141, 31215), (142, 31221), (145, 31269), (146, 31302), (147, 31305), (151, 31407), (152, 31410),

Gene: ProfessorX\_31 Start: 28750, Stop: 31005, Start Num: 5

Candidate Starts for ProfessorX\_31:

(Start: 5 @28750 has 296 MA's), (13, 28846), (19, 28924), (20, 28951), (27, 29050), (37, 29209), (44, 29389), (47, 29413), (55, 29503), (56, 29509), (58, 29545), (62, 29584), (64, 29593), (66, 29626), (67, 29665), (69, 29710), (73, 29761), (77, 29812), (78, 29821), (81, 29890), (85, 29965), (88, 30010), (90, 30025), (100, 30160), (104, 30214), (105, 30235), (106, 30268), (109, 30313), (112, 30367), (116, 30451), (120, 30472), (122, 30514), (123, 30553), (127, 30613), (145, 30853), (146, 30886), (147, 30889), (149, 30922), (150, 30928), (151, 30991),

Gene: Puhltonio\_31 Start: 28770, Stop: 31025, Start Num: 5

Candidate Starts for Puhltonio\_31:

(Start: 5 @28770 has 296 MA's), (13, 28866), (19, 28944), (20, 28971), (27, 29070), (37, 29229), (44, 29409), (47, 29433), (55, 29523), (56, 29529), (58, 29565), (62, 29604), (64, 29613), (66, 29646), (67, 29685), (69, 29730), (73, 29781), (77, 29832), (78, 29841), (81, 29910), (85, 29985), (88, 30030), (90, 30045), (100, 30180), (104, 30234), (105, 30255), (106, 30288), (109, 30333), (112, 30387), (114, 30414), (116, 30471), (120, 30492), (122, 30534), (123, 30573), (127, 30633), (145, 30873), (146, 30906), (147, 30909), (149, 30942), (150, 30948), (151, 31011),

Gene: QueenBeane\_31 Start: 28761, Stop: 31016, Start Num: 5

Candidate Starts for QueenBeane\_31:

(Start: 5 @28761 has 296 MA's), (13, 28857), (19, 28935), (20, 28962), (27, 29061), (37, 29220), (44, 29400), (47, 29424), (55, 29514), (56, 29520), (58, 29556), (62, 29595), (64, 29604), (66, 29637), (67, 29676), (69, 29721), (73, 29772), (77, 29823), (78, 29832), (81, 29901), (85, 29976), (88, 30021), (90, 30036), (100, 30171), (104, 30225), (105, 30246), (106, 30279), (109, 30324), (112, 30378), (114, 30405), (116, 30462), (120, 30483), (122, 30525), (123, 30564), (127, 30624), (145, 30864), (146, 30897), (147, 30900), (149, 30933), (150, 30939), (151, 31002),

Gene: QueenPie\_27 Start: 29065, Stop: 31362, Start Num: 5

Candidate Starts for QueenPie\_27:

(Start: 1 @28378 has 1 MA's), (2, 28525), (3, 28936), (Start: 5 @29065 has 296 MA's), (13, 29164), (14, 29182), (20, 29269), (24, 29305), (27, 29368), (31, 29449), (35, 29515), (41, 29632), (42, 29671), (47, 29731), (53, 29812), (54, 29815), (58, 29878), (63, 29920), (64, 29926), (65, 29932), (70, 30055), (71, 30079), (76, 30142), (80, 30181), (82, 30253), (83, 30274), (85, 30310), (86, 30331), (92, 30397), (93, 30409), (95, 30460), (96, 30463), (97, 30481), (99, 30505), (102, 30532), (104, 30565), (105, 30586), (106, 30619), (109, 30664), (117, 30805), (118, 30808), (120, 30820), (124, 30904), (133, 31039), (134, 31063), (138, 31126), (141, 31156), (142, 31162), (145, 31210), (146, 31243), (147, 31246), (151, 31348), (152, 31351),

Gene: Quisquilliae\_31 Start: 28789, Stop: 31044, Start Num: 5

Candidate Starts for Quisquilliae\_31:

(Start: 5 @28789 has 296 MA's), (13, 28885), (19, 28963), (20, 28990), (27, 29089), (37, 29248), (44, 29428), (47, 29452), (55, 29542), (56, 29548), (58, 29584), (62, 29623), (64, 29632), (66, 29665), (67, 29704), (69, 29749), (73, 29800), (77, 29851), (78, 29860), (81, 29929), (85, 30004), (88, 30049), (90, 30064), (100, 30199), (104, 30253), (105, 30274), (106, 30307), (109, 30352), (112, 30406), (114, 30433), (116, 30490), (120, 30511), (122, 30553), (123, 30592), (127, 30652), (145, 30892), (146, 30925), (147, 30928), (149, 30961), (150, 30967), (151, 31030),

Gene: RagingRooster\_31 Start: 28614, Stop: 30842, Start Num: 4

Candidate Starts for RagingRooster\_31:

(Start: 4 @28614 has 44 MA's), (Start: 7 @28629 has 1 MA's), (10, 28674), (14, 28731), (21, 28809), (26, 28878), (27, 28890), (30, 28932), (32, 28968), (33, 28995), (34, 29007), (36, 29034), (39, 29124), (43, 29196), (51, 29280), (59, 29388), (60, 29409), (67, 29502), (68, 29517), (76, 29646), (81, 29727), (85, 29802), (87, 29844), (88, 29850), (92, 29886), (100, 30000), (101, 30012), (104, 30054), (105, 30075), (108, 30129), (109, 30153), (111, 30189), (116, 30288), (118, 30297), (122, 30351), (128, 30459), (129, 30486), (133, 30528), (137, 30600), (145, 30690), (147, 30726),

Gene: RawrgerThat\_28 Start: 28967, Stop: 31264, Start Num: 5

Candidate Starts for RawrgerThat\_28:

(Start: 5 @28967 has 296 MA's), (13, 29066), (14, 29084), (24, 29207), (27, 29270), (31, 29351), (35, 29417), (41, 29534), (42, 29573), (45, 29624), (47, 29633), (52, 29690), (53, 29714), (54, 29717), (58, 29780), (63, 29822), (70, 29957), (71, 29981), (76, 30044), (82, 30155), (83, 30176), (85, 30212), (86, 30233), (92, 30299), (93, 30311), (95, 30362), (96, 30365), (97, 30383), (99, 30407), (102, 30434), (104, 30467), (105, 30488), (106, 30521), (109, 30566), (117, 30707), (118, 30710), (120, 30722), (124, 30806), (132, 30920), (133, 30941), (134, 30965), (138, 31028), (141, 31058), (142, 31064), (145, 31112), (146, 31145), (147, 31148), (151, 31250), (152, 31253),

Gene: RedMaple\_30 Start: 28765, Stop: 31023, Start Num: 5

Candidate Starts for RedMaple\_30:

(Start: 5 @28765 has 296 MA's), (13, 28861), (19, 28939), (20, 28966), (27, 29068), (37, 29227), (44, 29407), (47, 29431), (56, 29527), (58, 29563), (62, 29602), (64, 29611), (66, 29644), (67, 29683), (69, 29728), (73, 29779), (77, 29830), (78, 29839), (81, 29908), (85, 29983), (88, 30028), (90, 30043), (100, 30178), (104, 30232), (105, 30253), (106, 30286), (109, 30331), (112, 30385), (114, 30412), (116, 30469), (120, 30490), (122, 30532), (123, 30571), (127, 30631), (145, 30871), (147, 30907), (149, 30940), (151, 31009),

Gene: Reprobate\_30 Start: 29236, Stop: 31503, Start Num: 5

Candidate Starts for Reprobate\_30:

(Start: 5 @29236 has 296 MA's), (13, 29332), (17, 29389), (18, 29407), (22, 29452), (41, 29803), (46, 29899), (48, 29905), (51, 29935), (52, 29959), (54, 29986), (62, 30076), (65, 30091), (74, 30271), (77,

30307), (80, 30343), (81, 30385), (85, 30460), (86, 30481), (88, 30511), (95, 30610), (98, 30634), (100, 30661), (104, 30715), (105, 30736), (106, 30769), (113, 30871), (116, 30949), (118, 30958), (120, 30970), (123, 31051), (124, 31054), (126, 31108), (128, 31120), (130, 31150), (132, 31168), (136, 31234), (140, 31282), (145, 31351), (151, 31489), (152, 31492),

Gene: Rich\_29 Start: 28722, Stop: 30989, Start Num: 5

Candidate Starts for Rich\_29:

(Start: 5 @28722 has 296 MA's), (6, 28728), (10, 28779), (12, 28800), (15, 28854), (16, 28866), (17, 28875), (18, 28893), (24, 28956), (41, 29289), (48, 29391), (52, 29445), (62, 29565), (65, 29580), (66, 29607), (77, 29793), (80, 29829), (81, 29871), (86, 29967), (88, 29997), (95, 30096), (100, 30147), (108, 30276), (109, 30300), (115, 30414), (116, 30435), (122, 30498), (123, 30537), (124, 30540), (128, 30606), (130, 30636), (132, 30654), (136, 30720), (137, 30747), (145, 30837), (149, 30906), (151, 30975), (152, 30978),

Gene: Ricotta\_30 Start: 28488, Stop: 30743, Start Num: 5

Candidate Starts for Ricotta\_30:

(Start: 5 @28488 has 296 MA's), (13, 28584), (19, 28662), (20, 28689), (27, 28788), (37, 28947), (44, 29127), (47, 29151), (55, 29241), (56, 29247), (58, 29283), (62, 29322), (64, 29331), (66, 29364), (67, 29403), (69, 29448), (73, 29499), (77, 29550), (78, 29559), (81, 29628), (85, 29703), (88, 29748), (90, 29763), (100, 29898), (104, 29952), (105, 29973), (106, 30006), (109, 30051), (112, 30105), (114, 30132), (116, 30189), (120, 30210), (122, 30252), (123, 30291), (127, 30351), (145, 30591), (147, 30627), (149, 30660), (151, 30729),

Gene: Riggan\_31 Start: 28747, Stop: 31002, Start Num: 5

Candidate Starts for Riggan\_31:

(Start: 5 @28747 has 296 MA's), (13, 28843), (19, 28921), (20, 28948), (27, 29047), (37, 29206), (44, 29386), (47, 29410), (55, 29500), (56, 29506), (58, 29542), (62, 29581), (64, 29590), (66, 29623), (67, 29662), (69, 29707), (73, 29758), (77, 29809), (78, 29818), (81, 29887), (85, 29962), (88, 30007), (90, 30022), (100, 30157), (104, 30211), (105, 30232), (106, 30265), (109, 30310), (112, 30364), (114, 30391), (116, 30448), (120, 30469), (122, 30511), (123, 30550), (127, 30610), (145, 30850), (146, 30883), (147, 30886), (149, 30919), (150, 30925), (151, 30988),

Gene: Rimu\_32 Start: 28496, Stop: 30751, Start Num: 5

Candidate Starts for Rimu\_32:

(Start: 5 @28496 has 296 MA's), (13, 28592), (19, 28670), (20, 28697), (27, 28796), (37, 28955), (44, 29135), (47, 29159), (56, 29255), (58, 29291), (62, 29330), (64, 29339), (66, 29372), (67, 29411), (69, 29456), (73, 29507), (77, 29558), (78, 29567), (81, 29636), (85, 29711), (88, 29756), (90, 29771), (100, 29906), (104, 29960), (105, 29981), (106, 30014), (109, 30059), (112, 30113), (114, 30140), (116, 30197), (120, 30218), (122, 30260), (123, 30299), (127, 30359), (145, 30599), (147, 30635), (149, 30668), (151, 30737),

Gene: Rita1961\_31 Start: 28615, Stop: 30825, Start Num: 7

Candidate Starts for Rita1961\_31:

(Start: 4 @28600 has 44 MA's), (Start: 7 @28615 has 1 MA's), (10, 28660), (14, 28717), (21, 28795), (26, 28864), (27, 28876), (30, 28918), (32, 28954), (33, 28981), (34, 28993), (36, 29020), (39, 29110), (43, 29182), (51, 29266), (59, 29374), (60, 29395), (67, 29488), (68, 29503), (76, 29632), (81, 29713), (85, 29788), (87, 29830), (88, 29836), (92, 29872), (100, 29986), (101, 29998), (104, 30040), (105, 30061), (108, 30115), (109, 30139), (111, 30175), (116, 30271), (118, 30280), (122, 30334), (128, 30442), (129, 30469), (133, 30511), (137, 30583), (145, 30673), (147, 30709),

Gene: Robyn\_30 Start: 28329, Stop: 30587, Start Num: 5

Candidate Starts for Robyn\_30:

(Start: 5 @28329 has 296 MA's), (13, 28425), (19, 28503), (20, 28530), (27, 28632), (37, 28791), (44, 28971), (47, 28995), (56, 29091), (58, 29127), (62, 29166), (66, 29208), (67, 29247), (69, 29292), (73, 29343), (77, 29394), (78, 29403), (81, 29472), (85, 29547), (88, 29592), (90, 29607), (100, 29742), (104, 29796), (105, 29817), (106, 29850), (109, 29895), (112, 29949), (116, 30033), (120, 30054), (122, 30096), (123, 30135), (127, 30195), (145, 30435), (146, 30468), (147, 30471), (149, 30504), (150, 30510), (151, 30573),

Gene: Roliet\_31 Start: 28757, Stop: 31012, Start Num: 5

Candidate Starts for Roliet\_31:

(Start: 5 @28757 has 296 MA's), (13, 28853), (19, 28931), (20, 28958), (27, 29057), (37, 29216), (44, 29396), (47, 29420), (56, 29516), (58, 29552), (62, 29591), (64, 29600), (66, 29633), (67, 29672), (69, 29717), (73, 29768), (77, 29819), (78, 29828), (81, 29897), (85, 29972), (88, 30017), (90, 30032), (100, 30167), (104, 30221), (105, 30242), (106, 30275), (109, 30320), (112, 30374), (114, 30401), (116, 30458), (120, 30479), (122, 30521), (123, 30560), (127, 30620), (145, 30860), (147, 30896), (149, 30929), (151, 30998),

Gene: RomaT\_31 Start: 29390, Stop: 31615, Start Num: 4

Candidate Starts for RomaT\_31:

(Start: 4 @29390 has 44 MA's), (Start: 7 @29405 has 1 MA's), (10, 29450), (14, 29507), (21, 29585), (26, 29654), (27, 29666), (30, 29708), (32, 29744), (33, 29771), (34, 29783), (36, 29810), (39, 29900), (43, 29972), (51, 30056), (59, 30164), (60, 30185), (67, 30278), (68, 30293), (76, 30422), (81, 30503), (85, 30578), (87, 30620), (88, 30626), (92, 30662), (95, 30725), (100, 30776), (101, 30788), (104, 30830), (105, 30851), (108, 30905), (109, 30929), (111, 30965), (116, 31061), (118, 31070), (122, 31124), (128, 31232), (129, 31259), (133, 31301), (137, 31373), (145, 31463), (147, 31499),

Gene: Roscoe\_32 Start: 28995, Stop: 31250, Start Num: 5

Candidate Starts for Roscoe\_32:

(Start: 5 @28995 has 296 MA's), (13, 29091), (19, 29169), (20, 29196), (27, 29295), (37, 29454), (44, 29634), (47, 29658), (55, 29748), (56, 29754), (58, 29790), (62, 29829), (64, 29838), (66, 29871), (67, 29910), (69, 29955), (73, 30006), (77, 30057), (78, 30066), (81, 30135), (85, 30210), (88, 30255), (90, 30270), (100, 30405), (103, 30456), (104, 30459), (105, 30480), (106, 30513), (109, 30558), (112, 30612), (116, 30696), (120, 30717), (122, 30759), (123, 30798), (127, 30858), (145, 31098), (146, 31131), (147, 31134), (149, 31167), (150, 31173), (151, 31236),

Gene: Roy17\_31 Start: 28461, Stop: 30716, Start Num: 5

Candidate Starts for Roy17\_31:

(Start: 5 @28461 has 296 MA's), (13, 28557), (19, 28635), (20, 28662), (27, 28761), (37, 28920), (44, 29100), (47, 29124), (55, 29214), (56, 29220), (58, 29256), (62, 29295), (64, 29304), (66, 29337), (67, 29376), (69, 29421), (73, 29472), (77, 29523), (78, 29532), (81, 29601), (85, 29676), (88, 29721), (90, 29736), (100, 29871), (104, 29925), (105, 29946), (106, 29979), (109, 30024), (112, 30078), (116, 30162), (120, 30183), (122, 30225), (123, 30264), (127, 30324), (145, 30564), (146, 30597), (147, 30600), (149, 30633), (150, 30639), (151, 30702),

Gene: SDcharge11\_31 Start: 28735, Stop: 30990, Start Num: 5

Candidate Starts for SDcharge11\_31:

(Start: 5 @28735 has 296 MA's), (13, 28831), (19, 28909), (20, 28936), (27, 29035), (37, 29194), (44, 29374), (47, 29398), (56, 29494), (58, 29530), (62, 29569), (64, 29578), (66, 29611), (67, 29650), (69, 29695), (73, 29746), (77, 29797), (78, 29806), (81, 29875), (85, 29950), (88, 29995), (90, 30010), (100, 30145), (104, 30199), (105, 30220), (106, 30253), (109, 30298), (112, 30352), (114, 30379), (116, 30436), (120, 30457), (122, 30499), (123, 30538), (127, 30598), (145, 30838), (147, 30874), (149, 30907), (151, 30976),

Gene: Samaymay\_31 Start: 28761, Stop: 31016, Start Num: 5

Candidate Starts for Samaymay\_31:

(Start: 5 @28761 has 296 MA's), (13, 28857), (19, 28935), (20, 28962), (27, 29061), (37, 29220), (44, 29400), (47, 29424), (55, 29514), (56, 29520), (58, 29556), (62, 29595), (64, 29604), (66, 29637), (67, 29676), (69, 29721), (73, 29772), (77, 29823), (78, 29832), (81, 29901), (85, 29976), (88, 30021), (90, 30036), (100, 30171), (104, 30225), (105, 30246), (106, 30279), (109, 30324), (112, 30378), (114, 30405), (116, 30462), (120, 30483), (122, 30525), (123, 30564), (127, 30624), (145, 30864), (146, 30897), (147, 30900), (149, 30933), (150, 30939), (151, 31002),

Gene: SassyCat97\_30 Start: 28467, Stop: 30722, Start Num: 5

Candidate Starts for SassyCat97\_30:

(Start: 5 @28467 has 296 MA's), (13, 28563), (19, 28641), (20, 28668), (27, 28767), (37, 28926), (44, 29106), (47, 29130), (55, 29220), (56, 29226), (58, 29262), (62, 29301), (64, 29310), (66, 29343), (67, 29382), (69, 29427), (73, 29478), (77, 29529), (78, 29538), (81, 29607), (85, 29682), (88, 29727), (90, 29742), (100, 29877), (104, 29931), (105, 29952), (106, 29985), (109, 30030), (112, 30084), (114, 30111), (116, 30168), (120, 30189), (122, 30231), (123, 30270), (127, 30330), (145, 30570), (146, 30603), (147, 30606), (149, 30639), (150, 30645), (151, 30708),

Gene: Schadenfreude\_30 Start: 28315, Stop: 30573, Start Num: 5

Candidate Starts for Schadenfreude\_30:

(Start: 5 @28315 has 296 MA's), (13, 28411), (19, 28489), (20, 28516), (27, 28618), (37, 28777), (44, 28957), (47, 28981), (56, 29077), (58, 29113), (62, 29152), (64, 29161), (66, 29194), (67, 29233), (69, 29278), (73, 29329), (77, 29380), (78, 29389), (81, 29458), (85, 29533), (88, 29578), (90, 29593), (100, 29728), (104, 29782), (105, 29803), (106, 29836), (109, 29881), (112, 29935), (116, 30019), (120, 30040), (122, 30082), (123, 30121), (127, 30181), (145, 30421), (146, 30454), (147, 30457), (149, 30490), (150, 30496), (151, 30559),

Gene: Schueller\_31 Start: 28482, Stop: 30737, Start Num: 5

Candidate Starts for Schueller\_31:

(Start: 5 @28482 has 296 MA's), (13, 28578), (19, 28656), (20, 28683), (27, 28782), (37, 28941), (44, 29121), (47, 29145), (55, 29235), (56, 29241), (58, 29277), (62, 29316), (64, 29325), (66, 29358), (67, 29397), (69, 29442), (73, 29493), (77, 29544), (78, 29553), (81, 29622), (85, 29697), (88, 29742), (90, 29757), (100, 29892), (104, 29946), (105, 29967), (106, 30000), (109, 30045), (112, 30099), (114, 30126), (116, 30183), (120, 30204), (122, 30246), (123, 30285), (127, 30345), (145, 30585), (147, 30621), (149, 30654), (151, 30723),

Gene: Scoot17C\_31 Start: 28760, Stop: 31015, Start Num: 5

Candidate Starts for Scoot17C\_31:

(Start: 5 @28760 has 296 MA's), (13, 28856), (19, 28934), (20, 28961), (27, 29060), (37, 29219), (44, 29399), (47, 29423), (55, 29513), (56, 29519), (58, 29555), (62, 29594), (64, 29603), (66, 29636), (67, 29675), (69, 29720), (73, 29771), (77, 29822), (78, 29831), (81, 29900), (85, 29975), (88, 30020), (90, 30035), (100, 30170), (104, 30224), (105, 30245), (106, 30278), (109, 30323), (112, 30377), (116, 30461), (120, 30482), (122, 30524), (123, 30563), (127, 30623), (145, 30863), (146, 30896), (147, 30899), (149, 30932), (150, 30938), (151, 31001),

Gene: Scrick\_31 Start: 28485, Stop: 30740, Start Num: 5

Candidate Starts for Scrick\_31:

(Start: 5 @28485 has 296 MA's), (13, 28581), (19, 28659), (20, 28686), (27, 28785), (37, 28944), (44, 29124), (47, 29148), (55, 29238), (56, 29244), (58, 29280), (62, 29319), (64, 29328), (66, 29361), (67, 29400), (69, 29445), (73, 29496), (77, 29547), (78, 29556), (81, 29625), (85, 29700), (88, 29745), (90, 29760), (100, 29895), (104, 29949), (105, 29970), (106, 30003), (109, 30048), (112, 30102), (114, 30129), (116, 30186), (120, 30207), (122, 30249), (123, 30288), (127, 30348), (145, 30588), (146, 30621), (147, 30624), (149, 30657), (150, 30663), (151, 30726),

Gene: Selr12\_31 Start: 28489, Stop: 30744, Start Num: 5

Candidate Starts for Selr12\_31:

(Start: 5 @28489 has 296 MA's), (13, 28585), (19, 28663), (20, 28690), (27, 28789), (37, 28948), (44, 29128), (47, 29152), (55, 29242), (56, 29248), (58, 29284), (62, 29323), (64, 29332), (66, 29365), (67, 29404), (69, 29449), (73, 29500), (77, 29551), (78, 29560), (81, 29629), (85, 29704), (88, 29749), (90, 29764), (100, 29899), (104, 29953), (105, 29974), (106, 30007), (109, 30052), (112, 30106), (114, 30133), (116, 30190), (120, 30211), (122, 30253), (123, 30292), (127, 30352), (145, 30592), (147, 30628), (149, 30661), (151, 30730),

Gene: Serendipitous\_29 Start: 28782, Stop: 31049, Start Num: 5

Candidate Starts for Serendipitous\_29:

(Start: 5 @28782 has 296 MA's), (15, 28914), (17, 28935), (18, 28953), (22, 28998), (28, 29121), (41, 29349), (48, 29451), (51, 29481), (52, 29505), (62, 29625), (65, 29640), (72, 29793), (77, 29853), (80, 29889), (81, 29931), (85, 30006), (88, 30057), (95, 30156), (98, 30180), (100, 30207), (113, 30417), (116, 30495), (118, 30504), (120, 30516), (123, 30597), (124, 30600), (125, 30612), (128, 30666), (132, 30714), (136, 30780), (145, 30897), (151, 31035),

Gene: Serendipity\_31 Start: 28785, Stop: 31040, Start Num: 5

Candidate Starts for Serendipity\_31:

(Start: 5 @28785 has 296 MA's), (13, 28881), (19, 28959), (20, 28986), (27, 29085), (37, 29244), (44, 29424), (47, 29448), (55, 29538), (56, 29544), (58, 29580), (62, 29619), (64, 29628), (66, 29661), (67, 29700), (69, 29745), (73, 29796), (77, 29847), (78, 29856), (81, 29925), (85, 30000), (88, 30045), (90, 30060), (100, 30195), (104, 30249), (105, 30270), (106, 30303), (109, 30348), (112, 30402), (114, 30429), (116, 30486), (120, 30507), (122, 30549), (123, 30588), (127, 30648), (145, 30888), (146, 30921), (147, 30924), (149, 30957), (150, 30963), (151, 31026),

Gene: Serpentine\_0031 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Serpentine\_0031:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (114, 30410), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: Sheila\_31 Start: 28755, Stop: 31013, Start Num: 5

Candidate Starts for Sheila\_31:

(Start: 5 @28755 has 296 MA's), (13, 28851), (19, 28929), (20, 28956), (27, 29058), (37, 29217), (44, 29397), (47, 29421), (56, 29517), (58, 29553), (62, 29592), (64, 29601), (66, 29634), (67, 29673), (69, 29718), (73, 29769), (77, 29820), (78, 29829), (81, 29898), (85, 29973), (88, 30018), (90, 30033), (100, 30168), (104, 30222), (105, 30243), (106, 30276), (109, 30321), (112, 30375), (114, 30402), (116, 30459), (120, 30480), (122, 30522), (123, 30561), (127, 30621), (145, 30861), (146, 30894), (147, 30897), (149, 30930), (150, 30936), (151, 30999),

Gene: Shenyu\_30 Start: 28934, Stop: 31201, Start Num: 5

Candidate Starts for Shenyu\_30:

(Start: 5 @28934 has 296 MA's), (8, 28982), (12, 29012), (13, 29030), (15, 29066), (17, 29087), (18, 29105), (24, 29168), (28, 29273), (37, 29396), (38, 29402), (41, 29501), (48, 29603), (52, 29657), (62, 29777), (65, 29792), (66, 29819), (77, 30005), (80, 30041), (81, 30083), (85, 30158), (88, 30209), (92, 30245), (95, 30308), (98, 30332), (100, 30359), (108, 30488), (109, 30512), (116, 30647), (118, 30656), (120, 30668), (122, 30710), (123, 30749), (124, 30752), (126, 30806), (128, 30818), (130, 30848), (132, 30866), (136, 30932), (145, 31049), (151, 31187),

Gene: ShiVal\_31 Start: 28759, Stop: 31014, Start Num: 5

Candidate Starts for ShiVal\_31:

(Start: 5 @28759 has 296 MA's), (13, 28855), (19, 28933), (20, 28960), (27, 29059), (37, 29218), (44, 29398), (47, 29422), (55, 29512), (56, 29518), (58, 29554), (62, 29593), (64, 29602), (66, 29635), (67, 29674), (69, 29719), (73, 29770), (77, 29821), (78, 29830), (81, 29899), (85, 29974), (88, 30019), (90, 30034), (100, 30169), (104, 30223), (105, 30244), (106, 30277), (109, 30322), (112, 30376), (114, 30403), (116, 30460), (120, 30481), (122, 30523), (123, 30562), (127, 30622), (145, 30862), (146, 30895), (147, 30898), (149, 30931), (150, 30937), (151, 31000),

Gene: Sigman\_31 Start: 28751, Stop: 31006, Start Num: 5

Candidate Starts for Sigman\_31:

(Start: 5 @28751 has 296 MA's), (13, 28847), (19, 28925), (20, 28952), (27, 29051), (37, 29210), (44, 29390), (47, 29414), (55, 29504), (56, 29510), (58, 29546), (62, 29585), (64, 29594), (66, 29627), (67, 29666), (69, 29711), (73, 29762), (77, 29813), (78, 29822), (81, 29891), (85, 29966), (88, 30011), (90, 30026), (100, 30161), (104, 30215), (105, 30236), (106, 30269), (109, 30314), (112, 30368), (116, 30452), (120, 30473), (122, 30515), (123, 30554), (127, 30614), (145, 30854), (146, 30887), (147, 30890), (149, 30923), (150, 30929), (151, 30992),

Gene: SilverBell\_31 Start: 28781, Stop: 31036, Start Num: 5

Candidate Starts for SilverBell\_31:

(Start: 5 @28781 has 296 MA's), (13, 28877), (19, 28955), (20, 28982), (27, 29081), (37, 29240), (44, 29420), (47, 29444), (55, 29534), (56, 29540), (58, 29576), (62, 29615), (64, 29624), (66, 29657), (67, 29696), (69, 29741), (73, 29792), (77, 29843), (78, 29852), (81, 29921), (85, 29996), (88, 30041), (90, 30056), (100, 30191), (104, 30245), (105, 30266), (106, 30299), (109, 30344), (112, 30398), (114, 30425), (116, 30482), (120, 30503), (122, 30545), (123, 30584), (127, 30644), (145, 30884), (147, 30920), (149, 30953), (151, 31022),

Gene: Simielle\_30 Start: 28454, Stop: 30709, Start Num: 5

Candidate Starts for Simielle\_30:

(Start: 5 @28454 has 296 MA's), (13, 28550), (19, 28628), (20, 28655), (27, 28754), (37, 28913), (44, 29093), (47, 29117), (55, 29207), (56, 29213), (58, 29249), (62, 29288), (64, 29297), (66, 29330), (67, 29369), (69, 29414), (73, 29465), (77, 29516), (78, 29525), (81, 29594), (85, 29669), (88, 29714), (90, 29729), (100, 29864), (104, 29918), (105, 29939), (106, 29972), (109, 30017), (112, 30071), (114, 30098), (116, 30155), (120, 30176), (122, 30218), (123, 30257), (127, 30317), (145, 30557), (146, 30590), (147, 30593), (149, 30626), (150, 30632), (151, 30695),

Gene: SirJeffery\_30 Start: 28980, Stop: 31256, Start Num: 5

Candidate Starts for SirJeffery\_30:

(Start: 5 @28980 has 296 MA's), (6, 28986), (8, 29028), (11, 29049), (12, 29058), (15, 29112), (17, 29133), (18, 29151), (19, 29154), (22, 29196), (23, 29202), (24, 29214), (27, 29283), (28, 29319), (37, 29442), (41, 29547), (52, 29703), (54, 29730), (57, 29781), (62, 29832), (65, 29847), (77, 30060), (80, 30096), (81, 30138), (85, 30213), (95, 30363), (98, 30387), (100, 30414), (105, 30489), (108, 30543), (116, 30702), (118, 30711), (120, 30723), (123, 30804), (124, 30807), (128, 30873), (132, 30921), (136, 30987), (145, 31104),

Gene: Skippy\_31 Start: 28749, Stop: 31004, Start Num: 5

Candidate Starts for Skippy\_31:

(Start: 5 @28749 has 296 MA's), (13, 28845), (19, 28923), (20, 28950), (27, 29049), (37, 29208), (44, 29388), (47, 29412), (55, 29502), (56, 29508), (58, 29544), (62, 29583), (64, 29592), (66, 29625), (67, 29664), (69, 29709), (73, 29760), (77, 29811), (78, 29820), (81, 29889), (85, 29964), (88, 30009), (90, 30024), (100, 30159), (104, 30213), (105, 30234), (106, 30267), (109, 30312), (112, 30366), (114, 30393), (116, 30450), (120, 30471), (122, 30513), (123, 30552), (127, 30612), (145, 30852), (146, 30885), (147, 30888), (149, 30921), (150, 30927), (151, 30990),

Gene: Slatt\_31 Start: 28774, Stop: 31029, Start Num: 5

Candidate Starts for Slatt\_31:

(Start: 5 @28774 has 296 MA's), (13, 28870), (19, 28948), (20, 28975), (27, 29074), (37, 29233), (44, 29413), (47, 29437), (55, 29527), (56, 29533), (58, 29569), (62, 29608), (64, 29617), (66, 29650), (67, 29689), (69, 29734), (73, 29785), (77, 29836), (78, 29845), (81, 29914), (85, 29989), (88, 30034), (90, 30049), (100, 30184), (104, 30238), (105, 30259), (106, 30292), (109, 30337), (112, 30391), (114, 30418), (116, 30475), (120, 30496), (122, 30538), (123, 30577), (127, 30637), (145, 30877), (146, 30910), (147, 30913), (149, 30946), (150, 30952), (151, 31015),

Gene: SlippinJimmy\_31 Start: 29378, Stop: 31603, Start Num: 4

Candidate Starts for SlippinJimmy\_31:

(Start: 4 @29378 has 44 MA's), (Start: 7 @29393 has 1 MA's), (10, 29438), (14, 29495), (21, 29573), (26, 29642), (27, 29654), (30, 29696), (32, 29732), (33, 29759), (34, 29771), (36, 29798), (39, 29888), (43, 29960), (51, 30044), (59, 30152), (60, 30173), (67, 30266), (68, 30281), (76, 30410), (81, 30491), (85, 30566), (87, 30608), (88, 30614), (92, 30650), (95, 30713), (100, 30764), (101, 30776), (104, 30818), (105, 30839), (108, 30893), (109, 30917), (111, 30953), (116, 31049), (118, 31058), (122, 31112), (128, 31220), (129, 31247), (133, 31289), (137, 31361), (145, 31451), (147, 31487),

Gene: Soile\_31 Start: 28481, Stop: 30736, Start Num: 5

Candidate Starts for Soile\_31:

(Start: 5 @28481 has 296 MA's), (13, 28577), (19, 28655), (20, 28682), (27, 28781), (37, 28940), (44, 29120), (47, 29144), (55, 29234), (56, 29240), (58, 29276), (62, 29315), (64, 29324), (66, 29357), (67, 29396), (69, 29441), (73, 29492), (77, 29543), (78, 29552), (81, 29621), (85, 29696), (88, 29741), (90, 29756), (100, 29891), (104, 29945), (105, 29966), (106, 29999), (109, 30044), (112, 30098), (114, 30125), (116, 30182), (120, 30203), (122, 30245), (123, 30284), (127, 30344), (145, 30584), (146, 30617), (147, 30620), (149, 30653), (150, 30659), (151, 30722),

Gene: Solosis\_30 Start: 28476, Stop: 30731, Start Num: 5

Candidate Starts for Solosis\_30:

(Start: 5 @28476 has 296 MA's), (13, 28572), (19, 28650), (20, 28677), (27, 28776), (37, 28935), (44, 29115), (47, 29139), (55, 29229), (56, 29235), (58, 29271), (62, 29310), (64, 29319), (66, 29352), (67, 29391), (69, 29436), (73, 29487), (77, 29538), (78, 29547), (81, 29616), (85, 29691), (88, 29736), (90, 29751), (100, 29886), (104, 29940), (105, 29961), (106, 29994), (109, 30039), (112, 30093), (114, 30120), (116, 30177), (120, 30198), (122, 30240), (123, 30279), (127, 30339), (139, 30504), (145, 30579), (147, 30615), (149, 30648), (151, 30717),

Gene: Sophia\_30 Start: 28476, Stop: 30731, Start Num: 5

Candidate Starts for Sophia\_30:

(Start: 5 @28476 has 296 MA's), (13, 28572), (19, 28650), (20, 28677), (27, 28776), (37, 28935), (44, 29115), (47, 29139), (55, 29229), (56, 29235), (58, 29271), (62, 29310), (64, 29319), (66, 29352), (67, 29391), (69, 29436), (73, 29487), (77, 29538), (78, 29547), (81, 29616), (85, 29691), (88, 29736), (90, 29751), (100, 29886), (104, 29940), (105, 29961), (106, 29994), (109, 30039), (112, 30093), (114, 30120), (116, 30177), (120, 30198), (122, 30240), (123, 30279), (127, 30339), (145, 30579), (147, 30615), (149, 30648), (151, 30717),

Gene: Soto\_31 Start: 28769, Stop: 31024, Start Num: 5

Candidate Starts for Soto\_31:

(Start: 5 @28769 has 296 MA's), (13, 28865), (19, 28943), (20, 28970), (27, 29069), (37, 29228), (44, 29408), (47, 29432), (56, 29528), (58, 29564), (62, 29603), (64, 29612), (66, 29645), (67, 29684), (69, 29729), (73, 29780), (77, 29831), (78, 29840), (81, 29909), (85, 29984), (88, 30029), (90, 30044), (100, 30179), (104, 30233), (105, 30254), (106, 30287), (109, 30332), (112, 30386), (114, 30413), (116, 30470), (120, 30491), (122, 30533), (123, 30572), (127, 30632), (145, 30872), (147, 30908),



(149, 30941), (151, 31010),

Gene: Spartan300\_31 Start: 28755, Stop: 31010, Start Num: 5

Candidate Starts for Spartan300\_31:

(Start: 5 @28755 has 296 MA's), (13, 28851), (19, 28929), (20, 28956), (27, 29055), (37, 29214), (44, 29394), (47, 29418), (55, 29508), (56, 29514), (58, 29550), (62, 29589), (64, 29598), (66, 29631), (67, 29670), (69, 29715), (73, 29766), (77, 29817), (78, 29826), (81, 29895), (85, 29970), (88, 30015), (90, 30030), (100, 30165), (104, 30219), (105, 30240), (106, 30273), (109, 30318), (112, 30372), (116, 30456), (120, 30477), (122, 30519), (123, 30558), (127, 30618), (145, 30858), (146, 30891), (147, 30894), (149, 30927), (151, 30996),

Gene: Squid\_31 Start: 28467, Stop: 30722, Start Num: 5

Candidate Starts for Squid\_31:

(Start: 5 @28467 has 296 MA's), (13, 28563), (19, 28641), (20, 28668), (27, 28767), (37, 28926), (44, 29106), (47, 29130), (55, 29220), (56, 29226), (58, 29262), (62, 29301), (64, 29310), (66, 29343), (67, 29382), (69, 29427), (73, 29478), (77, 29529), (78, 29538), (81, 29607), (85, 29682), (88, 29727), (90, 29742), (100, 29877), (104, 29931), (105, 29952), (106, 29985), (109, 30030), (112, 30084), (114, 30111), (116, 30168), (120, 30189), (122, 30231), (123, 30270), (127, 30330), (145, 30570), (146, 30603), (147, 30606), (149, 30639), (150, 30645), (151, 30708),

Gene: Squiggle\_31 Start: 28479, Stop: 30734, Start Num: 5

Candidate Starts for Squiggle\_31:

(Start: 5 @28479 has 296 MA's), (13, 28575), (19, 28653), (20, 28680), (27, 28779), (37, 28938), (44, 29118), (47, 29142), (55, 29232), (56, 29238), (58, 29274), (62, 29313), (64, 29322), (66, 29355), (67, 29394), (69, 29439), (73, 29490), (77, 29541), (78, 29550), (81, 29619), (85, 29694), (88, 29739), (90, 29754), (100, 29889), (104, 29943), (105, 29964), (106, 29997), (109, 30042), (112, 30096), (114, 30123), (116, 30180), (120, 30201), (122, 30243), (123, 30282), (127, 30342), (145, 30582), (147, 30618), (149, 30651), (151, 30720),

Gene: Stinger\_26 Start: 27542, Stop: 29839, Start Num: 5

Candidate Starts for Stinger\_26:

(Start: 5 @27542 has 296 MA's), (13, 27641), (14, 27659), (27, 27845), (29, 27890), (31, 27926), (35, 27992), (37, 28004), (41, 28109), (42, 28148), (43, 28154), (47, 28208), (50, 28235), (53, 28289), (54, 28292), (58, 28355), (63, 28397), (65, 28409), (66, 28436), (71, 28556), (76, 28619), (80, 28658), (84, 28772), (85, 28787), (86, 28808), (88, 28838), (89, 28850), (92, 28874), (93, 28886), (95, 28937), (96, 28940), (97, 28958), (99, 28982), (100, 28988), (104, 29042), (105, 29063), (106, 29096), (108, 29117), (109, 29141), (116, 29276), (117, 29282), (118, 29285), (120, 29297), (124, 29381), (132, 29495), (133, 29516), (134, 29540), (138, 29603), (142, 29639), (145, 29687), (146, 29720), (147, 29723), (151, 29825), (152, 29828),

Gene: StinkyVeggy\_32 Start: 29124, Stop: 31391, Start Num: 5

Candidate Starts for StinkyVeggy\_32:

(Start: 5 @29124 has 296 MA's), (8, 29172), (12, 29202), (13, 29220), (15, 29256), (17, 29277), (18, 29295), (24, 29358), (28, 29463), (37, 29586), (38, 29592), (41, 29691), (48, 29793), (52, 29847), (62, 29967), (65, 29982), (66, 30009), (77, 30195), (80, 30231), (81, 30273), (85, 30348), (88, 30399), (92, 30435), (95, 30498), (98, 30522), (100, 30549), (108, 30678), (109, 30702), (116, 30837), (118, 30846), (120, 30858), (122, 30900), (123, 30939), (124, 30942), (126, 30996), (128, 31008), (130, 31038), (132, 31056), (136, 31122), (145, 31239), (151, 31377),

Gene: Struggle\_30 Start: 28317, Stop: 30572, Start Num: 5

Candidate Starts for Struggle\_30:

(Start: 5 @28317 has 296 MA's), (13, 28413), (19, 28491), (20, 28518), (27, 28617), (37, 28776), (44, 28956), (47, 28980), (56, 29076), (58, 29112), (62, 29151), (64, 29160), (66, 29193), (67, 29232), (69,

29277), (73, 29328), (77, 29379), (78, 29388), (81, 29457), (85, 29532), (88, 29577), (90, 29592), (100, 29727), (104, 29781), (105, 29802), (106, 29835), (109, 29880), (112, 29934), (114, 29961), (116, 30018), (120, 30039), (122, 30081), (123, 30120), (127, 30180), (145, 30420), (147, 30456), (149, 30489), (151, 30558),

Gene: Suffolk\_31 Start: 28763, Stop: 31021, Start Num: 5

Candidate Starts for Suffolk\_31:

(Start: 5 @28763 has 296 MA's), (13, 28859), (19, 28937), (20, 28964), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: Suigeneris\_30 Start: 28983, Stop: 31259, Start Num: 5

Candidate Starts for Suigeneris\_30:

(Start: 5 @28983 has 296 MA's), (6, 28989), (8, 29031), (11, 29052), (12, 29061), (15, 29115), (17, 29136), (18, 29154), (19, 29157), (22, 29199), (23, 29205), (24, 29217), (27, 29286), (28, 29322), (37, 29445), (41, 29550), (52, 29706), (54, 29733), (57, 29784), (62, 29835), (65, 29850), (77, 30063), (80, 30099), (81, 30141), (85, 30216), (95, 30366), (98, 30390), (100, 30417), (105, 30492), (108, 30546), (116, 30705), (118, 30714), (120, 30726), (123, 30807), (124, 30810), (128, 30876), (132, 30924), (136, 30990), (145, 31107),

Gene: Surely\_31 Start: 28769, Stop: 31024, Start Num: 5

Candidate Starts for Surely\_31:

(Start: 5 @28769 has 296 MA's), (13, 28865), (19, 28943), (20, 28970), (27, 29069), (37, 29228), (44, 29408), (47, 29432), (55, 29522), (56, 29528), (58, 29564), (62, 29603), (64, 29612), (66, 29645), (67, 29684), (69, 29729), (73, 29780), (77, 29831), (78, 29840), (81, 29909), (85, 29984), (88, 30029), (90, 30044), (100, 30179), (104, 30233), (105, 30254), (106, 30287), (109, 30332), (112, 30386), (114, 30413), (116, 30470), (120, 30491), (122, 30533), (123, 30572), (127, 30632), (145, 30872), (146, 30905), (147, 30908), (149, 30941), (150, 30947), (151, 31010),

Gene: Swiphy\_32 Start: 28764, Stop: 31019, Start Num: 5

Candidate Starts for Swiphy\_32:

(Start: 5 @28764 has 296 MA's), (13, 28860), (19, 28938), (20, 28965), (27, 29064), (37, 29223), (44, 29403), (47, 29427), (55, 29517), (56, 29523), (58, 29559), (62, 29598), (64, 29607), (66, 29640), (67, 29679), (69, 29724), (73, 29775), (77, 29826), (78, 29835), (81, 29904), (85, 29979), (88, 30024), (90, 30039), (100, 30174), (104, 30228), (105, 30249), (106, 30282), (109, 30327), (112, 30381), (114, 30408), (116, 30465), (120, 30486), (122, 30528), (123, 30567), (127, 30627), (145, 30867), (146, 30900), (147, 30903), (149, 30936), (150, 30942), (151, 31005),

Gene: Swish\_31 Start: 28752, Stop: 31007, Start Num: 5

Candidate Starts for Swish\_31:

(Start: 5 @28752 has 296 MA's), (13, 28848), (19, 28926), (20, 28953), (27, 29052), (37, 29211), (44, 29391), (47, 29415), (55, 29505), (56, 29511), (58, 29547), (62, 29586), (64, 29595), (66, 29628), (67, 29667), (69, 29712), (73, 29763), (77, 29814), (78, 29823), (81, 29892), (85, 29967), (88, 30012), (90, 30027), (100, 30162), (104, 30216), (105, 30237), (106, 30270), (109, 30315), (112, 30369), (116, 30453), (120, 30474), (122, 30516), (123, 30555), (127, 30615), (145, 30855), (146, 30888), (147, 30891), (149, 30924), (150, 30930), (151, 30993),

Gene: SynergyX\_31 Start: 28614, Stop: 30842, Start Num: 4

Candidate Starts for SynergyX\_31:

(Start: 4 @28614 has 44 MA's), (Start: 7 @28629 has 1 MA's), (10, 28674), (14, 28731), (21, 28809), (26, 28878), (27, 28890), (30, 28932), (32, 28968), (33, 28995), (34, 29007), (36, 29034), (39, 29124), (43, 29196), (51, 29280), (59, 29388), (60, 29409), (67, 29502), (68, 29517), (76, 29646), (81, 29727), (85, 29802), (87, 29844), (88, 29850), (92, 29886), (100, 30000), (101, 30012), (104, 30054), (105, 30075), (108, 30129), (109, 30153), (111, 30189), (116, 30288), (118, 30297), (122, 30351), (128, 30459), (129, 30486), (133, 30528), (137, 30600), (145, 30690), (147, 30726),

Gene: TallGrassMM\_31 Start: 28391, Stop: 30646, Start Num: 5

Candidate Starts for TallGrassMM\_31:

(Start: 5 @28391 has 296 MA's), (13, 28487), (19, 28565), (20, 28592), (27, 28691), (37, 28850), (44, 29030), (47, 29054), (55, 29144), (56, 29150), (58, 29186), (62, 29225), (64, 29234), (66, 29267), (67, 29306), (69, 29351), (73, 29402), (77, 29453), (78, 29462), (81, 29531), (85, 29606), (88, 29651), (90, 29666), (100, 29801), (104, 29855), (105, 29876), (106, 29909), (109, 29954), (112, 30008), (114, 30035), (116, 30092), (120, 30113), (122, 30155), (123, 30194), (127, 30254), (145, 30494), (147, 30530), (149, 30563), (151, 30632),

Gene: Telesworld\_30 Start: 28463, Stop: 30718, Start Num: 5

Candidate Starts for Telesworld\_30:

(Start: 5 @28463 has 296 MA's), (13, 28559), (19, 28637), (20, 28664), (27, 28763), (37, 28922), (44, 29102), (47, 29126), (55, 29216), (56, 29222), (58, 29258), (62, 29297), (64, 29306), (66, 29339), (67, 29378), (69, 29423), (73, 29474), (77, 29525), (78, 29534), (81, 29603), (85, 29678), (88, 29723), (90, 29738), (100, 29873), (104, 29927), (105, 29948), (106, 29981), (109, 30026), (112, 30080), (114, 30107), (116, 30164), (120, 30185), (122, 30227), (123, 30266), (127, 30326), (145, 30566), (146, 30599), (147, 30602), (149, 30635), (150, 30641), (151, 30704),

Gene: Thora\_31 Start: 28768, Stop: 31023, Start Num: 5

Candidate Starts for Thora\_31:

(Start: 5 @28768 has 296 MA's), (13, 28864), (19, 28942), (20, 28969), (27, 29068), (37, 29227), (44, 29407), (47, 29431), (55, 29521), (56, 29527), (58, 29563), (62, 29602), (64, 29611), (66, 29644), (67, 29683), (69, 29728), (73, 29779), (77, 29830), (78, 29839), (81, 29908), (85, 29983), (88, 30028), (90, 30043), (100, 30178), (104, 30232), (105, 30253), (106, 30286), (109, 30331), (112, 30385), (116, 30469), (120, 30490), (122, 30532), (123, 30571), (127, 30631), (145, 30871), (146, 30904), (147, 30907), (149, 30940), (150, 30946), (151, 31009),

Gene: ThreeOh3D2\_31 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for ThreeOh3D2\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (114, 30410), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: Thunderbird\_30 Start: 28472, Stop: 30727, Start Num: 5

Candidate Starts for Thunderbird\_30:

(Start: 5 @28472 has 296 MA's), (13, 28568), (19, 28646), (20, 28673), (27, 28772), (37, 28931), (44, 29111), (47, 29135), (55, 29225), (56, 29231), (58, 29267), (62, 29306), (64, 29315), (66, 29348), (67, 29387), (69, 29432), (73, 29483), (77, 29534), (78, 29543), (81, 29612), (85, 29687), (88, 29732), (90, 29747), (100, 29882), (104, 29936), (105, 29957), (106, 29990), (109, 30035), (112, 30089), (114, 30116), (116, 30173), (120, 30194), (122, 30236), (123, 30275), (127, 30335), (145, 30575), (147, 30611), (149, 30644), (151, 30713),

Gene: Timmi\_30 Start: 28477, Stop: 30732, Start Num: 5

Candidate Starts for Timmi\_30:

(Start: 5 @28477 has 296 MA's), (13, 28573), (19, 28651), (20, 28678), (27, 28777), (37, 28936), (44, 29116), (47, 29140), (56, 29236), (58, 29272), (62, 29311), (64, 29320), (66, 29353), (67, 29392), (69, 29437), (73, 29488), (77, 29539), (78, 29548), (81, 29617), (85, 29692), (88, 29737), (90, 29752), (100, 29887), (104, 29941), (105, 29962), (106, 29995), (109, 30040), (112, 30094), (114, 30121), (116, 30178), (120, 30199), (122, 30241), (123, 30280), (127, 30340), (145, 30580), (147, 30616), (149, 30649), (151, 30718),

Gene: TomBombadil\_31 Start: 28762, Stop: 31017, Start Num: 5

Candidate Starts for TomBombadil\_31:

(Start: 5 @28762 has 296 MA's), (13, 28858), (19, 28936), (20, 28963), (27, 29062), (37, 29221), (44, 29401), (47, 29425), (55, 29515), (56, 29521), (58, 29557), (62, 29596), (64, 29605), (66, 29638), (67, 29677), (69, 29722), (73, 29773), (77, 29824), (78, 29833), (81, 29902), (85, 29977), (88, 30022), (90, 30037), (100, 30172), (104, 30226), (105, 30247), (106, 30280), (109, 30325), (112, 30379), (114, 30406), (116, 30463), (120, 30484), (122, 30526), (123, 30565), (127, 30625), (145, 30865), (146, 30898), (147, 30901), (149, 30934), (150, 30940), (151, 31003),

Gene: Tomlarah\_31 Start: 28753, Stop: 31008, Start Num: 5

Candidate Starts for Tomlarah\_31:

(Start: 5 @28753 has 296 MA's), (13, 28849), (19, 28927), (20, 28954), (27, 29053), (37, 29212), (44, 29392), (47, 29416), (55, 29506), (56, 29512), (58, 29548), (62, 29587), (64, 29596), (66, 29629), (67, 29668), (69, 29713), (73, 29764), (77, 29815), (78, 29824), (81, 29893), (85, 29968), (88, 30013), (90, 30028), (100, 30163), (104, 30217), (105, 30238), (106, 30271), (109, 30316), (112, 30370), (114, 30397), (116, 30454), (120, 30475), (122, 30517), (123, 30556), (127, 30616), (145, 30856), (146, 30889), (147, 30892), (149, 30925), (150, 30931), (151, 30994),

Gene: Toni\_30 Start: 28469, Stop: 30724, Start Num: 5

Candidate Starts for Toni\_30:

(Start: 5 @28469 has 296 MA's), (13, 28565), (19, 28643), (20, 28670), (27, 28769), (37, 28928), (44, 29108), (47, 29132), (55, 29222), (56, 29228), (58, 29264), (62, 29303), (64, 29312), (66, 29345), (67, 29384), (69, 29429), (73, 29480), (77, 29531), (78, 29540), (81, 29609), (85, 29684), (88, 29729), (90, 29744), (100, 29879), (104, 29933), (105, 29954), (106, 29987), (109, 30032), (112, 30086), (116, 30170), (120, 30191), (122, 30233), (123, 30272), (127, 30332), (145, 30572), (146, 30605), (147, 30608), (149, 30641), (150, 30647), (151, 30710),

Gene: Tooj\_31 Start: 28823, Stop: 31081, Start Num: 5

Candidate Starts for Tooj\_31:

(Start: 5 @28823 has 296 MA's), (13, 28919), (19, 28997), (20, 29024), (27, 29126), (37, 29285), (44, 29465), (47, 29489), (56, 29585), (58, 29621), (62, 29660), (64, 29669), (66, 29702), (67, 29741), (69, 29786), (73, 29837), (77, 29888), (78, 29897), (81, 29966), (85, 30041), (88, 30086), (90, 30101), (100, 30236), (104, 30290), (105, 30311), (106, 30344), (109, 30389), (112, 30443), (114, 30470), (116, 30527), (120, 30548), (122, 30590), (123, 30629), (127, 30689), (145, 30929), (146, 30962), (147, 30965), (149, 30998), (150, 31004), (151, 31067),

Gene: True\_30 Start: 28466, Stop: 30721, Start Num: 5

Candidate Starts for True\_30:

(Start: 5 @28466 has 296 MA's), (13, 28562), (19, 28640), (20, 28667), (27, 28766), (37, 28925), (44, 29105), (47, 29129), (55, 29219), (56, 29225), (58, 29261), (62, 29300), (64, 29309), (66, 29342), (67, 29381), (69, 29426), (73, 29477), (77, 29528), (78, 29537), (81, 29606), (85, 29681), (88, 29726), (90, 29741), (100, 29876), (104, 29930), (105, 29951), (106, 29984), (109, 30029), (112, 30083), (114, 30110), (116, 30167), (120, 30188), (122, 30230), (123, 30269), (127, 30329), (145, 30569), (146, 30602), (147, 30605), (149, 30638), (150, 30644), (151, 30707),

Gene: Trypo\_31 Start: 28761, Stop: 31016, Start Num: 5

Candidate Starts for Trypo\_31:

(Start: 5 @28761 has 296 MA's), (13, 28857), (19, 28935), (20, 28962), (27, 29061), (37, 29220), (44, 29400), (47, 29424), (56, 29520), (58, 29556), (62, 29595), (64, 29604), (66, 29637), (67, 29676), (69, 29721), (73, 29772), (77, 29823), (78, 29832), (81, 29901), (85, 29976), (88, 30021), (90, 30036), (100, 30171), (104, 30225), (105, 30246), (106, 30279), (109, 30324), (112, 30378), (114, 30405), (116, 30462), (120, 30483), (122, 30525), (123, 30564), (127, 30624), (145, 30864), (147, 30900), (149, 30933), (151, 31002),

Gene: Tydolla\_31 Start: 29351, Stop: 31576, Start Num: 4

Candidate Starts for Tydolla\_31:

(Start: 4 @29351 has 44 MA's), (Start: 7 @29366 has 1 MA's), (10, 29411), (14, 29468), (21, 29546), (26, 29615), (27, 29627), (30, 29669), (32, 29705), (33, 29732), (34, 29744), (36, 29771), (39, 29861), (43, 29933), (51, 30017), (59, 30125), (60, 30146), (67, 30239), (68, 30254), (76, 30383), (81, 30464), (85, 30539), (87, 30581), (88, 30587), (92, 30623), (100, 30737), (101, 30749), (104, 30791), (105, 30812), (108, 30866), (109, 30890), (111, 30926), (116, 31022), (118, 31031), (122, 31085), (128, 31193), (129, 31220), (133, 31262), (137, 31334), (145, 31424), (147, 31460),

Gene: TyrionL\_30 Start: 28325, Stop: 30580, Start Num: 5

Candidate Starts for TyrionL\_30:

(Start: 5 @28325 has 296 MA's), (13, 28421), (19, 28499), (20, 28526), (27, 28625), (37, 28784), (44, 28964), (47, 28988), (56, 29084), (58, 29120), (62, 29159), (64, 29168), (66, 29201), (67, 29240), (69, 29285), (73, 29336), (78, 29396), (81, 29465), (85, 29540), (88, 29585), (90, 29600), (100, 29735), (104, 29789), (105, 29810), (106, 29843), (109, 29888), (112, 29942), (114, 29969), (116, 30026), (120, 30047), (122, 30089), (123, 30128), (127, 30188), (145, 30428), (146, 30461), (147, 30464), (149, 30497), (151, 30566),

Gene: UAch1\_31 Start: 28775, Stop: 31030, Start Num: 5

Candidate Starts for UAch1\_31:

(Start: 5 @28775 has 296 MA's), (13, 28871), (19, 28949), (20, 28976), (27, 29075), (37, 29234), (44, 29414), (47, 29438), (55, 29528), (56, 29534), (58, 29570), (62, 29609), (64, 29618), (66, 29651), (67, 29690), (69, 29735), (73, 29786), (77, 29837), (78, 29846), (81, 29915), (85, 29990), (88, 30035), (90, 30050), (100, 30185), (104, 30239), (105, 30260), (106, 30293), (109, 30338), (112, 30392), (116, 30476), (120, 30497), (122, 30539), (123, 30578), (127, 30638), (145, 30878), (146, 30911), (147, 30914), (149, 30947), (150, 30953), (151, 31016),

Gene: UncleHowie\_31 Start: 28465, Stop: 30720, Start Num: 5

Candidate Starts for UncleHowie\_31:

(Start: 5 @28465 has 296 MA's), (13, 28561), (19, 28639), (20, 28666), (27, 28765), (37, 28924), (44, 29104), (47, 29128), (55, 29218), (56, 29224), (58, 29260), (62, 29299), (64, 29308), (66, 29341), (67, 29380), (69, 29425), (73, 29476), (77, 29527), (78, 29536), (81, 29605), (85, 29680), (88, 29725), (90, 29740), (100, 29875), (104, 29929), (105, 29950), (106, 29983), (109, 30028), (112, 30082), (114, 30109), (116, 30166), (120, 30187), (122, 30229), (123, 30268), (127, 30328), (145, 30568), (147, 30604), (149, 30637), (151, 30706),

Gene: Usavi\_31 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Usavi\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (114, 30410), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (146, 30902), (147, 30905), (149, 30938), (150, 30944), (151, 31007),

Gene: Vaishali24\_30 Start: 28427, Stop: 30682, Start Num: 5

Candidate Starts for Vaishali24\_30:

(Start: 5 @28427 has 296 MA's), (13, 28523), (19, 28601), (20, 28628), (27, 28727), (44, 29066), (47, 29090), (55, 29180), (56, 29186), (58, 29222), (62, 29261), (66, 29303), (67, 29342), (69, 29387), (73, 29438), (77, 29489), (78, 29498), (81, 29567), (85, 29642), (88, 29687), (90, 29702), (100, 29837), (104, 29891), (105, 29912), (106, 29945), (109, 29990), (112, 30044), (116, 30128), (120, 30149), (122, 30191), (123, 30230), (127, 30290), (145, 30530), (146, 30563), (147, 30566), (149, 30599), (150, 30605), (151, 30668),

Gene: Valjean\_31 Start: 28758, Stop: 31013, Start Num: 5

Candidate Starts for Valjean\_31:

(Start: 5 @28758 has 296 MA's), (13, 28854), (19, 28932), (20, 28959), (27, 29058), (37, 29217), (44, 29397), (47, 29421), (55, 29511), (56, 29517), (58, 29553), (62, 29592), (64, 29601), (66, 29634), (67, 29673), (69, 29718), (73, 29769), (77, 29820), (78, 29829), (81, 29898), (85, 29973), (88, 30018), (90, 30033), (100, 30168), (104, 30222), (105, 30243), (106, 30276), (109, 30321), (112, 30375), (116, 30459), (120, 30480), (122, 30522), (123, 30561), (127, 30621), (145, 30861), (146, 30894), (147, 30897), (149, 30930), (151, 30999),

Gene: Vaticameos\_31 Start: 28456, Stop: 30711, Start Num: 5

Candidate Starts for Vaticameos\_31:

(Start: 5 @28456 has 296 MA's), (13, 28552), (19, 28630), (20, 28657), (27, 28756), (37, 28915), (44, 29095), (47, 29119), (55, 29209), (56, 29215), (58, 29251), (62, 29290), (64, 29299), (66, 29332), (67, 29371), (69, 29416), (73, 29467), (77, 29518), (78, 29527), (81, 29596), (85, 29671), (88, 29716), (90, 29731), (100, 29866), (104, 29920), (105, 29941), (106, 29974), (109, 30019), (112, 30073), (114, 30100), (116, 30157), (120, 30178), (122, 30220), (123, 30259), (127, 30319), (145, 30559), (146, 30592), (147, 30595), (149, 30628), (150, 30634), (151, 30697),

Gene: Veritas\_30 Start: 28328, Stop: 30583, Start Num: 5

Candidate Starts for Veritas\_30:

(Start: 5 @28328 has 296 MA's), (13, 28424), (19, 28502), (20, 28529), (27, 28628), (37, 28787), (44, 28967), (47, 28991), (55, 29081), (56, 29087), (58, 29123), (62, 29162), (64, 29171), (66, 29204), (67, 29243), (69, 29288), (73, 29339), (77, 29390), (78, 29399), (81, 29468), (85, 29543), (88, 29588), (90, 29603), (100, 29738), (104, 29792), (105, 29813), (106, 29846), (109, 29891), (112, 29945), (114, 29972), (116, 30029), (120, 30050), (122, 30092), (123, 30131), (127, 30191), (145, 30431), (146, 30464), (147, 30467), (149, 30500), (150, 30506), (151, 30569),

Gene: Vincenzo\_29 Start: 29686, Stop: 31983, Start Num: 5

Candidate Starts for Vincenzo\_29:

(Start: 5 @29686 has 296 MA's), (Start: 7 @29701 has 1 MA's), (13, 29785), (14, 29803), (18, 29860), (27, 29989), (41, 30253), (42, 30292), (43, 30298), (44, 30328), (45, 30343), (47, 30352), (53, 30433), (54, 30436), (61, 30535), (62, 30538), (63, 30541), (65, 30553), (70, 30676), (71, 30700), (76, 30763), (80, 30802), (82, 30874), (83, 30895), (84, 30916), (85, 30931), (86, 30952), (88, 30982), (91, 31015), (92, 31018), (93, 31030), (95, 31081), (96, 31084), (97, 31102), (99, 31126), (100, 31132), (104, 31186), (105, 31207), (108, 31261), (109, 31285), (116, 31420), (117, 31426), (118, 31429), (120, 31441), (124, 31525), (133, 31660), (134, 31684), (138, 31747), (142, 31783), (143, 31816), (145, 31831), (146, 31864), (147, 31867), (151, 31969), (152, 31972),

Gene: VioletZ\_28 Start: 29041, Stop: 31338, Start Num: 5

Candidate Starts for VioletZ\_28:

(Start: 1 @28354 has 1 MA's), (2, 28501), (Start: 5 @29041 has 296 MA's), (13, 29140), (14, 29158), (24, 29281), (27, 29344), (31, 29425), (35, 29491), (41, 29608), (42, 29647), (45, 29698), (47, 29707), (52, 29764), (53, 29788), (54, 29791), (58, 29854), (63, 29896), (65, 29908), (69, 30019), (70, 30031),

(71, 30055), (76, 30118), (82, 30229), (83, 30250), (85, 30286), (86, 30307), (92, 30373), (93, 30385), (95, 30436), (96, 30439), (97, 30457), (99, 30481), (102, 30508), (104, 30541), (105, 30562), (106, 30595), (109, 30640), (117, 30781), (118, 30784), (120, 30796), (124, 30880), (132, 30994), (133, 31015), (134, 31039), (138, 31102), (141, 31132), (145, 31186), (146, 31219), (147, 31222), (148, 31246), (151, 31324), (152, 31327),

Gene: Virapocalypse\_31 Start: 28752, Stop: 31007, Start Num: 5

Candidate Starts for Virapocalypse\_31:

(Start: 5 @28752 has 296 MA's), (13, 28848), (19, 28926), (20, 28953), (27, 29052), (37, 29211), (44, 29391), (47, 29415), (55, 29505), (56, 29511), (58, 29547), (62, 29586), (64, 29595), (66, 29628), (67, 29667), (69, 29712), (73, 29763), (77, 29814), (78, 29823), (81, 29892), (85, 29967), (88, 30012), (90, 30027), (100, 30162), (104, 30216), (105, 30237), (106, 30270), (109, 30315), (112, 30369), (114, 30396), (116, 30453), (120, 30474), (122, 30516), (123, 30555), (127, 30615), (145, 30855), (146, 30888), (147, 30891), (149, 30924), (150, 30930), (151, 30993),

Gene: Virgeve\_30 Start: 28527, Stop: 30788, Start Num: 5

Candidate Starts for Virgeve\_30:

(Start: 5 @28527 has 296 MA's), (13, 28623), (19, 28701), (20, 28728), (25, 28803), (27, 28833), (37, 28992), (44, 29172), (47, 29196), (56, 29292), (58, 29328), (62, 29367), (64, 29376), (66, 29409), (67, 29448), (69, 29493), (73, 29544), (78, 29604), (81, 29673), (85, 29748), (88, 29793), (90, 29808), (100, 29943), (104, 29997), (105, 30018), (106, 30051), (109, 30096), (112, 30150), (114, 30177), (116, 30234), (120, 30255), (122, 30297), (123, 30336), (127, 30396), (145, 30636), (147, 30672), (149, 30705), (151, 30774),

Gene: Vista\_31 Start: 28766, Stop: 31021, Start Num: 5

Candidate Starts for Vista\_31:

(Start: 5 @28766 has 296 MA's), (13, 28862), (19, 28940), (20, 28967), (27, 29066), (37, 29225), (44, 29405), (47, 29429), (55, 29519), (56, 29525), (58, 29561), (62, 29600), (64, 29609), (66, 29642), (67, 29681), (69, 29726), (73, 29777), (77, 29828), (78, 29837), (81, 29906), (85, 29981), (88, 30026), (90, 30041), (100, 30176), (104, 30230), (105, 30251), (106, 30284), (109, 30329), (112, 30383), (114, 30410), (116, 30467), (120, 30488), (122, 30530), (123, 30569), (127, 30629), (145, 30869), (147, 30905), (149, 30938), (151, 31007),

Gene: Vivaldi\_31 Start: 28792, Stop: 31050, Start Num: 5

Candidate Starts for Vivaldi\_31:

(Start: 5 @28792 has 296 MA's), (13, 28888), (19, 28966), (20, 28993), (27, 29095), (44, 29434), (47, 29458), (56, 29554), (58, 29590), (62, 29629), (66, 29671), (67, 29710), (69, 29755), (73, 29806), (77, 29857), (78, 29866), (81, 29935), (85, 30010), (88, 30055), (90, 30070), (100, 30205), (104, 30259), (105, 30280), (106, 30313), (109, 30358), (112, 30412), (116, 30496), (120, 30517), (122, 30559), (123, 30598), (127, 30658), (145, 30898), (146, 30931), (147, 30934), (149, 30967), (150, 30973), (151, 31036),

Gene: Vortex\_31 Start: 28472, Stop: 30727, Start Num: 5

Candidate Starts for Vortex\_31:

(Start: 5 @28472 has 296 MA's), (13, 28568), (19, 28646), (20, 28673), (27, 28772), (37, 28931), (44, 29111), (47, 29135), (56, 29231), (58, 29267), (62, 29306), (64, 29315), (66, 29348), (67, 29387), (69, 29432), (73, 29483), (77, 29534), (78, 29543), (81, 29612), (85, 29687), (88, 29732), (90, 29747), (100, 29882), (104, 29936), (105, 29957), (106, 29990), (109, 30035), (112, 30089), (114, 30116), (116, 30173), (120, 30194), (122, 30236), (123, 30275), (127, 30335), (145, 30575), (147, 30611), (149, 30644), (151, 30713),

Gene: Waleliano\_28 Start: 28968, Stop: 31265, Start Num: 5

Candidate Starts for Waleliano\_28:

(Start: 1 @28281 has 1 MA's), (2, 28428), (Start: 5 @28968 has 296 MA's), (13, 29067), (14, 29085), (24, 29208), (27, 29271), (31, 29352), (35, 29418), (41, 29535), (42, 29574), (45, 29625), (47, 29634), (52, 29691), (53, 29715), (54, 29718), (58, 29781), (63, 29823), (65, 29835), (70, 29958), (71, 29982), (76, 30045), (82, 30156), (83, 30177), (85, 30213), (86, 30234), (92, 30300), (93, 30312), (94, 30354), (95, 30363), (96, 30366), (97, 30384), (98, 30387), (99, 30408), (102, 30435), (104, 30468), (105, 30489), (106, 30522), (109, 30567), (117, 30708), (118, 30711), (120, 30723), (124, 30807), (132, 30921), (133, 30942), (134, 30966), (138, 31029), (141, 31059), (145, 31113), (146, 31146), (147, 31149), (151, 31251), (152, 31254),

Gene: Wallhey\_30 Start: 28329, Stop: 30584, Start Num: 5

Candidate Starts for Wallhey\_30:

(Start: 5 @28329 has 296 MA's), (13, 28425), (19, 28503), (20, 28530), (27, 28629), (37, 28788), (44, 28968), (47, 28992), (56, 29088), (58, 29124), (62, 29163), (64, 29172), (66, 29205), (67, 29244), (69, 29289), (73, 29340), (77, 29391), (78, 29400), (81, 29469), (85, 29544), (88, 29589), (90, 29604), (100, 29739), (104, 29793), (105, 29814), (106, 29847), (109, 29892), (112, 29946), (114, 29973), (116, 30030), (120, 30051), (122, 30093), (123, 30132), (127, 30192), (145, 30432), (147, 30468), (149, 30501), (151, 30570),

Gene: Waterdiva\_31 Start: 28758, Stop: 31013, Start Num: 5

Candidate Starts for Waterdiva\_31:

(Start: 5 @28758 has 296 MA's), (13, 28854), (19, 28932), (20, 28959), (27, 29058), (37, 29217), (44, 29397), (47, 29421), (55, 29511), (56, 29517), (58, 29553), (62, 29592), (64, 29601), (66, 29634), (67, 29673), (69, 29718), (73, 29769), (77, 29820), (78, 29829), (81, 29898), (85, 29973), (88, 30018), (90, 30033), (100, 30168), (104, 30222), (105, 30243), (106, 30276), (109, 30321), (112, 30375), (114, 30402), (116, 30459), (120, 30480), (122, 30522), (123, 30561), (127, 30621), (145, 30861), (146, 30894), (147, 30897), (149, 30930), (150, 30936), (151, 30999),

Gene: Weher20\_31 Start: 28757, Stop: 31012, Start Num: 5

Candidate Starts for Weher20\_31:

(Start: 5 @28757 has 296 MA's), (13, 28853), (19, 28931), (20, 28958), (27, 29057), (37, 29216), (44, 29396), (47, 29420), (55, 29510), (56, 29516), (58, 29552), (62, 29591), (64, 29600), (66, 29633), (67, 29672), (69, 29717), (73, 29768), (77, 29819), (78, 29828), (81, 29897), (85, 29972), (88, 30017), (90, 30032), (100, 30167), (104, 30221), (105, 30242), (106, 30275), (109, 30320), (112, 30374), (114, 30401), (116, 30458), (120, 30479), (122, 30521), (123, 30560), (127, 30620), (145, 30860), (146, 30893), (147, 30896), (149, 30929), (150, 30935), (151, 30998),

Gene: Windsor\_30 Start: 28456, Stop: 30717, Start Num: 5

Candidate Starts for Windsor\_30:

(Start: 5 @28456 has 296 MA's), (13, 28552), (19, 28630), (20, 28657), (25, 28732), (27, 28762), (37, 28921), (44, 29101), (47, 29125), (56, 29221), (58, 29257), (62, 29296), (64, 29305), (66, 29338), (67, 29377), (69, 29422), (73, 29473), (78, 29533), (81, 29602), (85, 29677), (88, 29722), (90, 29737), (100, 29872), (104, 29926), (105, 29947), (106, 29980), (109, 30025), (112, 30079), (114, 30106), (116, 30163), (120, 30184), (122, 30226), (123, 30265), (127, 30325), (145, 30565), (147, 30601), (149, 30634), (151, 30703),

Gene: Xavier\_30 Start: 28479, Stop: 30734, Start Num: 5

Candidate Starts for Xavier\_30:

(Start: 5 @28479 has 296 MA's), (13, 28575), (19, 28653), (20, 28680), (27, 28779), (37, 28938), (44, 29118), (47, 29142), (55, 29232), (56, 29238), (58, 29274), (62, 29313), (64, 29322), (66, 29355), (67, 29394), (69, 29439), (73, 29490), (77, 29541), (78, 29550), (81, 29619), (85, 29694), (88, 29739), (90, 29754), (100, 29889), (104, 29943), (105, 29964), (106, 29997), (109, 30042), (112, 30096), (114, 30123), (116, 30180), (120, 30201), (122, 30243), (123, 30282), (127, 30342), (145, 30582), (146, 30615), (147, 30618), (149, 30651), (150, 30657), (151, 30720),



Gene: Xincheng\_27 Start: 28426, Stop: 30714, Start Num: 5

Candidate Starts for Xincheng\_27:

(Start: 5 @28426 has 296 MA's), (13, 28525), (14, 28543), (20, 28630), (24, 28666), (27, 28729), (31, 28810), (35, 28876), (41, 28993), (42, 29032), (45, 29083), (47, 29092), (52, 29149), (53, 29173), (54, 29176), (58, 29239), (71, 29440), (74, 29470), (75, 29473), (76, 29503), (82, 29614), (83, 29635), (85, 29671), (86, 29692), (92, 29758), (93, 29770), (95, 29821), (96, 29824), (99, 29866), (102, 29893), (104, 29926), (105, 29947), (106, 29980), (107, 29983), (109, 30025), (110, 30037), (116, 30160), (118, 30169), (120, 30181), (121, 30205), (122, 30223), (123, 30262), (124, 30265), (126, 30319), (128, 30331), (132, 30379), (133, 30400), (145, 30562), (146, 30595), (147, 30598), (151, 30700),

Gene: Yahalom\_31 Start: 28626, Stop: 30851, Start Num: 4

Candidate Starts for Yahalom\_31:

(Start: 4 @28626 has 44 MA's), (Start: 7 @28641 has 1 MA's), (10, 28686), (14, 28743), (21, 28821), (26, 28890), (27, 28902), (30, 28944), (32, 28980), (33, 29007), (34, 29019), (36, 29046), (39, 29136), (40, 29160), (43, 29208), (51, 29292), (59, 29400), (60, 29421), (67, 29514), (68, 29529), (76, 29658), (81, 29739), (85, 29814), (87, 29856), (88, 29862), (95, 29961), (100, 30012), (101, 30024), (104, 30066), (105, 30087), (108, 30141), (109, 30165), (111, 30201), (116, 30297), (118, 30306), (122, 30360), (128, 30468), (129, 30495), (133, 30537), (137, 30609), (145, 30699), (147, 30735),

Gene: Yinz\_31 Start: 28649, Stop: 30874, Start Num: 4

Candidate Starts for Yinz\_31:

(Start: 4 @28649 has 44 MA's), (Start: 7 @28664 has 1 MA's), (10, 28709), (14, 28766), (21, 28844), (26, 28913), (27, 28925), (30, 28967), (32, 29003), (33, 29030), (34, 29042), (36, 29069), (39, 29159), (43, 29231), (51, 29315), (59, 29423), (60, 29444), (67, 29537), (68, 29552), (76, 29681), (81, 29762), (85, 29837), (87, 29879), (88, 29885), (92, 29921), (100, 30035), (101, 30047), (104, 30089), (105, 30110), (108, 30164), (109, 30188), (111, 30224), (116, 30320), (118, 30329), (122, 30383), (128, 30491), (129, 30518), (133, 30560), (137, 30632), (145, 30722), (147, 30758),

Gene: Yoshand\_31 Start: 28765, Stop: 31020, Start Num: 5

Candidate Starts for Yoshand\_31:

(Start: 5 @28765 has 296 MA's), (13, 28861), (19, 28939), (20, 28966), (27, 29065), (37, 29224), (44, 29404), (47, 29428), (55, 29518), (56, 29524), (58, 29560), (62, 29599), (64, 29608), (66, 29641), (67, 29680), (69, 29725), (73, 29776), (77, 29827), (78, 29836), (81, 29905), (85, 29980), (88, 30025), (90, 30040), (100, 30175), (104, 30229), (105, 30250), (106, 30283), (109, 30328), (112, 30382), (116, 30466), (120, 30487), (122, 30529), (123, 30568), (127, 30628), (145, 30868), (146, 30901), (147, 30904), (149, 30937), (150, 30943), (151, 31006),

Gene: YouGoGlencoco\_31 Start: 28760, Stop: 31015, Start Num: 5

Candidate Starts for YouGoGlencoco\_31:

(Start: 5 @28760 has 296 MA's), (13, 28856), (19, 28934), (20, 28961), (27, 29060), (37, 29219), (44, 29399), (47, 29423), (55, 29513), (56, 29519), (58, 29555), (62, 29594), (64, 29603), (66, 29636), (67, 29675), (69, 29720), (73, 29771), (77, 29822), (78, 29831), (81, 29900), (85, 29975), (88, 30020), (90, 30035), (100, 30170), (104, 30224), (105, 30245), (106, 30278), (109, 30323), (112, 30377), (114, 30404), (116, 30461), (120, 30482), (122, 30524), (123, 30563), (127, 30623), (145, 30863), (146, 30896), (147, 30899), (149, 30932), (150, 30938), (151, 31001),

Gene: Zaider\_32 Start: 28990, Stop: 31245, Start Num: 5

Candidate Starts for Zaider\_32:

(Start: 5 @28990 has 296 MA's), (13, 29086), (19, 29164), (20, 29191), (27, 29290), (37, 29449), (44, 29629), (47, 29653), (55, 29743), (56, 29749), (58, 29785), (62, 29824), (64, 29833), (66, 29866), (67, 29905), (69, 29950), (73, 30001), (77, 30052), (78, 30061), (81, 30130), (85, 30205), (88, 30250), (90, 30265), (100, 30400), (104, 30454), (105, 30475), (106, 30508), (109, 30553), (112, 30607), (114,

30634), (116, 30691), (120, 30712), (122, 30754), (123, 30793), (127, 30853), (145, 31093), (146, 31126), (147, 31129), (149, 31162), (150, 31168), (151, 31231),

Gene: Zelda\_31 Start: 28756, Stop: 31011, Start Num: 5

Candidate Starts for Zelda\_31:

(Start: 5 @28756 has 296 MA's), (13, 28852), (19, 28930), (20, 28957), (27, 29056), (37, 29215), (44, 29395), (47, 29419), (55, 29509), (56, 29515), (58, 29551), (62, 29590), (64, 29599), (66, 29632), (67, 29671), (69, 29716), (73, 29767), (77, 29818), (78, 29827), (81, 29896), (85, 29971), (88, 30016), (90, 30031), (100, 30166), (104, 30220), (105, 30241), (106, 30274), (109, 30319), (112, 30373), (114, 30400), (116, 30457), (120, 30478), (122, 30520), (123, 30559), (127, 30619), (145, 30859), (147, 30895), (149, 30928), (151, 30997),

Gene: Zemanar\_29 Start: 28968, Stop: 31265, Start Num: 5

Candidate Starts for Zemanar\_29:

(Start: 5 @28968 has 296 MA's), (13, 29067), (14, 29085), (24, 29208), (27, 29271), (31, 29352), (35, 29418), (41, 29535), (42, 29574), (45, 29625), (47, 29634), (52, 29691), (53, 29715), (54, 29718), (58, 29781), (63, 29823), (65, 29835), (70, 29958), (71, 29982), (76, 30045), (80, 30084), (82, 30156), (83, 30177), (85, 30213), (86, 30234), (92, 30300), (93, 30312), (95, 30363), (96, 30366), (97, 30384), (99, 30408), (102, 30435), (104, 30468), (105, 30489), (106, 30522), (109, 30567), (117, 30708), (118, 30711), (120, 30723), (124, 30807), (132, 30921), (133, 30942), (134, 30966), (138, 31029), (141, 31059), (142, 31065), (145, 31113), (146, 31146), (147, 31149), (151, 31251), (152, 31254),

Gene: Zonia\_31 Start: 28779, Stop: 31034, Start Num: 5

Candidate Starts for Zonia\_31:

(Start: 5 @28779 has 296 MA's), (13, 28875), (19, 28953), (20, 28980), (27, 29079), (37, 29238), (44, 29418), (47, 29442), (56, 29538), (58, 29574), (62, 29613), (64, 29622), (66, 29655), (67, 29694), (69, 29739), (73, 29790), (77, 29841), (78, 29850), (81, 29919), (85, 29994), (88, 30039), (90, 30054), (100, 30189), (104, 30243), (105, 30264), (106, 30297), (109, 30342), (112, 30396), (114, 30423), (116, 30480), (120, 30501), (122, 30543), (123, 30582), (127, 30642), (145, 30882), (147, 30918), (149, 30951), (151, 31020),