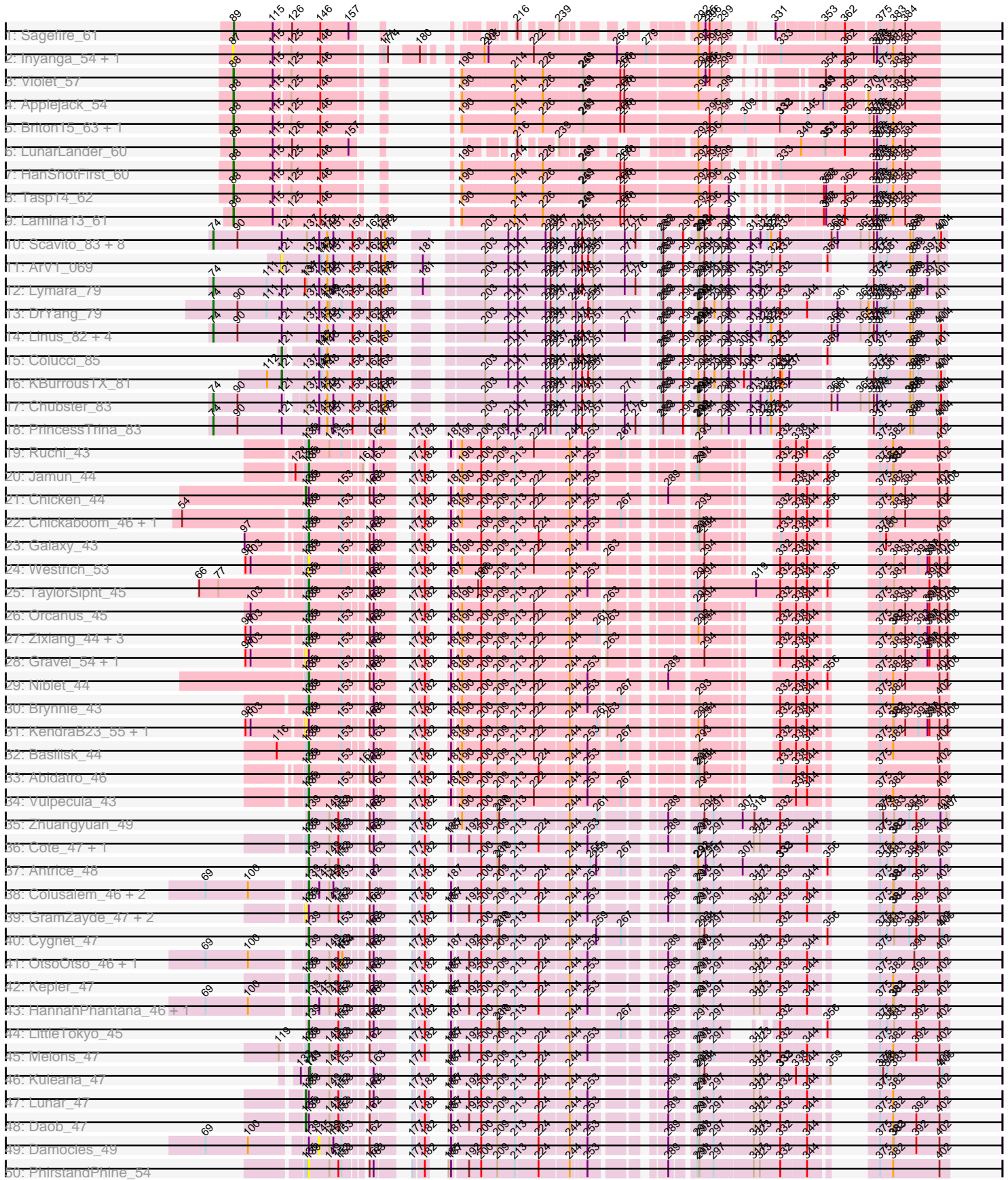
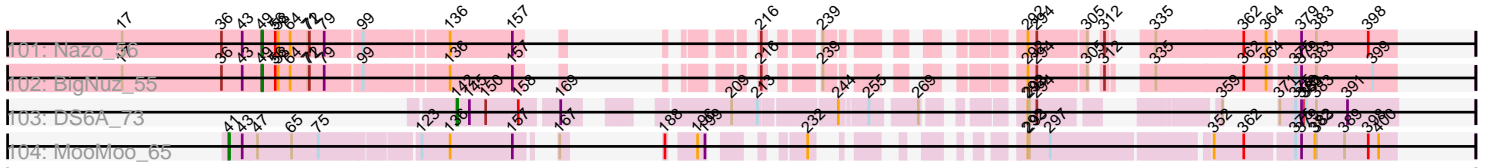


Pham 304771





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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 304771 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304771 has 152 members, 26 are drafts.

Phages represented in each track:

- Track 1 : Sagefire\_61
- Track 2 : Inyanga\_54, Iqorha\_54
- Track 3 : Violet\_57
- Track 4 : Applejack\_54
- Track 5 : Briton15\_63, Molly\_60
- Track 6 : LunarLander\_60
- Track 7 : HanShotFirst\_60
- Track 8 : Tasp14\_62
- Track 9 : Lamina13\_61
- Track 10 : Scavito\_83, Chipper1996\_830, HumptyDumpty\_82, JaNo\_81, Kabreeze\_82, Chocolat\_82, Tophat\_83, Mordred\_82, EdgarPoe\_81
- Track 11 : ArV1\_069
- Track 12 : Lymara\_79
- Track 13 : DrYang\_79
- Track 14 : Linus\_82, RosiePosie\_82, Conboy\_80, MoyaNatalis\_81, JayCookie\_82
- Track 15 : Colucci\_85
- Track 16 : KBurrousTX\_81
- Track 17 : Chubster\_83
- Track 18 : PrincessTrina\_83
- Track 19 : Ruchi\_43
- Track 20 : Jamun\_44
- Track 21 : Chicken\_44
- Track 22 : Chickaboom\_46, WileyE\_46
- Track 23 : Galaxy\_43
- Track 24 : Westrich\_53
- Track 25 : TaylorSipht\_45
- Track 26 : Orcanus\_45
- Track 27 : Zixiang\_44, Eesa\_44, Amanises\_47, Toad24\_47
- Track 28 : Gravel\_54, Pelletreau\_54
- Track 29 : Niblet\_44
- Track 30 : Brynnie\_43
- Track 31 : KendraB23\_55, Shen\_44
- Track 32 : Basilisk\_44
- Track 33 : Abidatro\_46
- Track 34 : Vulpecula\_43
- Track 35 : Zhuangyuan\_49
- Track 36 : Cote\_47, Coral\_45

- Track 37 : Antrice\_48
- Track 38 : Colusalem\_46, Amelia\_45, Jerole\_46
- Track 39 : GramZayde\_47, Bedetta\_50, Pineda\_48
- Track 40 : Cygnet\_47
- Track 41 : OtsoOtso\_46, Polka\_45
- Track 42 : Kepler\_47
- Track 43 : HannahPhantana\_46, Bibble12\_49
- Track 44 : LittleTokyo\_45
- Track 45 : Melons\_47
- Track 46 : Kuleana\_47
- Track 47 : Lunar\_47
- Track 48 : Daob\_47
- Track 49 : Damocles\_49
- Track 50 : PhirstandPhine\_54
- Track 51 : Andrew\_48
- Track 52 : Azaz\_48
- Track 53 : StuartMinion\_39, AlexMinion\_49
- Track 54 : DanHam62\_47, AmiCi24\_46, Rattail\_47, Oppalora\_46, PhluffyCoco\_47
- Track 55 : RedFox\_47
- Track 56 : Leona\_46
- Track 57 : Babushka\_44
- Track 58 : Juno112\_46, Fingolfin\_47, Camara\_47
- Track 59 : Atlantica\_47
- Track 60 : AdoptaAdorbs\_46
- Track 61 : Amphitrite\_47, Glotell\_48
- Track 62 : HamCheese\_47, Laphuphu24k\_46
- Track 63 : Renna12\_46
- Track 64 : KHumphrey\_47
- Track 65 : Wocket\_66
- Track 66 : Belphegor\_66
- Track 67 : Murica\_102, MISSy\_100
- Track 68 : ChotaBhai\_99
- Track 69 : StellaBean\_97
- Track 70 : Bogg\_99
- Track 71 : Tarkin\_98
- Track 72 : Wee\_78, Taj\_79
- Track 73 : Leperchaun\_59, JoeyJr\_62, PHappiness\_62, Polka14\_65, Daenerys\_61, RitaG\_62
- Track 74 : Harley\_68
- Track 75 : Kersh\_68
- Track 76 : Totinger\_66
- Track 77 : EleanorGeorge\_68
- Track 78 : Mantra\_64
- Track 79 : SG4\_70
- Track 80 : Phalconet\_70
- Track 81 : Hegedechwinu\_73
- Track 82 : PhesterPhotato\_66
- Track 83 : Mova\_70
- Track 84 : Royals2015\_69
- Track 85 : Bipolar\_76
- Track 86 : Filuzino\_74
- Track 87 : ShroomBoi\_67
- Track 88 : Pollywog\_67

- Track 89 : Brushbloom\_75
- Track 90 : OwlsT2W\_66
- Track 91 : Renaud18\_76
- Track 92 : Okabe\_69
- Track 93 : Bagrid\_152, Duke13\_147, BAKA\_151, EricMillard\_143
- Track 94 : Optimus\_142
- Track 95 : Gonephishing\_142
- Track 96 : Boilgate\_58
- Track 97 : Majeke\_63, Mangethe\_63, Phegusus\_63
- Track 98 : Thespis\_55
- Track 99 : Brusacoram\_55
- Track 100 : Zilizebeth\_63
- Track 101 : Nazo\_56
- Track 102 : BigNuz\_55
- Track 103 : DS6A\_73
- Track 104 : MooMoo\_65

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

The start number called the most often in the published annotations is 139, it was called in 45 of the 126 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abidatro\_46, AdoptaAdorbs\_46, AlexMinion\_49, Amanises\_47, Amelia\_45, AmiCi24\_46, Amphitrite\_47, Andrew\_48, Antrice\_48, Atlantica\_47, Babushka\_44, Basilisk\_44, Bibble12\_49, Brynnie\_43, Camara\_47, Chickaboom\_46, Colusalem\_46, Coral\_45, Cote\_47, Cygnet\_47, DanHam62\_47, Eesa\_44, Fingolfin\_47, Galaxy\_43, Glotell\_48, HamCheese\_47, HannahPhantana\_46, Jamun\_44, Jerole\_46, Juno112\_46, KHumphrey\_47, Kepler\_47, Laphuphu24k\_46, LittleTokyo\_45, Melons\_47, Niblet\_44, Oppalora\_46, Orcanus\_45, OtsoOtso\_46, PhirstandPhine\_54, PhluffyCoco\_47, Polka\_45, Rattail\_47, RedFox\_47, Renna12\_46, Ruchi\_43, StuartMinion\_39, TaylorSipht\_45, Toad24\_47, Vulpecula\_43, Westrich\_53, WileyE\_46, Zhuangyuan\_49, Zixiang\_44,

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

- Bedetta\_50, Chicken\_44, Damocles\_49, Daob\_47, GramZayde\_47, Gravel\_54, KendraB23\_55, Kuleana\_47, Lunar\_47, Pelletreau\_54, Pineda\_48, Shen\_44,

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

- Applejack\_54, ArV1\_069, Azaz\_48, BAKA\_151, Bagrid\_152, Belphegor\_66, BigNuz\_55, Bipolar\_76, Bogg\_99, Boilgate\_58, Briton15\_63, Brusacoram\_55, Brushbloom\_75, Chipper1996\_830, Chocolat\_82, ChotaBhai\_99, Chubster\_83, Colucci\_85, Conboy\_80, DS6A\_73, Daenerys\_61, DrYang\_79, Duke13\_147, EdgarPoe\_81, EleanorGeorge\_68, EricMillard\_143, Filuzino\_74, Gonephishing\_142, HanShotFirst\_60, Harley\_68, Hegedechwinu\_73, HumptyDumpty\_82, Inyanga\_54, Iqorha\_54, JaNo\_81, JayCookie\_82, JoeyJr\_62, KBurrousTX\_81, Kabreeze\_82, Kersh\_68, Lamina13\_61, Leona\_46, Leperchaun\_59, Linus\_82, LunarLander\_60, Lymara\_79, MISSy\_100, Majeke\_63, Mangethe\_63, Mantra\_64, Molly\_60, MooMoo\_65, Mordred\_82, Mova\_70, MoyaNatalis\_81, Murica\_102, Nazo\_56, Okabe\_69, Optimus\_142, OwlsT2W\_66, PHappiness\_62, Phalconet\_70,

Phegasus\_63, PhesterPhotato\_66, Polka14\_65, Pollywog\_67, PrincessTrina\_83, Renaud18\_76, RitaG\_62, RosiePosie\_82, Royals2015\_69, SG4\_70, Sagefire\_61, Scavito\_83, ShroomBoi\_67, StellaBean\_97, Taj\_79, Tarkin\_98, Tasp14\_62, Thespis\_55, Tophat\_83, Totinger\_66, Violet\_57, Wee\_78, Wocket\_66, Zilizebeth\_63,

### Summary by start number:

#### Start 14:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hegedechwinu\_73 (F1),

#### Start 15:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 3 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Okabe\_69 (F8), Phalconet\_70 (F1), Taj\_79 (F1), Wee\_78 (F1),

#### Start 16:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 4 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kersh\_68 (F1), Mantra\_64 (F1), Mova\_70 (F1), Totinger\_66 (F1),

#### Start 34:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Thespis\_55 (P1),

#### Start 39:

- Found in 3 of 152 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 3 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Belphegor\_66 (DE2), Boilgate\_58 (K8), Brushbloom\_75 (F1),

#### Start 40:

- Found in 13 of 152 ( 8.6% ) of genes in pham
- Manual Annotations of this start: 13 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Daenerys\_61 (F1), EleanorGeorge\_68 (F1), Harley\_68 (F1), JoeyJr\_62 (F1), Leperchaun\_59 (F1), OwlsT2W\_66 (F1), PHappiness\_62 (F1), PhesterPhotato\_66 (F1), Polka14\_65 (F1), Renaud18\_76 (F4), RitaG\_62 (F1), Royals2015\_69 (F1), ShroomBoi\_67 (F1),

#### Start 41:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 100.0% of time when present

- Phage (with cluster) where this start called: MooMoo\_65 (singleton),

#### Start 47:

- Found in 17 of 152 ( 11.2% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Brusacoram\_55 (P1),

#### Start 49:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BigNuz\_55 (P4), Nazo\_56 (P4),

#### Start 63:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bipolar\_76 (F1),

#### Start 74:

- Found in 18 of 152 ( 11.8% ) of genes in pham
- Manual Annotations of this start: 17 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chipper1996\_830 (AR), Chocolat\_82 (AR), Chubster\_83 (AR), Conboy\_80 (AR), DrYang\_79 (AR), EdgarPoe\_81 (AR), HumptyDumpty\_82 (AR), JaNo\_81 (AR), JayCookie\_82 (AR), Kabreeze\_82 (AR), Linus\_82 (AR), Lymara\_79 (AR), Mordred\_82 (AR), MoyaNatalis\_81 (AR), PrincessTrina\_83 (AR), RosiePosie\_82 (AR), Scavito\_83 (AR), Tophat\_83 (AR),

#### Start 80:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SG4\_70 (F1),

#### Start 83:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Filuzino\_74 (F1),

#### Start 84:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pollywog\_67 (F1),

#### Start 85:

- Found in 3 of 152 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 2 of 126
- Called 66.7% of time when present
- Phage (with cluster) where this start called: StellaBean\_97 (E), Tarkin\_98 (E),

Start 86:

- Found in 3 of 152 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 2 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bogg\_99 (E), MISSy\_100 (E), Murica\_102 (E),

Start 87:

- Found in 3 of 152 ( 2.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gonephishing\_142 (J), Inyanga\_54 (A1), Iqorha\_54 (A1),

Start 88:

- Found in 8 of 152 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 8 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Applejack\_54 (A1), Briton15\_63 (A1), HanShotFirst\_60 (A1), Lamina13\_61 (A1), Molly\_60 (A1), Optimus\_142 (J), Tasp14\_62 (A1), Violet\_57 (A1),

Start 89:

- Found in 6 of 152 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 5 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BAKA\_151 (J), Bagrid\_152 (J), Duke13\_147 (J), EricMillard\_143 (J), LunarLander\_60 (A1), Sagefire\_61 (A1),

Start 121:

- Found in 21 of 152 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 2 of 126
- Called 14.3% of time when present
- Phage (with cluster) where this start called: ArV1\_069 (AR), Colucci\_85 (AR), KBurrousTX\_81 (AR),

Start 132:

- Found in 13 of 152 ( 8.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Azaz\_48 (AS3),

Start 135:

- Found in 34 of 152 ( 22.4% ) of genes in pham
- Manual Annotations of this start: 4 of 126
- Called 32.4% of time when present
- Phage (with cluster) where this start called: Bedetta\_50 (AS2), Chicken\_44 (AS1), Daob\_47 (AS2), GramZayde\_47 (AS2), Gravel\_54 (AS1), KendraB23\_55 (AS1), Leona\_46 (AS3), Lunar\_47 (AS2), Pelletreau\_54 (AS1), Pineda\_48 (AS2), Shen\_44 (AS1),

Start 139:

- Found in 66 of 152 ( 43.4% ) of genes in pham
- Manual Annotations of this start: 45 of 126
- Called 81.8% of time when present
- Phage (with cluster) where this start called: Abidatro\_46 (AS1), AdoptaAdorbs\_46 (AS3), AlexMinion\_49 (AS3), Amanises\_47 (AS1), Amelia\_45 (AS2), AmiCi24\_46 (AS3), Amphitrite\_47 (AS3), Andrew\_48 (AS3), Antrice\_48 (AS2), Atlantica\_47 (AS3), Babushka\_44 (AS3), Basilisk\_44 (AS1), Bibble12\_49 (AS2), Brynnie\_43 (AS1), Camara\_47 (AS3), Chickaboom\_46 (AS1), Colusalem\_46 (AS2), Coral\_45 (AS2), Cote\_47 (AS2), Cygnet\_47 (AS2), DanHam62\_47 (AS3), Eesa\_44 (AS1), Fingolfin\_47 (AS3), Galaxy\_43 (AS1), Glotell\_48 (AS3), HamCheese\_47 (AS3), HannahPhantana\_46 (AS2), Jamun\_44 (AS1), Jerole\_46 (AS2), Juno112\_46 (AS3), KHumphrey\_47 (AS3), Kepler\_47 (AS2), Laphuphu24k\_46 (AS3), LittleTokyo\_45 (AS2), Melons\_47 (AS2), Niblet\_44 (AS1), Oppalora\_46 (AS3), Orcanus\_45 (AS1), OtsoOtso\_46 (AS2), PhirstandPhine\_54 (AS2), PhluffyCoco\_47 (AS3), Polka\_45 (AS2), Rattail\_47 (AS3), RedFox\_47 (AS3), Renna12\_46 (AS3), Ruchi\_43 (AS1), StuartMinion\_39 (AS3), TaylorSipht\_45 (AS1), Toad24\_47 (AS1), Vulpecula\_43 (AS1), Westrich\_53 (AS1), WileyE\_46 (AS1), Zhuangyuan\_49 (AS2), Zixiang\_44 (AS1),

#### Start 140:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 4 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Majeke\_63 (P1), Mangethe\_63 (P1), Phegasus\_63 (P1), Zilizebeth\_63 (P1),

#### Start 141:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kuleana\_47 (AS2), Wocket\_66 (CV),

#### Start 142:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DS6A\_73 (singleton),

#### Start 145:

- Found in 29 of 152 ( 19.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.4% of time when present
- Phage (with cluster) where this start called: Damocles\_49 (AS2),

#### Start 197:

- Found in 8 of 152 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 1 of 126
- Called 12.5% of time when present
- Phage (with cluster) where this start called: ChotaBhai\_99 (E),

### Summary by clusters:

There are 16 clusters represented in this pham: AS3, AS2, AS1, P1, E, P4, F1, F8, DE2, J, singleton, A1, AR, F4, K8, CV,

Info for manual annotations of cluster A1:

- Start number 88 was manually annotated 7 times for cluster A1.
- Start number 89 was manually annotated 2 times for cluster A1.

Info for manual annotations of cluster AR:

- Start number 74 was manually annotated 17 times for cluster AR.
- Start number 121 was manually annotated 2 times for cluster AR.

Info for manual annotations of cluster AS1:

- Start number 135 was manually annotated 1 time for cluster AS1.
- Start number 139 was manually annotated 16 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 135 was manually annotated 2 times for cluster AS2.
- Start number 139 was manually annotated 14 times for cluster AS2.
- Start number 141 was manually annotated 1 time for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 135 was manually annotated 1 time for cluster AS3.
- Start number 139 was manually annotated 15 times for cluster AS3.

Info for manual annotations of cluster CV:

- Start number 141 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster DE2:

- Start number 39 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster E:

- Start number 85 was manually annotated 2 times for cluster E.
- Start number 86 was manually annotated 2 times for cluster E.
- Start number 197 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster F1:

- Start number 14 was manually annotated 1 time for cluster F1.
- Start number 15 was manually annotated 3 times for cluster F1.
- Start number 16 was manually annotated 4 times for cluster F1.
- Start number 39 was manually annotated 1 time for cluster F1.
- Start number 40 was manually annotated 12 times for cluster F1.
- Start number 63 was manually annotated 1 time for cluster F1.
- Start number 80 was manually annotated 1 time for cluster F1.
- Start number 83 was manually annotated 1 time for cluster F1.
- Start number 84 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F4:

- Start number 40 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster J:

- Start number 88 was manually annotated 1 time for cluster J.
- Start number 89 was manually annotated 3 times for cluster J.

Info for manual annotations of cluster K8:

- Start number 39 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster P1:

- Start number 34 was manually annotated 1 time for cluster P1.
- Start number 47 was manually annotated 1 time for cluster P1.
- Start number 140 was manually annotated 4 times for cluster P1.

Info for manual annotations of cluster P4:

- Start number 49 was manually annotated 2 times for cluster P4.

### **Gene Information:**

Gene: Abidatro\_46 Start: 30256, Stop: 31575, Start Num: 139

Candidate Starts for Abidatro\_46:

(Start: 135 @30247 has 4 MA's), (Start: 139 @30256 has 45 MA's), (153, 30352), (161, 30397), (162, 30400), (163, 30412), (177, 30466), (182, 30490), (187, 30505), (190, 30526), (200, 30583), (209, 30631), (213, 30682), (224, 30742), (244, 30823), (253, 30862), (291, 31078), (293, 31084), (294, 31099), (333, 31216), (338, 31252), (344, 31285), (375, 31372), (402, 31549),

Gene: AdoptaAdorbs\_46 Start: 29473, Stop: 30876, Start Num: 139

Candidate Starts for AdoptaAdorbs\_46:

(Start: 139 @29473 has 45 MA's), (152, 29560), (153, 29569), (162, 29617), (163, 29629), (177, 29683), (182, 29707), (200, 29800), (209, 29848), (210, 29854), (212, 29887), (213, 29899), (244, 30040), (289, 30238), (291, 30295), (293, 30301), (317, 30448), (323, 30463), (330, 30493), (332, 30514), (333, 30517), (356, 30631), (359, 30640), (375, 30673), (383, 30715), (387, 30760), (392, 30781), (402, 30850), (408, 30871),

Gene: AlexMinion\_49 Start: 29756, Stop: 31159, Start Num: 139

Candidate Starts for AlexMinion\_49:

(Start: 139 @29756 has 45 MA's), (152, 29843), (153, 29852), (162, 29900), (163, 29912), (177, 29966), (182, 29990), (187, 30005), (193, 30050), (200, 30083), (209, 30131), (210, 30137), (213, 30182), (244, 30323), (259, 30386), (267, 30434), (289, 30521), (291, 30578), (293, 30584), (300, 30653), (317, 30731), (323, 30746), (330, 30776), (332, 30797), (356, 30914), (359, 30923), (375, 30956), (381, 30977), (387, 31043), (402, 31133),

Gene: Amanises\_47 Start: 31184, Stop: 32503, Start Num: 139

Candidate Starts for Amanises\_47:

(98, 31025), (103, 31040), (Start: 135 @31175 has 4 MA's), (Start: 139 @31184 has 45 MA's), (153, 31280), (162, 31328), (163, 31340), (177, 31394), (182, 31418), (187, 31433), (190, 31454), (200, 31511), (209, 31559), (213, 31610), (222, 31661), (244, 31751), (261, 31817), (263, 31829), (292, 32009), (294, 32027), (332, 32141), (338, 32180), (344, 32213), (375, 32300), (382, 32339), (383, 32342), (384, 32375), (393, 32414), (397, 32441), (398, 32447), (402, 32477), (408, 32498),

Gene: Amelia\_45 Start: 28531, Stop: 29934, Start Num: 139

Candidate Starts for Amelia\_45:

(69, 28270), (100, 28396), (Start: 139 @28531 has 45 MA's), (145, 28561), (149, 28591), (151, 28603), (153, 28627), (162, 28675), (177, 28741), (182, 28765), (187, 28780), (200, 28858), (209, 28906), (213, 28957), (224, 29017), (244, 29098), (253, 29137), (289, 29296), (291, 29353), (293, 29359), (297, 29398), (317, 29506), (323, 29521), (332, 29572), (344, 29644), (375, 29731), (382, 29770),

(383, 29773), (392, 29839), (402, 29908),

Gene: AmiCi24\_46 Start: 29582, Stop: 30985, Start Num: 139

Candidate Starts for AmiCi24\_46:

(Start: 139 @29582 has 45 MA's), (152, 29669), (162, 29726), (163, 29738), (177, 29792), (182, 29816), (200, 29909), (209, 29957), (210, 29963), (212, 29996), (213, 30008), (244, 30149), (289, 30347), (291, 30404), (293, 30410), (317, 30557), (323, 30572), (330, 30602), (332, 30623), (356, 30740), (359, 30749), (375, 30782), (382, 30821), (383, 30824), (387, 30869), (392, 30890), (402, 30959), (408, 30980),

Gene: Amphitrite\_47 Start: 29472, Stop: 30875, Start Num: 139

Candidate Starts for Amphitrite\_47:

(Start: 139 @29472 has 45 MA's), (152, 29559), (153, 29568), (162, 29616), (163, 29628), (177, 29682), (182, 29706), (200, 29799), (209, 29847), (210, 29853), (212, 29886), (213, 29898), (242, 30021), (244, 30039), (291, 30294), (293, 30300), (317, 30447), (323, 30462), (330, 30492), (332, 30513), (333, 30516), (356, 30630), (359, 30639), (375, 30672), (382, 30711), (383, 30714), (387, 30759), (392, 30780), (402, 30849), (408, 30870),

Gene: Andrew\_48 Start: 29461, Stop: 30864, Start Num: 139

Candidate Starts for Andrew\_48:

(Start: 139 @29461 has 45 MA's), (152, 29548), (153, 29557), (162, 29605), (163, 29617), (177, 29671), (182, 29695), (187, 29710), (193, 29755), (200, 29788), (209, 29836), (210, 29842), (213, 29887), (244, 30028), (259, 30091), (285, 30205), (289, 30226), (291, 30283), (292, 30286), (317, 30436), (323, 30451), (330, 30481), (332, 30502), (359, 30628), (375, 30661), (381, 30682), (382, 30700), (387, 30748), (402, 30838), (408, 30859),

Gene: Antrice\_48 Start: 29701, Stop: 31119, Start Num: 139

Candidate Starts for Antrice\_48:

(Start: 139 @29701 has 45 MA's), (149, 29761), (152, 29788), (153, 29797), (163, 29857), (177, 29911), (182, 29935), (200, 30028), (209, 30076), (210, 30082), (213, 30127), (244, 30268), (255, 30316), (259, 30331), (267, 30379), (291, 30526), (292, 30529), (295, 30550), (297, 30571), (307, 30655), (332, 30754), (333, 30757), (356, 30874), (375, 30916), (381, 30937), (383, 30958), (387, 31003), (392, 31024), (403, 31096),

Gene: Applejack\_54 Start: 38217, Stop: 36658, Start Num: 88

Candidate Starts for Applejack\_54:

(Start: 88 @38217 has 8 MA's), (115, 38109), (125, 38064), (146, 37980), (190, 37839), (214, 37689), (226, 37611), (249, 37506), (251, 37503), (266, 37401), (270, 37392), (292, 37185), (299, 37119), (349, 36978), (351, 36975), (362, 36921), (370, 36867), (375, 36834), (383, 36792), (384, 36759),

Gene: ArV1\_069 Start: 53043, Stop: 54641, Start Num: 121

Candidate Starts for ArV1\_069:

(Start: 121 @53043 has 2 MA's), (137, 53115), (145, 53151), (147, 53157), (148, 53175), (151, 53193), (158, 53250), (162, 53286), (168, 53316), (172, 53328), (181, 53391), (203, 53520), (211, 53589), (217, 53616), (229, 53697), (234, 53712), (237, 53727), (245, 53769), (247, 53778), (248, 53796), (254, 53814), (257, 53829), (271, 53913), (285, 53979), (288, 53985), (290, 54039), (293, 54066), (294, 54081), (297, 54105), (299, 54129), (301, 54150), (313, 54213), (329, 54267), (332, 54291), (356, 54405), (372, 54429), (375, 54447), (381, 54468), (388, 54537), (389, 54546), (397, 54588), (401, 54621),

Gene: Atlantica\_47 Start: 29584, Stop: 30987, Start Num: 139

Candidate Starts for Atlantica\_47:

(Start: 139 @29584 has 45 MA's), (152, 29671), (153, 29680), (162, 29728), (163, 29740), (177, 29794), (182, 29818), (200, 29911), (209, 29959), (210, 29965), (212, 29998), (213, 30010), (244, 30151), (289, 30349), (291, 30406), (293, 30412), (317, 30559), (323, 30574), (330, 30604), (332, 30625), (356, 30742), (359, 30751), (375, 30784), (382, 30823), (383, 30826), (387, 30871), (392, 30892), (402, 30961), (408, 30982),

Gene: Azaz\_48 Start: 29652, Stop: 31064, Start Num: 132

Candidate Starts for Azaz\_48:

(132, 29652), (Start: 135 @29661 has 4 MA's), (152, 29748), (153, 29757), (162, 29805), (163, 29817), (177, 29871), (182, 29895), (187, 29910), (193, 29955), (200, 29988), (209, 30036), (210, 30042), (212, 30075), (213, 30087), (244, 30228), (289, 30426), (291, 30483), (293, 30489), (317, 30636), (323, 30651), (330, 30681), (332, 30702), (356, 30819), (359, 30828), (375, 30861), (387, 30948), (392, 30969), (402, 31038), (408, 31059),

Gene: BAKA\_151 Start: 79379, Stop: 80692, Start Num: 89

Candidate Starts for BAKA\_151:

(Start: 89 @79379 has 5 MA's), (115, 79487), (126, 79532), (136, 79574), (138, 79577), (146, 79616), (157, 79697), (216, 79835), (239, 79907), (292, 80153), (296, 80183), (297, 80195), (331, 80261), (358, 80372), (362, 80414), (372, 80498), (373, 80507), (375, 80516), (381, 80537), (382, 80555), (384, 80591),

Gene: Babushka\_44 Start: 29406, Stop: 30809, Start Num: 139

Candidate Starts for Babushka\_44:

(Start: 139 @29406 has 45 MA's), (152, 29493), (153, 29502), (162, 29550), (163, 29562), (177, 29616), (182, 29640), (187, 29655), (193, 29700), (200, 29733), (209, 29781), (210, 29787), (213, 29832), (244, 29973), (259, 30036), (289, 30171), (291, 30228), (300, 30303), (317, 30381), (323, 30396), (330, 30426), (332, 30447), (359, 30573), (375, 30606), (382, 30645), (387, 30693), (402, 30783), (408, 30804),

Gene: Bagrid\_152 Start: 80074, Stop: 81387, Start Num: 89

Candidate Starts for Bagrid\_152:

(Start: 89 @80074 has 5 MA's), (115, 80182), (126, 80227), (136, 80269), (138, 80272), (146, 80311), (157, 80392), (216, 80530), (239, 80602), (292, 80848), (296, 80878), (297, 80890), (331, 80956), (358, 81067), (362, 81109), (372, 81193), (373, 81202), (375, 81211), (381, 81232), (382, 81250), (384, 81286),

Gene: Basilisk\_44 Start: 29453, Stop: 30772, Start Num: 139

Candidate Starts for Basilisk\_44:

(116, 29360), (Start: 135 @29444 has 4 MA's), (Start: 139 @29453 has 45 MA's), (153, 29549), (163, 29609), (177, 29663), (182, 29687), (187, 29702), (190, 29723), (200, 29780), (209, 29828), (213, 29879), (222, 29930), (244, 30020), (253, 30059), (267, 30131), (293, 30281), (332, 30410), (338, 30449), (344, 30482), (375, 30569), (382, 30608), (402, 30746),

Gene: Bedetta\_50 Start: 28689, Stop: 30101, Start Num: 135

Candidate Starts for Bedetta\_50:

(Start: 135 @28689 has 4 MA's), (Start: 139 @28698 has 45 MA's), (149, 28758), (152, 28785), (153, 28794), (162, 28842), (163, 28854), (177, 28908), (182, 28932), (185, 28941), (187, 28947), (192, 28989), (200, 29025), (209, 29073), (213, 29124), (224, 29184), (244, 29265), (253, 29304), (289, 29463), (291, 29520), (293, 29526), (297, 29565), (317, 29673), (323, 29688), (332, 29739), (344, 29811), (375, 29898), (382, 29937), (383, 29940), (392, 30006), (402, 30075),

Gene: Belphegor\_66 Start: 51910, Stop: 53616, Start Num: 39

Candidate Starts for Belphegor\_66:

(38, 51907), (Start: 39 @51910 has 3 MA's), (42, 51937), (50, 51979), (57, 52006), (62, 52027), (67, 52036), (81, 52114), (95, 52165), (107, 52216), (120, 52267), (129, 52312), (156, 52456), (189, 52504), (216, 52600), (228, 52645), (245, 52702), (250, 52714), (292, 52918), (297, 52960), (320, 53080), (332, 53146), (366, 53383), (372, 53398), (375, 53416), (387, 53503), (389, 53515), (400, 53584),

Gene: Bible12\_49 Start: 28526, Stop: 29929, Start Num: 139

Candidate Starts for Bible12\_49:

(69, 28265), (100, 28391), (Start: 139 @28526 has 45 MA's), (145, 28556), (149, 28586), (152, 28613), (153, 28622), (162, 28670), (163, 28682), (177, 28736), (182, 28760), (185, 28769), (187, 28775), (192, 28817), (200, 28853), (209, 28901), (213, 28952), (224, 29012), (244, 29093), (253, 29132), (289, 29291), (291, 29348), (293, 29354), (297, 29393), (317, 29501), (323, 29516), (332, 29567), (344, 29639), (375, 29726), (382, 29765), (383, 29768), (392, 29834), (402, 29903),

Gene: BigNuz\_55 Start: 38221, Stop: 39756, Start Num: 49

Candidate Starts for BigNuz\_55:

(17, 37939), (36, 38140), (43, 38182), (Start: 49 @38221 has 2 MA's), (56, 38248), (58, 38254), (64, 38278), (71, 38314), (72, 38317), (79, 38347), (99, 38413), (136, 38563), (157, 38686), (216, 38824), (239, 38896), (292, 39142), (294, 39160), (305, 39250), (312, 39259), (335, 39301), (362, 39466), (364, 39511), (375, 39553), (379, 39565), (383, 39595), (399, 39709),

Gene: Bipolar\_76 Start: 46390, Stop: 48396, Start Num: 63

Candidate Starts for Bipolar\_76:

(Start: 63 @46390 has 1 MA's), (Start: 83 @46483 has 1 MA's), (91, 46513), (102, 46543), (106, 46579), (115, 46612), (125, 46657), (136, 46699), (138, 46702), (144, 46735), (146, 46741), (157, 46822), (171, 46864), (176, 46879), (183, 46972), (202, 47062), (205, 47074), (222, 47206), (247, 47326), (265, 47449), (279, 47536), (292, 47671), (295, 47692), (296, 47701), (297, 47713), (299, 47737), (332, 47905), (333, 47908), (362, 48088), (363, 48118), (375, 48190), (379, 48202), (381, 48211), (382, 48229), (399, 48346),

Gene: Bogg\_99 Start: 57890, Stop: 59740, Start Num: 86

Candidate Starts for Bogg\_99:

(51, 57743), (59, 57773), (70, 57821), (73, 57836), (76, 57848), (Start: 86 @57890 has 2 MA's), (93, 57908), (115, 58004), (125, 58049), (146, 58133), (171, 58256), (183, 58343), (184, 58349), (202, 58436), (205, 58448), (222, 58580), (247, 58700), (265, 58823), (279, 58910), (292, 59045), (296, 59075), (297, 59087), (332, 59270), (333, 59273), (375, 59561), (383, 59603), (384, 59636), (388, 59651),

Gene: Boilgate\_58 Start: 41641, Stop: 43257, Start Num: 39

Candidate Starts for Boilgate\_58:

(29, 41533), (32, 41566), (Start: 39 @41641 has 3 MA's), (42, 41668), (46, 41698), (67, 41767), (105, 41941), (117, 41992), (120, 41998), (138, 42073), (157, 42193), (240, 42400), (241, 42403), (257, 42451), (264, 42469), (292, 42622), (294, 42640), (296, 42655), (301, 42712), (357, 42904), (375, 43054), (383, 43096), (389, 43153), (400, 43222), (406, 43246),

Gene: Briton15\_63 Start: 42021, Stop: 40291, Start Num: 88

Candidate Starts for Briton15\_63:

(Start: 88 @42021 has 8 MA's), (115, 41913), (125, 41868), (146, 41784), (190, 41643), (214, 41493), (226, 41415), (249, 41310), (251, 41307), (266, 41205), (270, 41196), (296, 40959), (299, 40923), (309, 40860), (332, 40758), (333, 40755), (345, 40677), (362, 40569), (371, 40497), (372, 40485), (373, 40476), (375, 40467), (381, 40446), (382, 40428),

Gene: Brusacoram\_55 Start: 36850, Stop: 38346, Start Num: 47

Candidate Starts for Brusacoram\_55:

(Start: 34 @36748 has 1 MA's), (35, 36757), (37, 36784), (Start: 47 @36850 has 1 MA's), (64, 36910), (72, 36949), (79, 36979), (93, 37036), (113, 37123), (131, 37201), (143, 37246), (194, 37408), (216, 37483), (239, 37555), (292, 37801), (294, 37819), (297, 37843), (339, 37978), (346, 38008), (353, 38044), (369, 38146), (381, 38203), (385, 38263), (394, 38296), (395, 38305), (396, 38308),

Gene: Brushbloom\_75 Start: 46445, Stop: 47815, Start Num: 39

Candidate Starts for Brushbloom\_75:

(30, 46343), (31, 46352), (Start: 39 @46445 has 3 MA's), (44, 46481), (Start: 47 @46505 has 1 MA's), (56, 46541), (65, 46574), (96, 46658), (127, 46733), (146, 46814), (157, 46895), (191, 46994), (223, 47111), (274, 47213), (292, 47300), (295, 47321), (296, 47330), (299, 47366), (332, 47510), (333, 47513), (352, 47615), (362, 47672), (367, 47729), (373, 47765),

Gene: Brynnie\_43 Start: 29310, Stop: 30629, Start Num: 139

Candidate Starts for Brynnie\_43:

(Start: 135 @29301 has 4 MA's), (Start: 139 @29310 has 45 MA's), (153, 29406), (163, 29466), (177, 29520), (182, 29544), (187, 29559), (190, 29580), (200, 29637), (209, 29685), (213, 29736), (222, 29787), (244, 29877), (253, 29916), (267, 29988), (293, 30138), (332, 30267), (338, 30306), (344, 30339), (375, 30426), (382, 30465), (402, 30603),

Gene: Camara\_47 Start: 29475, Stop: 30878, Start Num: 139

Candidate Starts for Camara\_47:

(Start: 139 @29475 has 45 MA's), (152, 29562), (153, 29571), (162, 29619), (163, 29631), (177, 29685), (182, 29709), (200, 29802), (209, 29850), (210, 29856), (212, 29889), (213, 29901), (242, 30024), (244, 30042), (289, 30240), (291, 30297), (293, 30303), (317, 30450), (323, 30465), (330, 30495), (332, 30516), (356, 30633), (359, 30642), (375, 30675), (382, 30714), (383, 30717), (387, 30762), (392, 30783), (402, 30852), (408, 30873),

Gene: Chickaboom\_46 Start: 30037, Stop: 31356, Start Num: 139

Candidate Starts for Chickaboom\_46:

(54, 29689), (Start: 135 @30028 has 4 MA's), (Start: 139 @30037 has 45 MA's), (153, 30133), (163, 30193), (177, 30247), (182, 30271), (187, 30286), (190, 30307), (200, 30364), (209, 30412), (213, 30463), (222, 30514), (244, 30604), (253, 30643), (267, 30715), (293, 30865), (332, 30994), (338, 31033), (344, 31066), (356, 31111), (375, 31153), (383, 31195), (384, 31228), (402, 31330),

Gene: Chicken\_44 Start: 30485, Stop: 31816, Start Num: 135

Candidate Starts for Chicken\_44:

(Start: 135 @30485 has 4 MA's), (Start: 139 @30494 has 45 MA's), (153, 30590), (162, 30638), (163, 30650), (177, 30704), (182, 30728), (187, 30743), (190, 30764), (200, 30821), (209, 30869), (213, 30920), (222, 30971), (244, 31061), (253, 31100), (289, 31259), (338, 31493), (344, 31526), (356, 31571), (375, 31613), (382, 31652), (384, 31688), (402, 31790), (408, 31811),

Gene: Chipper1996\_830 Start: 54205, Stop: 56127, Start Num: 74

Candidate Starts for Chipper1996\_830:

(Start: 74 @54205 has 17 MA's), (90, 54277), (Start: 121 @54409 has 2 MA's), (137, 54481), (145, 54517), (148, 54541), (151, 54559), (158, 54616), (162, 54652), (168, 54682), (172, 54694), (203, 54886), (211, 54955), (217, 54982), (229, 55063), (234, 55078), (237, 55093), (247, 55144), (248, 55162), (257, 55195), (271, 55279), (276, 55306), (285, 55345), (288, 55351), (290, 55405), (291, 55426), (292, 55429), (293, 55432), (294, 55447), (299, 55495), (301, 55516), (313, 55579), (325, 55603), (327, 55621), (328, 55630), (332, 55657), (360, 55792), (361, 55810), (365, 55879), (371, 55903), (372, 55915), (373, 55924), (375, 55933), (388, 56023), (389, 56032), (401, 56107), (404, 56113),

Gene: Chocolat\_82 Start: 53912, Stop: 55834, Start Num: 74

Candidate Starts for Chocolat\_82:

(Start: 74 @53912 has 17 MA's), (90, 53984), (Start: 121 @54116 has 2 MA's), (137, 54188), (145, 54224), (148, 54248), (151, 54266), (158, 54323), (162, 54359), (168, 54389), (172, 54401), (203, 54593), (211, 54662), (217, 54689), (229, 54770), (234, 54785), (237, 54800), (247, 54851), (248, 54869), (257, 54902), (271, 54986), (276, 55013), (285, 55052), (288, 55058), (290, 55112), (291, 55133), (292, 55136), (293, 55139), (294, 55154), (299, 55202), (301, 55223), (313, 55286), (325, 55310), (327, 55328), (328, 55337), (332, 55364), (360, 55499), (361, 55517), (365, 55586), (371, 55610), (372, 55622), (373, 55631), (375, 55640), (388, 55730), (389, 55739), (401, 55814), (404, 55820),

Gene: ChotaBhai\_99 Start: 58278, Stop: 59519, Start Num: 197

Candidate Starts for ChotaBhai\_99:

(151, 58131), (155, 58161), (167, 58209), (173, 58224), (189, 58236), (Start: 197 @58278 has 1 MA's), (201, 58296), (218, 58392), (225, 58437), (246, 58521), (272, 58644), (284, 58731), (287, 58737), (292, 58827), (296, 58857), (297, 58869), (309, 58956), (333, 59061), (341, 59124), (362, 59238), (383, 59382), (384, 59415),

Gene: Chubster\_83 Start: 54594, Stop: 56483, Start Num: 74

Candidate Starts for Chubster\_83:

(Start: 74 @54594 has 17 MA's), (90, 54666), (Start: 121 @54798 has 2 MA's), (137, 54837), (145, 54873), (148, 54897), (151, 54915), (158, 54972), (162, 55008), (168, 55038), (172, 55050), (203, 55242), (217, 55338), (229, 55419), (234, 55434), (237, 55449), (247, 55500), (248, 55518), (257, 55551), (271, 55635), (285, 55701), (288, 55707), (290, 55761), (291, 55782), (292, 55785), (293, 55788), (294, 55803), (299, 55851), (301, 55872), (313, 55935), (325, 55959), (327, 55977), (328, 55986), (332, 56013), (360, 56148), (361, 56166), (365, 56235), (371, 56259), (372, 56271), (373, 56280), (375, 56289), (387, 56376), (388, 56379), (389, 56388), (401, 56463), (404, 56469),

Gene: Colucci\_85 Start: 54914, Stop: 56491, Start Num: 121

Candidate Starts for Colucci\_85:

(Start: 121 @54914 has 2 MA's), (145, 55001), (147, 55007), (148, 55025), (158, 55100), (162, 55136), (168, 55166), (211, 55439), (217, 55466), (229, 55547), (234, 55562), (237, 55577), (245, 55619), (247, 55628), (248, 55646), (257, 55679), (285, 55829), (288, 55835), (290, 55889), (293, 55916), (294, 55931), (299, 55979), (301, 56000), (306, 56036), (313, 56063), (329, 56117), (332, 56141), (356, 56255), (371, 56267), (375, 56297), (388, 56387), (389, 56396), (401, 56471),

Gene: Colusalem\_46 Start: 28508, Stop: 29911, Start Num: 139

Candidate Starts for Colusalem\_46:

(69, 28247), (100, 28373), (Start: 139 @28508 has 45 MA's), (145, 28538), (149, 28568), (151, 28580), (153, 28604), (162, 28652), (177, 28718), (182, 28742), (187, 28757), (200, 28835), (209, 28883), (213, 28934), (224, 28994), (244, 29075), (253, 29114), (289, 29273), (291, 29330), (293, 29336), (297, 29375), (317, 29483), (323, 29498), (332, 29549), (344, 29621), (375, 29708), (382, 29747), (383, 29750), (392, 29816), (402, 29885),

Gene: Conboy\_80 Start: 53694, Stop: 55583, Start Num: 74

Candidate Starts for Conboy\_80:

(Start: 74 @53694 has 17 MA's), (90, 53766), (Start: 121 @53898 has 2 MA's), (137, 53937), (145, 53973), (148, 53997), (151, 54015), (158, 54072), (162, 54108), (168, 54138), (172, 54150), (203, 54342), (211, 54411), (217, 54438), (229, 54519), (234, 54534), (237, 54549), (247, 54600), (248, 54618), (257, 54651), (271, 54735), (285, 54801), (288, 54807), (290, 54861), (291, 54882), (292, 54885), (293, 54888), (294, 54903), (299, 54951), (301, 54972), (313, 55035), (325, 55059), (327, 55077), (328, 55086), (332, 55113), (360, 55248), (361, 55266), (365, 55335), (371, 55359), (372, 55371), (373, 55380), (375, 55389), (388, 55479), (389, 55488), (401, 55563), (404, 55569),

Gene: Coral\_45 Start: 28399, Stop: 29802, Start Num: 139

Candidate Starts for Coral\_45:

(Start: 135 @28390 has 4 MA's), (Start: 139 @28399 has 45 MA's), (149, 28459), (152, 28486), (153, 28495), (162, 28543), (163, 28555), (177, 28609), (182, 28633), (185, 28642), (187, 28648), (192, 28690), (200, 28726), (209, 28774), (213, 28825), (224, 28885), (244, 28966), (253, 29005), (289, 29164), (291, 29221), (293, 29227), (297, 29266), (317, 29374), (323, 29389), (332, 29440), (344, 29512), (375, 29599), (382, 29638), (383, 29641), (392, 29707), (402, 29776),

Gene: Cote\_47 Start: 28876, Stop: 30279, Start Num: 139

Candidate Starts for Cote\_47:

(Start: 135 @28867 has 4 MA's), (Start: 139 @28876 has 45 MA's), (149, 28936), (152, 28963), (153, 28972), (162, 29020), (163, 29032), (177, 29086), (182, 29110), (185, 29119), (187, 29125), (192, 29167), (200, 29203), (209, 29251), (213, 29302), (224, 29362), (244, 29443), (253, 29482), (289, 29641), (291, 29698), (293, 29704), (297, 29743), (317, 29851), (323, 29866), (332, 29917), (344, 29989), (375, 30076), (382, 30115), (383, 30118), (392, 30184), (402, 30253),

Gene: Cygnet\_47 Start: 30311, Stop: 31729, Start Num: 139

Candidate Starts for Cygnet\_47:

(Start: 139 @30311 has 45 MA's), (153, 30407), (162, 30455), (163, 30467), (177, 30521), (182, 30545), (200, 30638), (209, 30686), (210, 30692), (213, 30737), (244, 30878), (259, 30941), (267, 30989), (293, 31142), (294, 31157), (297, 31181), (332, 31364), (356, 31484), (375, 31526), (381, 31547), (383, 31568), (387, 31613), (392, 31634), (402, 31703), (405, 31712),

Gene: DS6A\_73 Start: 47459, Stop: 48829, Start Num: 142

Candidate Starts for DS6A\_73:

(Start: 142 @47459 has 1 MA's), (145, 47483), (150, 47516), (158, 47582), (169, 47648), (209, 47882), (213, 47933), (244, 48065), (255, 48113), (269, 48188), (292, 48323), (293, 48326), (294, 48341), (359, 48593), (371, 48596), (375, 48626), (379, 48638), (380, 48644), (381, 48647), (383, 48668), (391, 48731),

Gene: Daenerys\_61 Start: 41682, Stop: 43196, Start Num: 40

Candidate Starts for Daenerys\_61:

(20, 41505), (Start: 40 @41682 has 13 MA's), (Start: 47 @41739 has 1 MA's), (56, 41775), (65, 41808), (122, 42030), (131, 42072), (154, 42198), (157, 42216), (166, 42276), (192, 42318), (Start: 197 @42330 has 1 MA's), (227, 42423), (238, 42447), (256, 42507), (292, 42630), (295, 42651), (296, 42660), (306, 42753), (343, 42933), (362, 43053), (368, 43113), (373, 43146), (376, 43155), (377, 43158),

Gene: Damocles\_49 Start: 28697, Stop: 30070, Start Num: 145

Candidate Starts for Damocles\_49:

(69, 28406), (100, 28532), (Start: 139 @28667 has 45 MA's), (145, 28697), (149, 28727), (151, 28739), (153, 28763), (162, 28811), (177, 28877), (182, 28901), (187, 28916), (200, 28994), (209, 29042), (213, 29093), (224, 29153), (244, 29234), (253, 29273), (289, 29432), (291, 29489), (293, 29495), (297, 29534), (317, 29642), (323, 29657), (332, 29708), (344, 29780), (375, 29867), (382, 29906), (383, 29909), (392, 29975), (402, 30044),

Gene: DanHam62\_47 Start: 29583, Stop: 30986, Start Num: 139

Candidate Starts for DanHam62\_47:

(Start: 139 @29583 has 45 MA's), (152, 29670), (162, 29727), (163, 29739), (177, 29793), (182, 29817), (200, 29910), (209, 29958), (210, 29964), (212, 29997), (213, 30009), (244, 30150), (289, 30348), (291, 30405), (293, 30411), (317, 30558), (323, 30573), (330, 30603), (332, 30624), (356, 30741), (359, 30750), (375, 30783), (382, 30822), (383, 30825), (387, 30870), (392, 30891), (402,

30960), (408, 30981),

Gene: Daob\_47 Start: 28875, Stop: 30287, Start Num: 135

Candidate Starts for Daob\_47:

(Start: 135 @28875 has 4 MA's), (Start: 139 @28884 has 45 MA's), (149, 28944), (152, 28971), (153, 28980), (162, 29028), (177, 29094), (182, 29118), (185, 29127), (187, 29133), (192, 29175), (200, 29211), (209, 29259), (213, 29310), (224, 29370), (244, 29451), (253, 29490), (289, 29649), (291, 29706), (293, 29712), (297, 29751), (317, 29859), (323, 29874), (332, 29925), (344, 29997), (375, 30084), (382, 30123), (392, 30192), (402, 30261),

Gene: DrYang\_79 Start: 54332, Stop: 56248, Start Num: 74

Candidate Starts for DrYang\_79:

(Start: 74 @54332 has 17 MA's), (90, 54404), (111, 54491), (Start: 121 @54536 has 2 MA's), (137, 54602), (145, 54638), (148, 54662), (149, 54668), (153, 54704), (158, 54737), (162, 54773), (168, 54803), (203, 55007), (211, 55076), (217, 55103), (229, 55184), (234, 55199), (237, 55214), (245, 55256), (247, 55265), (254, 55301), (257, 55316), (285, 55466), (288, 55472), (290, 55526), (291, 55547), (292, 55550), (293, 55553), (294, 55568), (298, 55595), (299, 55616), (301, 55637), (313, 55700), (325, 55724), (332, 55778), (344, 55847), (361, 55931), (365, 56000), (370, 56021), (372, 56036), (373, 56045), (375, 56054), (381, 56075), (383, 56096), (388, 56144), (389, 56153), (401, 56228),

Gene: Duke13\_147 Start: 77664, Stop: 78977, Start Num: 89

Candidate Starts for Duke13\_147:

(Start: 89 @77664 has 5 MA's), (115, 77772), (126, 77817), (136, 77859), (138, 77862), (146, 77901), (157, 77982), (216, 78120), (239, 78192), (292, 78438), (296, 78468), (297, 78480), (331, 78546), (358, 78657), (362, 78699), (372, 78783), (373, 78792), (375, 78801), (381, 78822), (382, 78840), (384, 78876),

Gene: EdgarPoe\_81 Start: 54069, Stop: 55991, Start Num: 74

Candidate Starts for EdgarPoe\_81:

(Start: 74 @54069 has 17 MA's), (90, 54141), (Start: 121 @54273 has 2 MA's), (137, 54345), (145, 54381), (148, 54405), (151, 54423), (158, 54480), (162, 54516), (168, 54546), (172, 54558), (203, 54750), (211, 54819), (217, 54846), (229, 54927), (234, 54942), (237, 54957), (247, 55008), (248, 55026), (257, 55059), (271, 55143), (276, 55170), (285, 55209), (288, 55215), (290, 55269), (291, 55290), (292, 55293), (293, 55296), (294, 55311), (299, 55359), (301, 55380), (313, 55443), (325, 55467), (327, 55485), (328, 55494), (332, 55521), (360, 55656), (361, 55674), (365, 55743), (371, 55767), (372, 55779), (373, 55788), (375, 55797), (388, 55887), (389, 55896), (401, 55971), (404, 55977),

Gene: Eesa\_44 Start: 30907, Stop: 32226, Start Num: 139

Candidate Starts for Eesa\_44:

(98, 30748), (103, 30763), (Start: 135 @30898 has 4 MA's), (Start: 139 @30907 has 45 MA's), (153, 31003), (162, 31051), (163, 31063), (177, 31117), (182, 31141), (187, 31156), (190, 31177), (200, 31234), (209, 31282), (213, 31333), (222, 31384), (244, 31474), (261, 31540), (263, 31552), (292, 31732), (294, 31750), (332, 31864), (338, 31903), (344, 31936), (375, 32023), (382, 32062), (383, 32065), (384, 32098), (393, 32137), (397, 32164), (398, 32170), (402, 32200), (408, 32221),

Gene: EleanorGeorge\_68 Start: 43670, Stop: 44953, Start Num: 40

Candidate Starts for EleanorGeorge\_68:

(Start: 40 @43670 has 13 MA's), (44, 43703), (Start: 47 @43727 has 1 MA's), (65, 43796), (131, 43979), (132, 43982), (136, 44000), (138, 44003), (191, 44222), (223, 44339), (274, 44441), (292, 44528), (296, 44558), (352, 44753), (362, 44810), (367, 44867), (373, 44903),

Gene: EricMillard\_143 Start: 79016, Stop: 80329, Start Num: 89

Candidate Starts for EricMillard\_143:

(Start: 89 @79016 has 5 MA's), (115, 79124), (126, 79169), (136, 79211), (138, 79214), (146, 79253), (157, 79334), (216, 79472), (239, 79544), (292, 79790), (296, 79820), (297, 79832), (331, 79898), (358, 80009), (362, 80051), (372, 80135), (373, 80144), (375, 80153), (381, 80174), (382, 80192), (384, 80228),

Gene: Filuzino\_74 Start: 46234, Stop: 48309, Start Num: 83

Candidate Starts for Filuzino\_74:

(48, 46084), (53, 46099), (61, 46135), (Start: 83 @46234 has 1 MA's), (91, 46264), (102, 46294), (106, 46330), (115, 46363), (125, 46408), (136, 46450), (138, 46453), (154, 46555), (159, 46603), (165, 46657), (175, 46696), (178, 46771), (179, 46783), (183, 46828), (186, 46873), (202, 46978), (205, 46990), (222, 47122), (265, 47365), (279, 47452), (292, 47587), (295, 47608), (296, 47617), (299, 47653), (322, 47755), (332, 47818), (333, 47821), (342, 47884), (362, 48001), (375, 48103), (379, 48115), (382, 48142), (399, 48259),

Gene: Fingolfin\_47 Start: 29586, Stop: 30989, Start Num: 139

Candidate Starts for Fingolfin\_47:

(Start: 139 @29586 has 45 MA's), (152, 29673), (153, 29682), (162, 29730), (163, 29742), (177, 29796), (182, 29820), (200, 29913), (209, 29961), (210, 29967), (212, 30000), (213, 30012), (242, 30135), (244, 30153), (289, 30351), (291, 30408), (293, 30414), (317, 30561), (323, 30576), (330, 30606), (332, 30627), (356, 30744), (359, 30753), (375, 30786), (382, 30825), (383, 30828), (387, 30873), (392, 30894), (402, 30963), (408, 30984),

Gene: Galaxy\_43 Start: 28676, Stop: 29995, Start Num: 139

Candidate Starts for Galaxy\_43:

(97, 28526), (Start: 135 @28667 has 4 MA's), (Start: 139 @28676 has 45 MA's), (153, 28772), (162, 28820), (163, 28832), (177, 28886), (182, 28910), (187, 28925), (200, 29003), (209, 29051), (213, 29102), (224, 29162), (244, 29243), (253, 29282), (291, 29498), (293, 29504), (294, 29519), (333, 29636), (338, 29672), (344, 29705), (375, 29792), (380, 29810), (402, 29969),

Gene: Glotell\_48 Start: 29631, Stop: 31034, Start Num: 139

Candidate Starts for Glotell\_48:

(Start: 139 @29631 has 45 MA's), (152, 29718), (153, 29727), (162, 29775), (163, 29787), (177, 29841), (182, 29865), (200, 29958), (209, 30006), (210, 30012), (212, 30045), (213, 30057), (242, 30180), (244, 30198), (291, 30453), (293, 30459), (317, 30606), (323, 30621), (330, 30651), (332, 30672), (333, 30675), (356, 30789), (359, 30798), (375, 30831), (382, 30870), (383, 30873), (387, 30918), (392, 30939), (402, 31008), (408, 31029),

Gene: Gonephishing\_142 Start: 76140, Stop: 77969, Start Num: 87

Candidate Starts for Gonephishing\_142:

(87, 76140), (115, 76248), (125, 76293), (144, 76371), (146, 76377), (171, 76500), (202, 76662), (205, 76674), (222, 76806), (265, 77049), (279, 77136), (292, 77271), (295, 77292), (296, 77301), (299, 77337), (322, 77439), (332, 77502), (333, 77505), (372, 77775), (373, 77784), (375, 77793), (381, 77814), (382, 77832), (384, 77868),

Gene: GramZayde\_47 Start: 28703, Stop: 30115, Start Num: 135

Candidate Starts for GramZayde\_47:

(Start: 135 @28703 has 4 MA's), (Start: 139 @28712 has 45 MA's), (149, 28772), (152, 28799), (153, 28808), (162, 28856), (163, 28868), (177, 28922), (182, 28946), (185, 28955), (187, 28961), (192, 29003), (200, 29039), (209, 29087), (213, 29138), (224, 29198), (244, 29279), (253, 29318), (289, 29477), (291, 29534), (293, 29540), (297, 29579), (317, 29687), (323, 29702), (332, 29753), (344, 29825), (375, 29912), (382, 29951), (383, 29954), (392, 30020), (402, 30089),

Gene: Gravel\_54 Start: 30988, Stop: 32316, Start Num: 135

Candidate Starts for Gravel\_54:

(98, 30838), (103, 30853), (Start: 135 @30988 has 4 MA's), (Start: 139 @30997 has 45 MA's), (153, 31093), (162, 31141), (163, 31153), (177, 31207), (182, 31231), (187, 31246), (190, 31267), (200, 31324), (209, 31372), (213, 31423), (222, 31474), (244, 31564), (263, 31642), (294, 31840), (332, 31954), (338, 31993), (344, 32026), (375, 32113), (383, 32155), (384, 32188), (393, 32227), (397, 32254), (398, 32260), (402, 32290), (408, 32311),

Gene: HamCheese\_47 Start: 29570, Stop: 30973, Start Num: 139

Candidate Starts for HamCheese\_47:

(Start: 139 @29570 has 45 MA's), (152, 29657), (153, 29666), (163, 29726), (177, 29780), (182, 29804), (200, 29897), (209, 29945), (210, 29951), (212, 29984), (213, 29996), (244, 30137), (289, 30335), (291, 30392), (293, 30398), (317, 30545), (323, 30560), (330, 30590), (332, 30611), (356, 30728), (359, 30737), (375, 30770), (382, 30809), (383, 30812), (387, 30857), (392, 30878), (402, 30947), (408, 30968),

Gene: HanShotFirst\_60 Start: 41970, Stop: 40321, Start Num: 88

Candidate Starts for HanShotFirst\_60:

(Start: 88 @41970 has 8 MA's), (115, 41862), (125, 41817), (146, 41733), (190, 41592), (214, 41442), (226, 41364), (249, 41259), (251, 41256), (266, 41154), (270, 41145), (292, 40938), (296, 40908), (299, 40872), (333, 40785), (372, 40515), (373, 40506), (375, 40497), (381, 40476), (382, 40458), (384, 40422),

Gene: HannahPhantana\_46 Start: 28526, Stop: 29929, Start Num: 139

Candidate Starts for HannahPhantana\_46:

(69, 28265), (100, 28391), (Start: 139 @28526 has 45 MA's), (145, 28556), (149, 28586), (152, 28613), (153, 28622), (162, 28670), (163, 28682), (177, 28736), (182, 28760), (185, 28769), (187, 28775), (192, 28817), (200, 28853), (209, 28901), (213, 28952), (224, 29012), (244, 29093), (253, 29132), (289, 29291), (291, 29348), (293, 29354), (297, 29393), (317, 29501), (323, 29516), (332, 29567), (344, 29639), (375, 29726), (382, 29765), (383, 29768), (392, 29834), (402, 29903),

Gene: Harley\_68 Start: 43294, Stop: 44805, Start Num: 40

Candidate Starts for Harley\_68:

(19, 43117), (21, 43123), (23, 43132), (Start: 40 @43294 has 13 MA's), (Start: 47 @43351 has 1 MA's), (56, 43387), (65, 43420), (122, 43642), (131, 43684), (154, 43810), (157, 43828), (166, 43888), (192, 43930), (Start: 197 @43942 has 1 MA's), (227, 44035), (238, 44059), (256, 44119), (292, 44242), (295, 44263), (296, 44272), (299, 44308), (321, 44410), (332, 44473), (333, 44476), (362, 44662), (368, 44722), (373, 44755), (376, 44764), (377, 44767),

Gene: Hegedechwinu\_73 Start: 43329, Stop: 44918, Start Num: 14

Candidate Starts for Hegedechwinu\_73:

(Start: 14 @43329 has 1 MA's), (18, 43368), (25, 43398), (27, 43434), (31, 43467), (60, 43668), (68, 43701), (108, 43878), (114, 43902), (124, 43965), (131, 43989), (132, 43992), (275, 44226), (292, 44328), (295, 44349), (296, 44358), (299, 44394), (352, 44553), (362, 44610), (375, 44712), (379, 44724), (381, 44733), (383, 44754), (399, 44868),

Gene: HumptyDumpty\_82 Start: 53872, Stop: 55794, Start Num: 74

Candidate Starts for HumptyDumpty\_82:

(Start: 74 @53872 has 17 MA's), (90, 53944), (Start: 121 @54076 has 2 MA's), (137, 54148), (145, 54184), (148, 54208), (151, 54226), (158, 54283), (162, 54319), (168, 54349), (172, 54361), (203, 54553), (211, 54622), (217, 54649), (229, 54730), (234, 54745), (237, 54760), (247, 54811), (248, 54829), (257, 54862), (271, 54946), (276, 54973), (285, 55012), (288, 55018), (290, 55072), (291,

55093), (292, 55096), (293, 55099), (294, 55114), (299, 55162), (301, 55183), (313, 55246), (325, 55270), (327, 55288), (328, 55297), (332, 55324), (360, 55459), (361, 55477), (365, 55546), (371, 55570), (372, 55582), (373, 55591), (375, 55600), (388, 55690), (389, 55699), (401, 55774), (404, 55780),

Gene: Inyanga\_54 Start: 39801, Stop: 38044, Start Num: 87

Candidate Starts for Inyanga\_54:

(87, 39801), (115, 39693), (125, 39648), (146, 39564), (171, 39441), (174, 39429), (180, 39384), (202, 39267), (205, 39255), (222, 39123), (265, 38880), (279, 38793), (292, 38658), (296, 38628), (299, 38592), (333, 38505), (362, 38322), (372, 38238), (373, 38229), (375, 38220), (381, 38199), (382, 38181), (384, 38145),

Gene: Iqorha\_54 Start: 39800, Stop: 38043, Start Num: 87

Candidate Starts for Iqorha\_54:

(87, 39800), (115, 39692), (125, 39647), (146, 39563), (171, 39440), (174, 39428), (180, 39383), (202, 39266), (205, 39254), (222, 39122), (265, 38879), (279, 38792), (292, 38657), (296, 38627), (299, 38591), (333, 38504), (362, 38321), (372, 38237), (373, 38228), (375, 38219), (381, 38198), (382, 38180), (384, 38144),

Gene: JaNo\_81 Start: 53843, Stop: 55765, Start Num: 74

Candidate Starts for JaNo\_81:

(Start: 74 @53843 has 17 MA's), (90, 53915), (Start: 121 @54047 has 2 MA's), (137, 54119), (145, 54155), (148, 54179), (151, 54197), (158, 54254), (162, 54290), (168, 54320), (172, 54332), (203, 54524), (211, 54593), (217, 54620), (229, 54701), (234, 54716), (237, 54731), (247, 54782), (248, 54800), (257, 54833), (271, 54917), (276, 54944), (285, 54983), (288, 54989), (290, 55043), (291, 55064), (292, 55067), (293, 55070), (294, 55085), (299, 55133), (301, 55154), (313, 55217), (325, 55241), (327, 55259), (328, 55268), (332, 55295), (360, 55430), (361, 55448), (365, 55517), (371, 55541), (372, 55553), (373, 55562), (375, 55571), (388, 55661), (389, 55670), (401, 55745), (404, 55751),

Gene: Jamun\_44 Start: 30191, Stop: 31510, Start Num: 139

Candidate Starts for Jamun\_44:

(128, 30158), (Start: 135 @30182 has 4 MA's), (Start: 139 @30191 has 45 MA's), (161, 30332), (163, 30347), (177, 30401), (182, 30425), (190, 30461), (200, 30518), (209, 30566), (213, 30617), (244, 30758), (253, 30797), (291, 31013), (293, 31019), (332, 31148), (338, 31187), (356, 31265), (375, 31307), (381, 31328), (382, 31346), (383, 31349), (402, 31484),

Gene: JayCookie\_82 Start: 54405, Stop: 56327, Start Num: 74

Candidate Starts for JayCookie\_82:

(Start: 74 @54405 has 17 MA's), (90, 54477), (Start: 121 @54609 has 2 MA's), (137, 54681), (145, 54717), (148, 54741), (151, 54759), (158, 54816), (162, 54852), (168, 54882), (172, 54894), (203, 55086), (211, 55155), (217, 55182), (229, 55263), (234, 55278), (237, 55293), (247, 55344), (248, 55362), (257, 55395), (271, 55479), (285, 55545), (288, 55551), (290, 55605), (291, 55626), (292, 55629), (293, 55632), (294, 55647), (299, 55695), (301, 55716), (313, 55779), (325, 55803), (327, 55821), (328, 55830), (332, 55857), (360, 55992), (361, 56010), (365, 56079), (371, 56103), (372, 56115), (373, 56124), (375, 56133), (388, 56223), (389, 56232), (401, 56307), (404, 56313),

Gene: Jerole\_46 Start: 28650, Stop: 30053, Start Num: 139

Candidate Starts for Jerole\_46:

(69, 28389), (100, 28515), (Start: 139 @28650 has 45 MA's), (145, 28680), (149, 28710), (151, 28722), (153, 28746), (162, 28794), (177, 28860), (182, 28884), (187, 28899), (200, 28977), (209, 29025), (213, 29076), (224, 29136), (244, 29217), (253, 29256), (289, 29415), (291, 29472), (293, 29478), (297, 29517), (317, 29625), (323, 29640), (332, 29691), (344, 29763), (375, 29850), (382, 29889),

(383, 29892), (392, 29958), (402, 30027),

Gene: JoeyJr\_62 Start: 41850, Stop: 43364, Start Num: 40

Candidate Starts for JoeyJr\_62:

(20, 41673), (Start: 40 @41850 has 13 MA's), (Start: 47 @41907 has 1 MA's), (56, 41943), (65, 41976), (122, 42198), (131, 42240), (154, 42366), (157, 42384), (166, 42444), (192, 42486), (Start: 197 @42498 has 1 MA's), (227, 42591), (238, 42615), (256, 42675), (292, 42798), (295, 42819), (296, 42828), (306, 42921), (343, 43101), (362, 43221), (368, 43281), (373, 43314), (376, 43323), (377, 43326),

Gene: Juno112\_46 Start: 29586, Stop: 30989, Start Num: 139

Candidate Starts for Juno112\_46:

(Start: 139 @29586 has 45 MA's), (152, 29673), (153, 29682), (162, 29730), (163, 29742), (177, 29796), (182, 29820), (200, 29913), (209, 29961), (210, 29967), (212, 30000), (213, 30012), (242, 30135), (244, 30153), (289, 30351), (291, 30408), (293, 30414), (317, 30561), (323, 30576), (330, 30606), (332, 30627), (356, 30744), (359, 30753), (375, 30786), (382, 30825), (383, 30828), (387, 30873), (392, 30894), (402, 30963), (408, 30984),

Gene: KBurrousTX\_81 Start: 56110, Stop: 57699, Start Num: 121

Candidate Starts for KBurrousTX\_81:

(112, 56071), (Start: 121 @56110 has 2 MA's), (137, 56176), (145, 56212), (147, 56218), (148, 56236), (158, 56311), (162, 56347), (168, 56377), (203, 56581), (211, 56650), (217, 56677), (229, 56758), (234, 56773), (237, 56788), (245, 56830), (247, 56839), (248, 56857), (254, 56875), (257, 56890), (285, 57040), (288, 57046), (290, 57100), (292, 57124), (294, 57142), (298, 57169), (299, 57190), (301, 57211), (308, 57256), (313, 57274), (329, 57331), (332, 57355), (334, 57361), (337, 57382), (372, 57493), (375, 57511), (381, 57532), (388, 57601), (389, 57610), (393, 57625), (401, 57685), (404, 57691),

Gene: KHumphrey\_47 Start: 29474, Stop: 30877, Start Num: 139

Candidate Starts for KHumphrey\_47:

(Start: 139 @29474 has 45 MA's), (152, 29561), (153, 29570), (162, 29618), (163, 29630), (177, 29684), (182, 29708), (200, 29801), (209, 29849), (210, 29855), (212, 29888), (213, 29900), (242, 30023), (244, 30041), (289, 30239), (291, 30296), (293, 30302), (317, 30449), (323, 30464), (330, 30494), (332, 30515), (356, 30632), (359, 30641), (375, 30674), (382, 30713), (383, 30716), (387, 30761), (392, 30782), (402, 30851),

Gene: Kabreeze\_82 Start: 53929, Stop: 55851, Start Num: 74

Candidate Starts for Kabreeze\_82:

(Start: 74 @53929 has 17 MA's), (90, 54001), (Start: 121 @54133 has 2 MA's), (137, 54205), (145, 54241), (148, 54265), (151, 54283), (158, 54340), (162, 54376), (168, 54406), (172, 54418), (203, 54610), (211, 54679), (217, 54706), (229, 54787), (234, 54802), (237, 54817), (247, 54868), (248, 54886), (257, 54919), (271, 55003), (276, 55030), (285, 55069), (288, 55075), (290, 55129), (291, 55150), (292, 55153), (293, 55156), (294, 55171), (299, 55219), (301, 55240), (313, 55303), (325, 55327), (327, 55345), (328, 55354), (332, 55381), (360, 55516), (361, 55534), (365, 55603), (371, 55627), (372, 55639), (373, 55648), (375, 55657), (388, 55747), (389, 55756), (401, 55831), (404, 55837),

Gene: KendraB23\_55 Start: 31175, Stop: 32503, Start Num: 135

Candidate Starts for KendraB23\_55:

(98, 31025), (103, 31040), (Start: 135 @31175 has 4 MA's), (Start: 139 @31184 has 45 MA's), (153, 31280), (162, 31328), (163, 31340), (177, 31394), (182, 31418), (187, 31433), (190, 31454), (200, 31511), (209, 31559), (213, 31610), (222, 31661), (244, 31751), (261, 31817), (263, 31829), (292, 32009), (294, 32027), (332, 32141), (338, 32180), (344, 32213), (375, 32300), (382, 32339), (383,

32342), (384, 32375), (393, 32414), (397, 32441), (398, 32447), (402, 32477), (408, 32498),

Gene: Kepler\_47 Start: 29294, Stop: 30697, Start Num: 139

Candidate Starts for Kepler\_47:

(Start: 135 @29285 has 4 MA's), (Start: 139 @29294 has 45 MA's), (149, 29354), (152, 29381), (153, 29390), (162, 29438), (163, 29450), (177, 29504), (182, 29528), (185, 29537), (187, 29543), (192, 29585), (200, 29621), (209, 29669), (213, 29720), (224, 29780), (244, 29861), (253, 29900), (289, 30059), (291, 30116), (293, 30122), (297, 30161), (317, 30269), (323, 30284), (332, 30335), (344, 30407), (375, 30494), (382, 30533), (392, 30602), (402, 30671),

Gene: Kersh\_68 Start: 45094, Stop: 47070, Start Num: 16

Candidate Starts for Kersh\_68:

(6, 44980), (Start: 16 @45094 has 4 MA's), (25, 45151), (26, 45163), (31, 45220), (45, 45361), (52, 45391), (55, 45406), (68, 45454), (78, 45505), (94, 45568), (104, 45616), (108, 45631), (110, 45640), (114, 45655), (118, 45679), (129, 45736), (131, 45742), (132, 45745), (136, 45763), (138, 45766), (208, 46036), (221, 46084), (226, 46120), (273, 46210), (277, 46228), (292, 46351), (294, 46369), (296, 46381), (297, 46393), (321, 46519), (332, 46582), (333, 46585), (362, 46765), (363, 46795), (375, 46867), (379, 46879), (383, 46909),

Gene: Kuleana\_47 Start: 28864, Stop: 30267, Start Num: 141

Candidate Starts for Kuleana\_47:

(133, 28849), (Start: 139 @28861 has 45 MA's), (Start: 141 @28864 has 2 MA's), (149, 28921), (153, 28957), (163, 29017), (177, 29071), (185, 29104), (187, 29110), (200, 29188), (209, 29236), (213, 29287), (224, 29347), (244, 29428), (289, 29629), (291, 29686), (293, 29692), (294, 29707), (317, 29839), (323, 29854), (332, 29905), (333, 29908), (338, 29944), (344, 29977), (359, 30031), (375, 30064), (378, 30073), (381, 30085), (383, 30106), (402, 30241), (405, 30250),

Gene: Lamina13\_61 Start: 41357, Stop: 39765, Start Num: 88

Candidate Starts for Lamina13\_61:

(Start: 88 @41357 has 8 MA's), (115, 41249), (125, 41204), (146, 41120), (190, 40979), (214, 40829), (226, 40751), (249, 40646), (251, 40643), (266, 40541), (270, 40532), (292, 40325), (296, 40295), (301, 40238), (350, 40100), (355, 40097), (362, 40043), (372, 39959), (373, 39950), (375, 39941), (381, 39920), (382, 39902), (384, 39866),

Gene: Laphuphu24k\_46 Start: 29570, Stop: 30973, Start Num: 139

Candidate Starts for Laphuphu24k\_46:

(Start: 139 @29570 has 45 MA's), (152, 29657), (153, 29666), (163, 29726), (177, 29780), (182, 29804), (200, 29897), (209, 29945), (210, 29951), (212, 29984), (213, 29996), (244, 30137), (289, 30335), (291, 30392), (293, 30398), (317, 30545), (323, 30560), (330, 30590), (332, 30611), (356, 30728), (359, 30737), (375, 30770), (382, 30809), (383, 30812), (387, 30857), (392, 30878), (402, 30947), (408, 30968),

Gene: Leona\_46 Start: 29662, Stop: 31065, Start Num: 135

Candidate Starts for Leona\_46:

(132, 29653), (Start: 135 @29662 has 4 MA's), (152, 29749), (153, 29758), (162, 29806), (163, 29818), (177, 29872), (182, 29896), (187, 29911), (193, 29956), (200, 29989), (209, 30037), (210, 30043), (212, 30076), (213, 30088), (244, 30229), (289, 30427), (291, 30484), (317, 30637), (323, 30652), (330, 30682), (332, 30703), (356, 30820), (359, 30829), (375, 30862), (387, 30949), (392, 30970), (402, 31039), (408, 31060),

Gene: Leperchaun\_59 Start: 41080, Stop: 42594, Start Num: 40

Candidate Starts for Leperchaun\_59:

(20, 40903), (Start: 40 @41080 has 13 MA's), (Start: 47 @41137 has 1 MA's), (56, 41173), (65, 41206), (122, 41428), (131, 41470), (154, 41596), (157, 41614), (166, 41674), (192, 41716), (Start: 197 @41728 has 1 MA's), (227, 41821), (238, 41845), (256, 41905), (292, 42028), (295, 42049), (296, 42058), (306, 42151), (343, 42331), (362, 42451), (368, 42511), (373, 42544), (376, 42553), (377, 42556),

Gene: Linus\_82 Start: 54377, Stop: 56299, Start Num: 74

Candidate Starts for Linus\_82:

(Start: 74 @54377 has 17 MA's), (90, 54449), (Start: 121 @54581 has 2 MA's), (137, 54653), (145, 54689), (148, 54713), (151, 54731), (158, 54788), (162, 54824), (168, 54854), (172, 54866), (203, 55058), (211, 55127), (217, 55154), (229, 55235), (234, 55250), (237, 55265), (247, 55316), (248, 55334), (257, 55367), (271, 55451), (285, 55517), (288, 55523), (290, 55577), (291, 55598), (292, 55601), (293, 55604), (294, 55619), (299, 55667), (301, 55688), (313, 55751), (325, 55775), (327, 55793), (328, 55802), (332, 55829), (360, 55964), (361, 55982), (365, 56051), (371, 56075), (372, 56087), (373, 56096), (375, 56105), (388, 56195), (389, 56204), (401, 56279), (404, 56285),

Gene: LittleTokyo\_45 Start: 28365, Stop: 29681, Start Num: 139

Candidate Starts for LittleTokyo\_45:

(Start: 139 @28365 has 45 MA's), (152, 28452), (153, 28461), (162, 28509), (163, 28521), (177, 28575), (182, 28599), (187, 28614), (200, 28692), (209, 28740), (210, 28746), (213, 28791), (244, 28932), (267, 29043), (289, 29133), (291, 29190), (297, 29235), (332, 29316), (356, 29436), (375, 29478), (381, 29499), (383, 29520), (392, 29586), (402, 29655),

Gene: Lunar\_47 Start: 29201, Stop: 30613, Start Num: 135

Candidate Starts for Lunar\_47:

(Start: 135 @29201 has 4 MA's), (Start: 139 @29210 has 45 MA's), (149, 29270), (152, 29297), (153, 29306), (162, 29354), (163, 29366), (177, 29420), (182, 29444), (185, 29453), (187, 29459), (192, 29501), (200, 29537), (209, 29585), (213, 29636), (224, 29696), (244, 29777), (253, 29816), (289, 29975), (291, 30032), (293, 30038), (297, 30077), (317, 30185), (323, 30200), (332, 30251), (344, 30323), (375, 30410), (382, 30449), (402, 30587),

Gene: LunarLander\_60 Start: 41007, Stop: 39667, Start Num: 89

Candidate Starts for LunarLander\_60:

(Start: 89 @41007 has 5 MA's), (115, 40899), (126, 40854), (146, 40770), (157, 40689), (216, 40551), (239, 40479), (292, 40233), (296, 40203), (340, 40065), (351, 40002), (353, 39999), (362, 39945), (372, 39861), (373, 39852), (375, 39843), (381, 39822), (382, 39804), (384, 39768),

Gene: Lymara\_79 Start: 53015, Stop: 54817, Start Num: 74

Candidate Starts for Lymara\_79:

(Start: 74 @53015 has 17 MA's), (111, 53174), (Start: 121 @53219 has 2 MA's), (134, 53285), (137, 53291), (145, 53327), (148, 53351), (151, 53369), (158, 53426), (162, 53462), (168, 53492), (172, 53504), (181, 53567), (203, 53696), (211, 53765), (217, 53792), (229, 53873), (234, 53888), (237, 53903), (247, 53954), (248, 53972), (257, 54005), (271, 54089), (276, 54116), (285, 54155), (288, 54161), (290, 54215), (291, 54236), (293, 54242), (294, 54257), (297, 54281), (299, 54305), (301, 54326), (313, 54389), (325, 54413), (332, 54467), (372, 54605), (375, 54623), (388, 54713), (389, 54722), (397, 54764), (401, 54797),

Gene: MISSy\_100 Start: 58583, Stop: 60391, Start Num: 86

Candidate Starts for MISSy\_100:

(51, 58436), (59, 58466), (70, 58514), (73, 58529), (76, 58541), (Start: 86 @58583 has 2 MA's), (93, 58601), (115, 58697), (125, 58742), (146, 58826), (171, 58949), (183, 59036), (184, 59042), (202, 59129), (205, 59141), (222, 59273), (265, 59516), (279, 59603), (296, 59768), (297, 59780), (348, 60053), (375, 60212), (383, 60254), (384, 60287), (388, 60302),

Gene: Majeke\_63 Start: 39197, Stop: 40675, Start Num: 140

Candidate Starts for Majeke\_63:

(125, 39146), (130, 39161), (Start: 140 @39197 has 4 MA's), (154, 39290), (157, 39308), (167, 39344), (189, 39368), (195, 39404), (203, 39437), (215, 39527), (230, 39596), (231, 39602), (233, 39605), (235, 39623), (236, 39626), (284, 39869), (286, 39872), (292, 39956), (296, 39986), (297, 39998), (309, 40085), (332, 40187), (333, 40190), (341, 40253), (362, 40367), (375, 40469), (379, 40481), (382, 40508), (399, 40625),

Gene: Mangethe\_63 Start: 39197, Stop: 40675, Start Num: 140

Candidate Starts for Mangethe\_63:

(125, 39146), (130, 39161), (Start: 140 @39197 has 4 MA's), (154, 39290), (157, 39308), (167, 39344), (189, 39368), (195, 39404), (203, 39437), (215, 39527), (230, 39596), (231, 39602), (233, 39605), (235, 39623), (236, 39626), (284, 39869), (286, 39872), (292, 39956), (296, 39986), (297, 39998), (309, 40085), (332, 40187), (333, 40190), (341, 40253), (362, 40367), (375, 40469), (379, 40481), (382, 40508), (399, 40625),

Gene: Mantra\_64 Start: 42536, Stop: 44860, Start Num: 16

Candidate Starts for Mantra\_64:

(13, 42488), (Start: 16 @42536 has 4 MA's), (25, 42593), (31, 42662), (60, 42863), (68, 42896), (108, 43073), (114, 43097), (124, 43160), (129, 43178), (131, 43184), (136, 43205), (157, 43328), (202, 43532), (252, 43826), (265, 43922), (278, 44003), (279, 44009), (283, 44042), (292, 44141), (295, 44162), (296, 44171), (299, 44207), (321, 44309), (332, 44372), (333, 44375), (362, 44555), (374, 44654), (375, 44657), (379, 44669), (381, 44678), (383, 44699), (407, 44852),

Gene: Melons\_47 Start: 29024, Stop: 30427, Start Num: 139

Candidate Starts for Melons\_47:

(119, 28961), (Start: 135 @29015 has 4 MA's), (Start: 139 @29024 has 45 MA's), (149, 29084), (152, 29111), (153, 29120), (162, 29168), (177, 29234), (182, 29258), (185, 29267), (187, 29273), (192, 29315), (200, 29351), (209, 29399), (213, 29450), (224, 29510), (244, 29591), (253, 29630), (289, 29789), (291, 29846), (293, 29852), (297, 29891), (317, 29999), (323, 30014), (332, 30065), (344, 30137), (375, 30224), (382, 30263), (392, 30332), (402, 30401),

Gene: Molly\_60 Start: 40691, Stop: 38961, Start Num: 88

Candidate Starts for Molly\_60:

(Start: 88 @40691 has 8 MA's), (115, 40583), (125, 40538), (146, 40454), (190, 40313), (214, 40163), (226, 40085), (249, 39980), (251, 39977), (266, 39875), (270, 39866), (296, 39629), (299, 39593), (309, 39530), (332, 39428), (333, 39425), (345, 39347), (362, 39239), (371, 39167), (372, 39155), (373, 39146), (375, 39137), (381, 39116), (382, 39098),

Gene: MooMoo\_65 Start: 41964, Stop: 43592, Start Num: 41

Candidate Starts for MooMoo\_65:

(Start: 41 @41964 has 1 MA's), (43, 41991), (Start: 47 @42021 has 1 MA's), (65, 42090), (75, 42144), (123, 42321), (136, 42378), (157, 42501), (167, 42534), (188, 42555), (196, 42588), (199, 42603), (232, 42708), (292, 42912), (293, 42915), (297, 42954), (352, 43245), (362, 43302), (375, 43389), (379, 43401), (382, 43428), (383, 43431), (389, 43488), (398, 43536), (400, 43557),

Gene: Mordred\_82 Start: 53968, Stop: 55890, Start Num: 74

Candidate Starts for Mordred\_82:

(Start: 74 @53968 has 17 MA's), (90, 54040), (Start: 121 @54172 has 2 MA's), (137, 54244), (145, 54280), (148, 54304), (151, 54322), (158, 54379), (162, 54415), (168, 54445), (172, 54457), (203, 54649), (211, 54718), (217, 54745), (229, 54826), (234, 54841), (237, 54856), (247, 54907), (248, 54925), (257, 54958), (271, 55042), (276, 55069), (285, 55108), (288, 55114), (290, 55168), (291,

55189), (292, 55192), (293, 55195), (294, 55210), (299, 55258), (301, 55279), (313, 55342), (325, 55366), (327, 55384), (328, 55393), (332, 55420), (360, 55555), (361, 55573), (365, 55642), (371, 55666), (372, 55678), (373, 55687), (375, 55696), (388, 55786), (389, 55795), (401, 55870), (404, 55876),

Gene: Mova\_70 Start: 42582, Stop: 44489, Start Num: 16

Candidate Starts for Mova\_70:

(2, 42405), (4, 42420), (5, 42429), (11, 42525), (Start: 16 @42582 has 4 MA's), (25, 42639), (31, 42708), (60, 42909), (68, 42942), (108, 43119), (114, 43143), (124, 43206), (136, 43251), (170, 43410), (207, 43464), (218, 43491), (265, 43611), (280, 43668), (292, 43776), (296, 43806), (299, 43842), (315, 43920), (317, 43926), (362, 44184), (374, 44283), (375, 44286), (379, 44298), (381, 44307), (383, 44328), (407, 44481),

Gene: MoyaNatalis\_81 Start: 53851, Stop: 55773, Start Num: 74

Candidate Starts for MoyaNatalis\_81:

(Start: 74 @53851 has 17 MA's), (90, 53923), (Start: 121 @54055 has 2 MA's), (137, 54127), (145, 54163), (148, 54187), (151, 54205), (158, 54262), (162, 54298), (168, 54328), (172, 54340), (203, 54532), (211, 54601), (217, 54628), (229, 54709), (234, 54724), (237, 54739), (247, 54790), (248, 54808), (257, 54841), (271, 54925), (285, 54991), (288, 54997), (290, 55051), (291, 55072), (292, 55075), (293, 55078), (294, 55093), (299, 55141), (301, 55162), (313, 55225), (325, 55249), (327, 55267), (328, 55276), (332, 55303), (360, 55438), (361, 55456), (365, 55525), (371, 55549), (372, 55561), (373, 55570), (375, 55579), (388, 55669), (389, 55678), (401, 55753), (404, 55759),

Gene: Murica\_102 Start: 59799, Stop: 61607, Start Num: 86

Candidate Starts for Murica\_102:

(51, 59652), (59, 59682), (70, 59730), (73, 59745), (76, 59757), (Start: 86 @59799 has 2 MA's), (93, 59817), (115, 59913), (125, 59958), (146, 60042), (171, 60165), (183, 60252), (184, 60258), (202, 60345), (205, 60357), (222, 60489), (265, 60732), (279, 60819), (296, 60984), (297, 60996), (348, 61269), (375, 61428), (383, 61470), (384, 61503), (388, 61518),

Gene: Nazo\_56 Start: 38421, Stop: 39956, Start Num: 49

Candidate Starts for Nazo\_56:

(17, 38139), (36, 38340), (43, 38382), (Start: 49 @38421 has 2 MA's), (56, 38448), (58, 38454), (64, 38478), (71, 38514), (72, 38517), (79, 38547), (99, 38613), (136, 38763), (157, 38886), (216, 39024), (239, 39096), (292, 39342), (294, 39360), (305, 39450), (312, 39459), (335, 39501), (362, 39666), (364, 39711), (379, 39765), (383, 39795), (398, 39900),

Gene: Niblet\_44 Start: 30581, Stop: 31903, Start Num: 139

Candidate Starts for Niblet\_44:

(Start: 135 @30572 has 4 MA's), (Start: 139 @30581 has 45 MA's), (153, 30677), (162, 30725), (163, 30737), (177, 30791), (182, 30815), (187, 30830), (190, 30851), (200, 30908), (209, 30956), (213, 31007), (222, 31058), (244, 31148), (253, 31187), (289, 31346), (338, 31580), (344, 31613), (356, 31658), (375, 31700), (382, 31739), (384, 31775), (402, 31877), (408, 31898),

Gene: Okabe\_69 Start: 41882, Stop: 43765, Start Num: 15

Candidate Starts for Okabe\_69:

(1, 41699), (3, 41711), (7, 41777), (8, 41783), (Start: 15 @41882 has 3 MA's), (18, 41912), (25, 41942), (27, 41978), (31, 42011), (60, 42212), (68, 42245), (108, 42422), (114, 42446), (124, 42509), (131, 42533), (132, 42536), (154, 42659), (206, 42719), (258, 42761), (292, 42884), (295, 42905), (296, 42914), (297, 42926), (332, 43109), (333, 43112), (362, 43298), (377, 43406), (386, 43484), (409, 43604), (410, 43655), (411, 43736), (412, 43748),

Gene: Oppalora\_46 Start: 29584, Stop: 30987, Start Num: 139

Candidate Starts for Oppalora\_46:

(Start: 139 @29584 has 45 MA's), (152, 29671), (162, 29728), (163, 29740), (177, 29794), (182, 29818), (200, 29911), (209, 29959), (210, 29965), (212, 29998), (213, 30010), (244, 30151), (289, 30349), (291, 30406), (293, 30412), (317, 30559), (323, 30574), (330, 30604), (332, 30625), (356, 30742), (359, 30751), (375, 30784), (382, 30823), (383, 30826), (387, 30871), (392, 30892), (402, 30961), (408, 30982),

Gene: Optimus\_142 Start: 77338, Stop: 79065, Start Num: 88

Candidate Starts for Optimus\_142:

(Start: 88 @77338 has 8 MA's), (115, 77446), (125, 77491), (146, 77575), (190, 77716), (214, 77866), (226, 77944), (249, 78049), (251, 78052), (266, 78154), (270, 78163), (292, 78370), (295, 78391), (296, 78400), (299, 78436), (322, 78538), (332, 78601), (333, 78604), (362, 78787), (372, 78871), (373, 78880), (375, 78889), (381, 78910), (382, 78928), (384, 78964),

Gene: Orcanus\_45 Start: 30565, Stop: 31884, Start Num: 139

Candidate Starts for Orcanus\_45:

(103, 30397), (Start: 135 @30556 has 4 MA's), (Start: 139 @30565 has 45 MA's), (153, 30661), (162, 30709), (163, 30721), (177, 30775), (182, 30799), (187, 30814), (190, 30835), (200, 30892), (209, 30940), (213, 30991), (222, 31042), (244, 31132), (263, 31210), (291, 31387), (294, 31408), (332, 31522), (338, 31561), (344, 31594), (375, 31681), (383, 31723), (384, 31756), (397, 31822), (398, 31828), (402, 31858), (408, 31879),

Gene: OtsoOtso\_46 Start: 28380, Stop: 29783, Start Num: 139

Candidate Starts for OtsoOtso\_46:

(69, 28119), (100, 28245), (Start: 139 @28380 has 45 MA's), (149, 28440), (152, 28467), (153, 28476), (154, 28479), (162, 28524), (163, 28536), (177, 28590), (182, 28614), (187, 28629), (192, 28671), (200, 28707), (209, 28755), (213, 28806), (224, 28866), (244, 28947), (253, 28986), (289, 29145), (291, 29202), (293, 29208), (297, 29247), (317, 29355), (323, 29370), (332, 29421), (344, 29493), (375, 29580), (390, 29682), (402, 29757),

Gene: OwlsT2W\_66 Start: 42373, Stop: 44289, Start Num: 40

Candidate Starts for OwlsT2W\_66:

(20, 42196), (22, 42202), (23, 42211), (24, 42220), (28, 42259), (33, 42316), (Start: 40 @42373 has 13 MA's), (Start: 47 @42430 has 1 MA's), (50, 42442), (65, 42499), (75, 42553), (131, 42766), (132, 42769), (138, 42790), (157, 42910), (160, 42952), (166, 42988), (202, 43132), (205, 43144), (222, 43276), (247, 43396), (265, 43519), (281, 43606), (292, 43741), (296, 43771), (299, 43807), (321, 43909), (336, 43990), (362, 44146), (368, 44206), (373, 44239), (376, 44248), (377, 44251),

Gene: PHappiness\_62 Start: 41626, Stop: 43140, Start Num: 40

Candidate Starts for PHappiness\_62:

(20, 41449), (Start: 40 @41626 has 13 MA's), (Start: 47 @41683 has 1 MA's), (56, 41719), (65, 41752), (122, 41974), (131, 42016), (154, 42142), (157, 42160), (166, 42220), (192, 42262), (Start: 197 @42274 has 1 MA's), (227, 42367), (238, 42391), (256, 42451), (292, 42574), (295, 42595), (296, 42604), (306, 42697), (343, 42877), (362, 42997), (368, 43057), (373, 43090), (376, 43099), (377, 43102),

Gene: Pelletreau\_54 Start: 30988, Stop: 32316, Start Num: 135

Candidate Starts for Pelletreau\_54:

(98, 30838), (103, 30853), (Start: 135 @30988 has 4 MA's), (Start: 139 @30997 has 45 MA's), (153, 31093), (162, 31141), (163, 31153), (177, 31207), (182, 31231), (187, 31246), (190, 31267), (200, 31324), (209, 31372), (213, 31423), (222, 31474), (244, 31564), (263, 31642), (294, 31840), (332, 31954), (338, 31993), (344, 32026), (375, 32113), (383, 32155), (384, 32188), (393, 32227), (397, 32254), (398, 32260), (402, 32290), (408, 32311),

Gene: Phalconet\_70 Start: 43833, Stop: 45551, Start Num: 15

Candidate Starts for Phalconet\_70:

(9, 43743), (10, 43752), (12, 43779), (Start: 15 @43833 has 3 MA's), (18, 43863), (25, 43893), (27, 43929), (31, 43962), (60, 44163), (68, 44196), (108, 44373), (114, 44397), (124, 44460), (131, 44484), (132, 44487), (275, 44721), (292, 44823), (295, 44844), (296, 44853), (299, 44889), (321, 44991), (362, 45243), (375, 45345), (379, 45357), (383, 45387), (399, 45501),

Gene: Phegasus\_63 Start: 39164, Stop: 40642, Start Num: 140

Candidate Starts for Phegasus\_63:

(125, 39113), (130, 39128), (Start: 140 @39164 has 4 MA's), (154, 39257), (157, 39275), (167, 39311), (189, 39335), (195, 39371), (203, 39404), (215, 39494), (230, 39563), (231, 39569), (233, 39572), (235, 39590), (236, 39593), (284, 39836), (286, 39839), (292, 39923), (296, 39953), (297, 39965), (309, 40052), (332, 40154), (333, 40157), (341, 40220), (362, 40334), (375, 40436), (379, 40448), (382, 40475), (399, 40592),

Gene: PhesterPhotato\_66 Start: 41796, Stop: 43328, Start Num: 40

Candidate Starts for PhesterPhotato\_66:

(Start: 40 @41796 has 13 MA's), (Start: 47 @41853 has 1 MA's), (50, 41865), (65, 41922), (75, 41976), (131, 42189), (132, 42192), (138, 42213), (204, 42483), (219, 42531), (227, 42567), (256, 42657), (262, 42675), (292, 42798), (294, 42816), (296, 42828), (297, 42840), (301, 42885), (310, 42933), (347, 43128), (362, 43185), (368, 43245), (373, 43278), (376, 43287), (377, 43290),

Gene: PhirstandPhine\_54 Start: 29170, Stop: 30573, Start Num: 139

Candidate Starts for PhirstandPhine\_54:

(Start: 135 @29161 has 4 MA's), (Start: 139 @29170 has 45 MA's), (149, 29230), (152, 29257), (153, 29266), (162, 29314), (163, 29326), (177, 29380), (182, 29404), (185, 29413), (187, 29419), (192, 29461), (200, 29497), (209, 29545), (213, 29596), (224, 29656), (244, 29737), (253, 29776), (289, 29935), (291, 29992), (293, 29998), (297, 30037), (317, 30145), (323, 30160), (332, 30211), (344, 30283), (375, 30370), (382, 30409), (402, 30547),

Gene: PhluffyCoco\_47 Start: 29684, Stop: 31087, Start Num: 139

Candidate Starts for PhluffyCoco\_47:

(Start: 139 @29684 has 45 MA's), (152, 29771), (162, 29828), (163, 29840), (177, 29894), (182, 29918), (200, 30011), (209, 30059), (210, 30065), (212, 30098), (213, 30110), (244, 30251), (289, 30449), (291, 30506), (293, 30512), (317, 30659), (323, 30674), (330, 30704), (332, 30725), (356, 30842), (359, 30851), (375, 30884), (382, 30923), (383, 30926), (387, 30971), (392, 30992), (402, 31061), (408, 31082),

Gene: Pineda\_48 Start: 28687, Stop: 30099, Start Num: 135

Candidate Starts for Pineda\_48:

(Start: 135 @28687 has 4 MA's), (Start: 139 @28696 has 45 MA's), (149, 28756), (152, 28783), (153, 28792), (162, 28840), (163, 28852), (177, 28906), (182, 28930), (185, 28939), (187, 28945), (192, 28987), (200, 29023), (209, 29071), (213, 29122), (224, 29182), (244, 29263), (253, 29302), (289, 29461), (291, 29518), (293, 29524), (297, 29563), (317, 29671), (323, 29686), (332, 29737), (344, 29809), (375, 29896), (382, 29935), (383, 29938), (392, 30004), (402, 30073),

Gene: Polka\_45 Start: 28380, Stop: 29783, Start Num: 139

Candidate Starts for Polka\_45:

(69, 28119), (100, 28245), (Start: 139 @28380 has 45 MA's), (149, 28440), (152, 28467), (153, 28476), (154, 28479), (162, 28524), (163, 28536), (177, 28590), (182, 28614), (187, 28629), (192, 28671), (200, 28707), (209, 28755), (213, 28806), (224, 28866), (244, 28947), (253, 28986), (289, 29145), (291, 29202), (293, 29208), (297, 29247), (317, 29355), (323, 29370), (332, 29421), (344, 29493),

(375, 29580), (390, 29682), (402, 29757),

Gene: Polka14\_65 Start: 42690, Stop: 44204, Start Num: 40

Candidate Starts for Polka14\_65:

(20, 42513), (Start: 40 @42690 has 13 MA's), (Start: 47 @42747 has 1 MA's), (56, 42783), (65, 42816), (122, 43038), (131, 43080), (154, 43206), (157, 43224), (166, 43284), (192, 43326), (Start: 197 @43338 has 1 MA's), (227, 43431), (238, 43455), (256, 43515), (292, 43638), (295, 43659), (296, 43668), (306, 43761), (343, 43941), (362, 44061), (368, 44121), (373, 44154), (376, 44163), (377, 44166),

Gene: Pollywog\_67 Start: 43356, Stop: 45239, Start Num: 84

Candidate Starts for Pollywog\_67:

(59, 43242), (Start: 84 @43356 has 1 MA's), (102, 43413), (106, 43449), (115, 43482), (125, 43527), (136, 43569), (138, 43572), (146, 43611), (171, 43734), (202, 43899), (205, 43911), (222, 44043), (247, 44163), (265, 44286), (279, 44373), (292, 44508), (296, 44538), (299, 44574), (311, 44652), (322, 44679), (324, 44685), (332, 44745), (333, 44748), (345, 44826), (362, 44934), (372, 45018), (375, 45036), (379, 45048), (382, 45075),

Gene: PrincessTrina\_83 Start: 54273, Stop: 56075, Start Num: 74

Candidate Starts for PrincessTrina\_83:

(Start: 74 @54273 has 17 MA's), (90, 54345), (Start: 121 @54477 has 2 MA's), (137, 54549), (145, 54585), (148, 54609), (151, 54627), (158, 54684), (162, 54720), (168, 54750), (172, 54762), (203, 54954), (211, 55023), (217, 55050), (229, 55131), (234, 55146), (237, 55161), (247, 55212), (248, 55230), (257, 55263), (271, 55347), (276, 55374), (285, 55413), (288, 55419), (290, 55473), (291, 55494), (292, 55497), (293, 55500), (294, 55515), (299, 55563), (301, 55584), (313, 55647), (325, 55671), (327, 55689), (328, 55698), (332, 55725), (372, 55863), (375, 55881), (388, 55971), (389, 55980), (401, 56055), (404, 56061),

Gene: Rattail\_47 Start: 29770, Stop: 31173, Start Num: 139

Candidate Starts for Rattail\_47:

(Start: 139 @29770 has 45 MA's), (152, 29857), (162, 29914), (163, 29926), (177, 29980), (182, 30004), (200, 30097), (209, 30145), (210, 30151), (212, 30184), (213, 30196), (244, 30337), (289, 30535), (291, 30592), (293, 30598), (317, 30745), (323, 30760), (330, 30790), (332, 30811), (356, 30928), (359, 30937), (375, 30970), (382, 31009), (383, 31012), (387, 31057), (392, 31078), (402, 31147), (408, 31168),

Gene: RedFox\_47 Start: 29683, Stop: 31086, Start Num: 139

Candidate Starts for RedFox\_47:

(Start: 139 @29683 has 45 MA's), (152, 29770), (153, 29779), (162, 29827), (163, 29839), (177, 29893), (182, 29917), (187, 29932), (200, 30010), (209, 30058), (210, 30064), (212, 30097), (213, 30109), (244, 30250), (289, 30448), (291, 30505), (293, 30511), (317, 30658), (323, 30673), (330, 30703), (332, 30724), (333, 30727), (356, 30841), (359, 30850), (375, 30883), (383, 30925), (387, 30970), (392, 30991), (402, 31060), (408, 31081),

Gene: Renaud18\_76 Start: 44560, Stop: 46092, Start Num: 40

Candidate Starts for Renaud18\_76:

(20, 44383), (22, 44389), (23, 44398), (24, 44407), (28, 44446), (33, 44503), (Start: 40 @44560 has 13 MA's), (Start: 47 @44617 has 1 MA's), (50, 44629), (65, 44686), (75, 44740), (131, 44953), (132, 44956), (138, 44977), (204, 45247), (219, 45295), (227, 45331), (256, 45421), (262, 45439), (292, 45562), (294, 45580), (296, 45592), (297, 45604), (301, 45649), (310, 45697), (347, 45892), (362, 45949), (368, 46009), (373, 46042), (376, 46051), (377, 46054),

Gene: Renna12\_46 Start: 29540, Stop: 30943, Start Num: 139

Candidate Starts for Renna12\_46:

(Start: 139 @29540 has 45 MA's), (152, 29627), (153, 29636), (162, 29684), (163, 29696), (177, 29750), (182, 29774), (187, 29789), (190, 29810), (193, 29834), (200, 29867), (209, 29915), (210, 29921), (213, 29966), (244, 30107), (289, 30305), (291, 30362), (292, 30365), (317, 30515), (323, 30530), (330, 30560), (332, 30581), (356, 30698), (359, 30707), (372, 30722), (375, 30740), (382, 30779), (387, 30827), (392, 30848), (402, 30917), (408, 30938),

Gene: RitaG\_62 Start: 41971, Stop: 43485, Start Num: 40

Candidate Starts for RitaG\_62:

(20, 41794), (Start: 40 @41971 has 13 MA's), (Start: 47 @42028 has 1 MA's), (56, 42064), (65, 42097), (122, 42319), (131, 42361), (154, 42487), (157, 42505), (166, 42565), (192, 42607), (Start: 197 @42619 has 1 MA's), (227, 42712), (238, 42736), (256, 42796), (292, 42919), (295, 42940), (296, 42949), (306, 43042), (343, 43222), (362, 43342), (368, 43402), (373, 43435), (376, 43444), (377, 43447),

Gene: RosiePosie\_82 Start: 54057, Stop: 55946, Start Num: 74

Candidate Starts for RosiePosie\_82:

(Start: 74 @54057 has 17 MA's), (90, 54129), (Start: 121 @54261 has 2 MA's), (137, 54300), (145, 54336), (148, 54360), (151, 54378), (158, 54435), (162, 54471), (168, 54501), (172, 54513), (203, 54705), (211, 54774), (217, 54801), (229, 54882), (234, 54897), (237, 54912), (247, 54963), (248, 54981), (257, 55014), (271, 55098), (285, 55164), (288, 55170), (290, 55224), (291, 55245), (292, 55248), (293, 55251), (294, 55266), (299, 55314), (301, 55335), (313, 55398), (325, 55422), (327, 55440), (328, 55449), (332, 55476), (360, 55611), (361, 55629), (365, 55698), (371, 55722), (372, 55734), (373, 55743), (375, 55752), (388, 55842), (389, 55851), (401, 55926), (404, 55932),

Gene: Royals2015\_69 Start: 42774, Stop: 44306, Start Num: 40

Candidate Starts for Royals2015\_69:

(20, 42597), (22, 42603), (23, 42612), (28, 42660), (33, 42717), (Start: 40 @42774 has 13 MA's), (Start: 47 @42831 has 1 MA's), (50, 42843), (65, 42900), (75, 42954), (131, 43167), (132, 43170), (138, 43191), (204, 43461), (219, 43509), (227, 43545), (256, 43635), (262, 43653), (292, 43776), (294, 43794), (296, 43806), (297, 43818), (301, 43863), (310, 43911), (347, 44106), (362, 44163), (368, 44223), (373, 44256), (376, 44265), (377, 44268),

Gene: Ruchi\_43 Start: 29375, Stop: 30694, Start Num: 139

Candidate Starts for Ruchi\_43:

(Start: 135 @29366 has 4 MA's), (Start: 139 @29375 has 45 MA's), (149, 29435), (153, 29471), (163, 29531), (177, 29585), (182, 29609), (187, 29624), (190, 29645), (200, 29702), (209, 29750), (213, 29801), (222, 29852), (244, 29942), (253, 29981), (267, 30053), (293, 30203), (332, 30332), (338, 30371), (344, 30404), (375, 30491), (382, 30530), (402, 30668),

Gene: SG4\_70 Start: 43702, Stop: 45480, Start Num: 80

Candidate Starts for SG4\_70:

(Start: 80 @43702 has 1 MA's), (91, 43741), (102, 43771), (106, 43807), (115, 43840), (125, 43885), (190, 44110), (214, 44260), (226, 44338), (249, 44443), (251, 44446), (266, 44548), (270, 44557), (292, 44764), (295, 44785), (296, 44794), (299, 44830), (322, 44932), (332, 44995), (333, 44998), (336, 45013), (362, 45172), (375, 45274), (379, 45286), (381, 45295), (382, 45313), (399, 45430),

Gene: Sagefire\_61 Start: 42000, Stop: 40702, Start Num: 89

Candidate Starts for Sagefire\_61:

(Start: 89 @42000 has 5 MA's), (115, 41892), (126, 41847), (146, 41763), (157, 41682), (216, 41544), (239, 41472), (292, 41226), (295, 41205), (296, 41196), (299, 41160), (331, 41118), (353, 41019), (362, 40965), (375, 40878), (383, 40836), (384, 40803),

Gene: Scavito\_83 Start: 54017, Stop: 55939, Start Num: 74

Candidate Starts for Scavito\_83:

(Start: 74 @54017 has 17 MA's), (90, 54089), (Start: 121 @54221 has 2 MA's), (137, 54293), (145, 54329), (148, 54353), (151, 54371), (158, 54428), (162, 54464), (168, 54494), (172, 54506), (203, 54698), (211, 54767), (217, 54794), (229, 54875), (234, 54890), (237, 54905), (247, 54956), (248, 54974), (257, 55007), (271, 55091), (276, 55118), (285, 55157), (288, 55163), (290, 55217), (291, 55238), (292, 55241), (293, 55244), (294, 55259), (299, 55307), (301, 55328), (313, 55391), (325, 55415), (327, 55433), (328, 55442), (332, 55469), (360, 55604), (361, 55622), (365, 55691), (371, 55715), (372, 55727), (373, 55736), (375, 55745), (388, 55835), (389, 55844), (401, 55919), (404, 55925),

Gene: Shen\_44 Start: 29089, Stop: 30417, Start Num: 135

Candidate Starts for Shen\_44:

(98, 28939), (103, 28954), (Start: 135 @29089 has 4 MA's), (Start: 139 @29098 has 45 MA's), (153, 29194), (162, 29242), (163, 29254), (177, 29308), (182, 29332), (187, 29347), (190, 29368), (200, 29425), (209, 29473), (213, 29524), (222, 29575), (244, 29665), (261, 29731), (263, 29743), (292, 29923), (294, 29941), (332, 30055), (338, 30094), (344, 30127), (375, 30214), (382, 30253), (383, 30256), (384, 30289), (393, 30328), (397, 30355), (398, 30361), (402, 30391), (408, 30412),

Gene: ShroomBoi\_67 Start: 43105, Stop: 44667, Start Num: 40

Candidate Starts for ShroomBoi\_67:

(20, 42928), (22, 42934), (23, 42943), (24, 42952), (28, 42991), (Start: 40 @43105 has 13 MA's), (Start: 47 @43162 has 1 MA's), (56, 43198), (65, 43231), (122, 43453), (131, 43495), (204, 43789), (219, 43837), (227, 43873), (250, 43942), (256, 43963), (262, 43981), (292, 44104), (295, 44125), (296, 44134), (297, 44146), (321, 44272), (332, 44335), (343, 44404), (362, 44524), (368, 44584), (373, 44617), (376, 44626), (377, 44629),

Gene: StellaBean\_97 Start: 58301, Stop: 60040, Start Num: 85

Candidate Starts for StellaBean\_97:

(51, 58154), (59, 58184), (70, 58232), (73, 58247), (76, 58259), (Start: 85 @58301 has 2 MA's), (92, 58319), (115, 58415), (125, 58460), (146, 58544), (190, 58685), (214, 58835), (226, 58913), (249, 59018), (251, 59021), (266, 59123), (270, 59132), (292, 59339), (296, 59369), (309, 59468), (332, 59570), (333, 59573), (345, 59651), (362, 59759), (371, 59831), (375, 59861), (383, 59903), (384, 59936), (388, 59951),

Gene: StuartMinion\_39 Start: 26655, Stop: 28058, Start Num: 139

Candidate Starts for StuartMinion\_39:

(Start: 139 @26655 has 45 MA's), (152, 26742), (153, 26751), (162, 26799), (163, 26811), (177, 26865), (182, 26889), (187, 26904), (193, 26949), (200, 26982), (209, 27030), (210, 27036), (213, 27081), (244, 27222), (259, 27285), (267, 27333), (289, 27420), (291, 27477), (293, 27483), (300, 27552), (317, 27630), (323, 27645), (330, 27675), (332, 27696), (356, 27813), (359, 27822), (375, 27855), (381, 27876), (387, 27942), (402, 28032),

Gene: Taj\_79 Start: 46662, Stop: 48335, Start Num: 15

Candidate Starts for Taj\_79:

(9, 46572), (10, 46581), (Start: 15 @46662 has 3 MA's), (18, 46692), (25, 46722), (26, 46734), (31, 46791), (60, 46992), (68, 47025), (108, 47202), (114, 47226), (124, 47289), (131, 47313), (132, 47316), (157, 47457), (206, 47499), (260, 47544), (275, 47556), (292, 47661), (295, 47682), (296, 47691), (297, 47703), (304, 47769), (332, 47865), (333, 47868), (352, 47970), (362, 48027), (375, 48129), (379, 48141), (381, 48150), (383, 48171), (399, 48285),

Gene: Tarkin\_98 Start: 58765, Stop: 60504, Start Num: 85

Candidate Starts for Tarkin\_98:

(51, 58618), (59, 58648), (70, 58696), (73, 58711), (76, 58723), (Start: 85 @58765 has 2 MA's), (92, 58783), (115, 58879), (125, 58924), (146, 59008), (154, 59071), (190, 59149), (214, 59299), (226, 59377), (249, 59482), (251, 59485), (266, 59587), (270, 59596), (292, 59803), (295, 59824), (296, 59833), (297, 59845), (309, 59932), (332, 60034), (333, 60037), (345, 60115), (362, 60223), (375, 60325), (383, 60367), (384, 60400), (388, 60415),

Gene: Tasp14\_62 Start: 41981, Stop: 40389, Start Num: 88

Candidate Starts for Tasp14\_62:

(Start: 88 @41981 has 8 MA's), (115, 41873), (125, 41828), (146, 41744), (190, 41603), (214, 41453), (226, 41375), (249, 41270), (251, 41267), (266, 41165), (270, 41156), (292, 40949), (296, 40919), (301, 40862), (350, 40724), (355, 40721), (362, 40667), (372, 40583), (373, 40574), (375, 40565), (381, 40544), (382, 40526), (384, 40490),

Gene: TaylorSipt\_45 Start: 29940, Stop: 31352, Start Num: 139

Candidate Starts for TaylorSipt\_45:

(66, 29658), (77, 29715), (Start: 135 @29931 has 4 MA's), (Start: 139 @29940 has 45 MA's), (162, 30084), (163, 30096), (177, 30150), (182, 30174), (187, 30189), (198, 30258), (200, 30267), (209, 30315), (213, 30366), (244, 30507), (253, 30546), (291, 30762), (294, 30783), (319, 30927), (332, 30990), (338, 31029), (344, 31062), (356, 31107), (375, 31149), (383, 31191), (398, 31296), (402, 31326),

Gene: Thespis\_55 Start: 36748, Stop: 38346, Start Num: 34

Candidate Starts for Thespis\_55:

(Start: 34 @36748 has 1 MA's), (35, 36757), (37, 36784), (Start: 47 @36850 has 1 MA's), (64, 36910), (72, 36949), (79, 36979), (93, 37036), (113, 37123), (131, 37201), (143, 37246), (194, 37408), (216, 37483), (239, 37555), (292, 37801), (294, 37819), (297, 37843), (339, 37978), (346, 38008), (353, 38044), (369, 38146), (381, 38203), (385, 38263), (394, 38296), (395, 38305), (396, 38308),

Gene: Toad24\_47 Start: 31237, Stop: 32556, Start Num: 139

Candidate Starts for Toad24\_47:

(98, 31078), (103, 31093), (Start: 135 @31228 has 4 MA's), (Start: 139 @31237 has 45 MA's), (153, 31333), (162, 31381), (163, 31393), (177, 31447), (182, 31471), (187, 31486), (190, 31507), (200, 31564), (209, 31612), (213, 31663), (222, 31714), (244, 31804), (261, 31870), (263, 31882), (292, 32062), (294, 32080), (332, 32194), (338, 32233), (344, 32266), (375, 32353), (382, 32392), (383, 32395), (384, 32428), (393, 32467), (397, 32494), (398, 32500), (402, 32530), (408, 32551),

Gene: Tophat\_83 Start: 54206, Stop: 56128, Start Num: 74

Candidate Starts for Tophat\_83:

(Start: 74 @54206 has 17 MA's), (90, 54278), (Start: 121 @54410 has 2 MA's), (137, 54482), (145, 54518), (148, 54542), (151, 54560), (158, 54617), (162, 54653), (168, 54683), (172, 54695), (203, 54887), (211, 54956), (217, 54983), (229, 55064), (234, 55079), (237, 55094), (247, 55145), (248, 55163), (257, 55196), (271, 55280), (276, 55307), (285, 55346), (288, 55352), (290, 55406), (291, 55427), (292, 55430), (293, 55433), (294, 55448), (299, 55496), (301, 55517), (313, 55580), (325, 55604), (327, 55622), (328, 55631), (332, 55658), (360, 55793), (361, 55811), (365, 55880), (371, 55904), (372, 55916), (373, 55925), (375, 55934), (388, 56024), (389, 56033), (401, 56108), (404, 56114),

Gene: Totinger\_66 Start: 41872, Stop: 44196, Start Num: 16

Candidate Starts for Totinger\_66:

(2, 41695), (4, 41710), (5, 41719), (11, 41815), (Start: 16 @41872 has 4 MA's), (25, 41929), (31, 41998), (60, 42199), (68, 42232), (108, 42409), (114, 42433), (124, 42496), (129, 42514), (131, 42520), (136, 42541), (157, 42664), (202, 42868), (252, 43162), (265, 43258), (278, 43339), (279, 43345), (283, 43378), (292, 43477), (294, 43495), (297, 43519), (321, 43645), (332, 43708), (333,

43711), (362, 43891), (374, 43990), (375, 43993), (379, 44005), (381, 44014), (383, 44035), (407, 44188),

Gene: Violet\_57 Start: 42062, Stop: 40485, Start Num: 88

Candidate Starts for Violet\_57:

(Start: 88 @42062 has 8 MA's), (115, 41954), (125, 41909), (146, 41825), (190, 41684), (214, 41534), (226, 41456), (249, 41351), (251, 41348), (266, 41246), (270, 41237), (292, 41030), (295, 41009), (296, 41000), (299, 40964), (354, 40805), (362, 40748), (375, 40661), (383, 40619), (384, 40586),

Gene: Vulpecula\_43 Start: 29052, Stop: 30371, Start Num: 139

Candidate Starts for Vulpecula\_43:

(Start: 135 @29043 has 4 MA's), (Start: 139 @29052 has 45 MA's), (153, 29148), (163, 29208), (177, 29262), (182, 29286), (187, 29301), (190, 29322), (200, 29379), (209, 29427), (213, 29478), (222, 29529), (244, 29619), (253, 29658), (267, 29730), (293, 29880), (338, 30048), (344, 30081), (375, 30168), (382, 30207), (402, 30345),

Gene: Wee\_78 Start: 46738, Stop: 48411, Start Num: 15

Candidate Starts for Wee\_78:

(9, 46648), (10, 46657), (Start: 15 @46738 has 3 MA's), (18, 46768), (25, 46798), (26, 46810), (31, 46867), (60, 47068), (68, 47101), (108, 47278), (114, 47302), (124, 47365), (131, 47389), (132, 47392), (157, 47533), (206, 47575), (260, 47620), (275, 47632), (292, 47737), (295, 47758), (296, 47767), (297, 47779), (304, 47845), (332, 47941), (333, 47944), (352, 48046), (362, 48103), (375, 48205), (379, 48217), (381, 48226), (383, 48247), (399, 48361),

Gene: Westrich\_53 Start: 30921, Stop: 32240, Start Num: 139

Candidate Starts for Westrich\_53:

(98, 30762), (103, 30777), (Start: 135 @30912 has 4 MA's), (Start: 139 @30921 has 45 MA's), (153, 31017), (162, 31065), (163, 31077), (177, 31131), (182, 31155), (187, 31170), (190, 31191), (200, 31248), (209, 31296), (213, 31347), (222, 31398), (244, 31488), (263, 31566), (294, 31764), (332, 31878), (338, 31917), (344, 31950), (375, 32037), (383, 32079), (384, 32112), (393, 32151), (397, 32178), (398, 32184), (402, 32214), (408, 32235),

Gene: WileyE\_46 Start: 30037, Stop: 31356, Start Num: 139

Candidate Starts for WileyE\_46:

(54, 29689), (Start: 135 @30028 has 4 MA's), (Start: 139 @30037 has 45 MA's), (153, 30133), (163, 30193), (177, 30247), (182, 30271), (187, 30286), (190, 30307), (200, 30364), (209, 30412), (213, 30463), (222, 30514), (244, 30604), (253, 30643), (267, 30715), (293, 30865), (332, 30994), (338, 31033), (344, 31066), (356, 31111), (375, 31153), (383, 31195), (384, 31228), (402, 31330),

Gene: Wocket\_66 Start: 42075, Stop: 43580, Start Num: 141

Candidate Starts for Wocket\_66:

(82, 41838), (Start: 85 @41850 has 2 MA's), (101, 41898), (109, 41946), (Start: 141 @42075 has 2 MA's), (145, 42102), (149, 42132), (151, 42144), (153, 42168), (158, 42201), (164, 42258), (170, 42282), (217, 42576), (237, 42687), (243, 42717), (248, 42759), (257, 42789), (261, 42801), (268, 42858), (282, 42903), (326, 43185), (337, 43248), (372, 43359), (375, 43377), (389, 43476), (398, 43524),

Gene: Zhuangyuan\_49 Start: 30152, Stop: 31570, Start Num: 139

Candidate Starts for Zhuangyuan\_49:

(Start: 139 @30152 has 45 MA's), (149, 30212), (152, 30239), (153, 30248), (162, 30296), (163, 30308), (177, 30362), (182, 30386), (190, 30422), (200, 30479), (209, 30527), (210, 30533), (213, 30578), (244, 30719), (261, 30785), (289, 30920), (294, 30998), (297, 31022), (307, 31106), (318, 31139), (332, 31205), (375, 31367), (378, 31376), (383, 31409), (387, 31454), (392, 31475), (403,

31547), (407, 31562),

Gene: Zilizebeth\_63 Start: 39188, Stop: 40495, Start Num: 140

Candidate Starts for Zilizebeth\_63:

(125, 39137), (130, 39152), (Start: 140 @39188 has 4 MA's), (154, 39281), (157, 39299), (167, 39335), (189, 39359), (195, 39395), (203, 39428), (215, 39518), (220, 39545), (230, 39608), (231, 39614), (233, 39617), (235, 39635), (236, 39638), (284, 39881), (286, 39884), (294, 39986), (297, 40010), (302, 40067), (303, 40073), (314, 40103), (316, 40109), (333, 40175), (341, 40238), (362, 40352), (368, 40412), (373, 40445), (376, 40454), (377, 40457),

Gene: Zixiang\_44 Start: 30602, Stop: 31921, Start Num: 139

Candidate Starts for Zixiang\_44:

(98, 30443), (103, 30458), (Start: 135 @30593 has 4 MA's), (Start: 139 @30602 has 45 MA's), (153, 30698), (162, 30746), (163, 30758), (177, 30812), (182, 30836), (187, 30851), (190, 30872), (200, 30929), (209, 30977), (213, 31028), (222, 31079), (244, 31169), (261, 31235), (263, 31247), (292, 31427), (294, 31445), (332, 31559), (338, 31598), (344, 31631), (375, 31718), (382, 31757), (383, 31760), (384, 31793), (393, 31832), (397, 31859), (398, 31865), (402, 31895), (408, 31916),