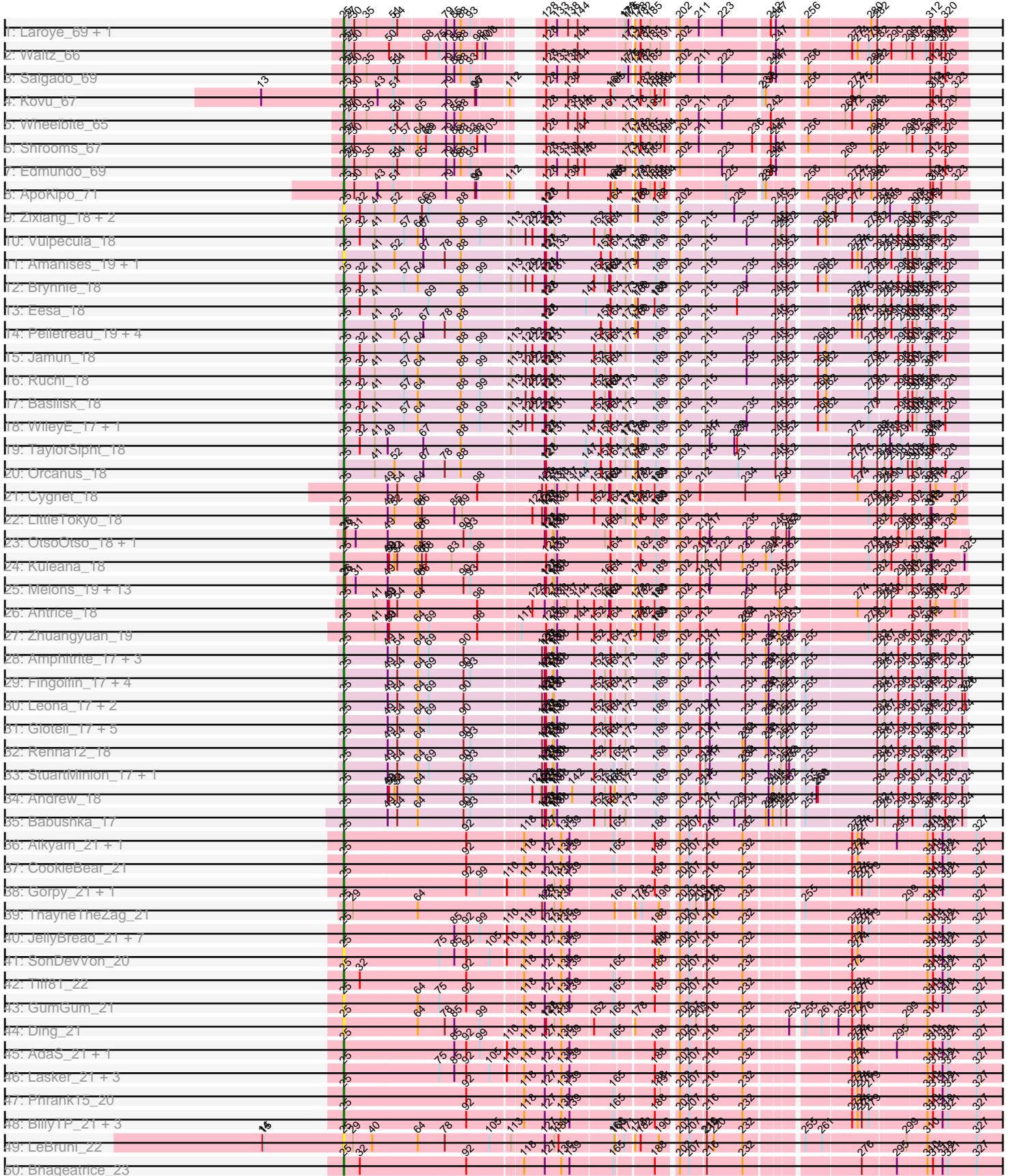
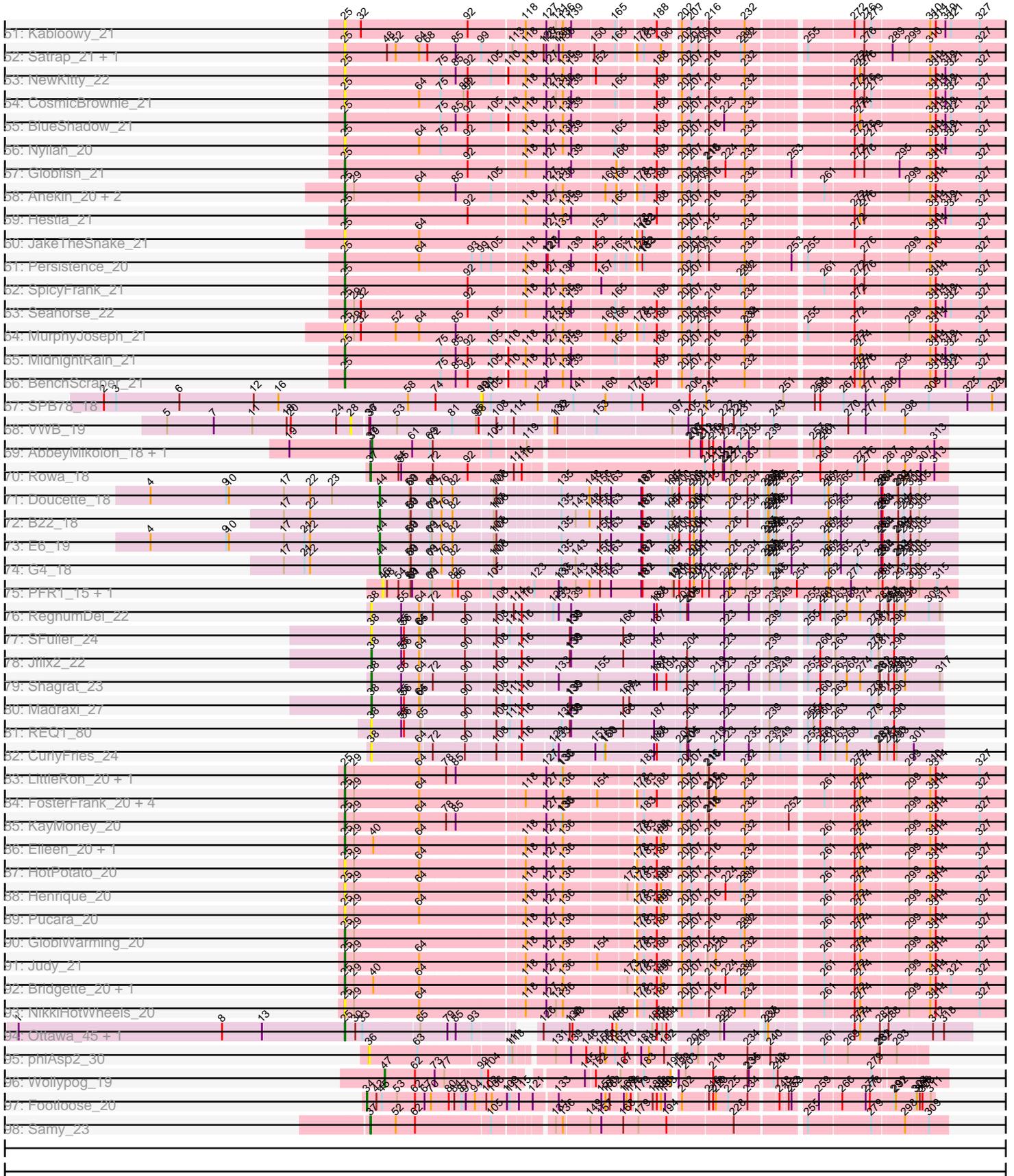


Pham 290896



Pham 290896



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 290896 Report

This analysis was run 03/28/26 on database version 641.

Pham number 290896 has 165 members, 59 are drafts.

Phages represented in each track:

- Track 1 : Laroye\_69, LiSara\_66
- Track 2 : Waltz\_66
- Track 3 : Salgado\_69
- Track 4 : Kovu\_67
- Track 5 : Wheelbite\_65
- Track 6 : Shrooms\_67
- Track 7 : Edmundo\_69
- Track 8 : ApoKipo\_71
- Track 9 : Zixiang\_18, Chicken\_18, Niblet\_18
- Track 10 : Vulpecula\_18
- Track 11 : Amanises\_19, Shen\_19
- Track 12 : Brynnie\_18
- Track 13 : Eesa\_18
- Track 14 : Pelletreau\_19, Gravel\_19, Toad24\_19, Westrich\_19, KendraB23\_19
- Track 15 : Jamun\_18
- Track 16 : Ruchi\_18
- Track 17 : Basilisk\_18
- Track 18 : WileyE\_17, Chickaboom\_17
- Track 19 : TaylorSipht\_18
- Track 20 : Orcanus\_18
- Track 21 : Cygnet\_18
- Track 22 : LittleTokyo\_18
- Track 23 : OtsoOtso\_18, Polka\_18
- Track 24 : Kuleana\_18
- Track 25 : Melons\_19, Pineda\_19, Bibble12\_19, Amelia\_19, Cote\_19, Lunar\_19, Bedetta\_19, PhirstandPhine\_19, Daob\_19, Coral\_18, Colusalem\_18, Kepler\_18, HannahPhantana\_19, Jerole\_19
- Track 26 : Antrice\_18
- Track 27 : Zhuangyuan\_19
- Track 28 : Amphitrite\_17, HamCheese\_17, PhluffyCoco\_17, Laphuphu24k\_17
- Track 29 : Fingolfin\_17, Juno112\_17, Camara\_17, Oppalora\_17, AmiCi24\_17
- Track 30 : Leona\_17, Azaz\_17, Rattail\_17
- Track 31 : Glotell\_17, KHumphrey\_17, DanHam62\_17, AdoptaAdorbs\_17, Atlantica\_17, RedFox\_17
- Track 32 : Renna12\_18
- Track 33 : StuartMinion\_17, AlexMinion\_18
- Track 34 : Andrew\_18

- Track 35 : Babushka\_17
- Track 36 : Aikyam\_21, MaterMagnus\_21
- Track 37 : CookieBear\_21
- Track 38 : Gorpy\_21, Sakai\_21
- Track 39 : ThayneTheZag\_21
- Track 40 : JellyBread\_21, Sporco\_22, RadFad\_21, Vopal\_22, Auxilium\_21, Raphaella\_21, YoungHarleezy\_21, Hillester\_21
- Track 41 : SonDevVon\_20
- Track 42 : Tiff81\_22
- Track 43 : GumGum\_21
- Track 44 : Ding\_21
- Track 45 : AdaS\_21, MUWow\_20
- Track 46 : Lasker\_21, Richie\_21, BasketStar\_21, Windest\_22
- Track 47 : Phrank15\_20
- Track 48 : BillyTP\_21, Mapleville\_21, Lawnathon\_21, Isolde\_21
- Track 49 : LeBruni\_22
- Track 50 : Bhageatrice\_23
- Track 51 : Kabloowy\_21
- Track 52 : Satrap\_21, Shukran\_21
- Track 53 : NewKitty\_22
- Track 54 : CosmicBrownie\_21
- Track 55 : BlueShadow\_21
- Track 56 : Nyilah\_20
- Track 57 : Globfish\_21
- Track 58 : Anekin\_20, Crescenzo\_21, DarwinJr\_24
- Track 59 : Hestia\_21
- Track 60 : JakeTheSnake\_21
- Track 61 : Persistence\_20
- Track 62 : SpicyFrank\_21
- Track 63 : Seahorse\_22
- Track 64 : MurphyJoseph\_21
- Track 65 : MidnightRain\_21
- Track 66 : BenchScraper\_21
- Track 67 : SPB78\_18
- Track 68 : VWB\_19
- Track 69 : AbbeyMikolon\_18, Nesbitt\_18
- Track 70 : Rowa\_18
- Track 71 : Doucette\_18
- Track 72 : B22\_18
- Track 73 : E6\_19
- Track 74 : G4\_18
- Track 75 : PFR1\_15, PFR2\_17
- Track 76 : RegnumDei\_22
- Track 77 : SFuller\_24
- Track 78 : Jflix2\_22
- Track 79 : Shagrat\_23
- Track 80 : Madraxi\_27
- Track 81 : REQ1\_80
- Track 82 : CurlyFries\_24
- Track 83 : LittleRon\_20, ChuckDuck\_20
- Track 84 : FosterFrank\_20, PeggyLeg03\_20, LilyBell\_20, NidoQ\_20, Constance\_20
- Track 85 : KayMoney\_20
- Track 86 : Eileen\_20, Peas\_20

- Track 87 : HotPotato\_20
- Track 88 : Henrique\_20
- Track 89 : Pucara\_20
- Track 90 : GlobiWarming\_20
- Track 91 : Judy\_21
- Track 92 : Bridgette\_20, Karkharias\_20
- Track 93 : NikkiHotWheels\_20
- Track 94 : Ottawa\_45, Kharcho\_45
- Track 95 : phiAsp2\_30
- Track 96 : Wollypog\_19
- Track 97 : Footloose\_20
- Track 98 : Samy\_23

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

The start number called the most often in the published annotations is 25, it was called in 93 of the 106 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• AdaS\_21, AdoptaAdorbs\_17, Aikyam\_21, AlexMinion\_18, Amanises\_19, Amelia\_19, AmiCi24\_17, Amphitrite\_17, Andrew\_18, Anekin\_20, Antrice\_18, ApoKipo\_71, Atlantica\_17, Auxilium\_21, Azaz\_17, Babushka\_17, Basilisk\_18, BasketStar\_21, Bedetta\_19, BenchScraper\_21, Bhageatrice\_23, Bibble12\_19, BillyTP\_21, BlueShadow\_21, Bridgette\_20, Brynnie\_18, Camara\_17, Chickaboom\_17, Chicken\_18, ChuckDuck\_20, Colusalem\_18, Constance\_20, CookieBear\_21, Coral\_18, CosmicBrownie\_21, Cote\_19, Crescenzo\_21, Cygnet\_18, DanHam62\_17, Daob\_19, DarwinJr\_24, Ding\_21, Edmundo\_69, Eesa\_18, Eileen\_20, Fingolfin\_17, FosterFrank\_20, Globfish\_21, GlobiWarming\_20, Glotell\_17, Gopy\_21, Gravel\_19, GumGum\_21, HamCheese\_17, HannahPhantana\_19, Henrique\_20, Hestia\_21, Hillester\_21, HotPotato\_20, Isolde\_21, JakeTheSnake\_21, Jamun\_18, JellyBread\_21, Jerole\_19, Judy\_21, Juno112\_17, KHumphrey\_17, Kabloowy\_21, Karkharias\_20, KayMoney\_20, KendraB23\_19, Kepler\_18, Kharcho\_45, Kovu\_67, Kuleana\_18, Laphuphu24k\_17, Laroye\_69, Lasker\_21, Lawnathon\_21, LeBruni\_22, Leona\_17, LiSara\_66, LilyBell\_20, LittleRon\_20, LittleTokyo\_18, Lunar\_19, MUWow\_20, Mapleville\_21, MaterMagnus\_21, Melons\_19, MidnightRain\_21, MurphyJoseph\_21, NewKitty\_22, Niblet\_18, NidoQ\_20, NikkiHotWheels\_20, Nyilah\_20, Oppalora\_17, Orcanus\_18, OtsoOtso\_18, Ottawa\_45, Peas\_20, PeggyLeg03\_20, Pelletreau\_19, Persistence\_20, PhirstandPhine\_19, PhluffyCoco\_17, Phrank15\_20, Pineda\_19, Polka\_18, Pucara\_20, RadFad\_21, Raphaella\_21, Rattail\_17, RedFox\_17, Renna12\_18, Richie\_21, Ruchi\_18, Sakai\_21, Salgado\_69, Satrap\_21, Seahorse\_22, Shen\_19, Shrooms\_67, Shukran\_21, SonDevVon\_20, SpicyFrank\_21, Sporco\_22, StuartMinion\_17, TaylorSipht\_18, ThayneTheZag\_21, Tiff81\_22, Toad24\_19, Vopal\_22, Vulpecula\_18, Waltz\_66, Westrich\_19, Wheelbite\_65, WileyE\_17, Windest\_22, YoungHarleezy\_21, Zhuangyuan\_19, Zixiang\_18,

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

- 

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

- AbbeyMikolon\_18, B22\_18, CurlyFries\_24, Doucette\_18, E6\_19, Footloose\_20, G4\_18, JfliX2\_22, Madraxi\_27, Nesbitt\_18, PFR1\_15, PFR2\_17, REQ1\_80, RegnumDei\_22, Rowa\_18, SFuller\_24, SPB78\_18, Samy\_23, Shagrat\_23, VWB\_19, Wollypog\_19, phiAsp2\_30,

### Summary by start number:

#### Start 25:

- Found in 143 of 165 ( 86.7% ) of genes in pham
- Manual Annotations of this start: 93 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AdaS\_21 (AY), AdoptaAdorbs\_17 (AS3), Aikyam\_21 (AY), AlexMinion\_18 (AS3), Amanises\_19 (AS1), Amelia\_19 (AS2), AmiCi24\_17 (AS3), Amphitrite\_17 (AS3), Andrew\_18 (AS3), Anekin\_20 (AY), Antrice\_18 (AS2), ApoKipo\_71 (AL), Atlantica\_17 (AS3), Auxilium\_21 (AY), Azaz\_17 (AS3), Babushka\_17 (AS3), Basilisk\_18 (AS1), BasketStar\_21 (AY), Bedetta\_19 (AS2), BenchScraper\_21 (AY), Bhageatrice\_23 (AY), Bible12\_19 (AS2), BillyTP\_21 (AY), BlueShadow\_21 (AY), Bridgette\_20 (FA), Brynnie\_18 (AS1), Camara\_17 (AS3), Chickaboom\_17 (AS1), Chicken\_18 (AS1), ChuckDuck\_20 (FA), Colusalem\_18 (AS2), Constance\_20 (FA), CookieBear\_21 (AY), Coral\_18 (AS2), CosmicBrownie\_21 (AY), Cote\_19 (AS2), Crescenzo\_21 (AY), Cygnet\_18 (AS2), DanHam62\_17 (AS3), Daob\_19 (AS2), DarwinJr\_24 (AY), Ding\_21 (AY), Edmundo\_69 (AL), Eesa\_18 (AS1), Eileen\_20 (FA), Fingolfin\_17 (AS3), FosterFrank\_20 (FA), Globfish\_21 (AY), GlobiWarming\_20 (FA), Glotell\_17 (AS3), Gorpy\_21 (AY), Gravel\_19 (AS1), GumGum\_21 (AY), HamCheese\_17 (AS3), HannahPhantana\_19 (AS2), Henrique\_20 (FA), Hestia\_21 (AY), Hillester\_21 (AY), HotPotato\_20 (FA), Isolde\_21 (AY), JakeTheSnake\_21 (AY), Jamun\_18 (AS1), JellyBread\_21 (AY), Jerole\_19 (AS2), Judy\_21 (FA), Juno112\_17 (AS3), KHumphrey\_17 (AS3), Kabloowy\_21 (AY), Karkharias\_20 (FA), KayMoney\_20 (FA), KendraB23\_19 (AS1), Kepler\_18 (AS2), Kharcho\_45 (FM), Kovu\_67 (AL), Kuleana\_18 (AS2), Laphuphu24k\_17 (AS3), Laroye\_69 (AL), Lasker\_21 (AY), Lawnathon\_21 (AY), LeBruni\_22 (AY), Leona\_17 (AS3), LiSara\_66 (AL), LilyBell\_20 (FA), LittleRon\_20 (FA), LittleTokyo\_18 (AS2), Lunar\_19 (AS2), MUWow\_20 (AY), Mapleville\_21 (AY), MaterMagnus\_21 (AY), Melons\_19 (AS2), MidnightRain\_21 (AY), MurphyJoseph\_21 (AY), NewKitty\_22 (AY), Niblet\_18 (AS1), NidoQ\_20 (FA), NikkiHotWheels\_20 (FA), Nyilah\_20 (AY), Oppalora\_17 (AS3), Orcanus\_18 (AS1), OtsoOtso\_18 (AS2), Ottawa\_45 (FM), Peas\_20 (FA), PeggyLeg03\_20 (FA), Pelletreau\_19 (AS1), Persistence\_20 (AY), PhirstandPhine\_19 (AS2), PhluffyCoco\_17 (AS3), Phrank15\_20 (AY), Pineda\_19 (AS2), Polka\_18 (AS2), Pucara\_20 (FA), RadFad\_21 (AY), Raphaella\_21 (AY), Rattail\_17 (AS3), RedFox\_17 (AS3), Renna12\_18 (AS3), Richie\_21 (AY), Ruchi\_18 (AS1), Sakai\_21 (AY), Salgado\_69 (AL), Satrap\_21 (AY), Seahorse\_22 (AY), Shen\_19 (AS1), Shrooms\_67 (AL), Shukran\_21 (AY), SonDevVon\_20 (AY), SpicyFrank\_21 (AY), Sporco\_22 (AY), StuartMinion\_17 (AS3), TaylorSipht\_18 (AS1), ThayneTheZag\_21 (AY), Tiff81\_22 (AY), Toad24\_19 (AS1), Vopal\_22 (AY), Vulpecula\_18 (AS1), Waltz\_66 (AL), Westrich\_19 (AS1), Wheelbite\_65 (AL), WileyE\_17 (AS1), Windest\_22 (AY), YoungHarleezy\_21 (AY), Zhuangyuan\_19 (AS2), Zixiang\_18 (AS1),

#### Start 28:

- Found in 1 of 165 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: VWB\_19 (BA),

Start 34:

- Found in 1 of 165 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Footloose\_20 (singleton),

Start 36:

- Found in 2 of 165 ( 1.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: phiAsp2\_30 (singleton),

Start 37:

- Found in 5 of 165 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 2 of 106
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Rowa\_18 (BL), Samy\_23 (singleton),

Start 38:

- Found in 7 of 165 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 3 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CurlyFries\_24 (CF), Jflix2\_22 (CF), Madraxi\_27 (CF), REQ1\_80 (CF), RegnumDei\_22 (CF), SFuller\_24 (CF), Shagrat\_23 (CF),

Start 39:

- Found in 2 of 165 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbeyMikolon\_18 (BL), Nesbitt\_18 (BL),

Start 44:

- Found in 4 of 165 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 4 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: B22\_18 (BW), Doucette\_18 (BW), E6\_19 (BW), G4\_18 (BW),

Start 46:

- Found in 2 of 165 ( 1.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PFR1\_15 (BX), PFR2\_17 (BX),

Start 47:

- Found in 1 of 165 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wollypog\_19 (singleton),

Start 99:

- Found in 25 of 165 ( 15.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.0% of time when present
- Phage (with cluster) where this start called: SPB78\_18 (BA),

### **Summary by clusters:**

There are 13 clusters represented in this pham: AS3, AS2, AS1, BA, BL, CF, AL, FA, BW, AY, singleton, BX, FM,

Info for manual annotations of cluster AL:

- Start number 25 was manually annotated 9 times for cluster AL.

Info for manual annotations of cluster AS1:

- Start number 25 was manually annotated 11 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 25 was manually annotated 17 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 25 was manually annotated 14 times for cluster AS3.

Info for manual annotations of cluster AY:

- Start number 25 was manually annotated 30 times for cluster AY.

Info for manual annotations of cluster BL:

- Start number 37 was manually annotated 1 time for cluster BL.
- Start number 39 was manually annotated 2 times for cluster BL.

Info for manual annotations of cluster BW:

- Start number 44 was manually annotated 4 times for cluster BW.

Info for manual annotations of cluster CF:

- Start number 38 was manually annotated 3 times for cluster CF.

Info for manual annotations of cluster FA:

- Start number 25 was manually annotated 10 times for cluster FA.

Info for manual annotations of cluster FM:

- Start number 25 was manually annotated 2 times for cluster FM.

### **Gene Information:**

Gene: AbbeyMikolon\_18 Start: 15163, Stop: 16281, Start Num: 39

Candidate Starts for AbbeyMikolon\_18:

(19, 14986), (Start: 37 @15160 has 2 MA's), (Start: 39 @15163 has 2 MA's), (61, 15247), (69, 15286), (72, 15292), (105, 15403), (119, 15463), (206, 15775), (207, 15778), (211, 15799), (212, 15802), (216, 15814), (218, 15823), (223, 15847), (231, 15883), (235, 15901), (239, 15937), (257, 16015), (260, 16030), (261, 16039), (313, 16252),

Gene: AdaS\_21 Start: 15623, Stop: 16924, Start Num: 25

Candidate Starts for AdaS\_21:

(Start: 25 @15623 has 93 MA's), (85, 15860), (92, 15884), (99, 15911), (110, 15962), (118, 15992), (127, 16034), (136, 16070), (139, 16088), (165, 16178), (188, 16253), (202, 16292), (207, 16310), (216, 16343), (232, 16415), (272, 16613), (274, 16625), (276, 16634), (295, 16700), (310, 16763), (314, 16775), (319, 16796), (321, 16808), (327, 16871),

Gene: AdoptaAdorbs\_17 Start: 12931, Stop: 14175, Start Num: 25

Candidate Starts for AdoptaAdorbs\_17:

(Start: 25 @12931 has 93 MA's), (49, 13024), (54, 13045), (64, 13090), (69, 13114), (90, 13186), (126, 13342), (127, 13345), (128, 13348), (130, 13363), (131, 13366), (133, 13372), (152, 13453), (161, 13477), (164, 13489), (173, 13516), (189, 13573), (202, 13609), (212, 13651), (217, 13666), (234, 13741), (238, 13783), (241, 13789), (251, 13816), (252, 13828), (255, 13855), (282, 14005), (287, 14011), (296, 14041), (302, 14068), (309, 14095), (312, 14104), (320, 14137), (324, 14167),

Gene: Aikyam\_21 Start: 15624, Stop: 16925, Start Num: 25

Candidate Starts for Aikyam\_21:

(Start: 25 @15624 has 93 MA's), (92, 15885), (118, 15993), (127, 16035), (136, 16071), (139, 16089), (165, 16179), (188, 16254), (202, 16293), (207, 16311), (216, 16344), (232, 16416), (272, 16614), (274, 16626), (276, 16635), (295, 16701), (310, 16764), (314, 16776), (319, 16797), (321, 16809), (327, 16872),

Gene: AlexMinion\_18 Start: 12969, Stop: 14216, Start Num: 25

Candidate Starts for AlexMinion\_18:

(Start: 25 @12969 has 93 MA's), (49, 13062), (54, 13083), (64, 13128), (69, 13152), (90, 13224), (93, 13239), (126, 13380), (127, 13383), (128, 13386), (130, 13401), (131, 13404), (133, 13410), (152, 13491), (165, 13533), (173, 13554), (189, 13611), (202, 13647), (212, 13689), (215, 13695), (217, 13704), (232, 13773), (234, 13779), (241, 13827), (251, 13854), (252, 13866), (253, 13872), (255, 13893), (282, 14043), (287, 14049), (296, 14079), (302, 14106), (309, 14133), (312, 14142), (320, 14175),

Gene: Amanises\_19 Start: 14538, Stop: 15809, Start Num: 25

Candidate Starts for Amanises\_19:

(Start: 25 @14538 has 93 MA's), (41, 14604), (52, 14646), (67, 14709), (78, 14754), (88, 14787), (127, 14949), (128, 14952), (133, 14976), (158, 15072), (164, 15093), (173, 15120), (178, 15132), (180, 15138), (189, 15177), (202, 15213), (215, 15261), (246, 15411), (252, 15435), (272, 15558), (274, 15570), (276, 15579), (282, 15612), (287, 15618), (290, 15633), (297, 15654), (300, 15669), (302, 15675), (305, 15681), (309, 15702), (312, 15711), (320, 15744),

Gene: Amelia\_19 Start: 13377, Stop: 14630, Start Num: 25

Candidate Starts for Amelia\_19:

(Start: 25 @13377 has 93 MA's), (26, 13380), (31, 13401), (49, 13470), (64, 13536), (66, 13545), (90, 13632), (93, 13647), (127, 13791), (128, 13794), (130, 13809), (131, 13812), (133, 13818), (161, 13923), (164, 13935), (178, 13974), (189, 14019), (202, 14055), (212, 14097), (217, 14112), (235, 14190), (246, 14253), (252, 14277), (282, 14454), (296, 14490), (299, 14508), (302, 14517), (309, 14544), (312, 14553), (320, 14586),

Gene: AmiCi24\_17 Start: 12929, Stop: 14173, Start Num: 25

Candidate Starts for AmiCi24\_17:

(Start: 25 @12929 has 93 MA's), (49, 13022), (54, 13043), (64, 13088), (69, 13112), (90, 13184), (93, 13199), (126, 13340), (127, 13343), (128, 13346), (130, 13361), (131, 13364), (133, 13370), (152, 13451), (161, 13475), (164, 13487), (173, 13514), (189, 13571), (202, 13607), (212, 13649), (217,

13664), (234, 13739), (238, 13781), (241, 13787), (251, 13814), (252, 13826), (255, 13853), (282, 14003), (287, 14009), (296, 14039), (302, 14066), (309, 14093), (312, 14102), (320, 14135), (324, 14165),

Gene: Amphitrite\_17 Start: 12929, Stop: 14173, Start Num: 25

Candidate Starts for Amphitrite\_17:

(Start: 25 @12929 has 93 MA's), (49, 13022), (54, 13043), (64, 13088), (69, 13112), (90, 13184), (126, 13340), (127, 13343), (128, 13346), (130, 13361), (131, 13364), (133, 13370), (152, 13451), (164, 13487), (173, 13514), (189, 13571), (202, 13607), (212, 13649), (217, 13664), (234, 13739), (238, 13781), (241, 13787), (251, 13814), (252, 13826), (255, 13853), (282, 14003), (287, 14009), (296, 14039), (302, 14066), (309, 14093), (312, 14102), (320, 14135), (324, 14165),

Gene: Andrew\_18 Start: 13390, Stop: 14640, Start Num: 25

Candidate Starts for Andrew\_18:

(Start: 25 @13390 has 93 MA's), (49, 13483), (50, 13486), (52, 13498), (54, 13504), (64, 13549), (90, 13645), (93, 13660), (122, 13780), (125, 13798), (126, 13801), (127, 13804), (128, 13807), (130, 13822), (131, 13825), (133, 13831), (142, 13864), (152, 13912), (161, 13936), (164, 13948), (166, 13957), (173, 13975), (189, 14032), (202, 14068), (212, 14110), (215, 14116), (234, 14200), (241, 14251), (244, 14260), (251, 14278), (252, 14290), (255, 14317), (259, 14341), (260, 14344), (282, 14467), (296, 14503), (302, 14530), (312, 14566), (320, 14599), (324, 14629),

Gene: Anekin\_20 Start: 15586, Stop: 16887, Start Num: 25

Candidate Starts for Anekin\_20:

(Start: 25 @15586 has 93 MA's), (29, 15604), (64, 15745), (85, 15823), (105, 15895), (127, 15997), (131, 16018), (136, 16033), (160, 16120), (166, 16144), (178, 16174), (183, 16189), (188, 16216), (202, 16255), (207, 16273), (209, 16288), (216, 16306), (232, 16378), (261, 16516), (299, 16684), (310, 16726), (314, 16738), (327, 16834),

Gene: Antrice\_18 Start: 13934, Stop: 15181, Start Num: 25

Candidate Starts for Antrice\_18:

(Start: 25 @13934 has 93 MA's), (41, 14000), (49, 14027), (50, 14030), (54, 14048), (64, 14093), (98, 14219), (122, 14324), (127, 14348), (131, 14369), (133, 14375), (137, 14396), (144, 14420), (152, 14456), (161, 14480), (163, 14489), (164, 14492), (178, 14528), (182, 14540), (188, 14570), (189, 14573), (202, 14609), (212, 14651), (234, 14741), (250, 14816), (274, 14966), (282, 15008), (287, 15014), (290, 15029), (302, 15071), (309, 15098), (312, 15107), (316, 15119), (322, 15161),

Gene: ApoKipo\_71 Start: 42421, Stop: 43596, Start Num: 25

Candidate Starts for ApoKipo\_71:

(Start: 25 @42421 has 93 MA's), (30, 42442), (43, 42490), (51, 42523), (79, 42628), (96, 42688), (97, 42691), (112, 42745), (128, 42772), (138, 42820), (164, 42910), (165, 42916), (166, 42919), (178, 42955), (182, 42967), (185, 42988), (188, 42997), (191, 43009), (194, 43018), (225, 43129), (237, 43198), (238, 43204), (256, 43270), (272, 43360), (275, 43378), (280, 43402), (282, 43414), (312, 43513), (314, 43519), (318, 43537), (323, 43567),

Gene: Atlantica\_17 Start: 12931, Stop: 14175, Start Num: 25

Candidate Starts for Atlantica\_17:

(Start: 25 @12931 has 93 MA's), (49, 13024), (54, 13045), (64, 13090), (69, 13114), (90, 13186), (126, 13342), (127, 13345), (128, 13348), (130, 13363), (131, 13366), (133, 13372), (152, 13453), (161, 13477), (164, 13489), (173, 13516), (189, 13573), (202, 13609), (212, 13651), (217, 13666), (234, 13741), (238, 13783), (241, 13789), (251, 13816), (252, 13828), (255, 13855), (282, 14005), (287, 14011), (296, 14041), (302, 14068), (309, 14095), (312, 14104), (320, 14137), (324, 14167),

Gene: Auxilium\_21 Start: 15623, Stop: 16924, Start Num: 25

Candidate Starts for Auxilium\_21:

(Start: 25 @15623 has 93 MA's), (85, 15860), (92, 15884), (99, 15911), (110, 15962), (118, 15992), (127, 16034), (131, 16055), (136, 16070), (139, 16088), (188, 16253), (202, 16292), (207, 16310), (216, 16343), (232, 16415), (272, 16613), (274, 16625), (276, 16634), (279, 16649), (310, 16763), (314, 16775), (319, 16796), (321, 16808), (327, 16871),

Gene: Azaz\_17 Start: 12982, Stop: 14229, Start Num: 25

Candidate Starts for Azaz\_17:

(Start: 25 @12982 has 93 MA's), (49, 13075), (54, 13096), (64, 13141), (69, 13165), (90, 13237), (126, 13393), (127, 13396), (128, 13399), (130, 13414), (131, 13417), (152, 13504), (161, 13528), (164, 13540), (173, 13567), (189, 13624), (202, 13660), (217, 13717), (234, 13792), (238, 13834), (241, 13840), (251, 13867), (252, 13879), (255, 13906), (282, 14056), (287, 14062), (296, 14092), (302, 14119), (309, 14146), (312, 14155), (320, 14188), (324, 14218), (326, 14224),

Gene: B22\_18 Start: 14570, Stop: 15742, Start Num: 44

Candidate Starts for B22\_18:

(17, 14363), (22, 14420), (Start: 44 @14570 has 4 MA's), (59, 14627), (60, 14630), (69, 14672), (71, 14675), (76, 14693), (82, 14717), (107, 14798), (108, 14804), (135, 14918), (143, 14948), (148, 14978), (156, 14999), (163, 15023), (181, 15089), (182, 15092), (195, 15146), (197, 15155), (206, 15191), (208, 15200), (211, 15215), (226, 15278), (234, 15317), (237, 15347), (238, 15353), (239, 15356), (243, 15365), (245, 15371), (262, 15485), (265, 15506), (281, 15584), (283, 15590), (284, 15593), (294, 15623), (297, 15635), (300, 15650), (305, 15662),

Gene: Babushka\_17 Start: 12984, Stop: 14228, Start Num: 25

Candidate Starts for Babushka\_17:

(Start: 25 @12984 has 93 MA's), (49, 13077), (54, 13098), (64, 13143), (90, 13239), (93, 13254), (126, 13395), (127, 13398), (128, 13401), (130, 13416), (131, 13419), (133, 13425), (152, 13506), (161, 13530), (164, 13542), (173, 13569), (189, 13626), (202, 13662), (212, 13704), (217, 13719), (229, 13770), (234, 13794), (238, 13836), (241, 13842), (244, 13851), (251, 13869), (252, 13881), (255, 13908), (282, 14058), (287, 14064), (296, 14094), (302, 14121), (309, 14148), (312, 14157), (320, 14190), (324, 14220),

Gene: Basilisk\_18 Start: 14668, Stop: 15918, Start Num: 25

Candidate Starts for Basilisk\_18:

(Start: 25 @14668 has 93 MA's), (32, 14701), (41, 14734), (57, 14797), (64, 14827), (88, 14917), (99, 14956), (113, 15016), (120, 15040), (122, 15055), (127, 15079), (128, 15082), (131, 15100), (152, 15187), (161, 15211), (163, 15220), (164, 15223), (173, 15250), (189, 15307), (202, 15343), (215, 15391), (246, 15541), (252, 15565), (260, 15619), (262, 15637), (279, 15724), (282, 15742), (296, 15778), (300, 15799), (302, 15805), (305, 15811), (309, 15832), (312, 15841), (320, 15874),

Gene: BasketStar\_21 Start: 15677, Stop: 16978, Start Num: 25

Candidate Starts for BasketStar\_21:

(Start: 25 @15677 has 93 MA's), (75, 15881), (85, 15914), (92, 15938), (105, 15986), (110, 16016), (118, 16046), (127, 16088), (136, 16124), (139, 16142), (188, 16307), (202, 16346), (207, 16364), (216, 16397), (232, 16469), (272, 16667), (274, 16679), (310, 16817), (314, 16829), (319, 16850), (321, 16862), (327, 16925),

Gene: Bedetta\_19 Start: 13377, Stop: 14630, Start Num: 25

Candidate Starts for Bedetta\_19:

(Start: 25 @13377 has 93 MA's), (26, 13380), (31, 13401), (49, 13470), (64, 13536), (66, 13545), (90, 13632), (93, 13647), (127, 13791), (128, 13794), (130, 13809), (131, 13812), (133, 13818), (161, 13923), (164, 13935), (178, 13974), (189, 14019), (202, 14055), (212, 14097), (217, 14112), (235, 14190), (246, 14253), (252, 14277), (282, 14454), (296, 14490), (299, 14508), (302, 14517), (309,

14544), (312, 14553), (320, 14586),

Gene: BenchScraper\_21 Start: 15638, Stop: 16939, Start Num: 25

Candidate Starts for BenchScraper\_21:

(Start: 25 @15638 has 93 MA's), (75, 15842), (85, 15875), (92, 15899), (105, 15947), (110, 15977), (118, 16007), (127, 16049), (136, 16085), (139, 16103), (188, 16268), (202, 16307), (207, 16325), (216, 16358), (232, 16430), (272, 16628), (274, 16640), (276, 16649), (295, 16715), (310, 16778), (314, 16790), (319, 16811), (321, 16823), (327, 16886),

Gene: Bhageatrice\_23 Start: 16913, Stop: 18214, Start Num: 25

Candidate Starts for Bhageatrice\_23:

(Start: 25 @16913 has 93 MA's), (32, 16946), (92, 17174), (118, 17282), (127, 17324), (136, 17360), (139, 17378), (165, 17468), (188, 17543), (202, 17582), (207, 17600), (216, 17633), (232, 17705), (276, 17924), (295, 17990), (310, 18053), (314, 18065), (319, 18086), (321, 18098), (327, 18161),

Gene: Bible12\_19 Start: 13380, Stop: 14633, Start Num: 25

Candidate Starts for Bible12\_19:

(Start: 25 @13380 has 93 MA's), (26, 13383), (31, 13404), (49, 13473), (64, 13539), (66, 13548), (90, 13635), (93, 13650), (127, 13794), (128, 13797), (130, 13812), (131, 13815), (133, 13821), (161, 13926), (164, 13938), (178, 13977), (189, 14022), (202, 14058), (212, 14100), (217, 14115), (235, 14193), (246, 14256), (252, 14280), (282, 14457), (296, 14493), (299, 14511), (302, 14520), (309, 14547), (312, 14556), (320, 14589),

Gene: BillyTP\_21 Start: 15407, Stop: 16708, Start Num: 25

Candidate Starts for BillyTP\_21:

(Start: 25 @15407 has 93 MA's), (92, 15668), (118, 15776), (127, 15818), (136, 15854), (139, 15872), (165, 15962), (188, 16037), (202, 16076), (207, 16094), (216, 16127), (232, 16199), (272, 16397), (274, 16409), (276, 16418), (279, 16433), (310, 16547), (314, 16559), (319, 16580), (321, 16592), (327, 16655),

Gene: BlueShadow\_21 Start: 15623, Stop: 16924, Start Num: 25

Candidate Starts for BlueShadow\_21:

(Start: 25 @15623 has 93 MA's), (75, 15827), (85, 15860), (92, 15884), (105, 15932), (110, 15962), (118, 15992), (127, 16034), (136, 16070), (139, 16088), (188, 16253), (202, 16292), (207, 16310), (216, 16343), (223, 16370), (232, 16415), (272, 16613), (274, 16625), (310, 16763), (314, 16775), (319, 16796), (321, 16808), (327, 16871),

Gene: Bridgette\_20 Start: 15685, Stop: 16986, Start Num: 25

Candidate Starts for Bridgette\_20:

(Start: 25 @15685 has 93 MA's), (29, 15703), (40, 15745), (64, 15844), (118, 16054), (127, 16096), (136, 16132), (173, 16261), (178, 16273), (183, 16288), (188, 16315), (190, 16324), (202, 16354), (207, 16372), (216, 16405), (224, 16435), (231, 16468), (232, 16477), (261, 16615), (272, 16675), (274, 16687), (299, 16783), (310, 16825), (314, 16837), (321, 16870), (327, 16933),

Gene: Brynnie\_18 Start: 14480, Stop: 15730, Start Num: 25

Candidate Starts for Brynnie\_18:

(Start: 25 @14480 has 93 MA's), (32, 14513), (41, 14546), (57, 14609), (64, 14639), (88, 14729), (99, 14768), (113, 14828), (120, 14852), (122, 14867), (127, 14891), (128, 14894), (131, 14912), (152, 14999), (161, 15023), (163, 15032), (164, 15035), (173, 15062), (189, 15119), (202, 15155), (215, 15203), (235, 15290), (246, 15353), (252, 15377), (260, 15431), (262, 15449), (279, 15536), (282, 15554), (296, 15590), (300, 15611), (302, 15617), (309, 15644), (312, 15653), (320, 15686),

Gene: Camara\_17 Start: 12932, Stop: 14176, Start Num: 25

Candidate Starts for Camara\_17:

(Start: 25 @12932 has 93 MA's), (49, 13025), (54, 13046), (64, 13091), (69, 13115), (90, 13187), (93, 13202), (126, 13343), (127, 13346), (128, 13349), (130, 13364), (131, 13367), (133, 13373), (152, 13454), (161, 13478), (164, 13490), (173, 13517), (189, 13574), (202, 13610), (212, 13652), (217, 13667), (234, 13742), (238, 13784), (241, 13790), (251, 13817), (252, 13829), (255, 13856), (282, 14006), (287, 14012), (296, 14042), (302, 14069), (309, 14096), (312, 14105), (320, 14138), (324, 14168),

Gene: Chickaboom\_17 Start: 13406, Stop: 14656, Start Num: 25

Candidate Starts for Chickaboom\_17:

(Start: 25 @13406 has 93 MA's), (32, 13439), (41, 13472), (57, 13535), (64, 13565), (88, 13655), (99, 13694), (113, 13754), (120, 13778), (122, 13793), (127, 13817), (128, 13820), (131, 13838), (152, 13925), (161, 13949), (164, 13961), (173, 13988), (189, 14045), (202, 14081), (215, 14129), (235, 14216), (246, 14279), (252, 14303), (260, 14357), (262, 14375), (279, 14462), (296, 14516), (300, 14537), (302, 14543), (305, 14549), (309, 14570), (312, 14579), (320, 14612),

Gene: Chicken\_18 Start: 14417, Stop: 15667, Start Num: 25

Candidate Starts for Chicken\_18:

(Start: 25 @14417 has 93 MA's), (32, 14450), (41, 14483), (52, 14525), (66, 14585), (69, 14600), (88, 14666), (127, 14828), (128, 14831), (164, 14972), (178, 15011), (180, 15017), (189, 15056), (202, 15092), (229, 15200), (246, 15290), (252, 15314), (262, 15386), (264, 15401), (272, 15437), (282, 15491), (287, 15497), (289, 15509), (302, 15554), (305, 15560), (309, 15581), (312, 15590),

Gene: ChuckDuck\_20 Start: 15527, Stop: 16828, Start Num: 25

Candidate Starts for ChuckDuck\_20:

(Start: 25 @15527 has 93 MA's), (29, 15545), (64, 15686), (78, 15743), (85, 15764), (127, 15938), (135, 15971), (136, 15974), (183, 16130), (202, 16196), (207, 16214), (215, 16244), (216, 16247), (232, 16319), (272, 16517), (274, 16529), (299, 16625), (310, 16667), (314, 16679), (327, 16775),

Gene: Colusalem\_18 Start: 13216, Stop: 14469, Start Num: 25

Candidate Starts for Colusalem\_18:

(Start: 25 @13216 has 93 MA's), (26, 13219), (31, 13240), (49, 13309), (64, 13375), (66, 13384), (90, 13471), (93, 13486), (127, 13630), (128, 13633), (130, 13648), (131, 13651), (133, 13657), (161, 13762), (164, 13774), (178, 13813), (189, 13858), (202, 13894), (212, 13936), (217, 13951), (235, 14029), (246, 14092), (252, 14116), (282, 14293), (296, 14329), (299, 14347), (302, 14356), (309, 14383), (312, 14392), (320, 14425),

Gene: Constance\_20 Start: 15667, Stop: 16968, Start Num: 25

Candidate Starts for Constance\_20:

(Start: 25 @15667 has 93 MA's), (29, 15685), (64, 15826), (118, 16036), (127, 16078), (136, 16114), (154, 16183), (178, 16255), (183, 16270), (188, 16297), (202, 16336), (207, 16354), (215, 16384), (216, 16387), (220, 16396), (232, 16459), (261, 16597), (272, 16657), (274, 16669), (299, 16765), (310, 16807), (314, 16819), (327, 16915),

Gene: CookieBear\_21 Start: 15623, Stop: 16924, Start Num: 25

Candidate Starts for CookieBear\_21:

(Start: 25 @15623 has 93 MA's), (92, 15884), (118, 15992), (127, 16034), (136, 16070), (139, 16088), (165, 16178), (188, 16253), (202, 16292), (207, 16310), (216, 16343), (232, 16415), (272, 16613), (274, 16625), (310, 16763), (314, 16775), (319, 16796), (321, 16808), (327, 16871),

Gene: Coral\_18 Start: 13216, Stop: 14469, Start Num: 25

Candidate Starts for Coral\_18:

(Start: 25 @13216 has 93 MA's), (26, 13219), (31, 13240), (49, 13309), (64, 13375), (66, 13384), (90, 13471), (93, 13486), (127, 13630), (128, 13633), (130, 13648), (131, 13651), (133, 13657), (161, 13762), (164, 13774), (178, 13813), (189, 13858), (202, 13894), (212, 13936), (217, 13951), (235, 14029), (246, 14092), (252, 14116), (282, 14293), (296, 14329), (299, 14347), (302, 14356), (309, 14383), (312, 14392), (320, 14425),

Gene: CosmicBrownie\_21 Start: 15581, Stop: 16882, Start Num: 25

Candidate Starts for CosmicBrownie\_21:

(Start: 25 @15581 has 93 MA's), (64, 15740), (75, 15785), (89, 15833), (92, 15842), (118, 15950), (127, 15992), (131, 16013), (136, 16028), (139, 16046), (165, 16136), (188, 16211), (202, 16250), (207, 16268), (216, 16301), (232, 16373), (272, 16571), (276, 16592), (279, 16607), (310, 16721), (314, 16733), (319, 16754), (321, 16766), (327, 16829),

Gene: Cote\_19 Start: 13377, Stop: 14630, Start Num: 25

Candidate Starts for Cote\_19:

(Start: 25 @13377 has 93 MA's), (26, 13380), (31, 13401), (49, 13470), (64, 13536), (66, 13545), (90, 13632), (93, 13647), (127, 13791), (128, 13794), (130, 13809), (131, 13812), (133, 13818), (161, 13923), (164, 13935), (178, 13974), (189, 14019), (202, 14055), (212, 14097), (217, 14112), (235, 14190), (246, 14253), (252, 14277), (282, 14454), (296, 14490), (299, 14508), (302, 14517), (309, 14544), (312, 14553), (320, 14586),

Gene: Crescenzo\_21 Start: 15514, Stop: 16815, Start Num: 25

Candidate Starts for Crescenzo\_21:

(Start: 25 @15514 has 93 MA's), (29, 15532), (64, 15673), (85, 15751), (105, 15823), (127, 15925), (131, 15946), (136, 15961), (160, 16048), (166, 16072), (178, 16102), (183, 16117), (188, 16144), (202, 16183), (207, 16201), (209, 16216), (216, 16234), (232, 16306), (261, 16444), (299, 16612), (310, 16654), (314, 16666), (327, 16762),

Gene: CurlyFries\_24 Start: 20993, Stop: 22120, Start Num: 38

Candidate Starts for CurlyFries\_24:

(Start: 38 @20993 has 3 MA's), (64, 21095), (72, 21119), (90, 21185), (108, 21248), (116, 21290), (129, 21347), (133, 21359), (151, 21437), (159, 21455), (160, 21458), (187, 21557), (188, 21563), (201, 21608), (204, 21620), (205, 21623), (219, 21677), (223, 21698), (235, 21752), (239, 21788), (249, 21809), (255, 21854), (260, 21881), (261, 21890), (263, 21908), (268, 21932), (281, 21998), (282, 22001), (287, 22007), (290, 22022), (293, 22028), (301, 22061),

Gene: Cygnet\_18 Start: 14044, Stop: 15291, Start Num: 25

Candidate Starts for Cygnet\_18:

(Start: 25 @14044 has 93 MA's), (49, 14137), (54, 14158), (64, 14203), (98, 14329), (126, 14455), (128, 14461), (131, 14479), (133, 14485), (137, 14506), (144, 14530), (152, 14566), (161, 14590), (163, 14599), (164, 14602), (178, 14638), (182, 14650), (188, 14680), (189, 14683), (202, 14719), (212, 14761), (234, 14851), (250, 14926), (274, 15076), (282, 15118), (287, 15124), (290, 15139), (302, 15181), (309, 15208), (312, 15217), (316, 15229), (322, 15271),

Gene: DanHam62\_17 Start: 12931, Stop: 14175, Start Num: 25

Candidate Starts for DanHam62\_17:

(Start: 25 @12931 has 93 MA's), (49, 13024), (54, 13045), (64, 13090), (69, 13114), (90, 13186), (126, 13342), (127, 13345), (128, 13348), (130, 13363), (131, 13366), (133, 13372), (152, 13453), (161, 13477), (164, 13489), (173, 13516), (189, 13573), (202, 13609), (212, 13651), (217, 13666), (234, 13741), (238, 13783), (241, 13789), (251, 13816), (252, 13828), (255, 13855), (282, 14005), (287, 14011), (296, 14041), (302, 14068), (309, 14095), (312, 14104), (320, 14137), (324, 14167),

Gene: Daob\_19 Start: 13380, Stop: 14633, Start Num: 25

Candidate Starts for Daob\_19:

(Start: 25 @13380 has 93 MA's), (26, 13383), (31, 13404), (49, 13473), (64, 13539), (66, 13548), (90, 13635), (93, 13650), (127, 13794), (128, 13797), (130, 13812), (131, 13815), (133, 13821), (161, 13926), (164, 13938), (178, 13977), (189, 14022), (202, 14058), (212, 14100), (217, 14115), (235, 14193), (246, 14256), (252, 14280), (282, 14457), (296, 14493), (299, 14511), (302, 14520), (309, 14547), (312, 14556), (320, 14589),

Gene: DarwinJr\_24 Start: 16818, Stop: 18119, Start Num: 25

Candidate Starts for DarwinJr\_24:

(Start: 25 @16818 has 93 MA's), (29, 16836), (64, 16977), (85, 17055), (105, 17127), (127, 17229), (131, 17250), (136, 17265), (160, 17352), (166, 17376), (178, 17406), (183, 17421), (188, 17448), (202, 17487), (207, 17505), (209, 17520), (216, 17538), (232, 17610), (261, 17748), (299, 17916), (310, 17958), (314, 17970), (327, 18066),

Gene: Ding\_21 Start: 15686, Stop: 16987, Start Num: 25

Candidate Starts for Ding\_21:

(Start: 25 @15686 has 93 MA's), (64, 15845), (78, 15902), (85, 15923), (99, 15974), (118, 16055), (127, 16097), (128, 16100), (131, 16118), (136, 16133), (152, 16199), (165, 16241), (178, 16274), (202, 16355), (207, 16373), (209, 16388), (216, 16406), (232, 16478), (253, 16559), (255, 16580), (261, 16616), (265, 16646), (272, 16676), (276, 16697), (299, 16784), (310, 16826), (327, 16934),

Gene: Doucette\_18 Start: 14743, Stop: 15915, Start Num: 44

Candidate Starts for Doucette\_18:

(4, 14245), (9, 14410), (10, 14416), (17, 14536), (22, 14593), (23, 14641), (Start: 44 @14743 has 4 MA's), (59, 14800), (60, 14803), (69, 14845), (71, 14848), (76, 14866), (82, 14890), (107, 14971), (108, 14977), (135, 15091), (148, 15151), (156, 15172), (163, 15196), (181, 15262), (182, 15265), (195, 15319), (197, 15328), (200, 15343), (206, 15364), (208, 15373), (211, 15388), (215, 15403), (226, 15451), (234, 15490), (237, 15520), (238, 15526), (239, 15529), (243, 15538), (245, 15544), (253, 15577), (261, 15649), (262, 15658), (265, 15679), (281, 15757), (283, 15763), (284, 15766), (293, 15793), (294, 15796), (297, 15808), (300, 15823), (305, 15835),

Gene: E6\_19 Start: 14791, Stop: 15963, Start Num: 44

Candidate Starts for E6\_19:

(4, 14293), (9, 14458), (10, 14464), (17, 14584), (21, 14629), (22, 14641), (Start: 44 @14791 has 4 MA's), (59, 14848), (60, 14851), (69, 14893), (71, 14896), (76, 14914), (82, 14938), (107, 15019), (108, 15025), (135, 15139), (156, 15220), (163, 15244), (181, 15310), (182, 15313), (195, 15367), (197, 15376), (200, 15391), (206, 15412), (208, 15421), (211, 15436), (226, 15499), (237, 15568), (238, 15574), (239, 15577), (243, 15586), (245, 15592), (253, 15625), (261, 15697), (262, 15706), (265, 15727), (281, 15805), (283, 15811), (284, 15814), (293, 15841), (294, 15844), (297, 15856), (300, 15871), (305, 15883),

Gene: Edmundo\_69 Start: 42213, Stop: 43382, Start Num: 25

Candidate Starts for Edmundo\_69:

(Start: 25 @42213 has 93 MA's), (27, 42222), (30, 42234), (35, 42261), (51, 42318), (54, 42324), (65, 42366), (79, 42423), (85, 42441), (88, 42453), (93, 42474), (128, 42567), (133, 42591), (138, 42615), (144, 42636), (146, 42651), (173, 42732), (178, 42744), (183, 42759), (185, 42777), (202, 42825), (223, 42909), (242, 43002), (247, 43008), (269, 43134), (282, 43203), (312, 43302), (320, 43335),

Gene: Eesa\_18 Start: 14631, Stop: 15881, Start Num: 25

Candidate Starts for Eesa\_18:

(Start: 25 @14631 has 93 MA's), (32, 14664), (41, 14697), (69, 14814), (88, 14880), (127, 15042), (128, 15045), (147, 15132), (164, 15186), (173, 15213), (178, 15225), (180, 15231), (188, 15267), (189, 15270), (202, 15306), (215, 15354), (230, 15420), (246, 15504), (252, 15528), (272, 15651),

(274, 15663), (276, 15672), (282, 15705), (287, 15711), (290, 15726), (297, 15747), (300, 15762), (302, 15768), (305, 15774), (309, 15795), (312, 15804), (320, 15837),

Gene: Eileen\_20 Start: 15628, Stop: 16929, Start Num: 25

Candidate Starts for Eileen\_20:

(Start: 25 @15628 has 93 MA's), (29, 15646), (40, 15688), (64, 15787), (118, 15997), (127, 16039), (136, 16075), (178, 16216), (183, 16231), (188, 16258), (190, 16267), (202, 16297), (207, 16315), (216, 16348), (232, 16420), (261, 16558), (272, 16618), (274, 16630), (299, 16726), (310, 16768), (314, 16780), (327, 16876),

Gene: Fingolfin\_17 Start: 12932, Stop: 14176, Start Num: 25

Candidate Starts for Fingolfin\_17:

(Start: 25 @12932 has 93 MA's), (49, 13025), (54, 13046), (64, 13091), (69, 13115), (90, 13187), (93, 13202), (126, 13343), (127, 13346), (128, 13349), (130, 13364), (131, 13367), (133, 13373), (152, 13454), (161, 13478), (164, 13490), (173, 13517), (189, 13574), (202, 13610), (212, 13652), (217, 13667), (234, 13742), (238, 13784), (241, 13790), (251, 13817), (252, 13829), (255, 13856), (282, 14006), (287, 14012), (296, 14042), (302, 14069), (309, 14096), (312, 14105), (320, 14138), (324, 14168),

Gene: Footloose\_20 Start: 13870, Stop: 14982, Start Num: 34

Candidate Starts for Footloose\_20:

(Start: 34 @13870 has 1 MA's), (42, 13891), (45, 13903), (53, 13933), (62, 13972), (67, 13993), (70, 14005), (80, 14044), (84, 14056), (87, 14071), (91, 14080), (94, 14098), (102, 14119), (106, 14131), (109, 14164), (111, 14170), (115, 14185), (121, 14215), (133, 14263), (157, 14353), (160, 14362), (162, 14371), (169, 14398), (172, 14404), (176, 14413), (179, 14419), (186, 14446), (188, 14455), (190, 14464), (193, 14473), (202, 14494), (216, 14545), (218, 14554), (220, 14560), (225, 14587), (234, 14629), (248, 14680), (252, 14695), (253, 14701), (259, 14746), (266, 14791), (277, 14842), (278, 14851), (291, 14899), (292, 14902), (303, 14941), (304, 14944), (306, 14950), (308, 14956), (311, 14974),

Gene: FosterFrank\_20 Start: 15625, Stop: 16926, Start Num: 25

Candidate Starts for FosterFrank\_20:

(Start: 25 @15625 has 93 MA's), (29, 15643), (64, 15784), (118, 15994), (127, 16036), (136, 16072), (154, 16141), (178, 16213), (183, 16228), (188, 16255), (202, 16294), (207, 16312), (215, 16342), (216, 16345), (220, 16354), (232, 16417), (261, 16555), (272, 16615), (274, 16627), (299, 16723), (310, 16765), (314, 16777), (327, 16873),

Gene: G4\_18 Start: 14733, Stop: 15905, Start Num: 44

Candidate Starts for G4\_18:

(17, 14526), (21, 14571), (22, 14583), (Start: 44 @14733 has 4 MA's), (59, 14790), (60, 14793), (69, 14835), (71, 14838), (76, 14856), (82, 14880), (107, 14961), (108, 14967), (135, 15081), (143, 15111), (156, 15162), (163, 15186), (181, 15252), (182, 15255), (195, 15309), (197, 15318), (206, 15354), (208, 15363), (211, 15378), (226, 15441), (234, 15480), (237, 15510), (238, 15516), (239, 15519), (243, 15528), (245, 15534), (253, 15567), (261, 15639), (262, 15648), (265, 15669), (273, 15702), (281, 15747), (283, 15753), (284, 15756), (293, 15783), (294, 15786), (297, 15798), (300, 15813), (305, 15825),

Gene: Globfish\_21 Start: 15696, Stop: 16997, Start Num: 25

Candidate Starts for Globfish\_21:

(Start: 25 @15696 has 93 MA's), (92, 15957), (118, 16065), (127, 16107), (139, 16161), (166, 16254), (188, 16326), (202, 16365), (207, 16383), (215, 16413), (216, 16416), (224, 16446), (232, 16488), (253, 16569), (272, 16686), (276, 16707), (295, 16773), (310, 16836), (314, 16848), (327, 16944),

Gene: GlobiWarming\_20 Start: 15621, Stop: 16922, Start Num: 25

Candidate Starts for GlobiWarming\_20:

(Start: 25 @15621 has 93 MA's), (29, 15639), (118, 15990), (127, 16032), (136, 16068), (178, 16209), (183, 16224), (188, 16251), (202, 16290), (207, 16308), (216, 16341), (231, 16404), (232, 16413), (261, 16551), (272, 16611), (274, 16623), (299, 16719), (310, 16761), (314, 16773), (327, 16869),

Gene: Glotell\_17 Start: 12929, Stop: 14173, Start Num: 25

Candidate Starts for Glotell\_17:

(Start: 25 @12929 has 93 MA's), (49, 13022), (54, 13043), (64, 13088), (69, 13112), (90, 13184), (126, 13340), (127, 13343), (128, 13346), (130, 13361), (131, 13364), (133, 13370), (152, 13451), (161, 13475), (164, 13487), (173, 13514), (189, 13571), (202, 13607), (212, 13649), (217, 13664), (234, 13739), (238, 13781), (241, 13787), (251, 13814), (252, 13826), (255, 13853), (282, 14003), (287, 14009), (296, 14039), (302, 14066), (309, 14093), (312, 14102), (320, 14135), (324, 14165),

Gene: Gorpy\_21 Start: 15632, Stop: 16933, Start Num: 25

Candidate Starts for Gorpy\_21:

(Start: 25 @15632 has 93 MA's), (92, 15893), (99, 15920), (110, 15971), (118, 16001), (127, 16043), (131, 16064), (136, 16079), (139, 16097), (188, 16262), (202, 16301), (207, 16319), (216, 16352), (232, 16424), (272, 16622), (274, 16634), (276, 16643), (279, 16658), (310, 16772), (314, 16784), (319, 16805), (321, 16817), (327, 16880),

Gene: Gravel\_19 Start: 14537, Stop: 15787, Start Num: 25

Candidate Starts for Gravel\_19:

(Start: 25 @14537 has 93 MA's), (41, 14603), (52, 14645), (67, 14708), (78, 14753), (88, 14786), (127, 14948), (128, 14951), (158, 15071), (164, 15092), (173, 15119), (178, 15131), (180, 15137), (189, 15176), (202, 15212), (215, 15260), (246, 15410), (252, 15434), (272, 15557), (274, 15569), (276, 15578), (282, 15611), (287, 15617), (290, 15632), (297, 15653), (300, 15668), (302, 15674), (305, 15680), (309, 15701), (312, 15710), (320, 15743),

Gene: GumGum\_21 Start: 15572, Stop: 16873, Start Num: 25

Candidate Starts for GumGum\_21:

(Start: 25 @15572 has 93 MA's), (64, 15731), (75, 15776), (92, 15833), (118, 15941), (127, 15983), (136, 16019), (139, 16037), (165, 16127), (188, 16202), (202, 16241), (207, 16259), (216, 16292), (232, 16364), (272, 16562), (274, 16574), (276, 16583), (310, 16712), (314, 16724), (319, 16745), (321, 16757), (327, 16820),

Gene: HamCheese\_17 Start: 12931, Stop: 14175, Start Num: 25

Candidate Starts for HamCheese\_17:

(Start: 25 @12931 has 93 MA's), (49, 13024), (54, 13045), (64, 13090), (69, 13114), (90, 13186), (126, 13342), (127, 13345), (128, 13348), (130, 13363), (131, 13366), (133, 13372), (152, 13453), (164, 13489), (173, 13516), (189, 13573), (202, 13609), (212, 13651), (217, 13666), (234, 13741), (238, 13783), (241, 13789), (251, 13816), (252, 13828), (255, 13855), (282, 14005), (287, 14011), (296, 14041), (302, 14068), (309, 14095), (312, 14104), (320, 14137), (324, 14167),

Gene: HannahPhantana\_19 Start: 13380, Stop: 14633, Start Num: 25

Candidate Starts for HannahPhantana\_19:

(Start: 25 @13380 has 93 MA's), (26, 13383), (31, 13404), (49, 13473), (64, 13539), (66, 13548), (90, 13635), (93, 13650), (127, 13794), (128, 13797), (130, 13812), (131, 13815), (133, 13821), (161, 13926), (164, 13938), (178, 13977), (189, 14022), (202, 14058), (212, 14100), (217, 14115), (235, 14193), (246, 14256), (252, 14280), (282, 14457), (296, 14493), (299, 14511), (302, 14520), (309, 14547), (312, 14556), (320, 14589),

Gene: Henrique\_20 Start: 15646, Stop: 16947, Start Num: 25

Candidate Starts for Henrique\_20:

(Start: 25 @15646 has 93 MA's), (29, 15664), (64, 15805), (118, 16015), (127, 16057), (136, 16093), (173, 16222), (178, 16234), (183, 16249), (188, 16276), (190, 16285), (202, 16315), (207, 16333), (216, 16366), (224, 16396), (231, 16429), (232, 16438), (261, 16576), (272, 16636), (274, 16648), (299, 16744), (310, 16786), (314, 16798), (327, 16894),

Gene: Hestia\_21 Start: 15801, Stop: 17102, Start Num: 25

Candidate Starts for Hestia\_21:

(Start: 25 @15801 has 93 MA's), (92, 16062), (118, 16170), (127, 16212), (136, 16248), (139, 16266), (165, 16356), (188, 16431), (202, 16470), (207, 16488), (216, 16521), (232, 16593), (272, 16791), (274, 16803), (276, 16812), (310, 16941), (314, 16953), (319, 16974), (321, 16986), (327, 17049),

Gene: Hillester\_21 Start: 15623, Stop: 16924, Start Num: 25

Candidate Starts for Hillester\_21:

(Start: 25 @15623 has 93 MA's), (85, 15860), (92, 15884), (99, 15911), (110, 15962), (118, 15992), (127, 16034), (131, 16055), (136, 16070), (139, 16088), (188, 16253), (202, 16292), (207, 16310), (216, 16343), (232, 16415), (272, 16613), (274, 16625), (276, 16634), (279, 16649), (310, 16763), (314, 16775), (319, 16796), (321, 16808), (327, 16871),

Gene: HotPotato\_20 Start: 15629, Stop: 16930, Start Num: 25

Candidate Starts for HotPotato\_20:

(Start: 25 @15629 has 93 MA's), (29, 15647), (64, 15788), (118, 15998), (127, 16040), (136, 16076), (178, 16217), (183, 16232), (188, 16259), (202, 16298), (207, 16316), (216, 16349), (232, 16421), (261, 16559), (272, 16619), (274, 16631), (299, 16727), (310, 16769), (314, 16781), (327, 16877),

Gene: Isolde\_21 Start: 15458, Stop: 16759, Start Num: 25

Candidate Starts for Isolde\_21:

(Start: 25 @15458 has 93 MA's), (92, 15719), (118, 15827), (127, 15869), (136, 15905), (139, 15923), (165, 16013), (188, 16088), (202, 16127), (207, 16145), (216, 16178), (232, 16250), (272, 16448), (274, 16460), (276, 16469), (279, 16484), (310, 16598), (314, 16610), (319, 16631), (321, 16643), (327, 16706),

Gene: JakeTheSnake\_21 Start: 15524, Stop: 16825, Start Num: 25

Candidate Starts for JakeTheSnake\_21:

(Start: 25 @15524 has 93 MA's), (64, 15683), (127, 15935), (133, 15962), (152, 16037), (178, 16112), (182, 16124), (183, 16127), (202, 16193), (207, 16211), (215, 16241), (232, 16316), (272, 16514), (310, 16664), (314, 16676), (327, 16772),

Gene: Jamun\_18 Start: 14074, Stop: 15324, Start Num: 25

Candidate Starts for Jamun\_18:

(Start: 25 @14074 has 93 MA's), (32, 14107), (41, 14140), (57, 14203), (64, 14233), (88, 14323), (99, 14362), (113, 14422), (120, 14446), (122, 14461), (127, 14485), (128, 14488), (131, 14506), (152, 14593), (161, 14617), (164, 14629), (173, 14656), (189, 14713), (202, 14749), (215, 14797), (235, 14884), (246, 14947), (252, 14971), (260, 15025), (262, 15043), (279, 15130), (282, 15148), (296, 15184), (300, 15205), (302, 15211), (309, 15238), (312, 15247), (320, 15280),

Gene: JellyBread\_21 Start: 15616, Stop: 16917, Start Num: 25

Candidate Starts for JellyBread\_21:

(Start: 25 @15616 has 93 MA's), (85, 15853), (92, 15877), (99, 15904), (110, 15955), (118, 15985), (127, 16027), (131, 16048), (136, 16063), (139, 16081), (188, 16246), (202, 16285), (207, 16303), (216, 16336), (232, 16408), (272, 16606), (274, 16618), (276, 16627), (279, 16642), (310, 16756), (314, 16768), (319, 16789), (321, 16801), (327, 16864),

Gene: Jerole\_19 Start: 13377, Stop: 14630, Start Num: 25

Candidate Starts for Jerole\_19:

(Start: 25 @13377 has 93 MA's), (26, 13380), (31, 13401), (49, 13470), (64, 13536), (66, 13545), (90, 13632), (93, 13647), (127, 13791), (128, 13794), (130, 13809), (131, 13812), (133, 13818), (161, 13923), (164, 13935), (178, 13974), (189, 14019), (202, 14055), (212, 14097), (217, 14112), (235, 14190), (246, 14253), (252, 14277), (282, 14454), (296, 14490), (299, 14508), (302, 14517), (309, 14544), (312, 14553), (320, 14586),

Gene: Jflix2\_22 Start: 23249, Stop: 24382, Start Num: 38

Candidate Starts for Jflix2\_22:

(Start: 38 @23249 has 3 MA's), (55, 23312), (56, 23318), (64, 23351), (90, 23441), (108, 23504), (116, 23546), (138, 23642), (139, 23645), (168, 23756), (187, 23816), (204, 23879), (223, 23957), (239, 24047), (260, 24140), (263, 24167), (279, 24242), (281, 24257), (290, 24281),

Gene: Judy\_21 Start: 15938, Stop: 17239, Start Num: 25

Candidate Starts for Judy\_21:

(Start: 25 @15938 has 93 MA's), (29, 15956), (64, 16097), (118, 16307), (127, 16349), (136, 16385), (154, 16454), (178, 16526), (183, 16541), (188, 16568), (202, 16607), (207, 16625), (215, 16655), (220, 16667), (232, 16730), (261, 16868), (272, 16928), (274, 16940), (299, 17036), (310, 17078), (314, 17090), (327, 17186),

Gene: Juno112\_17 Start: 12932, Stop: 14176, Start Num: 25

Candidate Starts for Juno112\_17:

(Start: 25 @12932 has 93 MA's), (49, 13025), (54, 13046), (64, 13091), (69, 13115), (90, 13187), (93, 13202), (126, 13343), (127, 13346), (128, 13349), (130, 13364), (131, 13367), (133, 13373), (152, 13454), (161, 13478), (164, 13490), (173, 13517), (189, 13574), (202, 13610), (212, 13652), (217, 13667), (234, 13742), (238, 13784), (241, 13790), (251, 13817), (252, 13829), (255, 13856), (282, 14006), (287, 14012), (296, 14042), (302, 14069), (309, 14096), (312, 14105), (320, 14138), (324, 14168),

Gene: KHumphrey\_17 Start: 12929, Stop: 14173, Start Num: 25

Candidate Starts for KHumphrey\_17:

(Start: 25 @12929 has 93 MA's), (49, 13022), (54, 13043), (64, 13088), (69, 13112), (90, 13184), (126, 13340), (127, 13343), (128, 13346), (130, 13361), (131, 13364), (133, 13370), (152, 13451), (161, 13475), (164, 13487), (173, 13514), (189, 13571), (202, 13607), (212, 13649), (217, 13664), (234, 13739), (238, 13781), (241, 13787), (251, 13814), (252, 13826), (255, 13853), (282, 14003), (287, 14009), (296, 14039), (302, 14066), (309, 14093), (312, 14102), (320, 14135), (324, 14165),

Gene: Kabloowy\_21 Start: 15812, Stop: 17113, Start Num: 25

Candidate Starts for Kabloowy\_21:

(Start: 25 @15812 has 93 MA's), (32, 15845), (92, 16073), (118, 16181), (127, 16223), (131, 16244), (136, 16259), (139, 16277), (165, 16367), (188, 16442), (202, 16481), (207, 16499), (216, 16532), (232, 16604), (272, 16802), (276, 16823), (279, 16838), (310, 16952), (314, 16964), (319, 16985), (321, 16997), (327, 17060),

Gene: Karkharias\_20 Start: 15625, Stop: 16926, Start Num: 25

Candidate Starts for Karkharias\_20:

(Start: 25 @15625 has 93 MA's), (29, 15643), (40, 15685), (64, 15784), (118, 15994), (127, 16036), (136, 16072), (173, 16201), (178, 16213), (183, 16228), (188, 16255), (190, 16264), (202, 16294), (207, 16312), (216, 16345), (224, 16375), (231, 16408), (232, 16417), (261, 16555), (272, 16615), (274, 16627), (299, 16723), (310, 16765), (314, 16777), (321, 16810), (327, 16873),

Gene: KayMoney\_20 Start: 15529, Stop: 16830, Start Num: 25

Candidate Starts for KayMoney\_20:

(Start: 25 @15529 has 93 MA's), (29, 15547), (64, 15688), (78, 15745), (85, 15766), (127, 15940), (135, 15973), (136, 15976), (183, 16132), (202, 16198), (207, 16216), (215, 16246), (216, 16249), (232, 16321), (252, 16396), (272, 16519), (274, 16531), (299, 16627), (310, 16669), (314, 16681), (327, 16777),

Gene: KendraB23\_19 Start: 14538, Stop: 15788, Start Num: 25

Candidate Starts for KendraB23\_19:

(Start: 25 @14538 has 93 MA's), (41, 14604), (52, 14646), (67, 14709), (78, 14754), (88, 14787), (127, 14949), (128, 14952), (158, 15072), (164, 15093), (173, 15120), (178, 15132), (180, 15138), (189, 15177), (202, 15213), (215, 15261), (246, 15411), (252, 15435), (272, 15558), (274, 15570), (276, 15579), (282, 15612), (287, 15618), (290, 15633), (297, 15654), (300, 15669), (302, 15675), (305, 15681), (309, 15702), (312, 15711), (320, 15744),

Gene: Kepler\_18 Start: 13215, Stop: 14468, Start Num: 25

Candidate Starts for Kepler\_18:

(Start: 25 @13215 has 93 MA's), (26, 13218), (31, 13239), (49, 13308), (64, 13374), (66, 13383), (90, 13470), (93, 13485), (127, 13629), (128, 13632), (130, 13647), (131, 13650), (133, 13656), (161, 13761), (164, 13773), (178, 13812), (189, 13857), (202, 13893), (212, 13935), (217, 13950), (235, 14028), (246, 14091), (252, 14115), (282, 14292), (296, 14328), (299, 14346), (302, 14355), (309, 14382), (312, 14391), (320, 14424),

Gene: Kharcho\_45 Start: 24006, Stop: 25181, Start Num: 25

Candidate Starts for Kharcho\_45:

(1, 23298), (8, 23742), (13, 23829), (Start: 25 @24006 has 93 MA's), (30, 24027), (33, 24042), (65, 24156), (79, 24213), (85, 24231), (93, 24264), (126, 24351), (138, 24405), (140, 24411), (164, 24495), (166, 24504), (185, 24573), (188, 24582), (191, 24594), (194, 24603), (221, 24696), (223, 24705), (237, 24783), (238, 24789), (272, 24945), (274, 24957), (282, 24999), (288, 25008), (312, 25098), (318, 25122),

Gene: Kovu\_67 Start: 42081, Stop: 43256, Start Num: 25

Candidate Starts for Kovu\_67:

(13, 41904), (Start: 25 @42081 has 93 MA's), (30, 42102), (43, 42150), (51, 42183), (79, 42288), (96, 42348), (97, 42351), (112, 42405), (128, 42432), (138, 42480), (164, 42570), (165, 42576), (182, 42627), (185, 42648), (188, 42657), (191, 42669), (194, 42678), (237, 42858), (238, 42864), (256, 42930), (272, 43020), (275, 43038), (312, 43173), (314, 43179), (318, 43197), (323, 43227),

Gene: Kuleana\_18 Start: 13395, Stop: 14642, Start Num: 25

Candidate Starts for Kuleana\_18:

(Start: 25 @13395 has 93 MA's), (49, 13488), (50, 13491), (52, 13503), (54, 13509), (64, 13554), (66, 13563), (68, 13572), (83, 13626), (98, 13680), (128, 13812), (131, 13830), (133, 13836), (164, 13953), (182, 14001), (189, 14034), (202, 14070), (210, 14106), (215, 14118), (222, 14148), (232, 14196), (238, 14247), (243, 14259), (252, 14292), (279, 14451), (282, 14469), (287, 14475), (290, 14490), (302, 14532), (305, 14538), (309, 14559), (312, 14568), (313, 14571), (325, 14637),

Gene: Laphuphu24k\_17 Start: 12931, Stop: 14175, Start Num: 25

Candidate Starts for Laphuphu24k\_17:

(Start: 25 @12931 has 93 MA's), (49, 13024), (54, 13045), (64, 13090), (69, 13114), (90, 13186), (126, 13342), (127, 13345), (128, 13348), (130, 13363), (131, 13366), (133, 13372), (152, 13453), (164, 13489), (173, 13516), (189, 13573), (202, 13609), (212, 13651), (217, 13666), (234, 13741), (238, 13783), (241, 13789), (251, 13816), (252, 13828), (255, 13855), (282, 14005), (287, 14011), (296, 14041), (302, 14068), (309, 14095), (312, 14104), (320, 14137), (324, 14167),

Gene: Laroye\_69 Start: 41604, Stop: 42773, Start Num: 25

Candidate Starts for Laroye\_69:

(Start: 25 @41604 has 93 MA's), (27, 41613), (30, 41625), (35, 41652), (51, 41709), (54, 41715), (79, 41814), (85, 41832), (88, 41844), (93, 41865), (128, 41958), (133, 41982), (138, 42006), (144, 42027), (171, 42120), (173, 42123), (175, 42129), (178, 42135), (182, 42147), (185, 42168), (202, 42216), (211, 42255), (223, 42300), (242, 42393), (247, 42399), (256, 42450), (280, 42582), (282, 42594), (312, 42693), (320, 42726),

Gene: Lasker\_21 Start: 15631, Stop: 16932, Start Num: 25

Candidate Starts for Lasker\_21:

(Start: 25 @15631 has 93 MA's), (75, 15835), (85, 15868), (92, 15892), (105, 15940), (110, 15970), (118, 16000), (127, 16042), (136, 16078), (139, 16096), (188, 16261), (202, 16300), (207, 16318), (216, 16351), (232, 16423), (272, 16621), (274, 16633), (310, 16771), (314, 16783), (319, 16804), (321, 16816), (327, 16879),

Gene: Lawnathon\_21 Start: 15552, Stop: 16853, Start Num: 25

Candidate Starts for Lawnathon\_21:

(Start: 25 @15552 has 93 MA's), (92, 15813), (118, 15921), (127, 15963), (136, 15999), (139, 16017), (165, 16107), (188, 16182), (202, 16221), (207, 16239), (216, 16272), (232, 16344), (272, 16542), (274, 16554), (276, 16563), (279, 16578), (310, 16692), (314, 16704), (319, 16725), (321, 16737), (327, 16800),

Gene: LeBruni\_22 Start: 15423, Stop: 16724, Start Num: 25

Candidate Starts for LeBruni\_22:

(14, 15246), (15, 15249), (Start: 25 @15423 has 93 MA's), (29, 15441), (40, 15483), (64, 15582), (78, 15639), (105, 15732), (113, 15771), (127, 15834), (131, 15855), (134, 15864), (165, 15978), (166, 15981), (171, 15996), (178, 16011), (182, 16023), (190, 16062), (202, 16092), (207, 16110), (215, 16140), (216, 16143), (220, 16152), (232, 16215), (255, 16317), (261, 16353), (299, 16521), (310, 16563), (327, 16671),

Gene: Leona\_17 Start: 12982, Stop: 14229, Start Num: 25

Candidate Starts for Leona\_17:

(Start: 25 @12982 has 93 MA's), (49, 13075), (54, 13096), (64, 13141), (69, 13165), (90, 13237), (126, 13393), (127, 13396), (128, 13399), (130, 13414), (131, 13417), (152, 13504), (161, 13528), (164, 13540), (173, 13567), (189, 13624), (202, 13660), (217, 13717), (234, 13792), (238, 13834), (241, 13840), (251, 13867), (252, 13879), (255, 13906), (282, 14056), (287, 14062), (296, 14092), (302, 14119), (309, 14146), (312, 14155), (320, 14188), (324, 14218), (326, 14224),

Gene: LiSara\_66 Start: 41766, Stop: 42935, Start Num: 25

Candidate Starts for LiSara\_66:

(Start: 25 @41766 has 93 MA's), (27, 41775), (30, 41787), (35, 41814), (51, 41871), (54, 41877), (79, 41976), (85, 41994), (88, 42006), (93, 42027), (128, 42120), (133, 42144), (138, 42168), (144, 42189), (171, 42282), (173, 42285), (175, 42291), (178, 42297), (182, 42309), (185, 42330), (202, 42378), (211, 42417), (223, 42462), (242, 42555), (247, 42561), (256, 42612), (280, 42744), (282, 42756), (312, 42855), (320, 42888),

Gene: LilyBell\_20 Start: 15641, Stop: 16942, Start Num: 25

Candidate Starts for LilyBell\_20:

(Start: 25 @15641 has 93 MA's), (29, 15659), (64, 15800), (118, 16010), (127, 16052), (136, 16088), (154, 16157), (178, 16229), (183, 16244), (188, 16271), (202, 16310), (207, 16328), (215, 16358), (216, 16361), (220, 16370), (232, 16433), (261, 16571), (272, 16631), (274, 16643), (299, 16739), (310, 16781), (314, 16793), (327, 16889),

Gene: LittleRon\_20 Start: 15499, Stop: 16800, Start Num: 25

Candidate Starts for LittleRon\_20:

(Start: 25 @15499 has 93 MA's), (29, 15517), (64, 15658), (78, 15715), (85, 15736), (127, 15910), (135, 15943), (136, 15946), (183, 16102), (202, 16168), (207, 16186), (215, 16216), (216, 16219), (232, 16291), (272, 16489), (274, 16501), (299, 16597), (310, 16639), (314, 16651), (327, 16747),

Gene: LittleTokyo\_18 Start: 13345, Stop: 14595, Start Num: 25

Candidate Starts for LittleTokyo\_18:

(Start: 25 @13345 has 93 MA's), (49, 13438), (52, 13453), (64, 13504), (66, 13513), (85, 13582), (89, 13597), (122, 13735), (126, 13756), (127, 13759), (128, 13762), (131, 13780), (133, 13786), (152, 13867), (164, 13903), (171, 13924), (173, 13927), (178, 13939), (182, 13951), (188, 13981), (189, 13984), (202, 14020), (279, 14401), (282, 14419), (287, 14425), (290, 14440), (302, 14482), (309, 14509), (312, 14518), (313, 14521), (322, 14572),

Gene: Lunar\_19 Start: 13377, Stop: 14630, Start Num: 25

Candidate Starts for Lunar\_19:

(Start: 25 @13377 has 93 MA's), (26, 13380), (31, 13401), (49, 13470), (64, 13536), (66, 13545), (90, 13632), (93, 13647), (127, 13791), (128, 13794), (130, 13809), (131, 13812), (133, 13818), (161, 13923), (164, 13935), (178, 13974), (189, 14019), (202, 14055), (212, 14097), (217, 14112), (235, 14190), (246, 14253), (252, 14277), (282, 14454), (296, 14490), (299, 14508), (302, 14517), (309, 14544), (312, 14553), (320, 14586),

Gene: MUWow\_20 Start: 15716, Stop: 17017, Start Num: 25

Candidate Starts for MUWow\_20:

(Start: 25 @15716 has 93 MA's), (85, 15953), (92, 15977), (99, 16004), (110, 16055), (118, 16085), (127, 16127), (136, 16163), (139, 16181), (165, 16271), (188, 16346), (202, 16385), (207, 16403), (216, 16436), (232, 16508), (272, 16706), (274, 16718), (276, 16727), (295, 16793), (310, 16856), (314, 16868), (319, 16889), (321, 16901), (327, 16964),

Gene: Madraxi\_27 Start: 25619, Stop: 26752, Start Num: 38

Candidate Starts for Madraxi\_27:

(Start: 38 @25619 has 3 MA's), (55, 25682), (56, 25688), (64, 25721), (65, 25724), (90, 25811), (108, 25874), (111, 25895), (116, 25916), (138, 26012), (139, 26015), (168, 26126), (174, 26138), (204, 26249), (223, 26327), (260, 26510), (263, 26537), (279, 26612), (281, 26627), (290, 26651),

Gene: Mapleville\_21 Start: 15622, Stop: 16923, Start Num: 25

Candidate Starts for Mapleville\_21:

(Start: 25 @15622 has 93 MA's), (92, 15883), (118, 15991), (127, 16033), (136, 16069), (139, 16087), (165, 16177), (188, 16252), (202, 16291), (207, 16309), (216, 16342), (232, 16414), (272, 16612), (274, 16624), (276, 16633), (279, 16648), (310, 16762), (314, 16774), (319, 16795), (321, 16807), (327, 16870),

Gene: MaterMagnus\_21 Start: 15624, Stop: 16925, Start Num: 25

Candidate Starts for MaterMagnus\_21:

(Start: 25 @15624 has 93 MA's), (92, 15885), (118, 15993), (127, 16035), (136, 16071), (139, 16089), (165, 16179), (188, 16254), (202, 16293), (207, 16311), (216, 16344), (232, 16416), (272, 16614), (274, 16626), (276, 16635), (295, 16701), (310, 16764), (314, 16776), (319, 16797), (321, 16809), (327, 16872),

Gene: Melons\_19 Start: 13377, Stop: 14630, Start Num: 25

Candidate Starts for Melons\_19:

(Start: 25 @13377 has 93 MA's), (26, 13380), (31, 13401), (49, 13470), (64, 13536), (66, 13545), (90, 13632), (93, 13647), (127, 13791), (128, 13794), (130, 13809), (131, 13812), (133, 13818), (161,

13923), (164, 13935), (178, 13974), (189, 14019), (202, 14055), (212, 14097), (217, 14112), (235, 14190), (246, 14253), (252, 14277), (282, 14454), (296, 14490), (299, 14508), (302, 14517), (309, 14544), (312, 14553), (320, 14586),

Gene: MidnightRain\_21 Start: 15622, Stop: 16923, Start Num: 25

Candidate Starts for MidnightRain\_21:

(Start: 25 @15622 has 93 MA's), (75, 15826), (85, 15859), (92, 15883), (105, 15931), (110, 15961), (118, 15991), (127, 16033), (136, 16069), (139, 16087), (165, 16177), (188, 16252), (202, 16291), (207, 16309), (216, 16342), (232, 16414), (272, 16612), (274, 16624), (310, 16762), (314, 16774), (319, 16795), (321, 16807), (327, 16870),

Gene: MurphyJoseph\_21 Start: 15707, Stop: 17008, Start Num: 25

Candidate Starts for MurphyJoseph\_21:

(Start: 25 @15707 has 93 MA's), (29, 15725), (32, 15740), (52, 15815), (64, 15866), (85, 15944), (105, 16016), (127, 16118), (131, 16139), (136, 16154), (160, 16241), (166, 16265), (178, 16295), (183, 16310), (188, 16337), (202, 16376), (207, 16394), (209, 16409), (216, 16427), (232, 16499), (234, 16505), (255, 16601), (272, 16697), (299, 16805), (310, 16847), (314, 16859), (327, 16955),

Gene: Nesbitt\_18 Start: 15235, Stop: 16353, Start Num: 39

Candidate Starts for Nesbitt\_18:

(19, 15058), (Start: 37 @15232 has 2 MA's), (Start: 39 @15235 has 2 MA's), (61, 15319), (69, 15358), (72, 15364), (105, 15475), (119, 15535), (206, 15847), (207, 15850), (211, 15871), (212, 15874), (216, 15886), (218, 15895), (223, 15919), (231, 15955), (235, 15973), (239, 16009), (257, 16087), (260, 16102), (261, 16111), (313, 16324),

Gene: NewKitty\_22 Start: 15853, Stop: 17154, Start Num: 25

Candidate Starts for NewKitty\_22:

(Start: 25 @15853 has 93 MA's), (75, 16057), (85, 16090), (92, 16114), (105, 16162), (110, 16192), (118, 16222), (127, 16264), (136, 16300), (139, 16318), (152, 16366), (188, 16483), (202, 16522), (207, 16540), (216, 16573), (232, 16645), (272, 16843), (274, 16855), (276, 16864), (310, 16993), (314, 17005), (319, 17026), (321, 17038), (327, 17101),

Gene: Niblet\_18 Start: 14417, Stop: 15667, Start Num: 25

Candidate Starts for Niblet\_18:

(Start: 25 @14417 has 93 MA's), (32, 14450), (41, 14483), (52, 14525), (66, 14585), (69, 14600), (88, 14666), (127, 14828), (128, 14831), (164, 14972), (178, 15011), (180, 15017), (189, 15056), (202, 15092), (229, 15200), (246, 15290), (252, 15314), (262, 15386), (264, 15401), (272, 15437), (282, 15491), (287, 15497), (289, 15509), (302, 15554), (305, 15560), (309, 15581), (312, 15590),

Gene: NidoQ\_20 Start: 15681, Stop: 16982, Start Num: 25

Candidate Starts for NidoQ\_20:

(Start: 25 @15681 has 93 MA's), (29, 15699), (64, 15840), (118, 16050), (127, 16092), (136, 16128), (154, 16197), (178, 16269), (183, 16284), (188, 16311), (202, 16350), (207, 16368), (215, 16398), (216, 16401), (220, 16410), (232, 16473), (261, 16611), (272, 16671), (274, 16683), (299, 16779), (310, 16821), (314, 16833), (327, 16929),

Gene: NikkiHotWheels\_20 Start: 15642, Stop: 16943, Start Num: 25

Candidate Starts for NikkiHotWheels\_20:

(Start: 25 @15642 has 93 MA's), (29, 15660), (64, 15801), (118, 16011), (127, 16053), (131, 16074), (136, 16089), (178, 16230), (183, 16245), (188, 16272), (202, 16311), (207, 16329), (216, 16362), (232, 16434), (261, 16572), (272, 16632), (274, 16644), (299, 16740), (310, 16782), (314, 16794), (327, 16890),

Gene: Nyilah\_20 Start: 15613, Stop: 16914, Start Num: 25

Candidate Starts for Nyilah\_20:

(Start: 25 @15613 has 93 MA's), (64, 15772), (75, 15817), (92, 15874), (118, 15982), (127, 16024), (136, 16060), (139, 16078), (165, 16168), (188, 16243), (202, 16282), (207, 16300), (216, 16333), (232, 16405), (272, 16603), (276, 16624), (279, 16639), (310, 16753), (314, 16765), (319, 16786), (321, 16798), (327, 16861),

Gene: Oppalora\_17 Start: 12929, Stop: 14173, Start Num: 25

Candidate Starts for Oppalora\_17:

(Start: 25 @12929 has 93 MA's), (49, 13022), (54, 13043), (64, 13088), (69, 13112), (90, 13184), (93, 13199), (126, 13340), (127, 13343), (128, 13346), (130, 13361), (131, 13364), (133, 13370), (152, 13451), (161, 13475), (164, 13487), (173, 13514), (189, 13571), (202, 13607), (212, 13649), (217, 13664), (234, 13739), (238, 13781), (241, 13787), (251, 13814), (252, 13826), (255, 13853), (282, 14003), (287, 14009), (296, 14039), (302, 14066), (309, 14093), (312, 14102), (320, 14135), (324, 14165),

Gene: Orcanus\_18 Start: 14331, Stop: 15581, Start Num: 25

Candidate Starts for Orcanus\_18:

(Start: 25 @14331 has 93 MA's), (41, 14397), (52, 14439), (67, 14502), (78, 14547), (88, 14580), (127, 14742), (128, 14745), (147, 14832), (158, 14865), (164, 14886), (173, 14913), (178, 14925), (180, 14931), (189, 14970), (202, 15006), (215, 15054), (231, 15123), (246, 15204), (252, 15228), (272, 15351), (276, 15372), (282, 15405), (287, 15411), (290, 15426), (297, 15447), (300, 15462), (302, 15468), (305, 15474), (309, 15495), (312, 15504), (320, 15537),

Gene: OtsoOtso\_18 Start: 13219, Stop: 14472, Start Num: 25

Candidate Starts for OtsoOtso\_18:

(Start: 25 @13219 has 93 MA's), (26, 13222), (31, 13243), (49, 13312), (64, 13378), (66, 13387), (90, 13474), (93, 13489), (127, 13633), (128, 13636), (130, 13651), (131, 13654), (133, 13660), (161, 13765), (164, 13777), (178, 13816), (189, 13861), (202, 13897), (212, 13939), (217, 13954), (235, 14032), (246, 14095), (252, 14119), (253, 14125), (282, 14296), (296, 14332), (299, 14350), (302, 14359), (309, 14386), (312, 14395), (320, 14428),

Gene: Ottawa\_45 Start: 24004, Stop: 25179, Start Num: 25

Candidate Starts for Ottawa\_45:

(1, 23296), (8, 23740), (13, 23827), (Start: 25 @24004 has 93 MA's), (30, 24025), (33, 24040), (65, 24154), (79, 24211), (85, 24229), (93, 24262), (126, 24349), (138, 24403), (140, 24409), (164, 24493), (166, 24502), (185, 24571), (188, 24580), (191, 24592), (194, 24601), (221, 24694), (223, 24703), (237, 24781), (238, 24787), (272, 24943), (274, 24955), (282, 24997), (288, 25006), (312, 25096), (318, 25120),

Gene: PFR1\_15 Start: 13778, Stop: 14950, Start Num: 46

Candidate Starts for PFR1\_15:

(46, 13778), (48, 13787), (54, 13811), (59, 13835), (60, 13838), (61, 13841), (69, 13880), (71, 13883), (82, 13925), (86, 13937), (105, 14000), (123, 14072), (133, 14120), (135, 14126), (143, 14156), (148, 14186), (156, 14207), (163, 14231), (181, 14297), (182, 14300), (197, 14360), (198, 14363), (200, 14375), (206, 14396), (208, 14405), (212, 14423), (216, 14438), (223, 14471), (226, 14483), (233, 14519), (243, 14570), (245, 14576), (254, 14621), (262, 14690), (271, 14732), (281, 14789), (284, 14798), (293, 14825), (300, 14855), (305, 14867), (315, 14906),

Gene: PFR2\_17 Start: 15347, Stop: 16519, Start Num: 46

Candidate Starts for PFR2\_17:

(46, 15347), (48, 15356), (54, 15380), (59, 15404), (60, 15407), (61, 15410), (69, 15449), (71, 15452), (82, 15494), (86, 15506), (105, 15569), (123, 15641), (133, 15689), (135, 15695), (143, 15725), (148,

15755), (156, 15776), (163, 15800), (181, 15866), (182, 15869), (197, 15929), (198, 15932), (200, 15944), (206, 15965), (208, 15974), (212, 15992), (216, 16007), (223, 16040), (226, 16052), (233, 16088), (243, 16139), (245, 16145), (254, 16190), (262, 16259), (271, 16301), (281, 16358), (284, 16367), (293, 16394), (300, 16424), (305, 16436), (315, 16475),

Gene: Peas\_20 Start: 15628, Stop: 16929, Start Num: 25

Candidate Starts for Peas\_20:

(Start: 25 @15628 has 93 MA's), (29, 15646), (40, 15688), (64, 15787), (118, 15997), (127, 16039), (136, 16075), (178, 16216), (183, 16231), (188, 16258), (190, 16267), (202, 16297), (207, 16315), (216, 16348), (232, 16420), (261, 16558), (272, 16618), (274, 16630), (299, 16726), (310, 16768), (314, 16780), (327, 16876),

Gene: PeggyLeg03\_20 Start: 15667, Stop: 16968, Start Num: 25

Candidate Starts for PeggyLeg03\_20:

(Start: 25 @15667 has 93 MA's), (29, 15685), (64, 15826), (118, 16036), (127, 16078), (136, 16114), (154, 16183), (178, 16255), (183, 16270), (188, 16297), (202, 16336), (207, 16354), (215, 16384), (216, 16387), (220, 16396), (232, 16459), (261, 16597), (272, 16657), (274, 16669), (299, 16765), (310, 16807), (314, 16819), (327, 16915),

Gene: Pelletreau\_19 Start: 14537, Stop: 15787, Start Num: 25

Candidate Starts for Pelletreau\_19:

(Start: 25 @14537 has 93 MA's), (41, 14603), (52, 14645), (67, 14708), (78, 14753), (88, 14786), (127, 14948), (128, 14951), (158, 15071), (164, 15092), (173, 15119), (178, 15131), (180, 15137), (189, 15176), (202, 15212), (215, 15260), (246, 15410), (252, 15434), (272, 15557), (274, 15569), (276, 15578), (282, 15611), (287, 15617), (290, 15632), (297, 15653), (300, 15668), (302, 15674), (305, 15680), (309, 15701), (312, 15710), (320, 15743),

Gene: Persistence\_20 Start: 15544, Stop: 16845, Start Num: 25

Candidate Starts for Persistence\_20:

(Start: 25 @15544 has 93 MA's), (64, 15703), (93, 15814), (99, 15832), (105, 15853), (118, 15913), (127, 15955), (128, 15958), (139, 16009), (152, 16057), (165, 16099), (171, 16117), (178, 16132), (182, 16144), (183, 16147), (202, 16213), (207, 16231), (209, 16246), (216, 16264), (232, 16336), (253, 16417), (255, 16438), (276, 16555), (299, 16642), (310, 16684), (327, 16792),

Gene: PhirstandPhine\_19 Start: 13377, Stop: 14630, Start Num: 25

Candidate Starts for PhirstandPhine\_19:

(Start: 25 @13377 has 93 MA's), (26, 13380), (31, 13401), (49, 13470), (64, 13536), (66, 13545), (90, 13632), (93, 13647), (127, 13791), (128, 13794), (130, 13809), (131, 13812), (133, 13818), (161, 13923), (164, 13935), (178, 13974), (189, 14019), (202, 14055), (212, 14097), (217, 14112), (235, 14190), (246, 14253), (252, 14277), (282, 14454), (296, 14490), (299, 14508), (302, 14517), (309, 14544), (312, 14553), (320, 14586),

Gene: PhluffyCoco\_17 Start: 12931, Stop: 14175, Start Num: 25

Candidate Starts for PhluffyCoco\_17:

(Start: 25 @12931 has 93 MA's), (49, 13024), (54, 13045), (64, 13090), (69, 13114), (90, 13186), (126, 13342), (127, 13345), (128, 13348), (130, 13363), (131, 13366), (133, 13372), (152, 13453), (164, 13489), (173, 13516), (189, 13573), (202, 13609), (212, 13651), (217, 13666), (234, 13741), (238, 13783), (241, 13789), (251, 13816), (252, 13828), (255, 13855), (282, 14005), (287, 14011), (296, 14041), (302, 14068), (309, 14095), (312, 14104), (320, 14137), (324, 14167),

Gene: Phrank15\_20 Start: 15557, Stop: 16858, Start Num: 25

Candidate Starts for Phrank15\_20:

(Start: 25 @15557 has 93 MA's), (92, 15818), (118, 15926), (127, 15968), (136, 16004), (139, 16022), (165, 16112), (188, 16187), (191, 16199), (202, 16226), (207, 16244), (216, 16277), (232, 16349), (272, 16547), (274, 16559), (276, 16568), (279, 16583), (310, 16697), (314, 16709), (319, 16730), (321, 16742), (327, 16805),

Gene: Pineda\_19 Start: 13377, Stop: 14630, Start Num: 25

Candidate Starts for Pineda\_19:

(Start: 25 @13377 has 93 MA's), (26, 13380), (31, 13401), (49, 13470), (64, 13536), (66, 13545), (90, 13632), (93, 13647), (127, 13791), (128, 13794), (130, 13809), (131, 13812), (133, 13818), (161, 13923), (164, 13935), (178, 13974), (189, 14019), (202, 14055), (212, 14097), (217, 14112), (235, 14190), (246, 14253), (252, 14277), (282, 14454), (296, 14490), (299, 14508), (302, 14517), (309, 14544), (312, 14553), (320, 14586),

Gene: Polka\_18 Start: 13219, Stop: 14472, Start Num: 25

Candidate Starts for Polka\_18:

(Start: 25 @13219 has 93 MA's), (26, 13222), (31, 13243), (49, 13312), (64, 13378), (66, 13387), (90, 13474), (93, 13489), (127, 13633), (128, 13636), (130, 13651), (131, 13654), (133, 13660), (161, 13765), (164, 13777), (178, 13816), (189, 13861), (202, 13897), (212, 13939), (217, 13954), (235, 14032), (246, 14095), (252, 14119), (253, 14125), (282, 14296), (296, 14332), (299, 14350), (302, 14359), (309, 14386), (312, 14395), (320, 14428),

Gene: Pucara\_20 Start: 15628, Stop: 16929, Start Num: 25

Candidate Starts for Pucara\_20:

(Start: 25 @15628 has 93 MA's), (29, 15646), (64, 15787), (118, 15997), (127, 16039), (136, 16075), (178, 16216), (183, 16231), (188, 16258), (190, 16267), (202, 16297), (207, 16315), (216, 16348), (232, 16420), (261, 16558), (272, 16618), (274, 16630), (299, 16726), (310, 16768), (314, 16780), (327, 16876),

Gene: REQ1\_80 Start: 46988, Stop: 48121, Start Num: 38

Candidate Starts for REQ1\_80:

(Start: 38 @46988 has 3 MA's), (55, 47051), (56, 47057), (65, 47093), (90, 47180), (108, 47243), (111, 47264), (116, 47285), (135, 47363), (138, 47381), (139, 47384), (168, 47495), (187, 47555), (204, 47618), (223, 47696), (239, 47786), (255, 47852), (257, 47864), (260, 47879), (263, 47906), (279, 47981), (290, 48020),

Gene: RadFad\_21 Start: 15623, Stop: 16924, Start Num: 25

Candidate Starts for RadFad\_21:

(Start: 25 @15623 has 93 MA's), (85, 15860), (92, 15884), (99, 15911), (110, 15962), (118, 15992), (127, 16034), (131, 16055), (136, 16070), (139, 16088), (188, 16253), (202, 16292), (207, 16310), (216, 16343), (232, 16415), (272, 16613), (274, 16625), (276, 16634), (279, 16649), (310, 16763), (314, 16775), (319, 16796), (321, 16808), (327, 16871),

Gene: Raphaella\_21 Start: 15623, Stop: 16924, Start Num: 25

Candidate Starts for Raphaella\_21:

(Start: 25 @15623 has 93 MA's), (85, 15860), (92, 15884), (99, 15911), (110, 15962), (118, 15992), (127, 16034), (131, 16055), (136, 16070), (139, 16088), (188, 16253), (202, 16292), (207, 16310), (216, 16343), (232, 16415), (272, 16613), (274, 16625), (276, 16634), (279, 16649), (310, 16763), (314, 16775), (319, 16796), (321, 16808), (327, 16871),

Gene: Rattail\_17 Start: 12982, Stop: 14229, Start Num: 25

Candidate Starts for Rattail\_17:

(Start: 25 @12982 has 93 MA's), (49, 13075), (54, 13096), (64, 13141), (69, 13165), (90, 13237), (126, 13393), (127, 13396), (128, 13399), (130, 13414), (131, 13417), (152, 13504), (161, 13528), (164,

13540), (173, 13567), (189, 13624), (202, 13660), (217, 13717), (234, 13792), (238, 13834), (241, 13840), (251, 13867), (252, 13879), (255, 13906), (282, 14056), (287, 14062), (296, 14092), (302, 14119), (309, 14146), (312, 14155), (320, 14188), (324, 14218), (326, 14224),

Gene: RedFox\_17 Start: 12931, Stop: 14175, Start Num: 25

Candidate Starts for RedFox\_17:

(Start: 25 @12931 has 93 MA's), (49, 13024), (54, 13045), (64, 13090), (69, 13114), (90, 13186), (126, 13342), (127, 13345), (128, 13348), (130, 13363), (131, 13366), (133, 13372), (152, 13453), (161, 13477), (164, 13489), (173, 13516), (189, 13573), (202, 13609), (212, 13651), (217, 13666), (234, 13741), (238, 13783), (241, 13789), (251, 13816), (252, 13828), (255, 13855), (282, 14005), (287, 14011), (296, 14041), (302, 14068), (309, 14095), (312, 14104), (320, 14137), (324, 14167),

Gene: RegnumDei\_22 Start: 21738, Stop: 22865, Start Num: 38

Candidate Starts for RegnumDei\_22:

(Start: 38 @21738 has 3 MA's), (55, 21801), (64, 21840), (72, 21864), (90, 21930), (108, 21993), (114, 22023), (116, 22035), (129, 22092), (133, 22104), (139, 22131), (187, 22302), (188, 22308), (201, 22353), (204, 22365), (205, 22368), (223, 22443), (235, 22497), (239, 22533), (249, 22554), (255, 22599), (260, 22626), (261, 22635), (263, 22653), (268, 22677), (274, 22704), (282, 22746), (287, 22752), (288, 22755), (290, 22767), (293, 22773), (298, 22791), (309, 22836), (317, 22860),

Gene: Renna12\_18 Start: 13275, Stop: 14519, Start Num: 25

Candidate Starts for Renna12\_18:

(Start: 25 @13275 has 93 MA's), (49, 13368), (54, 13389), (64, 13434), (90, 13530), (93, 13545), (126, 13686), (127, 13689), (128, 13692), (130, 13707), (131, 13710), (133, 13716), (152, 13797), (161, 13821), (164, 13833), (173, 13860), (189, 13917), (202, 13953), (212, 13995), (217, 14010), (232, 14079), (234, 14085), (238, 14127), (241, 14133), (251, 14160), (252, 14172), (255, 14199), (282, 14349), (287, 14355), (296, 14385), (302, 14412), (309, 14439), (312, 14448), (320, 14481), (324, 14511),

Gene: Richie\_21 Start: 15638, Stop: 16939, Start Num: 25

Candidate Starts for Richie\_21:

(Start: 25 @15638 has 93 MA's), (75, 15842), (85, 15875), (92, 15899), (105, 15947), (110, 15977), (118, 16007), (127, 16049), (136, 16085), (139, 16103), (188, 16268), (202, 16307), (207, 16325), (216, 16358), (232, 16430), (272, 16628), (274, 16640), (310, 16778), (314, 16790), (319, 16811), (321, 16823), (327, 16886),

Gene: Rowa\_18 Start: 15046, Stop: 16164, Start Num: 37

Candidate Starts for Rowa\_18:

(Start: 37 @15046 has 2 MA's), (54, 15103), (55, 15109), (72, 15175), (92, 15241), (114, 15328), (116, 15340), (213, 15691), (218, 15709), (222, 15730), (223, 15733), (227, 15748), (233, 15781), (260, 15916), (273, 15988), (276, 16003), (287, 16042), (298, 16081), (307, 16108), (313, 16138),

Gene: Ruchi\_18 Start: 14614, Stop: 15864, Start Num: 25

Candidate Starts for Ruchi\_18:

(Start: 25 @14614 has 93 MA's), (32, 14647), (41, 14680), (57, 14743), (64, 14773), (88, 14863), (99, 14902), (113, 14962), (120, 14986), (122, 15001), (127, 15025), (128, 15028), (131, 15046), (152, 15133), (161, 15157), (164, 15169), (189, 15253), (202, 15289), (215, 15337), (235, 15424), (246, 15487), (252, 15511), (260, 15565), (262, 15583), (279, 15670), (282, 15688), (296, 15724), (300, 15745), (302, 15751), (309, 15778), (312, 15787),

Gene: SFuller\_24 Start: 23845, Stop: 24978, Start Num: 38

Candidate Starts for SFuller\_24:

(Start: 38 @23845 has 3 MA's), (55, 23908), (56, 23914), (64, 23947), (65, 23950), (90, 24037), (108, 24100), (111, 24121), (116, 24142), (138, 24238), (139, 24241), (168, 24352), (187, 24412), (223, 24553), (239, 24643), (255, 24709), (263, 24763), (279, 24838), (281, 24853), (290, 24877),

Gene: SPB78\_18 Start: 14539, Stop: 15684, Start Num: 99

Candidate Starts for SPB78\_18:

(2, 13717), (3, 13744), (6, 13882), (12, 14044), (16, 14098), (58, 14380), (74, 14440), (99, 14539), (100, 14542), (105, 14560), (124, 14662), (141, 14740), (160, 14809), (177, 14866), (182, 14890), (206, 14992), (214, 15028), (251, 15193), (258, 15259), (260, 15271), (267, 15322), (277, 15370), (286, 15412), (309, 15508), (325, 15592), (328, 15646),

Gene: Sakai\_21 Start: 15632, Stop: 16933, Start Num: 25

Candidate Starts for Sakai\_21:

(Start: 25 @15632 has 93 MA's), (92, 15893), (99, 15920), (110, 15971), (118, 16001), (127, 16043), (131, 16064), (136, 16079), (139, 16097), (188, 16262), (202, 16301), (207, 16319), (216, 16352), (232, 16424), (272, 16622), (274, 16634), (276, 16643), (279, 16658), (310, 16772), (314, 16784), (319, 16805), (321, 16817), (327, 16880),

Gene: Salgado\_69 Start: 41420, Stop: 42589, Start Num: 25

Candidate Starts for Salgado\_69:

(Start: 25 @41420 has 93 MA's), (27, 41429), (30, 41441), (35, 41468), (51, 41525), (54, 41531), (79, 41630), (85, 41648), (88, 41660), (93, 41681), (128, 41774), (133, 41798), (138, 41822), (144, 41843), (171, 41936), (175, 41945), (178, 41951), (182, 41963), (185, 41984), (202, 42032), (211, 42071), (223, 42116), (242, 42209), (247, 42215), (256, 42266), (280, 42398), (282, 42410), (312, 42509), (320, 42542),

Gene: Samy\_23 Start: 18462, Stop: 19574, Start Num: 37

Candidate Starts for Samy\_23:

(Start: 37 @18462 has 2 MA's), (52, 18513), (62, 18552), (105, 18702), (131, 18807), (136, 18822), (149, 18876), (157, 18897), (168, 18945), (179, 18978), (194, 19038), (228, 19170), (255, 19305), (279, 19434), (298, 19491), (309, 19536),

Gene: Satrap\_21 Start: 15544, Stop: 16845, Start Num: 25

Candidate Starts for Satrap\_21:

(Start: 25 @15544 has 93 MA's), (48, 15634), (52, 15652), (64, 15703), (68, 15721), (85, 15781), (99, 15832), (113, 15892), (118, 15913), (126, 15952), (127, 15955), (131, 15976), (133, 15982), (136, 15991), (150, 16054), (165, 16099), (178, 16132), (183, 16147), (190, 16183), (202, 16213), (207, 16231), (209, 16246), (216, 16264), (231, 16327), (232, 16336), (255, 16438), (276, 16555), (289, 16606), (299, 16642), (310, 16684), (327, 16792),

Gene: Seahorse\_22 Start: 15990, Stop: 17291, Start Num: 25

Candidate Starts for Seahorse\_22:

(Start: 25 @15990 has 93 MA's), (29, 16008), (32, 16023), (92, 16251), (118, 16359), (127, 16401), (136, 16437), (139, 16455), (165, 16545), (188, 16620), (202, 16659), (207, 16677), (216, 16710), (232, 16782), (272, 16980), (310, 17130), (314, 17142), (319, 17163), (321, 17175), (327, 17238),

Gene: Shagrat\_23 Start: 22765, Stop: 23892, Start Num: 38

Candidate Starts for Shagrat\_23:

(Start: 38 @22765 has 3 MA's), (55, 22828), (64, 22867), (72, 22891), (90, 22957), (108, 23020), (116, 23062), (133, 23131), (155, 23215), (187, 23329), (188, 23335), (194, 23356), (201, 23380), (204, 23392), (219, 23449), (223, 23470), (235, 23524), (239, 23560), (249, 23581), (255, 23626), (260, 23653), (263, 23680), (268, 23704), (274, 23731), (281, 23770), (282, 23773), (288, 23782), (290, 23794), (293, 23800), (298, 23818), (317, 23887),

Gene: Shen\_19 Start: 14538, Stop: 15788, Start Num: 25

Candidate Starts for Shen\_19:

(Start: 25 @14538 has 93 MA's), (41, 14604), (52, 14646), (67, 14709), (78, 14754), (88, 14787), (127, 14949), (128, 14952), (133, 14976), (158, 15072), (164, 15093), (173, 15120), (178, 15132), (180, 15138), (189, 15177), (202, 15213), (215, 15261), (246, 15411), (252, 15435), (272, 15558), (274, 15570), (276, 15579), (282, 15612), (287, 15618), (290, 15633), (297, 15654), (300, 15669), (302, 15675), (305, 15681), (309, 15702), (312, 15711), (320, 15744),

Gene: Shrooms\_67 Start: 39941, Stop: 41110, Start Num: 25

Candidate Starts for Shrooms\_67:

(Start: 25 @39941 has 93 MA's), (27, 39950), (30, 39962), (51, 40046), (57, 40067), (64, 40091), (68, 40109), (69, 40115), (79, 40151), (85, 40169), (88, 40181), (93, 40202), (98, 40217), (103, 40229), (128, 40295), (144, 40364), (173, 40460), (178, 40472), (182, 40484), (185, 40505), (191, 40526), (194, 40535), (202, 40553), (211, 40592), (236, 40703), (242, 40730), (247, 40736), (256, 40787), (280, 40919), (282, 40931), (299, 40985), (302, 40994), (309, 41021), (312, 41030), (320, 41063),

Gene: Shukran\_21 Start: 15544, Stop: 16845, Start Num: 25

Candidate Starts for Shukran\_21:

(Start: 25 @15544 has 93 MA's), (48, 15634), (52, 15652), (64, 15703), (68, 15721), (85, 15781), (99, 15832), (113, 15892), (118, 15913), (126, 15952), (127, 15955), (131, 15976), (133, 15982), (136, 15991), (150, 16054), (165, 16099), (178, 16132), (183, 16147), (190, 16183), (202, 16213), (207, 16231), (209, 16246), (216, 16264), (231, 16327), (232, 16336), (255, 16438), (276, 16555), (289, 16606), (299, 16642), (310, 16684), (327, 16792),

Gene: SonDevVon\_20 Start: 15625, Stop: 16926, Start Num: 25

Candidate Starts for SonDevVon\_20:

(Start: 25 @15625 has 93 MA's), (75, 15829), (85, 15862), (92, 15886), (105, 15934), (110, 15964), (118, 15994), (127, 16036), (136, 16072), (139, 16090), (188, 16255), (190, 16264), (202, 16294), (207, 16312), (216, 16345), (232, 16417), (272, 16615), (274, 16627), (310, 16765), (314, 16777), (319, 16798), (321, 16810), (327, 16873),

Gene: SpicyFrank\_21 Start: 15700, Stop: 17001, Start Num: 25

Candidate Starts for SpicyFrank\_21:

(Start: 25 @15700 has 93 MA's), (92, 15961), (118, 16069), (127, 16111), (136, 16147), (157, 16225), (202, 16369), (207, 16387), (231, 16483), (232, 16492), (261, 16630), (272, 16690), (276, 16711), (310, 16840), (314, 16852), (327, 16948),

Gene: Sporco\_22 Start: 15680, Stop: 16981, Start Num: 25

Candidate Starts for Sporco\_22:

(Start: 25 @15680 has 93 MA's), (85, 15917), (92, 15941), (99, 15968), (110, 16019), (118, 16049), (127, 16091), (131, 16112), (136, 16127), (139, 16145), (188, 16310), (202, 16349), (207, 16367), (216, 16400), (232, 16472), (272, 16670), (274, 16682), (276, 16691), (279, 16706), (310, 16820), (314, 16832), (319, 16853), (321, 16865), (327, 16928),

Gene: StuartMinion\_17 Start: 12969, Stop: 14216, Start Num: 25

Candidate Starts for StuartMinion\_17:

(Start: 25 @12969 has 93 MA's), (49, 13062), (54, 13083), (64, 13128), (69, 13152), (90, 13224), (93, 13239), (126, 13380), (127, 13383), (128, 13386), (130, 13401), (131, 13404), (133, 13410), (152, 13491), (165, 13533), (173, 13554), (189, 13611), (202, 13647), (212, 13689), (215, 13695), (217, 13704), (232, 13773), (234, 13779), (241, 13827), (251, 13854), (252, 13866), (253, 13872), (255, 13893), (282, 14043), (287, 14049), (296, 14079), (302, 14106), (309, 14133), (312, 14142), (320, 14175),

Gene: TaylorSipt\_18 Start: 13348, Stop: 14598, Start Num: 25

Candidate Starts for TaylorSipt\_18:

(Start: 25 @13348 has 93 MA's), (32, 13381), (41, 13414), (49, 13441), (67, 13519), (88, 13597), (113, 13696), (127, 13759), (128, 13762), (131, 13780), (147, 13849), (158, 13882), (164, 13903), (171, 13927), (173, 13930), (178, 13942), (180, 13948), (189, 13987), (202, 14023), (215, 14071), (217, 14080), (229, 14131), (230, 14137), (246, 14221), (252, 14245), (272, 14368), (282, 14422), (285, 14425), (289, 14440), (297, 14464), (309, 14512), (312, 14521), (314, 14527),

Gene: ThayneTheZag\_21 Start: 15791, Stop: 17092, Start Num: 25

Candidate Starts for ThayneTheZag\_21:

(Start: 25 @15791 has 93 MA's), (29, 15809), (64, 15950), (126, 16199), (127, 16202), (131, 16223), (136, 16238), (166, 16349), (178, 16379), (183, 16394), (190, 16430), (202, 16460), (207, 16478), (209, 16493), (215, 16508), (216, 16511), (220, 16520), (232, 16583), (255, 16685), (299, 16889), (310, 16931), (314, 16943), (327, 17039),

Gene: Tiff81\_22 Start: 15718, Stop: 17019, Start Num: 25

Candidate Starts for Tiff81\_22:

(Start: 25 @15718 has 93 MA's), (32, 15751), (92, 15979), (118, 16087), (127, 16129), (136, 16165), (139, 16183), (165, 16273), (188, 16348), (202, 16387), (207, 16405), (216, 16438), (232, 16510), (272, 16708), (310, 16858), (314, 16870), (319, 16891), (321, 16903), (327, 16966),

Gene: Toad24\_19 Start: 14538, Stop: 15788, Start Num: 25

Candidate Starts for Toad24\_19:

(Start: 25 @14538 has 93 MA's), (41, 14604), (52, 14646), (67, 14709), (78, 14754), (88, 14787), (127, 14949), (128, 14952), (158, 15072), (164, 15093), (173, 15120), (178, 15132), (180, 15138), (189, 15177), (202, 15213), (215, 15261), (246, 15411), (252, 15435), (272, 15558), (274, 15570), (276, 15579), (282, 15612), (287, 15618), (290, 15633), (297, 15654), (300, 15669), (302, 15675), (305, 15681), (309, 15702), (312, 15711), (320, 15744),

Gene: VWB\_19 Start: 16658, Stop: 17779, Start Num: 28

Candidate Starts for VWB\_19:

(5, 16259), (7, 16361), (11, 16445), (18, 16520), (20, 16529), (24, 16628), (28, 16658), (36, 16688), (Start: 37 @16691 has 2 MA's), (53, 16745), (81, 16853), (95, 16901), (98, 16907), (108, 16940), (114, 16967), (130, 17027), (132, 17033), (153, 17105), (197, 17258), (205, 17285), (212, 17315), (222, 17354), (228, 17378), (231, 17393), (243, 17453), (270, 17594), (277, 17630), (298, 17696),

Gene: Vopal\_22 Start: 15695, Stop: 16996, Start Num: 25

Candidate Starts for Vopal\_22:

(Start: 25 @15695 has 93 MA's), (85, 15932), (92, 15956), (99, 15983), (110, 16034), (118, 16064), (127, 16106), (131, 16127), (136, 16142), (139, 16160), (188, 16325), (202, 16364), (207, 16382), (216, 16415), (232, 16487), (272, 16685), (274, 16697), (276, 16706), (279, 16721), (310, 16835), (314, 16847), (319, 16868), (321, 16880), (327, 16943),

Gene: Vulpecula\_18 Start: 14072, Stop: 15322, Start Num: 25

Candidate Starts for Vulpecula\_18:

(Start: 25 @14072 has 93 MA's), (32, 14105), (41, 14138), (57, 14201), (64, 14231), (67, 14243), (88, 14321), (99, 14360), (113, 14420), (120, 14444), (122, 14459), (127, 14483), (128, 14486), (131, 14504), (152, 14591), (161, 14615), (164, 14627), (189, 14711), (202, 14747), (215, 14795), (235, 14882), (246, 14945), (251, 14957), (252, 14969), (260, 15023), (262, 15041), (279, 15128), (282, 15146), (296, 15182), (300, 15203), (302, 15209), (309, 15236), (312, 15245), (320, 15278),

Gene: Waltz\_66 Start: 39954, Stop: 41123, Start Num: 25

Candidate Starts for Waltz\_66:

(Start: 25 @39954 has 93 MA's), (27, 39963), (30, 39975), (50, 40050), (68, 40122), (75, 40149), (79, 40164), (85, 40182), (88, 40194), (98, 40230), (101, 40236), (103, 40242), (128, 40308), (144, 40377), (173, 40473), (178, 40485), (182, 40497), (185, 40518), (191, 40539), (202, 40566), (247, 40749), (272, 40890), (274, 40902), (279, 40926), (282, 40944), (290, 40965), (299, 40998), (302, 41007), (309, 41034), (312, 41043), (314, 41049), (318, 41067), (320, 41076),

Gene: Westrich\_19 Start: 14526, Stop: 15797, Start Num: 25

Candidate Starts for Westrich\_19:

(Start: 25 @14526 has 93 MA's), (41, 14592), (52, 14634), (67, 14697), (78, 14742), (88, 14775), (127, 14937), (128, 14940), (158, 15060), (164, 15081), (173, 15108), (178, 15120), (180, 15126), (189, 15165), (202, 15201), (215, 15249), (246, 15399), (252, 15423), (272, 15546), (274, 15558), (276, 15567), (282, 15600), (287, 15606), (290, 15621), (297, 15642), (300, 15657), (302, 15663), (305, 15669), (309, 15690), (312, 15699), (320, 15732),

Gene: Wheelbite\_65 Start: 41577, Stop: 42746, Start Num: 25

Candidate Starts for Wheelbite\_65:

(Start: 25 @41577 has 93 MA's), (27, 41586), (30, 41598), (35, 41625), (51, 41682), (54, 41688), (65, 41730), (79, 41787), (85, 41805), (88, 41817), (128, 41931), (138, 41979), (144, 42000), (146, 42015), (161, 42057), (173, 42096), (178, 42108), (185, 42141), (202, 42189), (211, 42228), (223, 42273), (242, 42366), (269, 42498), (272, 42513), (280, 42555), (282, 42567), (312, 42666), (320, 42699),

Gene: WileyE\_17 Start: 13406, Stop: 14656, Start Num: 25

Candidate Starts for WileyE\_17:

(Start: 25 @13406 has 93 MA's), (32, 13439), (41, 13472), (57, 13535), (64, 13565), (88, 13655), (99, 13694), (113, 13754), (120, 13778), (122, 13793), (127, 13817), (128, 13820), (131, 13838), (152, 13925), (161, 13949), (164, 13961), (173, 13988), (189, 14045), (202, 14081), (215, 14129), (235, 14216), (246, 14279), (252, 14303), (260, 14357), (262, 14375), (279, 14462), (296, 14516), (300, 14537), (302, 14543), (305, 14549), (309, 14570), (312, 14579), (320, 14612),

Gene: Windest\_22 Start: 15679, Stop: 16980, Start Num: 25

Candidate Starts for Windest\_22:

(Start: 25 @15679 has 93 MA's), (75, 15883), (85, 15916), (92, 15940), (105, 15988), (110, 16018), (118, 16048), (127, 16090), (136, 16126), (139, 16144), (188, 16309), (202, 16348), (207, 16366), (216, 16399), (232, 16471), (272, 16669), (274, 16681), (310, 16819), (314, 16831), (319, 16852), (321, 16864), (327, 16927),

Gene: Wollypog\_19 Start: 17989, Stop: 19074, Start Num: 47

Candidate Starts for Wollypog\_19:

(Start: 47 @17989 has 1 MA's), (62, 18055), (73, 18097), (77, 18118), (99, 18193), (104, 18208), (145, 18373), (152, 18391), (167, 18439), (183, 18481), (196, 18538), (199, 18541), (203, 18556), (218, 18616), (234, 18691), (235, 18694), (243, 18736), (246, 18745), (279, 18922),

Gene: YoungHarleezy\_21 Start: 15636, Stop: 16937, Start Num: 25

Candidate Starts for YoungHarleezy\_21:

(Start: 25 @15636 has 93 MA's), (85, 15873), (92, 15897), (99, 15924), (110, 15975), (118, 16005), (127, 16047), (131, 16068), (136, 16083), (139, 16101), (188, 16266), (202, 16305), (207, 16323), (216, 16356), (232, 16428), (272, 16626), (274, 16638), (276, 16647), (279, 16662), (310, 16776), (314, 16788), (319, 16809), (321, 16821), (327, 16884),

Gene: Zhuangyuan\_19 Start: 13779, Stop: 15026, Start Num: 25

Candidate Starts for Zhuangyuan\_19:

(Start: 25 @13779 has 93 MA's), (41, 13845), (49, 13872), (50, 13875), (64, 13938), (69, 13962), (98, 14064), (117, 14145), (128, 14196), (131, 14214), (133, 14220), (144, 14265), (152, 14301), (164, 14337), (178, 14373), (182, 14385), (188, 14415), (189, 14418), (202, 14454), (212, 14496), (232, 14580), (234, 14586), (241, 14637), (250, 14661), (253, 14682), (279, 14835), (282, 14853), (302, 14916), (309, 14943), (312, 14952),

Gene: Zixiang\_18 Start: 14417, Stop: 15688, Start Num: 25

Candidate Starts for Zixiang\_18:

(Start: 25 @14417 has 93 MA's), (32, 14450), (41, 14483), (52, 14525), (66, 14585), (69, 14600), (88, 14666), (127, 14828), (128, 14831), (164, 14972), (178, 15011), (180, 15017), (189, 15056), (202, 15092), (229, 15200), (246, 15290), (252, 15314), (262, 15386), (264, 15401), (272, 15437), (282, 15491), (287, 15497), (289, 15509), (302, 15554), (305, 15560), (309, 15581), (312, 15590),

Gene: phiAsp2\_30 Start: 25990, Stop: 27063, Start Num: 36

Candidate Starts for phiAsp2\_30:

(36, 25990), (63, 26092), (111, 26269), (113, 26275), (131, 26341), (139, 26374), (146, 26407), (156, 26434), (160, 26446), (165, 26467), (170, 26488), (181, 26515), (184, 26530), (192, 26563), (207, 26602), (209, 26617), (234, 26713), (240, 26758), (261, 26866), (269, 26911), (281, 26974), (282, 26977), (293, 27004),