

Pham 292702

	10		24	28	38	46	56		64	70	82		112	119		138		155	158		193		
1: StAugustine_15	15		24	28	38	46	56		64	70	82		112	119		138		155	158		193		
2: Causa_17	19		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
3: Shrubaron_25 + 3	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
4: Paschalis_24 + 6	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
5: Ganandoni_24 + 1	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
6: Rockwell_24 + 20	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
7: Yeti_25	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
8: Ariadne_33 + 1	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
9: ClearAsMud_27	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
10: Skugga_23	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
11: Jayden_26	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
12: Megan_19	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
13: Onika_24	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
14: SirFrank_24 + 1	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
15: PhedwardCullen_25 + 1	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
16: Gina_26	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
17: Teamocil_26	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
18: Merry_9	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
19: Nicole72_20	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
20: Fireman_25	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
21: Shotgun_24	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
22: Zapato_24	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
23: Cinna_20	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
24: Margaery_19	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
25: Cressida_22	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
26: Matzah_21	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
27: Kozie_21	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
28: MementoMori_21	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
29: Terij_21	15	16	20		32	34	47	53	58	69	70		102	109		126	134				176	191	196
30: KSunshine22	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
31: FrostedGloves_14 + 1	14		24	28	38	46	56		64	70	82		112	119		138		155	158		193		
32: Oniliams_77	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
33: Phramga_77	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
34: SJReid_83	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
35: Rockatye_63	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
36: ReginaGlobina_30	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
37: Panchaail_73	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
38: FloraSnap33_81 + 1	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
39: LeoJr_80	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
40: GoldenEssence_66	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
41: Stewart25555_71	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
42: MisoSoup_14	16		26	30	36	42	50	61	67	71	80	90	106	123		136	145	161	164	166	172	198	
43: FuzzBuster_27	14		24	28	38	46	56		64	70	82		112	119		138		155	158		193		
44: Laure_82	14		24	28	38	46	56		64	70	82		112	119		138		155	158		193		
45: phiAsp2_7	14		24	28	38	46	56		64	70	82		112	119		138		155	158		193		

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 292702 Report

This analysis was run 04/18/26 on database version 643.

Pham number 292702 has 91 members, 22 are drafts.

Phages represented in each track:

- Track 1 : StAugustine\_15
- Track 2 : Causa\_17
- Track 3 : Shrubaron\_25, Metamorphoo\_25, Tyrumbra\_23, RobsFeet\_26
- Track 4 : Paschalis\_24, Jollipop\_25, PiperSansNom\_25, Glorp\_26, Phrancesco\_25, PierreOrion\_25, Piperis\_25
- Track 5 : Ganandorf\_24, Busephilis\_24
- Track 6 : Rockwell\_24, Hermeonysus\_24, LittleFortune\_26, Jefe\_25, Cranjis\_26, BeagleBug\_24, KaiHaiDragon\_25, Selwyn23\_26, Pulchra\_26, Ramiel05\_24, Lucretia\_25, EarickHC\_25, Savannah\_24, BrazzalePHS\_24, Antares\_25, Scumberland\_26, CrazyRich\_24, Crisis\_26, Quhwah\_27, Honeyfin\_26, Kowalski\_24
- Track 7 : Yeti\_25
- Track 8 : Ariadne\_33, Smarties\_33
- Track 9 : ClearAsMud\_27
- Track 10 : Skugga\_23
- Track 11 : Jayden\_26
- Track 12 : Megan\_19
- Track 13 : Onika\_24
- Track 14 : SirFrank\_24, NoodlelyBoi\_24
- Track 15 : PhedwardCullen\_23, Phorgeous\_24
- Track 16 : Gina\_26
- Track 17 : Teamocil\_26
- Track 18 : Merry\_, Sunny\_
- Track 19 : Nicole72\_20
- Track 20 : Fireman\_25
- Track 21 : Shotgun\_24
- Track 22 : Zapato\_24
- Track 23 : Cinna\_20
- Track 24 : Margaery\_19
- Track 25 : Cressida\_22
- Track 26 : Matzah\_21
- Track 27 : Kozie\_21
- Track 28 : MementoMori\_21
- Track 29 : Terij\_20
- Track 30 : KSunshine22\_75, Ellewin\_69, Emmetator\_73, WaddleDee\_68, DunneganBoMo\_70, Artu\_73, BooTeria\_77
- Track 31 : FrostedClock\_83, Bloom\_84, Racecar\_81, Mimi\_80, Talia1610\_80
- Track 32 : Chilliams\_77

- Track 33 : Phrampa\_72
- Track 34 : SJReid\_83
- Track 35 : Rockabye\_82
- Track 36 : ReginaGlobina\_80, Atuin\_75
- Track 37 : Panchaali\_73
- Track 38 : FloraSnap32\_80, Patbob\_79
- Track 39 : LeoJr\_80
- Track 40 : GoldenEssence\_66
- Track 41 : Stewart25555\_71
- Track 42 : MisoSoup\_14
- Track 43 : FuzzBuster\_27
- Track 44 : Laure\_82
- Track 45 : phiAsp2\_7

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

The start number called the most often in the published annotations is 19, it was called in 54 of the 69 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares\_25, Ariadne\_33, BeagleBug\_24, BrazzalePHS\_24, Busephilis\_24, Cinna\_20, ClearAsMud\_27, Cranjis\_26, CrazyRich\_24, Cressida\_22, Crisis\_26, EarickHC\_25, Fireman\_25, Ganandorf\_24, Gina\_26, Glorp\_26, Hermeonysus\_24, Honeyfin\_26, Jayden\_26, Jefe\_25, Jollipop\_25, KaiHaiDragon\_25, Kowalski\_24, Kozi\_21, LittleFortune\_26, Lucretia\_25, Margaery\_19, Matzah\_21, Megan\_19, MementoMori\_21, Merry\_, Metamorphoo\_25, Nicole72\_20, NoodlelyBoi\_24, Onika\_24, Paschalis\_24, PhedwardCullen\_23, Phorgeous\_24, Phrancesco\_25, PierreOrion\_25, PiperSansNom\_25, Piperis\_25, Pulchra\_26, Quhwah\_27, Ramiel05\_24, RobsFeet\_26, Rockwell\_24, Savannah\_24, Scumberland\_26, Selwyn23\_26, Shotgun\_24, Shrubaron\_25, SirFrank\_24, Skugga\_23, Smarties\_33, Sunny\_, Teamocil\_26, Terij\_20, Tyumbra\_23, Yeti\_25, Zapato\_24,

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

- 

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

- Artu\_73, Atuin\_75, Bloom\_84, BooTeria\_77, Causa\_17, Chilliams\_77, DunneganBoMo\_70, Ellewin\_69, Emmetator\_73, FloraSnap32\_80, FrostedClock\_83, FuzzBuster\_27, GoldenEssence\_66, KSunshine22\_75, Laure\_82, LeoJr\_80, Mimi\_80, MisoSoup\_14, Panchaali\_73, Patbob\_79, Phrampa\_72, Racecar\_81, ReginaGlobina\_80, Rockabye\_82, SJReid\_83, StAugustine\_15, Stewart25555\_71, Talia1610\_80, WaddleDee\_68, phiAsp2\_7,

**Summary by start number:**

Start 10:

- Found in 3 of 91 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 2 of 69
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Causa\_17 (AI), StAugustine\_15 (AI),

Start 15:

- Found in 9 of 91 ( 9.9% ) of genes in pham
- Manual Annotations of this start: 4 of 69
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Artu\_73 (FC), BooTeria\_77 (FC), DunneganBoMo\_70 (FC), Ellewin\_69 (FC), Emmetator\_73 (FC), KSunshine22\_75 (FC), Panchaali\_73 (FC), Stewart25555\_71 (FC), WaddleDee\_68 (FC),

Start 16:

- Found in 16 of 91 ( 17.6% ) of genes in pham
- Manual Annotations of this start: 8 of 69
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Atuin\_75 (FC), Bloom\_84 (FC), Chilliams\_77 (FC), FloraSnap32\_80 (FC), FrostedClock\_83 (FC), GoldenEssence\_66 (FC), Laure\_82 (UNK), LeoJr\_80 (FC), Mimi\_80 (FC), Patbob\_79 (FC), Phrampa\_72 (FC), Racecar\_81 (FC), ReginaGlobina\_80 (FC), Rockabye\_82 (FC), SJReid\_83 (FC), Talia1610\_80 (FC),

Start 19:

- Found in 61 of 91 ( 67.0% ) of genes in pham
- Manual Annotations of this start: 54 of 69
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antares\_25 (EC), Ariadne\_33 (EC), BeagleBug\_24 (EC), BrazzalePHS\_24 (EC), Busephilis\_24 (EC), Cinna\_20 (EI), ClearAsMud\_27 (EC), Cranjis\_26 (EC), CrazyRich\_24 (EC), Cressida\_22 (EI), Crisis\_26 (EC), EarickHC\_25 (EC), Fireman\_25 (EC), Ganandorf\_24 (EC), Gina\_26 (EC), Glorp\_26 (EC), Hermeonysus\_24 (EC), Honeyfin\_26 (EC), Jayden\_26 (EC), Jefe\_25 (EC), Jollipop\_25 (EC), KaiHaiDragon\_25 (EC), Kowalski\_24 (EC), Kozie\_21 (EI), LittleFortune\_26 (EC), Lucretia\_25 (EC), Margaery\_19 (EI), Matzah\_21 (EI), Megan\_19 (EC), MementoMori\_21 (EI), Merry\_ (EC), Metamorphoo\_25 (EC), Nicole72\_20 (EC), NoodlelyBoi\_24 (EC), Onika\_24 (EC), Paschalis\_24 (EC), PhedwardCullen\_23 (EC), Phorgeous\_24 (EC), Phrancesco\_25 (EC), PierreOrion\_25 (EC), PiperSansNom\_25 (EC), Piperis\_25 (EC), Pulchra\_26 (EC), Quhwah\_27 (EC), Ramiel05\_24 (EC), RobsFeet\_26 (EC), Rockwell\_24 (EC), Savannah\_24 (EC), Scumberland\_26 (EC), Selwyn23\_26 (EC), Shotgun\_24 (EC), Shrubaron\_25 (EC), SirFrank\_24 (EC), Skugga\_23 (EC), Smarties\_33 (EC), Sunny\_ (EC), Teamocil\_26 (EC), Terij\_20 (EI), Tyrumbra\_23 (EC), Yeti\_25 (EC), Zapato\_24 (EC),

Start 26:

- Found in 50 of 91 ( 54.9% ) of genes in pham
- Manual Annotations of this start: 1 of 69
- Called 4.0% of time when present
- Phage (with cluster) where this start called: FuzzBuster\_27 (GM), MisoSoup\_14 (GM),

Start 37:

- Found in 1 of 91 ( 1.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: phiAsp2\_7 (singleton),

**Summary by clusters:**

There are 7 clusters represented in this pham: singleton, EI, AI, EC, FC, GM, UNK,

Info for manual annotations of cluster AI:

- Start number 10 was manually annotated 2 times for cluster AI.

Info for manual annotations of cluster EC:

- Start number 19 was manually annotated 47 times for cluster EC.

Info for manual annotations of cluster EI:

- Start number 19 was manually annotated 7 times for cluster EI.

Info for manual annotations of cluster FC:

- Start number 15 was manually annotated 4 times for cluster FC.
- Start number 16 was manually annotated 8 times for cluster FC.

Info for manual annotations of cluster GM:

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

### **Gene Information:**

Gene: Antares\_25 Start: 12156, Stop: 13625, Start Num: 19

Candidate Starts for Antares\_25:

(Start: 19 @12156 has 54 MA's), (Start: 26 @12213 has 1 MA's), (28, 12225), (30, 12237), (45, 12333), (46, 12351), (50, 12387), (54, 12411), (56, 12423), (61, 12459), (65, 12489), (67, 12516), (75, 12582), (76, 12588), (78, 12597), (80, 12615), (85, 12639), (86, 12648), (87, 12651), (89, 12660), (99, 12723), (103, 12738), (104, 12756), (105, 12759), (112, 12804), (126, 12903), (129, 12930), (132, 12981), (143, 13119), (149, 13212), (151, 13224), (152, 13230), (161, 13308), (171, 13383), (172, 13398), (174, 13419), (175, 13437), (180, 13461), (196, 13590),

Gene: Ariadne\_33 Start: 13624, Stop: 15117, Start Num: 19

Candidate Starts for Ariadne\_33:

(Start: 19 @13624 has 54 MA's), (28, 13693), (30, 13705), (45, 13801), (46, 13819), (48, 13840), (56, 13891), (61, 13927), (67, 13984), (71, 14020), (73, 14044), (75, 14050), (76, 14056), (78, 14065), (85, 14107), (86, 14116), (87, 14119), (104, 14224), (105, 14227), (123, 14368), (136, 14536), (145, 14632), (151, 14716), (152, 14722), (154, 14743), (160, 14788), (164, 14845), (167, 14854), (172, 14890), (181, 14956), (196, 15082),

Gene: Artu\_73 Start: 42522, Stop: 44036, Start Num: 15

Candidate Starts for Artu\_73:

(7, 42429), (Start: 15 @42522 has 4 MA's), (18, 42555), (20, 42582), (40, 42690), (44, 42708), (47, 42747), (53, 42777), (55, 42789), (58, 42819), (70, 42918), (97, 43065), (98, 43071), (105, 43113), (126, 43233), (134, 43353), (191, 43890), (198, 43956),

Gene: Atuin\_75 Start: 45156, Stop: 46664, Start Num: 16

Candidate Starts for Atuin\_75:

(11, 45114), (13, 45117), (Start: 16 @45156 has 8 MA's), (17, 45165), (20, 45216), (53, 45411), (55, 45423), (57, 45450), (70, 45552), (97, 45693), (106, 45744), (134, 45981), (148, 46131), (150, 46161), (168, 46314), (191, 46518), (198, 46584), (199, 46587),

Gene: BeagleBug\_24 Start: 11934, Stop: 13403, Start Num: 19

Candidate Starts for BeagleBug\_24:

(Start: 19 @11934 has 54 MA's), (Start: 26 @11991 has 1 MA's), (28, 12003), (30, 12015), (45, 12111), (46, 12129), (50, 12165), (54, 12189), (56, 12201), (61, 12237), (65, 12267), (67, 12294), (75, 12360), (76, 12366), (78, 12375), (80, 12393), (85, 12417), (86, 12426), (87, 12429), (89, 12438), (99, 12501), (103, 12516), (104, 12534), (105, 12537), (112, 12582), (126, 12681), (129, 12708), (132, 12759), (143, 12897), (149, 12990), (151, 13002), (152, 13008), (161, 13086), (171, 13161), (172, 13176), (174, 13197), (175, 13215), (180, 13239), (196, 13368),

Gene: Bloom\_84 Start: 46467, Stop: 48026, Start Num: 16

Candidate Starts for Bloom\_84:

(Start: 16 @46467 has 8 MA's), (20, 46527), (21, 46542), (53, 46752), (70, 46893), (91, 47007), (97, 47058), (105, 47106), (133, 47340), (146, 47475), (151, 47538), (176, 47757), (191, 47883), (198, 47949),

Gene: BooTeria\_77 Start: 42590, Stop: 44104, Start Num: 15

Candidate Starts for BooTeria\_77:

(7, 42497), (Start: 15 @42590 has 4 MA's), (18, 42623), (20, 42650), (40, 42758), (44, 42776), (47, 42815), (53, 42845), (55, 42857), (58, 42887), (70, 42986), (97, 43133), (98, 43139), (105, 43181), (126, 43301), (134, 43421), (191, 43958), (198, 44024),

Gene: BrazzalePHS\_24 Start: 11949, Stop: 13418, Start Num: 19

Candidate Starts for BrazzalePHS\_24:

(Start: 19 @11949 has 54 MA's), (Start: 26 @12006 has 1 MA's), (28, 12018), (30, 12030), (45, 12126), (46, 12144), (50, 12180), (54, 12204), (56, 12216), (61, 12252), (65, 12282), (67, 12309), (75, 12375), (76, 12381), (78, 12390), (80, 12408), (85, 12432), (86, 12441), (87, 12444), (89, 12453), (99, 12516), (103, 12531), (104, 12549), (105, 12552), (112, 12597), (126, 12696), (129, 12723), (132, 12774), (143, 12912), (149, 13005), (151, 13017), (152, 13023), (161, 13101), (171, 13176), (172, 13191), (174, 13212), (175, 13230), (180, 13254), (196, 13383),

Gene: Busephilis\_24 Start: 11887, Stop: 13356, Start Num: 19

Candidate Starts for Busephilis\_24:

(Start: 19 @11887 has 54 MA's), (Start: 26 @11944 has 1 MA's), (28, 11956), (30, 11968), (45, 12064), (46, 12082), (50, 12118), (54, 12142), (56, 12154), (61, 12190), (65, 12220), (67, 12247), (75, 12313), (76, 12319), (78, 12328), (80, 12346), (85, 12370), (86, 12379), (87, 12382), (89, 12391), (99, 12454), (103, 12469), (104, 12487), (105, 12490), (111, 12529), (112, 12535), (126, 12634), (129, 12661), (132, 12712), (143, 12850), (149, 12943), (151, 12955), (152, 12961), (161, 13039), (171, 13114), (172, 13129), (174, 13150), (175, 13168), (180, 13192), (196, 13321),

Gene: Causa\_17 Start: 11421, Stop: 12947, Start Num: 10

Candidate Starts for Causa\_17:

(Start: 10 @11421 has 2 MA's), (24, 11574), (28, 11607), (38, 11679), (44, 11718), (46, 11739), (56, 11799), (64, 11862), (70, 11928), (81, 11997), (82, 12000), (112, 12162), (119, 12240), (138, 12462), (153, 12627), (155, 12633), (166, 12735), (193, 12936),

Gene: Chilliams\_77 Start: 48357, Stop: 49904, Start Num: 16

Candidate Starts for Chilliams\_77:

(2, 48171), (4, 48201), (5, 48237), (8, 48264), (11, 48315), (13, 48318), (Start: 16 @48357 has 8 MA's), (17, 48366), (20, 48417), (21, 48432), (53, 48642), (70, 48783), (88, 48870), (97, 48933), (105, 48981), (113, 49026), (132, 49179), (134, 49221), (191, 49758), (198, 49824),

Gene: Cinna\_20 Start: 11368, Stop: 12846, Start Num: 19

Candidate Starts for Cinna\_20:

(Start: 19 @11368 has 54 MA's), (30, 11461), (32, 11488), (34, 11506), (43, 11542), (46, 11572), (57, 11668), (65, 11713), (67, 11740), (75, 11806), (78, 11821), (80, 11839), (86, 11863), (102, 11923), (105, 11950), (106, 11953), (109, 11971), (110, 11980), (112, 11995), (114, 12028), (115, 12046), (125, 12100), (130, 12145), (131, 12175), (132, 12193), (143, 12331), (145, 12352), (151, 12436), (152, 12442), (161, 12520), (165, 12571), (170, 12589), (171, 12595), (172, 12610), (174, 12631), (175, 12649), (177, 12658), (179, 12670), (181, 12676), (182, 12682), (186, 12721), (190, 12775), (192, 12778), (195, 12796), (196, 12802),

Gene: ClearAsMud\_27 Start: 12684, Stop: 14153, Start Num: 19

Candidate Starts for ClearAsMud\_27:

(Start: 19 @12684 has 54 MA's), (Start: 26 @12741 has 1 MA's), (28, 12753), (30, 12765), (45, 12861), (46, 12879), (50, 12915), (54, 12939), (56, 12951), (61, 12987), (65, 13017), (67, 13044), (75, 13110), (76, 13116), (78, 13125), (80, 13143), (85, 13167), (86, 13176), (87, 13179), (99, 13248), (103, 13263), (104, 13281), (105, 13284), (112, 13329), (126, 13428), (129, 13455), (132, 13506), (144, 13650), (149, 13737), (151, 13749), (152, 13755), (155, 13779), (159, 13806), (161, 13833), (171, 13908), (175, 13962), (177, 13971), (180, 13986), (196, 14115),

Gene: Cranjis\_26 Start: 12111, Stop: 13580, Start Num: 19

Candidate Starts for Cranjis\_26:

(Start: 19 @12111 has 54 MA's), (Start: 26 @12168 has 1 MA's), (28, 12180), (30, 12192), (45, 12288), (46, 12306), (50, 12342), (54, 12366), (56, 12378), (61, 12414), (65, 12444), (67, 12471), (75, 12537), (76, 12543), (78, 12552), (80, 12570), (85, 12594), (86, 12603), (87, 12606), (89, 12615), (99, 12678), (103, 12693), (104, 12711), (105, 12714), (112, 12759), (126, 12858), (129, 12885), (132, 12936), (143, 13074), (149, 13167), (151, 13179), (152, 13185), (161, 13263), (171, 13338), (172, 13353), (174, 13374), (175, 13392), (180, 13416), (196, 13545),

Gene: CrazyRich\_24 Start: 11921, Stop: 13390, Start Num: 19

Candidate Starts for CrazyRich\_24:

(Start: 19 @11921 has 54 MA's), (Start: 26 @11978 has 1 MA's), (28, 11990), (30, 12002), (45, 12098), (46, 12116), (50, 12152), (54, 12176), (56, 12188), (61, 12224), (65, 12254), (67, 12281), (75, 12347), (76, 12353), (78, 12362), (80, 12380), (85, 12404), (86, 12413), (87, 12416), (89, 12425), (99, 12488), (103, 12503), (104, 12521), (105, 12524), (112, 12569), (126, 12668), (129, 12695), (132, 12746), (143, 12884), (149, 12977), (151, 12989), (152, 12995), (161, 13073), (171, 13148), (172, 13163), (174, 13184), (175, 13202), (180, 13226), (196, 13355),

Gene: Cressida\_22 Start: 11398, Stop: 12870, Start Num: 19

Candidate Starts for Cressida\_22:

(Start: 19 @11398 has 54 MA's), (30, 11491), (31, 11512), (32, 11518), (43, 11575), (46, 11605), (57, 11701), (65, 11746), (67, 11773), (75, 11839), (78, 11854), (80, 11872), (86, 11896), (102, 11956), (105, 11983), (109, 12004), (110, 12013), (112, 12028), (114, 12061), (125, 12136), (130, 12181), (131, 12211), (132, 12229), (143, 12367), (145, 12388), (151, 12472), (152, 12478), (161, 12556), (165, 12607), (170, 12625), (172, 12646), (174, 12667), (175, 12685), (177, 12694), (179, 12706), (181, 12712), (182, 12718), (186, 12757), (192, 12814),

Gene: Crisis\_26 Start: 11906, Stop: 13375, Start Num: 19

Candidate Starts for Crisis\_26:

(Start: 19 @11906 has 54 MA's), (Start: 26 @11963 has 1 MA's), (28, 11975), (30, 11987), (45, 12083), (46, 12101), (50, 12137), (54, 12161), (56, 12173), (61, 12209), (65, 12239), (67, 12266), (75, 12332), (76, 12338), (78, 12347), (80, 12365), (85, 12389), (86, 12398), (87, 12401), (89, 12410), (99, 12473), (103, 12488), (104, 12506), (105, 12509), (112, 12554), (126, 12653), (129, 12680), (132, 12731), (143, 12869), (149, 12962), (151, 12974), (152, 12980), (161, 13058), (171, 13133), (172, 13148), (174, 13169), (175, 13187), (180, 13211), (196, 13340),

Gene: DunneganBoMo\_70 Start: 42015, Stop: 43529, Start Num: 15

Candidate Starts for DunneganBoMo\_70:

(7, 41922), (Start: 15 @42015 has 4 MA's), (18, 42048), (20, 42075), (40, 42183), (44, 42201), (47, 42240), (53, 42270), (55, 42282), (58, 42312), (70, 42411), (97, 42558), (98, 42564), (105, 42606), (126, 42726), (134, 42846), (191, 43383), (198, 43449),

Gene: EarickHC\_25 Start: 11832, Stop: 13301, Start Num: 19

Candidate Starts for EarickHC\_25:

(Start: 19 @11832 has 54 MA's), (Start: 26 @11889 has 1 MA's), (28, 11901), (30, 11913), (45, 12009), (46, 12027), (50, 12063), (54, 12087), (56, 12099), (61, 12135), (65, 12165), (67, 12192), (75, 12258), (76, 12264), (78, 12273), (80, 12291), (85, 12315), (86, 12324), (87, 12327), (89, 12336), (99, 12399), (103, 12414), (104, 12432), (105, 12435), (112, 12480), (126, 12579), (129, 12606), (132, 12657), (143, 12795), (149, 12888), (151, 12900), (152, 12906), (161, 12984), (171, 13059), (172, 13074), (174, 13095), (175, 13113), (180, 13137), (196, 13266),

Gene: Ellewin\_69 Start: 41610, Stop: 43124, Start Num: 15

Candidate Starts for Ellewin\_69:

(7, 41517), (Start: 15 @41610 has 4 MA's), (18, 41643), (20, 41670), (40, 41778), (44, 41796), (47, 41835), (53, 41865), (55, 41877), (58, 41907), (70, 42006), (97, 42153), (98, 42159), (105, 42201), (126, 42321), (134, 42441), (191, 42978), (198, 43044),

Gene: Emmetator\_73 Start: 42762, Stop: 44276, Start Num: 15

Candidate Starts for Emmetator\_73:

(7, 42669), (Start: 15 @42762 has 4 MA's), (18, 42795), (20, 42822), (40, 42930), (44, 42948), (47, 42987), (53, 43017), (55, 43029), (58, 43059), (70, 43158), (97, 43305), (98, 43311), (105, 43353), (126, 43473), (134, 43593), (191, 44130), (198, 44196),

Gene: Fireman\_25 Start: 11529, Stop: 13022, Start Num: 19

Candidate Starts for Fireman\_25:

(Start: 19 @11529 has 54 MA's), (Start: 26 @11586 has 1 MA's), (28, 11598), (30, 11610), (45, 11706), (46, 11724), (50, 11760), (54, 11784), (56, 11796), (61, 11832), (67, 11889), (71, 11925), (75, 11955), (76, 11961), (78, 11970), (80, 11988), (85, 12012), (86, 12021), (87, 12024), (103, 12111), (104, 12129), (105, 12132), (123, 12270), (132, 12375), (136, 12438), (145, 12534), (149, 12606), (151, 12618), (152, 12624), (154, 12645), (160, 12690), (167, 12756), (172, 12792), (196, 12984),

Gene: FloraSnap32\_80 Start: 45495, Stop: 47063, Start Num: 16

Candidate Starts for FloraSnap32\_80:

(Start: 16 @45495 has 8 MA's), (20, 45555), (21, 45570), (22, 45573), (53, 45780), (70, 45921), (91, 46035), (97, 46086), (105, 46134), (133, 46377), (146, 46512), (151, 46575), (176, 46794), (191, 46920), (198, 46986),

Gene: FrostedClock\_83 Start: 45955, Stop: 47514, Start Num: 16

Candidate Starts for FrostedClock\_83:

(Start: 16 @45955 has 8 MA's), (20, 46015), (21, 46030), (53, 46240), (70, 46381), (91, 46495), (97, 46546), (105, 46594), (133, 46828), (146, 46963), (151, 47026), (176, 47245), (191, 47371), (198, 47437),

Gene: FuzzBuster\_27 Start: 11648, Stop: 13237, Start Num: 26

Candidate Starts for FuzzBuster\_27:

(Start: 26 @11648 has 1 MA's), (58, 11912), (59, 11915), (63, 11993), (66, 12041), (68, 12056), (72, 12089), (75, 12110), (79, 12137), (87, 12179), (89, 12188), (97, 12239), (100, 12254), (105, 12287), (106, 12290), (107, 12293), (136, 12635), (137, 12656), (145, 12731), (159, 12872), (160, 12887), (163, 12932), (171, 12974), (175, 13031), (180, 13055), (183, 13073), (196, 13181),

Gene: Ganandorf\_24 Start: 11968, Stop: 13437, Start Num: 19

Candidate Starts for Ganandorf\_24:

(Start: 19 @11968 has 54 MA's), (Start: 26 @12025 has 1 MA's), (28, 12037), (30, 12049), (45, 12145), (46, 12163), (50, 12199), (54, 12223), (56, 12235), (61, 12271), (65, 12301), (67, 12328), (75, 12394), (76, 12400), (78, 12409), (80, 12427), (85, 12451), (86, 12460), (87, 12463), (89, 12472), (99, 12535), (103, 12550), (104, 12568), (105, 12571), (111, 12610), (112, 12616), (126, 12715), (129, 12742), (132, 12793), (143, 12931), (149, 13024), (151, 13036), (152, 13042), (161, 13120), (171, 13195), (172, 13210), (174, 13231), (175, 13249), (180, 13273), (196, 13402),

Gene: Gina\_26 Start: 11315, Stop: 12709, Start Num: 19

Candidate Starts for Gina\_26:

(Start: 19 @11315 has 54 MA's), (Start: 26 @11372 has 1 MA's), (45, 11393), (46, 11411), (50, 11447), (56, 11483), (61, 11519), (67, 11576), (71, 11612), (75, 11642), (76, 11648), (78, 11657), (85, 11699), (86, 11708), (87, 11711), (88, 11717), (104, 11822), (105, 11825), (112, 11870), (123, 11960), (127, 11990), (136, 12128), (145, 12224), (151, 12308), (152, 12314), (154, 12335), (160, 12380), (167, 12446), (196, 12674),

Gene: Glorp\_26 Start: 11970, Stop: 13439, Start Num: 19

Candidate Starts for Glorp\_26:

(Start: 19 @11970 has 54 MA's), (Start: 26 @12027 has 1 MA's), (28, 12039), (30, 12051), (45, 12147), (46, 12165), (50, 12201), (54, 12225), (56, 12237), (61, 12273), (65, 12303), (67, 12330), (75, 12396), (76, 12402), (78, 12411), (80, 12429), (85, 12453), (86, 12462), (87, 12465), (89, 12474), (103, 12552), (104, 12570), (105, 12573), (112, 12618), (126, 12717), (129, 12744), (132, 12795), (143, 12933), (149, 13026), (151, 13038), (152, 13044), (161, 13122), (171, 13197), (172, 13212), (174, 13233), (175, 13251), (180, 13275), (196, 13404),

Gene: GoldenEssence\_66 Start: 40260, Stop: 41819, Start Num: 16

Candidate Starts for GoldenEssence\_66:

(Start: 16 @40260 has 8 MA's), (20, 40320), (21, 40335), (53, 40545), (70, 40686), (91, 40800), (97, 40851), (105, 40899), (133, 41133), (146, 41268), (176, 41550), (191, 41676), (198, 41742),

Gene: Hermeonysus\_24 Start: 11838, Stop: 13307, Start Num: 19

Candidate Starts for Hermeonysus\_24:

(Start: 19 @11838 has 54 MA's), (Start: 26 @11895 has 1 MA's), (28, 11907), (30, 11919), (45, 12015), (46, 12033), (50, 12069), (54, 12093), (56, 12105), (61, 12141), (65, 12171), (67, 12198), (75, 12264), (76, 12270), (78, 12279), (80, 12297), (85, 12321), (86, 12330), (87, 12333), (89, 12342), (99, 12405), (103, 12420), (104, 12438), (105, 12441), (112, 12486), (126, 12585), (129, 12612), (132, 12663), (143, 12801), (149, 12894), (151, 12906), (152, 12912), (161, 12990), (171, 13065), (172, 13080), (174, 13101), (175, 13119), (180, 13143), (196, 13272),

Gene: Honeyfin\_26 Start: 12153, Stop: 13622, Start Num: 19

Candidate Starts for Honeyfin\_26:

(Start: 19 @12153 has 54 MA's), (Start: 26 @12210 has 1 MA's), (28, 12222), (30, 12234), (45, 12330), (46, 12348), (50, 12384), (54, 12408), (56, 12420), (61, 12456), (65, 12486), (67, 12513), (75, 12579), (76, 12585), (78, 12594), (80, 12612), (85, 12636), (86, 12645), (87, 12648), (89, 12657), (99, 12720), (103, 12735), (104, 12753), (105, 12756), (112, 12801), (126, 12900), (129, 12927), (132, 12978), (143, 13116), (149, 13209), (151, 13221), (152, 13227), (161, 13305), (171, 13380), (172, 13395), (174, 13416), (175, 13434), (180, 13458), (196, 13587),

Gene: Jayden\_26 Start: 11599, Stop: 13095, Start Num: 19

Candidate Starts for Jayden\_26:

(Start: 19 @11599 has 54 MA's), (30, 11680), (45, 11776), (46, 11794), (50, 11830), (56, 11866), (61, 11902), (67, 11959), (75, 12025), (76, 12031), (78, 12040), (85, 12082), (86, 12091), (87, 12094), (104, 12202), (105, 12205), (112, 12250), (121, 12328), (123, 12346), (132, 12451), (136, 12514), (145, 12610), (151, 12694), (152, 12700), (154, 12721), (160, 12766), (167, 12832), (177, 12916), (179, 12928), (181, 12934), (184, 12955), (186, 12979), (196, 13060),

Gene: Jefe\_25 Start: 11891, Stop: 13360, Start Num: 19

Candidate Starts for Jefe\_25:

(Start: 19 @11891 has 54 MA's), (Start: 26 @11948 has 1 MA's), (28, 11960), (30, 11972), (45, 12068), (46, 12086), (50, 12122), (54, 12146), (56, 12158), (61, 12194), (65, 12224), (67, 12251), (75, 12317), (76, 12323), (78, 12332), (80, 12350), (85, 12374), (86, 12383), (87, 12386), (89, 12395), (99, 12458), (103, 12473), (104, 12491), (105, 12494), (112, 12539), (126, 12638), (129, 12665), (132, 12716), (143, 12854), (149, 12947), (151, 12959), (152, 12965), (161, 13043), (171, 13118), (172, 13133), (174, 13154), (175, 13172), (180, 13196), (196, 13325),

Gene: Jollipop\_25 Start: 12239, Stop: 13708, Start Num: 19

Candidate Starts for Jollipop\_25:

(Start: 19 @12239 has 54 MA's), (Start: 26 @12296 has 1 MA's), (28, 12308), (30, 12320), (45, 12416), (46, 12434), (50, 12470), (54, 12494), (56, 12506), (61, 12542), (65, 12572), (67, 12599), (75, 12665), (76, 12671), (78, 12680), (80, 12698), (85, 12722), (86, 12731), (87, 12734), (89, 12743), (103, 12821), (104, 12839), (105, 12842), (112, 12887), (126, 12986), (129, 13013), (132, 13064), (143, 13202), (149, 13295), (151, 13307), (152, 13313), (161, 13391), (171, 13466), (172, 13481), (174, 13502), (175, 13520), (180, 13544), (196, 13673),

Gene: KSunshine22\_75 Start: 43249, Stop: 44763, Start Num: 15

Candidate Starts for KSunshine22\_75:

(7, 43156), (Start: 15 @43249 has 4 MA's), (18, 43282), (20, 43309), (40, 43417), (44, 43435), (47, 43474), (53, 43504), (55, 43516), (58, 43546), (70, 43645), (97, 43792), (98, 43798), (105, 43840), (126, 43960), (134, 44080), (191, 44617), (198, 44683),

Gene: KaiHaiDragon\_25 Start: 11832, Stop: 13301, Start Num: 19

Candidate Starts for KaiHaiDragon\_25:

(Start: 19 @11832 has 54 MA's), (Start: 26 @11889 has 1 MA's), (28, 11901), (30, 11913), (45, 12009), (46, 12027), (50, 12063), (54, 12087), (56, 12099), (61, 12135), (65, 12165), (67, 12192), (75, 12258), (76, 12264), (78, 12273), (80, 12291), (85, 12315), (86, 12324), (87, 12327), (89, 12336), (99, 12399), (103, 12414), (104, 12432), (105, 12435), (112, 12480), (126, 12579), (129, 12606), (132, 12657), (143, 12795), (149, 12888), (151, 12900), (152, 12906), (161, 12984), (171, 13059), (172, 13074), (174, 13095), (175, 13113), (180, 13137), (196, 13266),

Gene: Kowalski\_24 Start: 11948, Stop: 13417, Start Num: 19

Candidate Starts for Kowalski\_24:

(Start: 19 @11948 has 54 MA's), (Start: 26 @12005 has 1 MA's), (28, 12017), (30, 12029), (45, 12125), (46, 12143), (50, 12179), (54, 12203), (56, 12215), (61, 12251), (65, 12281), (67, 12308), (75, 12374), (76, 12380), (78, 12389), (80, 12407), (85, 12431), (86, 12440), (87, 12443), (89, 12452), (99, 12515), (103, 12530), (104, 12548), (105, 12551), (112, 12596), (126, 12695), (129, 12722), (132, 12773), (143, 12911), (149, 13004), (151, 13016), (152, 13022), (161, 13100), (171, 13175), (172, 13190), (174, 13211), (175, 13229), (180, 13253), (196, 13382),

Gene: Kozie\_21 Start: 11363, Stop: 12874, Start Num: 19

Candidate Starts for Kozie\_21:

(Start: 19 @11363 has 54 MA's), (23, 11420), (29, 11459), (36, 11525), (43, 11561), (45, 11573), (49, 11621), (52, 11645), (54, 11654), (67, 11759), (71, 11795), (75, 11825), (76, 11831), (78, 11840), (80, 11858), (86, 11891), (104, 12002), (105, 12005), (109, 12026), (111, 12044), (112, 12050), (118,

12119), (132, 12233), (142, 12368), (144, 12377), (145, 12392), (151, 12476), (160, 12548), (174, 12671), (175, 12689), (181, 12716), (196, 12842),

Gene: Laure\_82 Start: 46131, Stop: 47720, Start Num: 16

Candidate Starts for Laure\_82:

(Start: 16 @46131 has 8 MA's), (17, 46140), (20, 46191), (40, 46371), (53, 46458), (62, 46527), (70, 46602), (71, 46605), (75, 46635), (88, 46692), (97, 46749), (105, 46797), (113, 46842), (134, 47037), (136, 47052), (140, 47100), (150, 47220), (191, 47574), (194, 47586), (198, 47640),

Gene: LeoJr\_80 Start: 45284, Stop: 46792, Start Num: 16

Candidate Starts for LeoJr\_80:

(11, 45242), (13, 45245), (Start: 16 @45284 has 8 MA's), (17, 45293), (20, 45344), (53, 45539), (55, 45551), (57, 45578), (70, 45680), (97, 45821), (106, 45872), (134, 46109), (148, 46259), (150, 46289), (159, 46355), (191, 46646), (198, 46712), (199, 46715),

Gene: LittleFortune\_26 Start: 12195, Stop: 13664, Start Num: 19

Candidate Starts for LittleFortune\_26:

(Start: 19 @12195 has 54 MA's), (Start: 26 @12252 has 1 MA's), (28, 12264), (30, 12276), (45, 12372), (46, 12390), (50, 12426), (54, 12450), (56, 12462), (61, 12498), (65, 12528), (67, 12555), (75, 12621), (76, 12627), (78, 12636), (80, 12654), (85, 12678), (86, 12687), (87, 12690), (89, 12699), (99, 12762), (103, 12777), (104, 12795), (105, 12798), (112, 12843), (126, 12942), (129, 12969), (132, 13020), (143, 13158), (149, 13251), (151, 13263), (152, 13269), (161, 13347), (171, 13422), (172, 13437), (174, 13458), (175, 13476), (180, 13500), (196, 13629),

Gene: Lucretia\_25 Start: 11885, Stop: 13354, Start Num: 19

Candidate Starts for Lucretia\_25:

(Start: 19 @11885 has 54 MA's), (Start: 26 @11942 has 1 MA's), (28, 11954), (30, 11966), (45, 12062), (46, 12080), (50, 12116), (54, 12140), (56, 12152), (61, 12188), (65, 12218), (67, 12245), (75, 12311), (76, 12317), (78, 12326), (80, 12344), (85, 12368), (86, 12377), (87, 12380), (89, 12389), (99, 12452), (103, 12467), (104, 12485), (105, 12488), (112, 12533), (126, 12632), (129, 12659), (132, 12710), (143, 12848), (149, 12941), (151, 12953), (152, 12959), (161, 13037), (171, 13112), (172, 13127), (174, 13148), (175, 13166), (180, 13190), (196, 13319),

Gene: Margaery\_19 Start: 11140, Stop: 12612, Start Num: 19

Candidate Starts for Margaery\_19:

(Start: 19 @11140 has 54 MA's), (30, 11233), (32, 11260), (43, 11314), (46, 11344), (57, 11440), (67, 11512), (71, 11548), (75, 11578), (80, 11611), (86, 11635), (102, 11695), (105, 11722), (109, 11743), (110, 11752), (112, 11767), (114, 11800), (125, 11878), (130, 11923), (131, 11953), (132, 11971), (143, 12109), (145, 12130), (151, 12214), (152, 12220), (161, 12298), (165, 12349), (172, 12388), (175, 12427), (182, 12460), (186, 12499),

Gene: Matzah\_21 Start: 11345, Stop: 12823, Start Num: 19

Candidate Starts for Matzah\_21:

(Start: 19 @11345 has 54 MA's), (30, 11438), (32, 11465), (34, 11483), (43, 11519), (46, 11549), (57, 11645), (65, 11690), (67, 11717), (75, 11783), (78, 11798), (80, 11816), (86, 11840), (102, 11900), (105, 11927), (109, 11948), (110, 11957), (112, 11972), (114, 12005), (115, 12023), (125, 12077), (130, 12122), (131, 12152), (132, 12170), (143, 12308), (145, 12329), (151, 12413), (152, 12419), (161, 12497), (165, 12548), (170, 12566), (171, 12572), (172, 12587), (174, 12608), (175, 12626), (177, 12635), (179, 12647), (181, 12653), (182, 12659), (186, 12698), (190, 12752), (192, 12755), (195, 12773), (196, 12779),

Gene: Megan\_19 Start: 12956, Stop: 14425, Start Num: 19

Candidate Starts for Megan\_19:

(Start: 10 @12860 has 2 MA's), (12, 12875), (18, 12947), (Start: 19 @12956 has 54 MA's), (Start: 26 @13013 has 1 MA's), (43, 13112), (49, 13172), (52, 13196), (54, 13205), (56, 13217), (57, 13238), (67, 13310), (70, 13343), (73, 13370), (75, 13376), (78, 13391), (84, 13424), (86, 13436), (92, 13457), (104, 13532), (105, 13535), (109, 13556), (112, 13580), (114, 13613), (141, 13895), (144, 13922), (145, 13937), (147, 13964), (151, 14021), (155, 14051), (157, 14066), (160, 14093), (171, 14180), (181, 14261), (182, 14267), (184, 14282), (196, 14387),

Gene: MementoMori\_21 Start: 11058, Stop: 12539, Start Num: 19

Candidate Starts for MementoMori\_21:

(Start: 19 @11058 has 54 MA's), (30, 11151), (32, 11178), (34, 11196), (43, 11232), (46, 11262), (57, 11358), (65, 11403), (67, 11430), (71, 11466), (75, 11496), (78, 11511), (80, 11529), (86, 11553), (102, 11613), (105, 11640), (109, 11661), (110, 11670), (112, 11685), (114, 11718), (115, 11736), (125, 11793), (130, 11838), (131, 11868), (132, 11886), (143, 12024), (145, 12045), (151, 12129), (152, 12135), (161, 12213), (165, 12264), (170, 12282), (172, 12303), (174, 12324), (175, 12342), (177, 12351), (179, 12363), (181, 12369), (182, 12375), (186, 12414), (190, 12468), (192, 12471), (195, 12489), (196, 12495),

Gene: Merry\_ Start: 12177, Stop: 13676, Start Num: 19

Candidate Starts for Merry\_:

(Start: 19 @12177 has 54 MA's), (28, 12246), (30, 12258), (45, 12354), (46, 12372), (57, 12465), (61, 12480), (67, 12537), (71, 12573), (75, 12603), (76, 12609), (78, 12618), (85, 12660), (86, 12669), (87, 12672), (90, 12684), (101, 12753), (105, 12783), (112, 12828), (120, 12906), (126, 12954), (132, 13032), (145, 13191), (149, 13263), (151, 13275), (152, 13281), (154, 13302), (155, 13305), (160, 13347), (170, 13428), (186, 13560), (196, 13641),

Gene: Metamorphoo\_25 Start: 11518, Stop: 13008, Start Num: 19

Candidate Starts for Metamorphoo\_25:

(Start: 19 @11518 has 54 MA's), (Start: 26 @11575 has 1 MA's), (28, 11587), (30, 11599), (45, 11695), (46, 11713), (50, 11749), (54, 11773), (56, 11785), (61, 11821), (67, 11878), (71, 11914), (75, 11944), (76, 11950), (78, 11959), (80, 11977), (85, 12001), (86, 12010), (87, 12013), (103, 12100), (104, 12118), (105, 12121), (123, 12256), (132, 12361), (136, 12424), (145, 12520), (151, 12604), (152, 12610), (154, 12631), (160, 12676), (167, 12742), (172, 12778), (196, 12970),

Gene: Mimi\_80 Start: 45814, Stop: 47373, Start Num: 16

Candidate Starts for Mimi\_80:

(Start: 16 @45814 has 8 MA's), (20, 45874), (21, 45889), (53, 46099), (70, 46240), (91, 46354), (97, 46405), (105, 46453), (133, 46687), (146, 46822), (151, 46885), (176, 47104), (191, 47230), (198, 47296),

Gene: MisoSoup\_14 Start: 7399, Stop: 8979, Start Num: 26

Candidate Starts for MisoSoup\_14:

(Start: 26 @7399 has 1 MA's), (63, 7741), (66, 7789), (75, 7858), (80, 7891), (87, 7927), (89, 7936), (105, 8035), (107, 8041), (112, 8080), (124, 8212), (131, 8290), (132, 8308), (136, 8374), (145, 8470), (150, 8545), (151, 8554), (159, 8611), (160, 8626), (173, 8749), (180, 8794),

Gene: Nicole72\_20 Start: 13339, Stop: 14817, Start Num: 19

Candidate Starts for Nicole72\_20:

(9, 13222), (Start: 19 @13339 has 54 MA's), (Start: 26 @13396 has 1 MA's), (43, 13495), (49, 13555), (52, 13579), (56, 13600), (57, 13621), (67, 13693), (73, 13753), (75, 13759), (78, 13774), (84, 13807), (86, 13819), (92, 13840), (95, 13864), (104, 13921), (105, 13924), (109, 13945), (112, 13969), (114, 14002), (117, 14032), (131, 14152), (132, 14170), (141, 14287), (144, 14314), (145, 14329), (147, 14356), (149, 14401), (151, 14413), (157, 14458), (163, 14530), (184, 14674), (186, 14698), (196, 14779),

Gene: NoodlelyBoi\_24 Start: 11989, Stop: 13458, Start Num: 19

Candidate Starts for NoodlelyBoi\_24:

(Start: 19 @11989 has 54 MA's), (Start: 26 @12046 has 1 MA's), (28, 12058), (30, 12070), (45, 12166), (46, 12184), (50, 12220), (54, 12244), (56, 12256), (61, 12292), (65, 12322), (67, 12349), (75, 12415), (76, 12421), (78, 12430), (80, 12448), (85, 12472), (86, 12481), (87, 12484), (99, 12553), (103, 12568), (104, 12586), (105, 12589), (112, 12634), (126, 12733), (129, 12760), (132, 12811), (144, 12955), (151, 13054), (152, 13060), (155, 13084), (161, 13138), (171, 13213), (175, 13267), (177, 13276), (180, 13291), (196, 13420),

Gene: Onika\_24 Start: 11922, Stop: 13391, Start Num: 19

Candidate Starts for Onika\_24:

(Start: 19 @11922 has 54 MA's), (Start: 26 @11979 has 1 MA's), (28, 11991), (30, 12003), (45, 12099), (46, 12117), (50, 12153), (54, 12177), (56, 12189), (61, 12225), (65, 12255), (67, 12282), (75, 12348), (76, 12354), (78, 12363), (80, 12381), (85, 12405), (86, 12414), (87, 12417), (89, 12426), (99, 12489), (103, 12504), (104, 12522), (105, 12525), (112, 12570), (126, 12669), (129, 12696), (132, 12747), (143, 12885), (149, 12978), (151, 12990), (152, 12996), (161, 13074), (165, 13125), (171, 13149), (172, 13164), (174, 13185), (175, 13203), (180, 13227), (196, 13356),

Gene: Panchaali\_73 Start: 42946, Stop: 44454, Start Num: 15

Candidate Starts for Panchaali\_73:

(Start: 15 @42946 has 4 MA's), (20, 43006), (33, 43063), (40, 43114), (41, 43117), (53, 43201), (55, 43213), (58, 43243), (70, 43342), (73, 43369), (94, 43459), (97, 43483), (98, 43489), (105, 43531), (126, 43651), (134, 43771), (151, 43960), (191, 44308), (198, 44374),

Gene: Paschalis\_24 Start: 11937, Stop: 13406, Start Num: 19

Candidate Starts for Paschalis\_24:

(Start: 19 @11937 has 54 MA's), (Start: 26 @11994 has 1 MA's), (28, 12006), (30, 12018), (45, 12114), (46, 12132), (50, 12168), (54, 12192), (56, 12204), (61, 12240), (65, 12270), (67, 12297), (75, 12363), (76, 12369), (78, 12378), (80, 12396), (85, 12420), (86, 12429), (87, 12432), (89, 12441), (103, 12519), (104, 12537), (105, 12540), (112, 12585), (126, 12684), (129, 12711), (132, 12762), (143, 12900), (149, 12993), (151, 13005), (152, 13011), (161, 13089), (171, 13164), (172, 13179), (174, 13200), (175, 13218), (180, 13242), (196, 13371),

Gene: Patbob\_79 Start: 46680, Stop: 48245, Start Num: 16

Candidate Starts for Patbob\_79:

(Start: 16 @46680 has 8 MA's), (20, 46740), (21, 46755), (22, 46758), (53, 46965), (70, 47106), (91, 47220), (97, 47271), (105, 47319), (133, 47559), (146, 47694), (151, 47757), (176, 47976), (191, 48102), (198, 48168),

Gene: PhedwardCullen\_23 Start: 11681, Stop: 13150, Start Num: 19

Candidate Starts for PhedwardCullen\_23:

(Start: 19 @11681 has 54 MA's), (Start: 26 @11738 has 1 MA's), (28, 11750), (30, 11762), (45, 11858), (46, 11876), (50, 11912), (54, 11936), (56, 11948), (61, 11984), (65, 12014), (67, 12041), (75, 12107), (76, 12113), (78, 12122), (80, 12140), (85, 12164), (86, 12173), (87, 12176), (89, 12185), (99, 12248), (103, 12263), (104, 12281), (105, 12284), (126, 12428), (129, 12455), (132, 12506), (143, 12644), (149, 12737), (151, 12749), (152, 12755), (161, 12833), (171, 12908), (172, 12923), (174, 12944), (175, 12962), (180, 12986), (196, 13115),

Gene: Phorgeous\_24 Start: 11789, Stop: 13258, Start Num: 19

Candidate Starts for Phorgeous\_24:

(Start: 19 @11789 has 54 MA's), (Start: 26 @11846 has 1 MA's), (28, 11858), (30, 11870), (45, 11966), (46, 11984), (50, 12020), (54, 12044), (56, 12056), (61, 12092), (65, 12122), (67, 12149), (75, 12215),

(76, 12221), (78, 12230), (80, 12248), (85, 12272), (86, 12281), (87, 12284), (89, 12293), (99, 12356), (103, 12371), (104, 12389), (105, 12392), (126, 12536), (129, 12563), (132, 12614), (143, 12752), (149, 12845), (151, 12857), (152, 12863), (161, 12941), (171, 13016), (172, 13031), (174, 13052), (175, 13070), (180, 13094), (196, 13223),

Gene: Phrampa\_72 Start: 43330, Stop: 44889, Start Num: 16

Candidate Starts for Phrampa\_72:

(Start: 16 @43330 has 8 MA's), (20, 43390), (21, 43405), (53, 43615), (70, 43756), (91, 43870), (97, 43921), (105, 43969), (126, 44089), (133, 44203), (146, 44338), (185, 44668), (191, 44746), (198, 44812),

Gene: Phrancesco\_25 Start: 12068, Stop: 13537, Start Num: 19

Candidate Starts for Phrancesco\_25:

(Start: 19 @12068 has 54 MA's), (Start: 26 @12125 has 1 MA's), (28, 12137), (30, 12149), (45, 12245), (46, 12263), (50, 12299), (54, 12323), (56, 12335), (61, 12371), (65, 12401), (67, 12428), (75, 12494), (76, 12500), (78, 12509), (80, 12527), (85, 12551), (86, 12560), (87, 12563), (89, 12572), (103, 12650), (104, 12668), (105, 12671), (112, 12716), (126, 12815), (129, 12842), (132, 12893), (143, 13031), (149, 13124), (151, 13136), (152, 13142), (161, 13220), (171, 13295), (172, 13310), (174, 13331), (175, 13349), (180, 13373), (196, 13502),

Gene: PierreOrion\_25 Start: 12092, Stop: 13561, Start Num: 19

Candidate Starts for PierreOrion\_25:

(Start: 19 @12092 has 54 MA's), (Start: 26 @12149 has 1 MA's), (28, 12161), (30, 12173), (45, 12269), (46, 12287), (50, 12323), (54, 12347), (56, 12359), (61, 12395), (65, 12425), (67, 12452), (75, 12518), (76, 12524), (78, 12533), (80, 12551), (85, 12575), (86, 12584), (87, 12587), (89, 12596), (103, 12674), (104, 12692), (105, 12695), (112, 12740), (126, 12839), (129, 12866), (132, 12917), (143, 13055), (149, 13148), (151, 13160), (152, 13166), (161, 13244), (171, 13319), (172, 13334), (174, 13355), (175, 13373), (180, 13397), (196, 13526),

Gene: PiperSansNom\_25 Start: 12244, Stop: 13713, Start Num: 19

Candidate Starts for PiperSansNom\_25:

(Start: 19 @12244 has 54 MA's), (Start: 26 @12301 has 1 MA's), (28, 12313), (30, 12325), (45, 12421), (46, 12439), (50, 12475), (54, 12499), (56, 12511), (61, 12547), (65, 12577), (67, 12604), (75, 12670), (76, 12676), (78, 12685), (80, 12703), (85, 12727), (86, 12736), (87, 12739), (89, 12748), (103, 12826), (104, 12844), (105, 12847), (112, 12892), (126, 12991), (129, 13018), (132, 13069), (143, 13207), (149, 13300), (151, 13312), (152, 13318), (161, 13396), (171, 13471), (172, 13486), (174, 13507), (175, 13525), (180, 13549), (196, 13678),

Gene: Piperis\_25 Start: 11914, Stop: 13383, Start Num: 19

Candidate Starts for Piperis\_25:

(Start: 19 @11914 has 54 MA's), (Start: 26 @11971 has 1 MA's), (28, 11983), (30, 11995), (45, 12091), (46, 12109), (50, 12145), (54, 12169), (56, 12181), (61, 12217), (65, 12247), (67, 12274), (75, 12340), (76, 12346), (78, 12355), (80, 12373), (85, 12397), (86, 12406), (87, 12409), (89, 12418), (103, 12496), (104, 12514), (105, 12517), (112, 12562), (126, 12661), (129, 12688), (132, 12739), (143, 12877), (149, 12970), (151, 12982), (152, 12988), (161, 13066), (171, 13141), (172, 13156), (174, 13177), (175, 13195), (180, 13219), (196, 13348),

Gene: Pulchra\_26 Start: 12313, Stop: 13782, Start Num: 19

Candidate Starts for Pulchra\_26:

(Start: 19 @12313 has 54 MA's), (Start: 26 @12370 has 1 MA's), (28, 12382), (30, 12394), (45, 12490), (46, 12508), (50, 12544), (54, 12568), (56, 12580), (61, 12616), (65, 12646), (67, 12673), (75, 12739), (76, 12745), (78, 12754), (80, 12772), (85, 12796), (86, 12805), (87, 12808), (89, 12817), (99, 12880), (103, 12895), (104, 12913), (105, 12916), (112, 12961), (126, 13060), (129, 13087), (132, 13138),

(143, 13276), (149, 13369), (151, 13381), (152, 13387), (161, 13465), (171, 13540), (172, 13555),  
(174, 13576), (175, 13594), (180, 13618), (196, 13747),

Gene: Quhwah\_27 Start: 12304, Stop: 13773, Start Num: 19

Candidate Starts for Quhwah\_27:

(Start: 19 @12304 has 54 MA's), (Start: 26 @12361 has 1 MA's), (28, 12373), (30, 12385), (45, 12481),  
(46, 12499), (50, 12535), (54, 12559), (56, 12571), (61, 12607), (65, 12637), (67, 12664), (75, 12730),  
(76, 12736), (78, 12745), (80, 12763), (85, 12787), (86, 12796), (87, 12799), (89, 12808), (99, 12871),  
(103, 12886), (104, 12904), (105, 12907), (112, 12952), (126, 13051), (129, 13078), (132, 13129),  
(143, 13267), (149, 13360), (151, 13372), (152, 13378), (161, 13456), (171, 13531), (172, 13546),  
(174, 13567), (175, 13585), (180, 13609), (196, 13738),

Gene: Racecar\_81 Start: 46467, Stop: 48026, Start Num: 16

Candidate Starts for Racecar\_81:

(Start: 16 @46467 has 8 MA's), (20, 46527), (21, 46542), (53, 46752), (70, 46893), (91, 47007), (97,  
47058), (105, 47106), (133, 47340), (146, 47475), (151, 47538), (176, 47757), (191, 47883), (198,  
47949),

Gene: Ramiel05\_24 Start: 11948, Stop: 13417, Start Num: 19

Candidate Starts for Ramiel05\_24:

(Start: 19 @11948 has 54 MA's), (Start: 26 @12005 has 1 MA's), (28, 12017), (30, 12029), (45, 12125),  
(46, 12143), (50, 12179), (54, 12203), (56, 12215), (61, 12251), (65, 12281), (67, 12308), (75, 12374),  
(76, 12380), (78, 12389), (80, 12407), (85, 12431), (86, 12440), (87, 12443), (89, 12452), (99, 12515),  
(103, 12530), (104, 12548), (105, 12551), (112, 12596), (126, 12695), (129, 12722), (132, 12773),  
(143, 12911), (149, 13004), (151, 13016), (152, 13022), (161, 13100), (171, 13175), (172, 13190),  
(174, 13211), (175, 13229), (180, 13253), (196, 13382),

Gene: ReginaGlobina\_80 Start: 46036, Stop: 47544, Start Num: 16

Candidate Starts for ReginaGlobina\_80:

(11, 45994), (13, 45997), (Start: 16 @46036 has 8 MA's), (17, 46045), (20, 46096), (53, 46291), (55,  
46303), (57, 46330), (70, 46432), (97, 46573), (106, 46624), (134, 46861), (148, 47011), (150, 47041),  
(168, 47194), (191, 47398), (198, 47464), (199, 47467),

Gene: RobsFeet\_26 Start: 11796, Stop: 13289, Start Num: 19

Candidate Starts for RobsFeet\_26:

(Start: 19 @11796 has 54 MA's), (Start: 26 @11853 has 1 MA's), (28, 11865), (30, 11877), (45, 11973),  
(46, 11991), (50, 12027), (54, 12051), (56, 12063), (61, 12099), (67, 12156), (71, 12192), (75, 12222),  
(76, 12228), (78, 12237), (80, 12255), (85, 12279), (86, 12288), (87, 12291), (103, 12378), (104,  
12396), (105, 12399), (123, 12537), (132, 12642), (136, 12705), (145, 12801), (151, 12885), (152,  
12891), (154, 12912), (160, 12957), (167, 13023), (172, 13059), (196, 13251),

Gene: Rockabye\_82 Start: 48709, Stop: 50256, Start Num: 16

Candidate Starts for Rockabye\_82:

(1, 48484), (2, 48523), (4, 48553), (5, 48589), (6, 48604), (11, 48667), (13, 48670), (Start: 16 @48709  
has 8 MA's), (17, 48718), (20, 48769), (21, 48784), (35, 48874), (53, 48994), (59, 49039), (70, 49135),  
(88, 49222), (97, 49285), (105, 49333), (126, 49453), (134, 49573), (150, 49756), (188, 50089), (191,  
50110), (198, 50176),

Gene: Rockwell\_24 Start: 11948, Stop: 13417, Start Num: 19

Candidate Starts for Rockwell\_24:

(Start: 19 @11948 has 54 MA's), (Start: 26 @12005 has 1 MA's), (28, 12017), (30, 12029), (45, 12125),  
(46, 12143), (50, 12179), (54, 12203), (56, 12215), (61, 12251), (65, 12281), (67, 12308), (75, 12374),  
(76, 12380), (78, 12389), (80, 12407), (85, 12431), (86, 12440), (87, 12443), (89, 12452), (99, 12515),

(103, 12530), (104, 12548), (105, 12551), (112, 12596), (126, 12695), (129, 12722), (132, 12773), (143, 12911), (149, 13004), (151, 13016), (152, 13022), (161, 13100), (171, 13175), (172, 13190), (174, 13211), (175, 13229), (180, 13253), (196, 13382),

Gene: SJReid\_83 Start: 47777, Stop: 49324, Start Num: 16

Candidate Starts for SJReid\_83:

(6, 47672), (11, 47735), (13, 47738), (Start: 16 @47777 has 8 MA's), (17, 47786), (20, 47837), (21, 47852), (35, 47942), (42, 47981), (53, 48062), (59, 48107), (70, 48203), (88, 48290), (97, 48353), (105, 48401), (134, 48641), (187, 49130), (191, 49178), (198, 49244),

Gene: Savannah\_24 Start: 11972, Stop: 13441, Start Num: 19

Candidate Starts for Savannah\_24:

(Start: 19 @11972 has 54 MA's), (Start: 26 @12029 has 1 MA's), (28, 12041), (30, 12053), (45, 12149), (46, 12167), (50, 12203), (54, 12227), (56, 12239), (61, 12275), (65, 12305), (67, 12332), (75, 12398), (76, 12404), (78, 12413), (80, 12431), (85, 12455), (86, 12464), (87, 12467), (89, 12476), (99, 12539), (103, 12554), (104, 12572), (105, 12575), (112, 12620), (126, 12719), (129, 12746), (132, 12797), (143, 12935), (149, 13028), (151, 13040), (152, 13046), (161, 13124), (171, 13199), (172, 13214), (174, 13235), (175, 13253), (180, 13277), (196, 13406),

Gene: Scumberland\_26 Start: 12163, Stop: 13632, Start Num: 19

Candidate Starts for Scumberland\_26:

(Start: 19 @12163 has 54 MA's), (Start: 26 @12220 has 1 MA's), (28, 12232), (30, 12244), (45, 12340), (46, 12358), (50, 12394), (54, 12418), (56, 12430), (61, 12466), (65, 12496), (67, 12523), (75, 12589), (76, 12595), (78, 12604), (80, 12622), (85, 12646), (86, 12655), (87, 12658), (89, 12667), (99, 12730), (103, 12745), (104, 12763), (105, 12766), (112, 12811), (126, 12910), (129, 12937), (132, 12988), (143, 13126), (149, 13219), (151, 13231), (152, 13237), (161, 13315), (171, 13390), (172, 13405), (174, 13426), (175, 13444), (180, 13468), (196, 13597),

Gene: Selwyn23\_26 Start: 12141, Stop: 13610, Start Num: 19

Candidate Starts for Selwyn23\_26:

(Start: 19 @12141 has 54 MA's), (Start: 26 @12198 has 1 MA's), (28, 12210), (30, 12222), (45, 12318), (46, 12336), (50, 12372), (54, 12396), (56, 12408), (61, 12444), (65, 12474), (67, 12501), (75, 12567), (76, 12573), (78, 12582), (80, 12600), (85, 12624), (86, 12633), (87, 12636), (89, 12645), (99, 12708), (103, 12723), (104, 12741), (105, 12744), (112, 12789), (126, 12888), (129, 12915), (132, 12966), (143, 13104), (149, 13197), (151, 13209), (152, 13215), (161, 13293), (171, 13368), (172, 13383), (174, 13404), (175, 13422), (180, 13446), (196, 13575),

Gene: Shotgun\_24 Start: 11770, Stop: 13239, Start Num: 19

Candidate Starts for Shotgun\_24:

(Start: 19 @11770 has 54 MA's), (Start: 26 @11827 has 1 MA's), (28, 11839), (30, 11851), (45, 11947), (46, 11965), (50, 12001), (54, 12025), (56, 12037), (61, 12073), (65, 12103), (67, 12130), (75, 12196), (76, 12202), (78, 12211), (80, 12229), (85, 12253), (86, 12262), (87, 12265), (89, 12274), (99, 12337), (103, 12352), (104, 12370), (105, 12373), (112, 12418), (126, 12517), (129, 12544), (132, 12595), (143, 12733), (149, 12826), (151, 12838), (152, 12844), (161, 12922), (171, 12997), (172, 13012), (174, 13033), (175, 13051), (196, 13204),

Gene: Shrubaron\_25 Start: 11431, Stop: 12921, Start Num: 19

Candidate Starts for Shrubaron\_25:

(Start: 19 @11431 has 54 MA's), (Start: 26 @11488 has 1 MA's), (28, 11500), (30, 11512), (45, 11608), (46, 11626), (50, 11662), (54, 11686), (56, 11698), (61, 11734), (67, 11791), (71, 11827), (75, 11857), (76, 11863), (78, 11872), (80, 11890), (85, 11914), (86, 11923), (87, 11926), (103, 12013), (104, 12031), (105, 12034), (123, 12169), (132, 12274), (136, 12337), (145, 12433), (151, 12517), (152, 12523), (154, 12544), (160, 12589), (167, 12655), (172, 12691), (196, 12883),

Gene: SirFrank\_24 Start: 11839, Stop: 13308, Start Num: 19

Candidate Starts for SirFrank\_24:

(Start: 19 @11839 has 54 MA's), (Start: 26 @11896 has 1 MA's), (28, 11908), (30, 11920), (45, 12016), (46, 12034), (50, 12070), (54, 12094), (56, 12106), (61, 12142), (65, 12172), (67, 12199), (75, 12265), (76, 12271), (78, 12280), (80, 12298), (85, 12322), (86, 12331), (87, 12334), (99, 12403), (103, 12418), (104, 12436), (105, 12439), (112, 12484), (126, 12583), (129, 12610), (132, 12661), (144, 12805), (151, 12904), (152, 12910), (155, 12934), (161, 12988), (171, 13063), (175, 13117), (177, 13126), (180, 13141), (196, 13270),

Gene: Skugga\_23 Start: 11150, Stop: 12640, Start Num: 19

Candidate Starts for Skugga\_23:

(Start: 19 @11150 has 54 MA's), (Start: 26 @11207 has 1 MA's), (28, 11219), (30, 11231), (45, 11327), (46, 11345), (56, 11417), (61, 11453), (67, 11510), (75, 11576), (76, 11582), (78, 11591), (80, 11609), (85, 11633), (86, 11642), (87, 11645), (104, 11750), (105, 11753), (112, 11798), (123, 11891), (126, 11918), (132, 11996), (136, 12059), (145, 12155), (151, 12239), (152, 12245), (154, 12266), (160, 12311), (167, 12377), (180, 12476), (184, 12500), (196, 12605),

Gene: Smarties\_33 Start: 13624, Stop: 15117, Start Num: 19

Candidate Starts for Smarties\_33:

(Start: 19 @13624 has 54 MA's), (28, 13693), (30, 13705), (45, 13801), (46, 13819), (48, 13840), (56, 13891), (61, 13927), (67, 13984), (71, 14020), (73, 14044), (75, 14050), (76, 14056), (78, 14065), (85, 14107), (86, 14116), (87, 14119), (104, 14224), (105, 14227), (123, 14368), (136, 14536), (145, 14632), (151, 14716), (152, 14722), (154, 14743), (160, 14788), (164, 14845), (167, 14854), (172, 14890), (181, 14956), (196, 15082),

Gene: StAugustine\_15 Start: 11415, Stop: 12941, Start Num: 10

Candidate Starts for StAugustine\_15:

(Start: 10 @11415 has 2 MA's), (24, 11568), (28, 11601), (38, 11673), (44, 11712), (46, 11733), (56, 11793), (64, 11856), (70, 11922), (82, 11994), (112, 12156), (119, 12234), (138, 12456), (153, 12621), (155, 12627), (158, 12648), (193, 12930),

Gene: Stewart25555\_71 Start: 42369, Stop: 43883, Start Num: 15

Candidate Starts for Stewart25555\_71:

(3, 42207), (Start: 15 @42369 has 4 MA's), (18, 42402), (20, 42429), (33, 42486), (40, 42537), (44, 42555), (53, 42624), (55, 42636), (58, 42666), (70, 42765), (97, 42912), (98, 42918), (105, 42960), (134, 43200), (191, 43737), (194, 43749), (198, 43803),

Gene: Sunny\_ Start: 12177, Stop: 13676, Start Num: 19

Candidate Starts for Sunny\_:

(Start: 19 @12177 has 54 MA's), (28, 12246), (30, 12258), (45, 12354), (46, 12372), (57, 12465), (61, 12480), (67, 12537), (71, 12573), (75, 12603), (76, 12609), (78, 12618), (85, 12660), (86, 12669), (87, 12672), (90, 12684), (101, 12753), (105, 12783), (112, 12828), (120, 12906), (126, 12954), (132, 13032), (145, 13191), (149, 13263), (151, 13275), (152, 13281), (154, 13302), (155, 13305), (160, 13347), (170, 13428), (186, 13560), (196, 13641),

Gene: Talia1610\_80 Start: 45832, Stop: 47391, Start Num: 16

Candidate Starts for Talia1610\_80:

(Start: 16 @45832 has 8 MA's), (20, 45892), (21, 45907), (53, 46117), (70, 46258), (91, 46372), (97, 46423), (105, 46471), (133, 46705), (146, 46840), (151, 46903), (176, 47122), (191, 47248), (198, 47314),

Gene: Teamocil\_26 Start: 11315, Stop: 12808, Start Num: 19

Candidate Starts for Teamocil\_26:

(Start: 19 @11315 has 54 MA's), (Start: 26 @11372 has 1 MA's), (28, 11384), (30, 11396), (45, 11492), (46, 11510), (50, 11546), (56, 11582), (61, 11618), (67, 11675), (71, 11711), (75, 11741), (76, 11747), (78, 11756), (85, 11798), (86, 11807), (87, 11810), (88, 11816), (104, 11921), (105, 11924), (112, 11969), (123, 12059), (127, 12089), (136, 12227), (145, 12323), (151, 12407), (152, 12413), (154, 12434), (160, 12479), (167, 12545), (196, 12773),

Gene: Terij\_20 Start: 11194, Stop: 12684, Start Num: 19

Candidate Starts for Terij\_20:

(Start: 19 @11194 has 54 MA's), (32, 11311), (43, 11368), (46, 11398), (57, 11494), (67, 11566), (75, 11632), (78, 11647), (80, 11665), (86, 11689), (102, 11749), (105, 11776), (109, 11797), (110, 11806), (111, 11815), (112, 11821), (114, 11854), (115, 11872), (130, 11983), (132, 12031), (143, 12169), (145, 12190), (152, 12280), (161, 12358), (165, 12409), (172, 12448), (179, 12508), (181, 12514), (182, 12520), (187, 12568), (189, 12604), (192, 12616), (195, 12634), (196, 12640),

Gene: Tyrumbra\_23 Start: 10872, Stop: 12365, Start Num: 19

Candidate Starts for Tyrumbra\_23:

(Start: 19 @10872 has 54 MA's), (Start: 26 @10929 has 1 MA's), (28, 10941), (30, 10953), (45, 11049), (46, 11067), (50, 11103), (54, 11127), (56, 11139), (61, 11175), (67, 11232), (71, 11268), (75, 11298), (76, 11304), (78, 11313), (80, 11331), (85, 11355), (86, 11364), (87, 11367), (103, 11454), (104, 11472), (105, 11475), (123, 11613), (132, 11718), (136, 11781), (145, 11877), (151, 11961), (152, 11967), (154, 11988), (160, 12033), (167, 12099), (172, 12135), (196, 12327),

Gene: WaddleDee\_68 Start: 41867, Stop: 43381, Start Num: 15

Candidate Starts for WaddleDee\_68:

(7, 41774), (Start: 15 @41867 has 4 MA's), (18, 41900), (20, 41927), (40, 42035), (44, 42053), (47, 42092), (53, 42122), (55, 42134), (58, 42164), (70, 42263), (97, 42410), (98, 42416), (105, 42458), (126, 42578), (134, 42698), (191, 43235), (198, 43301),

Gene: Yeti\_25 Start: 11944, Stop: 13413, Start Num: 19

Candidate Starts for Yeti\_25:

(Start: 19 @11944 has 54 MA's), (Start: 26 @12001 has 1 MA's), (28, 12013), (30, 12025), (45, 12121), (46, 12139), (50, 12175), (54, 12199), (56, 12211), (61, 12247), (67, 12304), (75, 12370), (76, 12376), (78, 12385), (80, 12403), (85, 12427), (86, 12436), (87, 12439), (89, 12448), (103, 12526), (104, 12544), (105, 12547), (112, 12592), (126, 12691), (129, 12718), (132, 12769), (143, 12907), (149, 13000), (151, 13012), (152, 13018), (161, 13096), (171, 13171), (172, 13186), (174, 13207), (175, 13225), (180, 13249), (196, 13378),

Gene: Zapato\_24 Start: 11539, Stop: 13032, Start Num: 19

Candidate Starts for Zapato\_24:

(Start: 19 @11539 has 54 MA's), (30, 11620), (45, 11716), (46, 11734), (56, 11806), (61, 11842), (67, 11899), (75, 11965), (76, 11971), (78, 11980), (80, 11998), (85, 12022), (86, 12031), (87, 12034), (104, 12139), (105, 12142), (112, 12187), (121, 12265), (123, 12283), (132, 12388), (136, 12451), (145, 12547), (151, 12631), (152, 12637), (154, 12658), (160, 12703), (167, 12769), (179, 12865), (180, 12868), (181, 12871), (186, 12916), (196, 12997),

Gene: phiAsp2\_7 Start: 3884, Stop: 5326, Start Num: 37

Candidate Starts for phiAsp2\_7:

(14, 3638), (25, 3785), (27, 3791), (37, 3884), (39, 3905), (51, 3977), (57, 4031), (59, 4037), (60, 4043), (65, 4082), (68, 4121), (69, 4133), (70, 4142), (74, 4172), (77, 4187), (80, 4208), (83, 4220), (90, 4256), (93, 4286), (94, 4289), (96, 4310), (108, 4376), (110, 4391), (116, 4466), (122, 4520), (125, 4538), (128, 4565), (132, 4634), (135, 4685), (139, 4745), (145, 4790), (148, 4835), (149, 4859), (155, 4901), (156, 4904), (162, 4967), (169, 5015), (178, 5099), (183, 5126), (197, 5258),

