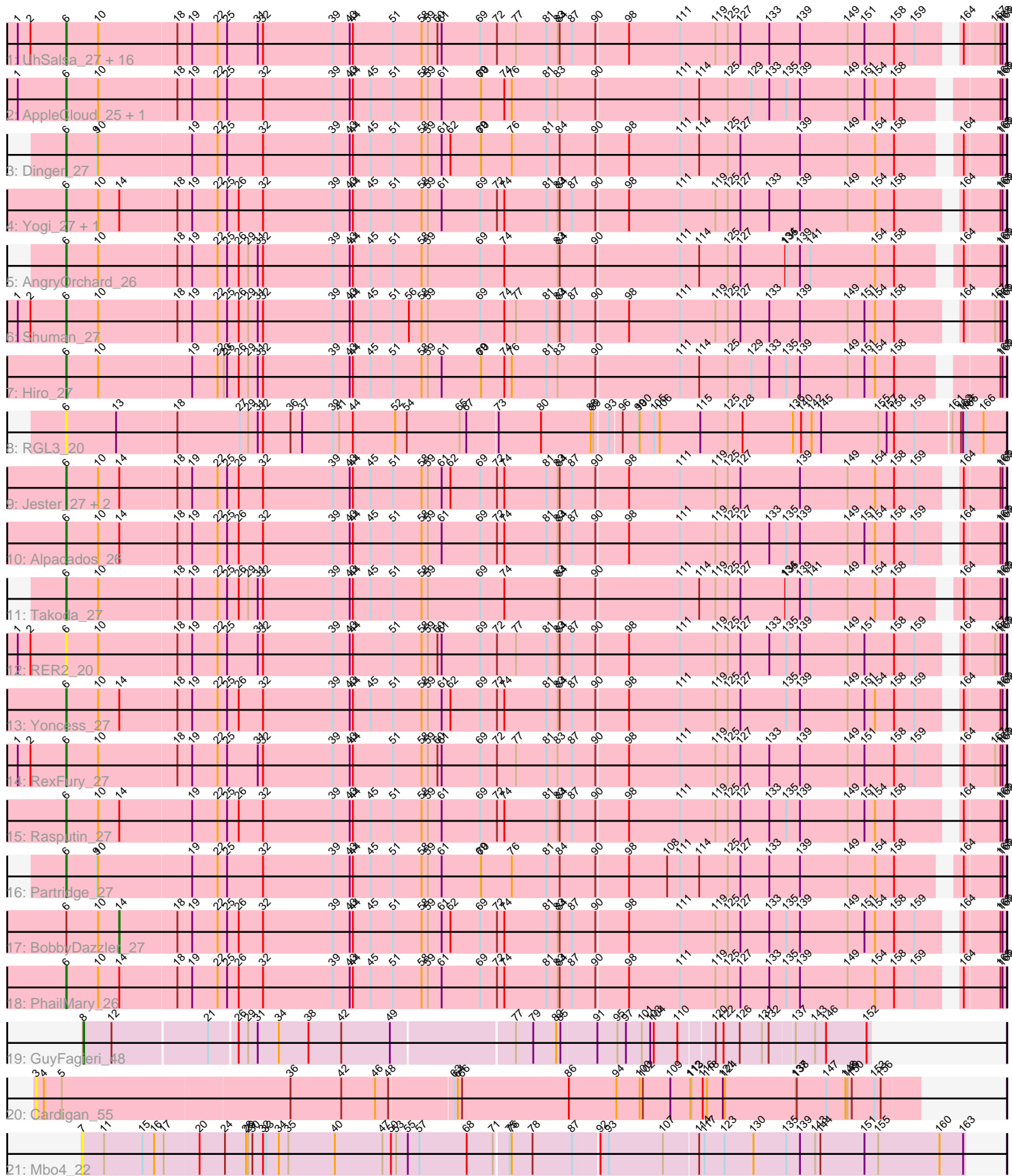# Pham 196664

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 196664 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196664 has 41 members, 4 are drafts.

Phages represented in each track:
• Track 1 : UhSalsa_27, Gollum_27, Nancinator_27, Espica_27, Belenaria_27, Lillie_27, Bradshaw_27, StCroix_27, Swann_27, CosmicSans_27, Phrankenstein_27, TWAMP_27, Alatin_27, Natosaleda_27, Rhodalysa_27, Erik_27, Naiad_27
• Track 2 : AppleCloud_25, Krishelle_27
• Track 3 : Dinger_27
• Track 4 : Yogi_27, Bonanza_27
• Track 5 : AngryOrchard_26
• Track 6 : Shuman_27
• Track 7 : Hiro_27
• Track 8 : RGL3_20
• Track 9 : Jester_27, Harlequin_27, Bryce_27
• Track 10 : Alpacados_26
• Track 11 : Takoda_27
• Track 12 : RER2_20
• Track 13 : Yoncess_27
• Track 14 : RexFury_27
• Track 15 : Rasputin_27
• Track 16 : Partridge_27
• Track 17 : BobbyDazzler_27
• Track 18 : PhailMary_26
• Track 19 : GuyFagieri_48
• Track 20 : Cardigan_55
• Track 21 : Mbo4_22

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

The start number called the most often in the published annotations is 6, it was called in 35 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Alatin_27, Alpacados_26, AngryOrchard_26, AppleCloud_25, Belenaria_27, Bonanza_27, Bradshaw_27, Bryce_27, CosmicSans_27, Dinger_27, Erik_27, Espica_27, Gollum_27, Harlequin_27, Hiro_27, Jester_27, Krishelle_27, Lillie_27, Naiad_27, Nancinator_27, Natosaleda_27, Partridge_27, PhailMary_26,

Phrankenstein_27, RER2_20, RGL3_20, Rasputin_27, RexFury_27, Rhodalysa_27, Shuman_27, StCroix_27, Swann_27, TWAMP_27, Takoda_27, UhSalsa_27, Yogi_27, Yoncess_27,

Genes that have the "Most Annotated" start but do not call it:
• BobbyDazzler_27,

Genes that do not have the "Most Annotated" start:
• Cardigan_55, GuyFagieri_48, Mbo4_22,

Summary by start number:

Start 3:
• Found in 1 of 41 (2.4%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Cardigan_55 (DD),

Start 6:
• Found in 38 of 41 (92.7%) of genes in pham
• Manual Annotations of this start: 35 of 37
• Called 97.4% of time when present
• Phage (with cluster) where this start called: Alatin_27 (CA), Alpacados_26 (CA), AngryOrchard_26 (CA), AppleCloud_25 (CA), Belenaria_27 (CA), Bonanza_27 (CA), Bradshaw_27 (CA), Bryce_27 (CA), CosmicSans_27 (CA), Dinger_27 (CA), Erik_27 (CA), Espica_27 (CA), Gollum_27 (CA), Harlequin_27 (CA), Hiro_27 (CA), Jester_27 (CA), Krishelle_27 (CA), Lillie_27 (CA), Naiad_27 (CA), Nancinator_27 (CA), Natosaleda_27 (CA), Partridge_27 (CA), PhailMary_26 (CA), Phrankenstein_27 (CA), RER2_20 (CA), RGL3_20 (CA), Rasputin_27 (CA), RexFury_27 (CA), Rhodalysa_27 (CA), Shuman_27 (CA), StCroix_27 (CA), Swann_27 (CA), TWAMP_27 (CA), Takoda_27 (CA), UhSalsa_27 (CA), Yogi_27 (CA), Yoncess_27 (CA),

Start 7:
• Found in 1 of 41 (2.4%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Mbo4_22 (singleton),

Start 8:
• Found in 1 of 41 (2.4%) of genes in pham
• Manual Annotations of this start: 1 of 37
• Called 100.0% of time when present
• Phage (with cluster) where this start called: GuyFagieri_48 (CR),

Start 14:
• Found in 10 of 41 (24.4%) of genes in pham
• Manual Annotations of this start: 1 of 37
• Called 10.0% of time when present
• Phage (with cluster) where this start called: BobbyDazzler_27 (CA),

Summary by clusters:

There are 4 clusters represented in this pham: CR, CA, singleton, DD,

Info for manual annotations of cluster CA:
•Start number 6 was manually annotated 35 times for cluster CA.
•Start number 14 was manually annotated 1 time for cluster CA.

Info for manual annotations of cluster CR:
•Start number 8 was manually annotated 1 time for cluster CR.

Gene Information:
Gene: Alatin_27 Start: 19094, Stop: 21670, Start Num: 6
Candidate Starts for Alatin_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21557), (167, 21638), (168, 21653), (169, 21659),

Gene: Alpacados_26 Start: 19030, Stop: 21552, Start Num: 6
Candidate Starts for Alpacados_26:
(Start: 6 @19030 has 35 MA's), (10, 19120), (Start: 14 @19180 has 1 MA's), (18, 19339), (19, 19372), (22, 19441), (25, 19468), (26, 19501), (32, 19570), (39, 19768), (43, 19816), (44, 19825), (45, 19873), (51, 19936), (58, 20017), (59, 20035), (61, 20074), (69, 20176), (72, 20224), (74, 20245), (81, 20356), (83, 20386), (84, 20392), (87, 20422), (90, 20482), (98, 20566), (111, 20710), (119, 20803), (125, 20833), (127, 20869), (133, 20950), (135, 20998), (139, 21037), (149, 21166), (151, 21214), (154, 21244), (158, 21298), (159, 21355), (164, 21439), (168, 21535), (169, 21541),

Gene: AngryOrchard_26 Start: 19013, Stop: 21535, Start Num: 6
Candidate Starts for AngryOrchard_26:
(Start: 6 @19013 has 35 MA's), (10, 19103), (18, 19322), (19, 19355), (22, 19424), (25, 19451), (26, 19484), (29, 19511), (31, 19538), (32, 19553), (39, 19751), (43, 19799), (44, 19808), (45, 19856), (51, 19919), (58, 20000), (59, 20018), (69, 20159), (74, 20228), (83, 20369), (84, 20375), (90, 20465), (111, 20693), (114, 20744), (125, 20816), (127, 20852), (134, 20978), (135, 20981), (139, 21020), (141, 21050), (154, 21227), (158, 21281), (164, 21422), (168, 21518), (169, 21524),

Gene: AppleCloud_25 Start: 19059, Stop: 21581, Start Num: 6
Candidate Starts for AppleCloud_25:
(1, 18921), (Start: 6 @19059 has 35 MA's), (10, 19149), (18, 19368), (19, 19401), (22, 19470), (25, 19497), (32, 19599), (39, 19797), (43, 19845), (44, 19854), (45, 19902), (51, 19965), (58, 20046), (59, 20064), (61, 20103), (69, 20205), (70, 20208), (74, 20274), (76, 20295), (81, 20385), (83, 20415), (90, 20511), (111, 20739), (114, 20790), (125, 20862), (129, 20928), (133, 20979), (135, 21027), (139, 21066), (149, 21195), (151, 21243), (154, 21273), (158, 21327), (168, 21564), (169, 21570),

Gene: Belenaria_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Belenaria_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897),

(127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: BobbyDazzler_27 Start: 19289, Stop: 21661, Start Num: 14
Candidate Starts for BobbyDazzler_27:
(Start: 6 @19139 has 35 MA's), (10, 19229), (Start: 14 @19289 has 1 MA's), (18, 19448), (19, 19481), (22, 19550), (25, 19577), (26, 19610), (32, 19679), (39, 19877), (43, 19925), (44, 19934), (45, 19982), (51, 20045), (58, 20126), (59, 20144), (61, 20183), (62, 20204), (69, 20285), (72, 20333), (74, 20354), (81, 20465), (83, 20495), (84, 20501), (87, 20531), (90, 20591), (98, 20675), (111, 20819), (119, 20912), (125, 20942), (127, 20978), (133, 21059), (135, 21107), (139, 21146), (149, 21275), (151, 21323), (154, 21353), (158, 21407), (159, 21464), (164, 21548), (168, 21644), (169, 21650),

Gene: Bonanza_27 Start: 19068, Stop: 21590, Start Num: 6
Candidate Starts for Bonanza_27:
(Start: 6 @19068 has 35 MA's), (10, 19158), (Start: 14 @19218 has 1 MA's), (18, 19377), (19, 19410), (22, 19479), (25, 19506), (26, 19539), (32, 19608), (39, 19806), (43, 19854), (44, 19863), (45, 19911), (51, 19974), (58, 20055), (59, 20073), (61, 20112), (69, 20214), (72, 20262), (74, 20283), (81, 20394), (83, 20424), (84, 20430), (87, 20460), (90, 20520), (98, 20604), (111, 20748), (119, 20841), (125, 20871), (127, 20907), (133, 20988), (139, 21075), (149, 21204), (154, 21282), (158, 21336), (164, 21477), (168, 21573), (169, 21579),

Gene: Bradshaw_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Bradshaw_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Bryce_27 Start: 19068, Stop: 21590, Start Num: 6
Candidate Starts for Bryce_27:
(Start: 6 @19068 has 35 MA's), (10, 19158), (Start: 14 @19218 has 1 MA's), (18, 19377), (19, 19410), (22, 19479), (25, 19506), (26, 19539), (32, 19608), (39, 19806), (43, 19854), (44, 19863), (45, 19911), (51, 19974), (58, 20055), (59, 20073), (61, 20112), (62, 20133), (69, 20214), (72, 20262), (74, 20283), (81, 20394), (83, 20424), (84, 20430), (87, 20460), (90, 20520), (98, 20604), (111, 20748), (119, 20841), (125, 20871), (127, 20907), (139, 21075), (149, 21204), (154, 21282), (158, 21336), (159, 21393), (164, 21477), (168, 21573), (169, 21579),

Gene: Cardigan_55 Start: 38491, Stop: 40887, Start Num: 3
Candidate Starts for Cardigan_55:
(3, 38491), (4, 38512), (5, 38563), (36, 39172), (42, 39316), (46, 39409), (48, 39445), (63, 39616), (64, 39625), (66, 39637), (86, 39934), (94, 40063), (100, 40129), (102, 40138), (109, 40216), (112, 40270), (113, 40273), (116, 40300), (118, 40312), (121, 40351), (124, 40357), (137, 40555), (138, 40558), (147, 40639), (148, 40687), (149, 40693), (150, 40705), (153, 40762), (156, 40780),

Gene: CosmicSans_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for CosmicSans_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419),

(164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Dinger_27 Start: 19064, Stop: 21586, Start Num: 6
Candidate Starts for Dinger_27:
(Start: 6 @19064 has 35 MA's), (9, 19151), (10, 19154), (19, 19406), (22, 19475), (25, 19502), (32, 19604), (39, 19802), (43, 19850), (44, 19859), (45, 19907), (51, 19970), (58, 20051), (59, 20069), (61, 20108), (62, 20129), (69, 20210), (70, 20213), (76, 20300), (81, 20390), (84, 20426), (90, 20516), (98, 20600), (111, 20744), (114, 20795), (125, 20867), (127, 20903), (139, 21071), (149, 21200), (154, 21278), (158, 21332), (164, 21473), (168, 21569), (169, 21575),

Gene: Erik_27 Start: 19093, Stop: 21615, Start Num: 6
Candidate Starts for Erik_27:
(1, 18955), (2, 18991), (Start: 6 @19093 has 35 MA's), (10, 19183), (18, 19402), (19, 19435), (22, 19504), (25, 19531), (31, 19618), (32, 19633), (39, 19831), (43, 19879), (44, 19888), (51, 19999), (58, 20080), (59, 20098), (60, 20125), (61, 20137), (69, 20239), (72, 20287), (77, 20341), (81, 20419), (83, 20449), (84, 20455), (87, 20485), (90, 20545), (98, 20629), (111, 20773), (119, 20866), (125, 20896), (127, 20932), (133, 21013), (139, 21100), (149, 21229), (151, 21277), (158, 21361), (159, 21418), (164, 21502), (167, 21583), (168, 21598), (169, 21604),

Gene: Espica_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Espica_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Gollum_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Gollum_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: GuyFagieri_48 Start: 34232, Stop: 36250, Start Num: 8
Candidate Starts for GuyFagieri_48:
(Start: 8 @34232 has 1 MA's), (12, 34298), (21, 34547), (26, 34622), (29, 34649), (31, 34676), (34, 34736), (38, 34820), (42, 34910), (49, 35042), (77, 35360), (79, 35408), (82, 35468), (85, 35480), (91, 35579), (95, 35636), (97, 35660), (101, 35702), (103, 35720), (104, 35729), (110, 35786), (120, 35861), (122, 35879), (126, 35924), (131, 35972), (132, 35990), (137, 36053), (143, 36104), (146, 36131), (152, 36239),

Gene: Harlequin_27 Start: 19044, Stop: 21620, Start Num: 6
Candidate Starts for Harlequin_27:
(Start: 6 @19044 has 35 MA's), (10, 19134), (Start: 14 @19194 has 1 MA's), (18, 19353), (19, 19386), (22, 19455), (25, 19482), (26, 19515), (32, 19584), (39, 19782), (43, 19830), (44, 19839), (45, 19887), (51, 19950), (58, 20031), (59, 20049), (61, 20088), (62, 20109), (69, 20190), (72, 20238), (74, 20259), (81, 20370), (83, 20400), (84, 20406), (87, 20436), (90, 20496), (98, 20580), (111, 20724), (119, 20817), (125, 20847), (127, 20883), (139, 21051), (149, 21180), (154, 21258), (158, 21312), (159, 21369), (164, 21507), (168, 21603), (169, 21609),

Gene: Hiro_27 Start: 19350, Stop: 21872, Start Num: 6
Candidate Starts for Hiro_27:
(Start: 6 @19350 has 35 MA's), (10, 19440), (19, 19692), (22, 19761), (23, 19779), (25, 19788), (26, 19821), (29, 19848), (31, 19875), (32, 19890), (39, 20088), (43, 20136), (44, 20145), (45, 20193), (51, 20256), (58, 20337), (59, 20355), (61, 20394), (69, 20496), (70, 20499), (74, 20565), (76, 20586), (81, 20676), (83, 20706), (90, 20802), (111, 21030), (114, 21081), (125, 21153), (129, 21219), (133, 21270), (135, 21318), (139, 21357), (149, 21486), (151, 21534), (154, 21564), (158, 21618), (168, 21855), (169, 21861),

Gene: Jester_27 Start: 19038, Stop: 21560, Start Num: 6
Candidate Starts for Jester_27:
(Start: 6 @19038 has 35 MA's), (10, 19128), (Start: 14 @19188 has 1 MA's), (18, 19347), (19, 19380), (22, 19449), (25, 19476), (26, 19509), (32, 19578), (39, 19776), (43, 19824), (44, 19833), (45, 19881), (51, 19944), (58, 20025), (59, 20043), (61, 20082), (62, 20103), (69, 20184), (72, 20232), (74, 20253), (81, 20364), (83, 20394), (84, 20400), (87, 20430), (90, 20490), (98, 20574), (111, 20718), (119, 20811), (125, 20841), (127, 20877), (139, 21045), (149, 21174), (154, 21252), (158, 21306), (159, 21363), (164, 21447), (168, 21543), (169, 21549),

Gene: Krishelle_27 Start: 19365, Stop: 21923, Start Num: 6
Candidate Starts for Krishelle_27:
(1, 19227), (Start: 6 @19365 has 35 MA's), (10, 19455), (18, 19674), (19, 19707), (22, 19776), (25, 19803), (32, 19905), (39, 20103), (43, 20151), (44, 20160), (45, 20208), (51, 20271), (58, 20352), (59, 20370), (61, 20409), (69, 20511), (70, 20514), (74, 20580), (76, 20601), (81, 20691), (83, 20721), (90, 20817), (111, 21045), (114, 21096), (125, 21168), (129, 21234), (133, 21285), (135, 21333), (139, 21372), (149, 21501), (151, 21549), (154, 21579), (158, 21633), (168, 21906), (169, 21912),

Gene: Lillie_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Lillie_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Mbo4_22 Start: 19737, Stop: 22112, Start Num: 7
Candidate Starts for Mbo4_22:
(7, 19737), (11, 19794), (15, 19899), (16, 19929), (17, 19956), (20, 20046), (24, 20118), (28, 20175), (29, 20181), (30, 20193), (32, 20223), (33, 20232), (34, 20268), (35, 20295), (40, 20427), (47, 20556), (50, 20580), (53, 20595), (55, 20628), (57, 20661), (68, 20793), (71, 20856), (75, 20892), (76, 20898), (78, 20952), (87, 21057), (92, 21120), (93, 21141), (107, 21291), (114, 21378), (117, 21393), (123, 21441), (130, 21522), (135, 21609), (139, 21648), (143, 21690), (144, 21705), (151, 21828), (155, 21867), (160, 22041), (163, 22107),

Gene: Naiad_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Naiad_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Nancinator_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Nancinator_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Natosaleda_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Natosaleda_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Partridge_27 Start: 19127, Stop: 21649, Start Num: 6
Candidate Starts for Partridge_27:
(Start: 6 @19127 has 35 MA's), (9, 19214), (10, 19217), (19, 19469), (22, 19538), (25, 19565), (32, 19667), (39, 19865), (43, 19913), (44, 19922), (45, 19970), (51, 20033), (58, 20114), (59, 20132), (61, 20171), (69, 20273), (70, 20276), (76, 20363), (81, 20453), (84, 20489), (90, 20579), (98, 20663), (108, 20771), (111, 20807), (114, 20858), (125, 20930), (127, 20966), (133, 21047), (139, 21134), (149, 21263), (154, 21341), (158, 21395), (164, 21536), (168, 21632), (169, 21638),

Gene: PhailMary_26 Start: 19416, Stop: 21938, Start Num: 6
Candidate Starts for PhailMary_26:
(Start: 6 @19416 has 35 MA's), (10, 19506), (Start: 14 @19566 has 1 MA's), (18, 19725), (19, 19758), (22, 19827), (25, 19854), (26, 19887), (32, 19956), (39, 20154), (43, 20202), (44, 20211), (45, 20259), (51, 20322), (58, 20403), (59, 20421), (61, 20460), (69, 20562), (72, 20610), (74, 20631), (81, 20742), (83, 20772), (84, 20778), (87, 20808), (90, 20868), (98, 20952), (111, 21096), (119, 21189), (125, 21219), (127, 21255), (133, 21336), (135, 21384), (139, 21423), (149, 21552), (154, 21630), (158, 21684), (159, 21741), (164, 21825), (168, 21921), (169, 21927),

Gene: Phrankenstein_27 Start: 19094, Stop: 21562, Start Num: 6
Candidate Starts for Phrankenstein_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21449), (167, 21530), (168, 21545), (169, 21551),

Gene: RER2_20 Start: 15966, Stop: 18488, Start Num: 6
Candidate Starts for RER2_20:
(1, 15828), (2, 15864), (Start: 6 @15966 has 35 MA's), (10, 16056), (18, 16275), (19, 16308), (22, 16377), (25, 16404), (31, 16491), (32, 16506), (39, 16704), (43, 16752), (44, 16761), (51, 16872), (58, 16953), (59, 16971), (60, 16998), (61, 17010), (69, 17112), (72, 17160), (77, 17214), (81, 17292), (83, 17322), (84, 17328), (87, 17358), (90, 17418), (98, 17502), (111, 17646), (119, 17739), (125, 17769), (127, 17805), (133, 17886), (135, 17934), (139, 17973), (149, 18102), (151, 18150), (158, 18234), (159, 18291), (164, 18375), (167, 18456), (168, 18471), (169, 18477),

Gene: RGL3_20 Start: 16114, Stop: 18651, Start Num: 6
Candidate Starts for RGL3_20:
(Start: 6 @16114 has 35 MA's), (13, 16255), (18, 16423), (27, 16585), (29, 16609), (31, 16636), (32, 16651), (36, 16729), (37, 16762), (39, 16849), (41, 16867), (44, 16906), (52, 17023), (54, 17056), (65, 17197), (67, 17215), (73, 17296), (80, 17404), (88, 17524), (89, 17527), (93, 17560), (96, 17590), (99, 17635), (100, 17638), (105, 17677), (106, 17692), (115, 17803), (125, 17881), (128, 17923), (136, 18061), (140, 18082), (142, 18112), (145, 18139), (155, 18298), (157, 18322), (158, 18343), (159, 18400), (161, 18499), (162, 18523), (163, 18529), (165, 18538), (166, 18586),

Gene: Rasputin_27 Start: 19062, Stop: 21584, Start Num: 6
Candidate Starts for Rasputin_27:
(Start: 6 @19062 has 35 MA's), (10, 19152), (Start: 14 @19212 has 1 MA's), (19, 19404), (22, 19473), (25, 19500), (26, 19533), (32, 19602), (39, 19800), (43, 19848), (44, 19857), (45, 19905), (51, 19968), (58, 20049), (59, 20067), (61, 20106), (69, 20208), (72, 20256), (74, 20277), (81, 20388), (83, 20418), (84, 20424), (87, 20454), (90, 20514), (98, 20598), (111, 20742), (119, 20835), (125, 20865), (127, 20901), (133, 20982), (135, 21030), (139, 21069), (149, 21198), (151, 21246), (154, 21276), (158, 21330), (164, 21471), (168, 21567), (169, 21573),

Gene: RexFury_27 Start: 19125, Stop: 21647, Start Num: 6
Candidate Starts for RexFury_27:
(1, 18987), (2, 19023), (Start: 6 @19125 has 35 MA's), (10, 19215), (18, 19434), (19, 19467), (22, 19536), (25, 19563), (31, 19650), (32, 19665), (39, 19863), (43, 19911), (44, 19920), (51, 20031), (58, 20112), (59, 20130), (60, 20157), (61, 20169), (69, 20271), (72, 20319), (77, 20373), (81, 20451), (83, 20481), (87, 20517), (90, 20577), (98, 20661), (111, 20805), (119, 20898), (125, 20928), (127, 20964), (133, 21045), (139, 21132), (149, 21261), (151, 21309), (158, 21393), (159, 21450), (164, 21534), (167, 21615), (168, 21630), (169, 21636),

Gene: Rhodalysa_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Rhodalysa_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Shuman_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Shuman_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (26, 19565), (29, 19592), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (45, 19937), (51, 20000), (56, 20045), (58, 20081), (59, 20099), (69, 20240), (74, 20309), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (154, 21308), (158, 21362), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: StCroix_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for StCroix_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419),

(164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Swann_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for Swann_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: TWAMP_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for TWAMP_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Takoda_27 Start: 19054, Stop: 21576, Start Num: 6
Candidate Starts for Takoda_27:
(Start: 6 @19054 has 35 MA's), (10, 19144), (18, 19363), (19, 19396), (22, 19465), (25, 19492), (26, 19525), (29, 19552), (31, 19579), (32, 19594), (39, 19792), (43, 19840), (44, 19849), (45, 19897), (51, 19960), (58, 20041), (59, 20059), (69, 20200), (74, 20269), (83, 20410), (84, 20416), (90, 20506), (111, 20734), (114, 20785), (119, 20827), (125, 20857), (127, 20893), (134, 21019), (135, 21022), (139, 21061), (141, 21091), (149, 21190), (154, 21268), (158, 21322), (164, 21463), (168, 21559), (169, 21565),

Gene: UhSalsa_27 Start: 19094, Stop: 21616, Start Num: 6
Candidate Starts for UhSalsa_27:
(1, 18956), (2, 18992), (Start: 6 @19094 has 35 MA's), (10, 19184), (18, 19403), (19, 19436), (22, 19505), (25, 19532), (31, 19619), (32, 19634), (39, 19832), (43, 19880), (44, 19889), (51, 20000), (58, 20081), (59, 20099), (60, 20126), (61, 20138), (69, 20240), (72, 20288), (77, 20342), (81, 20420), (83, 20450), (84, 20456), (87, 20486), (90, 20546), (98, 20630), (111, 20774), (119, 20867), (125, 20897), (127, 20933), (133, 21014), (139, 21101), (149, 21230), (151, 21278), (158, 21362), (159, 21419), (164, 21503), (167, 21584), (168, 21599), (169, 21605),

Gene: Yogi_27 Start: 19068, Stop: 21590, Start Num: 6
Candidate Starts for Yogi_27:
(Start: 6 @19068 has 35 MA's), (10, 19158), (Start: 14 @19218 has 1 MA's), (18, 19377), (19, 19410), (22, 19479), (25, 19506), (26, 19539), (32, 19608), (39, 19806), (43, 19854), (44, 19863), (45, 19911), (51, 19974), (58, 20055), (59, 20073), (61, 20112), (69, 20214), (72, 20262), (74, 20283), (81, 20394), (83, 20424), (84, 20430), (87, 20460), (90, 20520), (98, 20604), (111, 20748), (119, 20841), (125, 20871), (127, 20907), (133, 20988), (139, 21075), (149, 21204), (154, 21282), (158, 21336), (164, 21477), (168, 21573), (169, 21579),

Gene: Yoncess_27 Start: 19068, Stop: 21590, Start Num: 6
Candidate Starts for Yoncess_27:
(Start: 6 @19068 has 35 MA's), (10, 19158), (Start: 14 @19218 has 1 MA's), (18, 19377), (19, 19410), (22, 19479), (25, 19506), (26, 19539), (32, 19608), (39, 19806), (43, 19854), (44, 19863), (45, 19911), (51, 19974), (58, 20055), (59, 20073), (61, 20112), (62, 20133), (69, 20214), (72, 20262), (74, 20283), (81, 20394), (83, 20424), (84, 20430), (87, 20460), (90, 20520), (98, 20604), (111, 20748), (119,

20841), (125, 20871), (127, 20907), (135, 21036), (139, 21075), (149, 21204), (151, 21252), (154, 21282), (158, 21336), (159, 21393), (164, 21477), (168, 21573), (169, 21579),