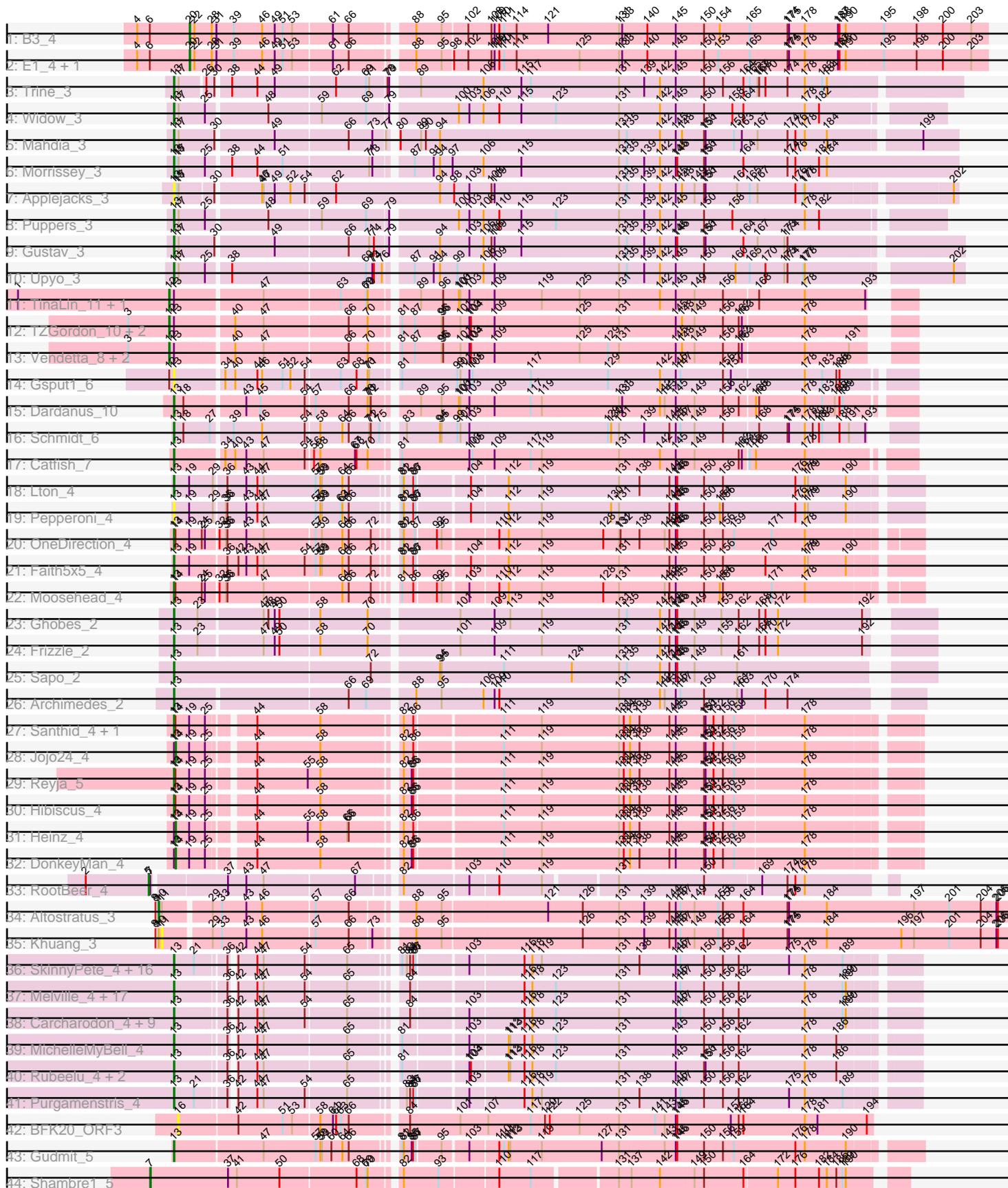# Pham 287786

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 287786 Report

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

Pham number 287786 has 95 members, 9 are drafts.

Phages represented in each track:
• Track 1 : B3_4
• Track 2 : E1_4, Anatole_4
• Track 3 : Trine_3
• Track 4 : Widow_3
• Track 5 : Mahdia_3
• Track 6 : Morrissey_3
• Track 7 : Applejacks_3
• Track 8 : Puppers_3
• Track 9 : Gustav_3
• Track 10 : Upyo_3
• Track 11 : TinaLin_11, Banquo_12
• Track 12 : TZGordon_10, Huffy_10, DinoDaryn_10
• Track 13 : Vendetta_8, Goib_9, Splinter_8
• Track 14 : Gsput1_6
• Track 15 : Dardanus_10
• Track 16 : Schmidt_6
• Track 17 : Catfish_7
• Track 18 : Lton_4
• Track 19 : Pepperoni_4
• Track 20 : OneDirection_4
• Track 21 : Faith5x5_4
• Track 22 : Moosehead_4
• Track 23 : Ghobes_2
• Track 24 : Frizzle_2
• Track 25 : Sapo_2
• Track 26 : Archimedes_2
• Track 27 : Santhid_4, Tarzan_4
• Track 28 : Jojo24_4
• Track 29 : Reyja_5
• Track 30 : Hibiscus_4
• Track 31 : Heinz_4
• Track 32 : DonkeyMan_4
• Track 33 : RootBeer_4
• Track 34 : Altostratus_3
• Track 35 : Khuang_3
• Track 36 : SkinnyPete_4, Jamie19_4, PhancyPhin_4, Snekmaggedon_4, Hanako_4, Spinach_4, Phrann_4, Impisi_4, Raymond7_4, Shweta_4, Redi_4, SpongeBob_4,

Nenae_4, ShrimpFriedEgg_4, Panchino_4, Rebel_4, BabeRuth_4
• Track 37 : Melville_4, Xerxes_4, Bosection6_4, Parmesanjohn_4, Duplicity_4, Philonius_4, Schnauzer_4, Journey_4, Tapioca_4, Magsby_4, Aggie_4, Tessdabest_3, Charlie_4, Silvy_4, Pipsqueaks_4, Gex_4, Smurph_4, Chewbacca_4
• Track 38 : Carcharodon_4, Andies_4, Scitech_4, Fulbright_4, Xeno_4, Cubone_3, Tortoise12_4, Silvafighter_4, EGUnicorn_4, Phloss_4
• Track 39 : MichelleMyBell_4
• Track 40 : Rubeelu_4, Kevin1_4, Butters_4
• Track 41 : Purgamenstris_4
• Track 42 : BFK20_ORF3
• Track 43 : Gudmit_5
• Track 44 : Shambre1_5

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

The start number called the most often in the published annotations is 13, it was called in 69 of the 86 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aggie_4, Andies_4, Applejacks_3, Archimedes_2, BabeRuth_4, Bosection6_4, Butters_4, Carcharodon_4, Catfish_7, Charlie_4, Chewbacca_4, Cubone_3, Dardanus_10, Duplicity_4, EGUnicorn_4, Faith5x5_4, Frizzle_2, Fulbright_4, Gex_4, Ghobes_2, Gsput1_6, Gudmit_5, Gustav_3, Hanako_4, Hibiscus_4, Impisi_4, Jamie19_4, Journey_4, Kevin1_4, Lton_4, Magsby_4, Mahdia_3, Melville_4, MichelleMyBell_4, Moosehead_4, Morrissey_3, Nenae_4, OneDirection_4, Panchino_4, Parmesanjohn_4, Pepperoni_4, PhancyPhin_4, Philonius_4, Phloss_4, Phrann_4, Pipsqueaks_4, Puppers_3, Purgamenstris_4, Raymond7_4, Rebel_4, Redi_4, Reyja_5, Rubeelu_4, Santhid_4, Sapo_2, Schmidt_6, Schnauzer_4, Scitech_4, ShrimpFriedEgg_4, Shweta_4, Silvafighter_4, Silvy_4, SkinnyPete_4, Smurph_4, Snekmaggedon_4, Spinach_4, SpongeBob_4, Tapioca_4, Tarzan_4, Tessdabest_3, Tortoise12_4, Trine_3, Upyo_3, Widow_3, Xeno_4, Xerxes_4,

Genes that have the "Most Annotated" start but do not call it:
• Banquo_12, DinoDaryn_10, DonkeyMan_4, Goib_9, Heinz_4, Huffy_10, Jojo24_4, Splinter_8, TZGordon_10, TinaLin_11, Vendetta_8,

Genes that do not have the "Most Annotated" start:
• Altostratus_3, Anatole_4, B3_4, BFK20_ORF3, E1_4, Khuang_3, RootBeer_4, Shambre1_5,

Summary by start number:

Start 5:
• Found in 1 of 95 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 86
• Called 100.0% of time when present
• Phage (with cluster) where this start called: RootBeer_4 (FA),

Start 7:
• Found in 2 of 95 (2.1%) of genes in pham

- Manual Annotations of this start: 1 of 86
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Shambre1_5 (singleton),

Start 10:
- Found in 2 of 95 (2.1%) of genes in pham
- Manual Annotations of this start: 1 of 86
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Altostratus_3 (FS),

Start 11:
- Found in 2 of 95 (2.1%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Khuang_3 (FS),

Start 12:
- Found in 9 of 95 (9.5%) of genes in pham
- Manual Annotations of this start: 8 of 86
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Banquo_12 (CU1), DinoDaryn_10 (CU1), Goib_9 (CU1), Huffy_10 (CU1), Splinter_8 (CU1), TZGordon_10 (CU1), TinaLin_11 (CU1), Vendetta_8 (CU1),

Start 13:
- Found in 87 of 95 (91.6%) of genes in pham
- Manual Annotations of this start: 69 of 86
- Called 87.4% of time when present
- Phage (with cluster) where this start called: Aggie_4 (N), Andies_4 (N), Applejacks_3 (CD), Archimedes_2 (DA), BabeRuth_4 (N), Bosection6_4 (N), Butters_4 (N), Carcharodon_4 (N), Catfish_7 (CU5), Charlie_4 (N), Chewbacca_4 (N), Cubone_3 (N), Dardanus_10 (CU3), Duplicity_4 (N), EGUnicorn_4 (N), Faith5x5_4 (CZ6), Frizzle_2 (DA), Fulbright_4 (N), Gex_4 (N), Ghobes_2 (DA), Gsput1_6 (CU2), Gudmit_5 (singleton), Gustav_3 (CD), Hanako_4 (N), Hibiscus_4 (DY), Impisi_4 (N), Jamie19_4 (N), Journey_4 (N), Kevin1_4 (N), Lton_4 (CZ), Magsby_4 (N), Mahdia_3 (CD), Melville_4 (N), MichelleMyBell_4 (N), Moosehead_4 (CZ6), Morrissey_3 (CD), Nenae_4 (N), OneDirection_4 (CZ6), Panchino_4 (N), Parmesanjohn_4 (N), Pepperoni_4 (CZ), PhancyPhin_4 (N), Philonius_4 (N), Phloss_4 (N), Phrann_4 (N), Pipsqueaks_4 (N), Puppers_3 (CD), Purgamenstris_4 (N), Raymond7_4 (N), Rebel_4 (N), Redi_4 (N), Reyja_5 (DY), Rubeelu_4 (N), Santhid_4 (DY), Sapo_2 (DA), Schmidt_6 (CU4), Schnauzer_4 (N), Scitech_4 (N), ShrimpFriedEgg_4 (N), Shweta_4 (N), Silvafighter_4 (N), Silvy_4 (N), SkinnyPete_4 (N), Smurph_4 (N), Snekmaggedon_4 (N), Spinach_4 (N), SpongeBob_4 (N), Tapioca_4 (N), Tarzan_4 (DY), Tessdabest_3 (N), Tortoise12_4 (N), Trine_3 (CD), Upyo_3 (CD), Widow_3 (CD), Xeno_4 (N), Xerxes_4 (N),

Start 14:
- Found in 9 of 95 (9.5%) of genes in pham
- Manual Annotations of this start: 3 of 86
- Called 33.3% of time when present
- Phage (with cluster) where this start called: DonkeyMan_4 (DY), Heinz_4 (DY), Jojo24_4 (DY),

Start 16:
• Found in 1 of 95 (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: BFK20_ORF3 (singleton),

Start 20:
• Found in 3 of 95 (3.2%) of genes in pham
• Manual Annotations of this start: 3 of 86
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Anatole_4 (BV), B3_4 (BV), E1_4 (BV),

Summary by clusters:

There are 15 clusters represented in this pham: CU5, CU4, DA, CU2, CU1, CZ, CZ6, singleton, N, FA, BV, FS, DY, CU3, CD,

Info for manual annotations of cluster BV:
•Start number 20 was manually annotated 3 times for cluster BV.

Info for manual annotations of cluster CD:
•Start number 13 was manually annotated 7 times for cluster CD.

Info for manual annotations of cluster CU1:
•Start number 12 was manually annotated 8 times for cluster CU1.

Info for manual annotations of cluster CU3:
•Start number 13 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU4:
•Start number 13 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster CU5:
•Start number 13 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster CZ:
•Start number 13 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ6:
•Start number 13 was manually annotated 3 times for cluster CZ6.

Info for manual annotations of cluster DA:
•Start number 13 was manually annotated 4 times for cluster DA.

Info for manual annotations of cluster DY:
•Start number 13 was manually annotated 4 times for cluster DY.
•Start number 14 was manually annotated 3 times for cluster DY.

Info for manual annotations of cluster FA:
•Start number 5 was manually annotated 1 time for cluster FA.

Info for manual annotations of cluster FS:

•Start number 10 was manually annotated 1 time for cluster FS.

Info for manual annotations of cluster N:
•Start number 13 was manually annotated 46 times for cluster N.

Gene Information:

Gene: Aggie_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Aggie_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Altostratus_3 Start: 1985, Stop: 3505, Start Num: 10
Candidate Starts for Altostratus_3:
(8, 1979), (9, 1982), (Start: 10 @1985 has 1 MA's), (11, 1991), (29, 2072), (33, 2090), (43, 2132), (46, 2162), (57, 2255), (66, 2318), (88, 2411), (95, 2456), (121, 2648), (126, 2708), (131, 2774), (139, 2819), (144, 2867), (145, 2879), (147, 2888), (149, 2915), (153, 2960), (156, 2969), (164, 3005), (174, 3086), (175, 3089), (184, 3158), (197, 3323), (201, 3389), (204, 3446), (205, 3476), (206, 3479),

Gene: Anatole_4 Start: 2800, Stop: 4233, Start Num: 20
Candidate Starts for Anatole_4:
(4, 2701), (6, 2725), (Start: 20 @2800 has 3 MA's), (22, 2809), (28, 2842), (31, 2851), (39, 2884), (46, 2938), (49, 2962), (51, 2977), (53, 2995), (61, 3067), (66, 3097), (88, 3199), (95, 3244), (98, 3262), (102, 3289), (108, 3328), (109, 3334), (110, 3343), (111, 3352), (114, 3376), (125, 3490), (131, 3559), (133, 3565), (140, 3610), (145, 3664), (150, 3718), (153, 3745), (165, 3802), (174, 3871), (175, 3874), (178, 3901), (187, 3964), (188, 3967), (190, 3979), (195, 4045), (198, 4102), (200, 4150), (203, 4204),

Gene: Andies_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Andies_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Applejacks_3 Start: 2099, Stop: 3511, Start Num: 13
Candidate Starts for Applejacks_3:
(Start: 13 @2099 has 69 MA's), (15, 2105), (17, 2108), (30, 2168), (46, 2246), (47, 2249), (49, 2270), (52, 2300), (54, 2327), (62, 2381), (94, 2576), (98, 2600), (103, 2627), (108, 2666), (109, 2672), (131, 2903), (135, 2918), (139, 2948), (142, 2978), (145, 3008), (148, 3020), (149, 3044), (150, 3062), (151, 3065), (161, 3125), (165, 3149), (167, 3164), (176, 3236), (177, 3248), (178, 3251), (202, 3503),

Gene: Archimedes_2 Start: 1796, Stop: 3112, Start Num: 13
Candidate Starts for Archimedes_2:
(Start: 13 @1796 has 69 MA's), (66, 2105), (69, 2138), (88, 2213), (95, 2258), (106, 2333), (109, 2351), (110, 2360), (131, 2582), (142, 2657), (143, 2666), (145, 2687), (147, 2696), (150, 2741), (161, 2804), (163, 2813), (170, 2855), (174, 2897),

Gene: B3_4 Start: 2800, Stop: 4233, Start Num: 20
Candidate Starts for B3_4:
(4, 2701), (6, 2725), (Start: 20 @2800 has 3 MA's), (22, 2809), (28, 2842), (31, 2851), (39, 2884), (46, 2938), (49, 2962), (51, 2977), (53, 2995), (61, 3067), (66, 3097), (88, 3199), (95, 3244), (102, 3289),

(108, 3328), (109, 3334), (110, 3343), (111, 3352), (114, 3376), (121, 3436), (131, 3559), (133, 3565), (140, 3610), (145, 3664), (150, 3718), (154, 3748), (165, 3802), (174, 3871), (175, 3874), (178, 3901), (187, 3964), (188, 3967), (190, 3979), (195, 4045), (198, 4102), (200, 4150), (203, 4204),

Gene: BFK20_ORF3 Start: 2178, Stop: 3449, Start Num: 16
Candidate Starts for BFK20_ORF3:
(16, 2178), (42, 2286), (51, 2370), (53, 2388), (58, 2436), (61, 2460), (62, 2466), (63, 2475), (66, 2490), (84, 2583), (101, 2679), (107, 2727), (117, 2808), (120, 2835), (122, 2844), (125, 2901), (131, 2973), (141, 3039), (143, 3057), (145, 3078), (146, 3081), (157, 3183), (162, 3198), (164, 3207), (178, 3321), (181, 3345), (194, 3438),

Gene: BabeRuth_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for BabeRuth_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Banquo_12 Start: 6215, Stop: 7504, Start Num: 12
Candidate Starts for Banquo_12:
(1, 5927), (Start: 12 @6215 has 8 MA's), (Start: 13 @6224 has 69 MA's), (47, 6374), (63, 6515), (69, 6563), (70, 6566), (89, 6638), (96, 6680), (100, 6707), (101, 6710), (103, 6725), (109, 6770), (119, 6860), (125, 6926), (131, 6998), (142, 7073), (145, 7103), (149, 7139), (156, 7193), (168, 7256), (178, 7340), (193, 7454),

Gene: Bosection6_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Bosection6_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Butters_4 Start: 2249, Stop: 3535, Start Num: 13
Candidate Starts for Butters_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (65, 2543), (81, 2615), (103, 2726), (104, 2729), (112, 2795), (113, 2798), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (150, 3155), (151, 3158), (156, 3191), (162, 3221), (178, 3344), (186, 3404),

Gene: Carcharodon_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Carcharodon_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Catfish_7 Start: 4168, Stop: 5466, Start Num: 13
Candidate Starts for Catfish_7:
(Start: 13 @4168 has 69 MA's), (34, 4246), (40, 4264), (43, 4285), (47, 4318), (54, 4396), (56, 4408), (58, 4420), (67, 4486), (68, 4489), (70, 4510), (81, 4549), (103, 4669), (105, 4675), (109, 4714), (117, 4783), (119, 4804), (131, 4942), (142, 5017), (145, 5047), (149, 5083), (162, 5167), (163, 5173), (165, 5182), (166, 5194), (178, 5284),

Gene: Charlie_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Charlie_4:

(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Chewbacca_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Chewbacca_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Cubone_3 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Cubone_3:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Dardanus_10 Start: 5244, Stop: 6548, Start Num: 13
Candidate Starts for Dardanus_10:
(Start: 13 @5244 has 69 MA's), (18, 5262), (43, 5361), (45, 5388), (54, 5472), (57, 5487), (66, 5550), (70, 5586), (71, 5589), (72, 5592), (89, 5658), (95, 5697), (100, 5727), (101, 5730), (103, 5745), (109, 5790), (117, 5859), (119, 5880), (131, 6018), (133, 6024), (142, 6093), (143, 6102), (145, 6123), (149, 6159), (156, 6213), (162, 6243), (166, 6270), (168, 6276), (178, 6360), (183, 6393), (185, 6417), (188, 6426), (189, 6432),

Gene: DinoDaryn_10 Start: 5301, Stop: 6593, Start Num: 12
Candidate Starts for DinoDaryn_10:
(3, 5223), (Start: 12 @5301 has 8 MA's), (Start: 13 @5310 has 69 MA's), (40, 5406), (47, 5460), (66, 5616), (70, 5652), (81, 5691), (87, 5715), (95, 5763), (96, 5766), (101, 5796), (103, 5811), (104, 5814), (109, 5856), (125, 6012), (131, 6084), (145, 6189), (148, 6201), (149, 6225), (156, 6279), (162, 6309), (163, 6315), (178, 6426),

Gene: DonkeyMan_4 Start: 2357, Stop: 3652, Start Num: 14
Candidate Starts for DonkeyMan_4:
(Start: 13 @2354 has 69 MA's), (Start: 14 @2357 has 3 MA's), (19, 2381), (25, 2411), (44, 2483), (58, 2600), (82, 2732), (85, 2747), (86, 2750), (111, 2906), (119, 2978), (131, 3119), (134, 3128), (136, 3140), (138, 3155), (144, 3212), (145, 3224), (150, 3278), (151, 3281), (152, 3296), (156, 3314), (159, 3335), (178, 3461),

Gene: Duplicity_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Duplicity_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: E1_4 Start: 2800, Stop: 4233, Start Num: 20
Candidate Starts for E1_4:
(4, 2701), (6, 2725), (Start: 20 @2800 has 3 MA's), (22, 2809), (28, 2842), (31, 2851), (39, 2884), (46, 2938), (49, 2962), (51, 2977), (53, 2995), (61, 3067), (66, 3097), (88, 3199), (95, 3244), (98, 3262), (102, 3289), (108, 3328), (109, 3334), (110, 3343), (111, 3352), (114, 3376), (125, 3490), (131, 3559), (133, 3565), (140, 3610), (145, 3664), (150, 3718), (153, 3745), (165, 3802), (174, 3871), (175, 3874), (178, 3901), (187, 3964), (188, 3967), (190, 3979), (195, 4045), (198, 4102), (200, 4150), (203, 4204),

Gene: EGUnicorn_4 Start: 2249, Stop: 3538, Start Num: 13

Candidate Starts for EGUnicorn_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Faith5x5_4 Start: 2170, Stop: 3483, Start Num: 13
Candidate Starts for Faith5x5_4:
(Start: 13 @2170 has 69 MA's), (19, 2197), (36, 2260), (42, 2281), (43, 2296), (44, 2317), (47, 2329), (54, 2407), (57, 2428), (58, 2437), (59, 2440), (64, 2479), (66, 2491), (72, 2533), (81, 2557), (82, 2560), (86, 2578), (87, 2581), (104, 2671), (112, 2737), (119, 2800), (131, 2938), (144, 3031), (145, 3043), (150, 3097), (156, 3133), (170, 3214), (178, 3286), (179, 3292), (190, 3364),

Gene: Frizzle_2 Start: 1804, Stop: 3138, Start Num: 13
Candidate Starts for Frizzle_2:
(Start: 13 @1804 has 69 MA's), (23, 1846), (47, 1960), (49, 1981), (50, 1990), (58, 2062), (70, 2152), (101, 2299), (109, 2359), (119, 2449), (131, 2590), (142, 2665), (144, 2683), (145, 2695), (146, 2698), (149, 2731), (155, 2782), (162, 2815), (168, 2851), (170, 2863), (172, 2887), (192, 3043),

Gene: Fulbright_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Fulbright_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Gex_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Gex_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Ghobes_2 Start: 1804, Stop: 3138, Start Num: 13
Candidate Starts for Ghobes_2:
(Start: 13 @1804 has 69 MA's), (23, 1846), (47, 1960), (48, 1969), (49, 1981), (50, 1990), (58, 2062), (70, 2152), (101, 2299), (109, 2359), (113, 2389), (119, 2449), (131, 2590), (135, 2605), (142, 2665), (144, 2683), (145, 2695), (146, 2698), (149, 2731), (155, 2782), (162, 2815), (168, 2851), (170, 2863), (172, 2887), (192, 3043),

Gene: Goib_9 Start: 5071, Stop: 6363, Start Num: 12
Candidate Starts for Goib_9:
(3, 4993), (Start: 12 @5071 has 8 MA's), (Start: 13 @5080 has 69 MA's), (40, 5176), (47, 5230), (66, 5386), (70, 5422), (81, 5461), (87, 5485), (95, 5533), (96, 5536), (101, 5566), (103, 5581), (104, 5584), (109, 5626), (125, 5782), (129, 5833), (131, 5854), (145, 5959), (148, 5971), (149, 5995), (156, 6049), (162, 6079), (163, 6085), (178, 6196), (191, 6280),

Gene: Gsput1_6 Start: 3629, Stop: 4933, Start Num: 13
Candidate Starts for Gsput1_6:
(Start: 12 @3623 has 8 MA's), (Start: 13 @3629 has 69 MA's), (34, 3707), (40, 3725), (44, 3767), (46, 3776), (51, 3815), (52, 3830), (54, 3857), (63, 3920), (68, 3950), (70, 3971), (71, 3974), (81, 4010), (99, 4109), (101, 4115), (103, 4130), (105, 4136), (117, 4244), (129, 4382), (142, 4478), (145, 4508), (147, 4517), (156, 4598), (157, 4613), (178, 4745), (183, 4778), (186, 4805), (188, 4811),

Gene: Gudmit_5 Start: 2938, Stop: 4251, Start Num: 13
Candidate Starts for Gudmit_5:

(Start: 13 @2938 has 69 MA's), (47, 3097), (57, 3196), (58, 3205), (59, 3208), (60, 3226), (64, 3247), (66, 3259), (81, 3325), (82, 3328), (85, 3343), (86, 3346), (87, 3349), (95, 3394), (103, 3436), (110, 3487), (111, 3496), (112, 3505), (113, 3508), (119, 3568), (127, 3673), (131, 3706), (143, 3790), (145, 3811), (146, 3814), (150, 3865), (156, 3901), (159, 3922), (176, 4039), (178, 4054), (190, 4132),

Gene: Gustav_3 Start: 2120, Stop: 3523, Start Num: 13
Candidate Starts for Gustav_3:
(Start: 13 @2120 has 69 MA's), (17, 2129), (30, 2192), (49, 2294), (66, 2429), (71, 2468), (74, 2477), (79, 2501), (94, 2576), (103, 2627), (106, 2654), (108, 2666), (109, 2672), (115, 2723), (131, 2903), (135, 2918), (139, 2948), (142, 2978), (145, 3008), (146, 3011), (150, 3062), (151, 3065), (164, 3137), (167, 3164), (173, 3215), (174, 3221),

Gene: Hanako_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Hanako_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Heinz_4 Start: 2359, Stop: 3654, Start Num: 14
Candidate Starts for Heinz_4:
(Start: 13 @2356 has 69 MA's), (Start: 14 @2359 has 3 MA's), (19, 2383), (25, 2413), (44, 2485), (55, 2578), (58, 2602), (65, 2653), (66, 2656), (82, 2734), (86, 2752), (111, 2908), (119, 2980), (131, 3121), (134, 3130), (136, 3142), (138, 3157), (144, 3214), (145, 3226), (150, 3280), (151, 3283), (152, 3298), (156, 3316), (159, 3337), (178, 3463),

Gene: Hibiscus_4 Start: 2356, Stop: 3654, Start Num: 13
Candidate Starts for Hibiscus_4:
(Start: 13 @2356 has 69 MA's), (Start: 14 @2359 has 3 MA's), (19, 2383), (25, 2413), (44, 2485), (58, 2602), (82, 2734), (85, 2749), (86, 2752), (111, 2908), (119, 2980), (131, 3121), (134, 3130), (136, 3142), (138, 3157), (144, 3214), (145, 3226), (150, 3280), (151, 3283), (152, 3298), (156, 3316), (159, 3337), (178, 3463),

Gene: Huffy_10 Start: 5301, Stop: 6593, Start Num: 12
Candidate Starts for Huffy_10:
(3, 5223), (Start: 12 @5301 has 8 MA's), (Start: 13 @5310 has 69 MA's), (40, 5406), (47, 5460), (66, 5616), (70, 5652), (81, 5691), (87, 5715), (95, 5763), (96, 5766), (101, 5796), (103, 5811), (104, 5814), (109, 5856), (125, 6012), (131, 6084), (145, 6189), (148, 6201), (149, 6225), (156, 6279), (162, 6309), (163, 6315), (178, 6426),

Gene: Impisi_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Impisi_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Jamie19_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Jamie19_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Jojo24_4 Start: 2354, Stop: 3649, Start Num: 14
Candidate Starts for Jojo24_4:
(Start: 13 @2351 has 69 MA's), (Start: 14 @2354 has 3 MA's), (19, 2378), (25, 2408), (44, 2480), (58, 2597), (82, 2729), (86, 2747), (111, 2903), (119, 2975), (131, 3116), (134, 3125), (136, 3137), (138, 3152), (144, 3209), (145, 3221), (150, 3275), (151, 3278), (152, 3293), (156, 3311), (159, 3332), (178, 3458),

Gene: Journey_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Journey_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Kevin1_4 Start: 2249, Stop: 3535, Start Num: 13
Candidate Starts for Kevin1_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (65, 2543), (81, 2615), (103, 2726), (104, 2729), (112, 2795), (113, 2798), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (150, 3155), (151, 3158), (156, 3191), (162, 3221), (178, 3344), (186, 3404),

Gene: Khuang_3 Start: 1991, Stop: 3505, Start Num: 11
Candidate Starts for Khuang_3:
(8, 1979), (9, 1982), (Start: 10 @1985 has 1 MA's), (11, 1991), (29, 2072), (33, 2090), (43, 2132), (46, 2162), (57, 2255), (66, 2318), (73, 2357), (88, 2411), (95, 2456), (126, 2708), (131, 2774), (139, 2819), (144, 2867), (145, 2879), (147, 2888), (149, 2915), (153, 2960), (156, 2969), (164, 3005), (174, 3086), (175, 3089), (184, 3158), (196, 3299), (197, 3323), (201, 3389), (204, 3446), (205, 3476), (206, 3479),

Gene: Lton_4 Start: 2174, Stop: 3487, Start Num: 13
Candidate Starts for Lton_4:
(Start: 13 @2174 has 69 MA's), (19, 2201), (29, 2243), (36, 2264), (43, 2300), (44, 2321), (47, 2333), (57, 2432), (58, 2441), (59, 2444), (64, 2483), (66, 2495), (81, 2561), (82, 2564), (86, 2582), (87, 2585), (104, 2675), (112, 2741), (119, 2804), (131, 2942), (138, 2978), (144, 3035), (145, 3047), (146, 3050), (150, 3101), (156, 3137), (176, 3275), (178, 3290), (179, 3296), (190, 3368),

Gene: Magsby_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Magsby_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Mahdia_3 Start: 2134, Stop: 3525, Start Num: 13
Candidate Starts for Mahdia_3:
(Start: 13 @2134 has 69 MA's), (17, 2143), (30, 2206), (49, 2308), (66, 2443), (73, 2488), (77, 2509), (80, 2518), (89, 2554), (90, 2563), (94, 2590), (131, 2917), (135, 2932), (142, 2992), (145, 3022), (148, 3034), (150, 3076), (151, 3079), (159, 3133), (163, 3148), (167, 3178), (174, 3235), (176, 3250), (178, 3265), (184, 3307), (199, 3463),

Gene: Melville_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Melville_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: MichelleMyBell_4 Start: 2263, Stop: 3549, Start Num: 13
Candidate Starts for MichelleMyBell_4:
(Start: 13 @2263 has 69 MA's), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (65, 2557), (81, 2629), (103, 2740), (112, 2809), (113, 2812), (116, 2839), (118, 2854), (123, 2896), (131, 3010), (145, 3115), (150, 3169), (156, 3205), (162, 3235), (178, 3358), (186, 3418),

Gene: Moosehead_4 Start: 2170, Stop: 3477, Start Num: 13
Candidate Starts for Moosehead_4:
(Start: 13 @2170 has 69 MA's), (Start: 14 @2173 has 3 MA's), (24, 2221), (25, 2227), (32, 2248), (35, 2260), (36, 2263), (47, 2332), (64, 2476), (66, 2488), (72, 2530), (81, 2554), (86, 2575), (92, 2614), (95, 2623), (103, 2665), (110, 2716), (112, 2734), (119, 2797), (128, 2905), (131, 2935), (143, 3019), (144, 3028), (145, 3040), (150, 3094), (154, 3124), (156, 3130), (171, 3223), (178, 3283),

Gene: Morrissey_3 Start: 2106, Stop: 3524, Start Num: 13
Candidate Starts for Morrissey_3:
(Start: 13 @2106 has 69 MA's), (15, 2112), (17, 2115), (25, 2163), (38, 2202), (44, 2250), (51, 2298), (71, 2457), (73, 2463), (87, 2520), (91, 2553), (94, 2565), (97, 2586), (106, 2643), (115, 2712), (131, 2892), (135, 2907), (139, 2937), (142, 2967), (145, 2997), (146, 3000), (150, 3051), (151, 3054), (164, 3126), (174, 3210), (176, 3225), (182, 3267), (184, 3282),

Gene: Nenae_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Nenae_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: OneDirection_4 Start: 2171, Stop: 3472, Start Num: 13
Candidate Starts for OneDirection_4:
(Start: 13 @2171 has 69 MA's), (Start: 14 @2174 has 3 MA's), (19, 2198), (24, 2222), (25, 2228), (32, 2249), (35, 2261), (36, 2264), (43, 2300), (47, 2333), (57, 2426), (59, 2438), (64, 2477), (66, 2489), (72, 2531), (81, 2555), (82, 2558), (87, 2579), (92, 2615), (95, 2624), (110, 2717), (112, 2735), (119, 2798), (128, 2906), (131, 2936), (132, 2939), (138, 2972), (143, 3020), (144, 3029), (145, 3041), (146, 3044), (150, 3095), (156, 3131), (159, 3152), (171, 3224), (178, 3284),

Gene: Panchino_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Panchino_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Parmesanjohn_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Parmesanjohn_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Pepperoni_4 Start: 2468, Stop: 3781, Start Num: 13
Candidate Starts for Pepperoni_4:
(Start: 13 @2468 has 69 MA's), (19, 2495), (29, 2537), (35, 2555), (36, 2558), (43, 2594), (44, 2615), (47, 2627), (57, 2726), (58, 2735), (59, 2738), (63, 2774), (64, 2777), (66, 2789), (81, 2855), (82, 2858), (86, 2876), (87, 2879), (104, 2969), (112, 3035), (119, 3098), (130, 3221), (131, 3236), (144, 3329),

(145, 3341), (146, 3344), (150, 3395), (154, 3425), (156, 3431), (176, 3569), (178, 3584), (179, 3590), (190, 3662),

Gene: PhancyPhin_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for PhancyPhin_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Philonius_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Philonius_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Phloss_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Phloss_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Phrann_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Phrann_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Pipsqueaks_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Pipsqueaks_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Puppers_3 Start: 2078, Stop: 3436, Start Num: 13
Candidate Starts for Puppers_3:
(Start: 13 @2078 has 69 MA's), (17, 2087), (25, 2135), (48, 2243), (59, 2339), (69, 2423), (79, 2462), (100, 2570), (103, 2588), (106, 2615), (110, 2642), (115, 2684), (123, 2747), (131, 2864), (139, 2909), (142, 2939), (145, 2969), (150, 3023), (158, 3077), (178, 3212), (182, 3239),

Gene: Purgamenstris_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Purgamenstris_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Raymond7_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Raymond7_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162,

3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Rebel_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Rebel_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Redi_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Redi_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Reyja_5 Start: 2467, Stop: 3768, Start Num: 13
Candidate Starts for Reyja_5:
(Start: 13 @2467 has 69 MA's), (Start: 14 @2470 has 3 MA's), (19, 2494), (25, 2524), (44, 2596), (55, 2689), (58, 2713), (82, 2845), (85, 2860), (86, 2863), (111, 3019), (119, 3091), (131, 3232), (134, 3241), (136, 3253), (138, 3268), (144, 3325), (145, 3337), (150, 3391), (151, 3394), (152, 3409), (156, 3427), (159, 3448), (178, 3574),

Gene: RootBeer_4 Start: 2459, Stop: 3739, Start Num: 5
Candidate Starts for RootBeer_4:
(2, 2339), (Start: 5 @2459 has 1 MA's), (Start: 7 @2462 has 1 MA's), (37, 2582), (43, 2615), (47, 2648), (67, 2816), (82, 2879), (103, 2993), (110, 3044), (119, 3125), (131, 3251), (150, 3410), (169, 3515), (174, 3563), (176, 3578), (178, 3593),

Gene: Rubeelu_4 Start: 2249, Stop: 3535, Start Num: 13
Candidate Starts for Rubeelu_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (65, 2543), (81, 2615), (103, 2726), (104, 2729), (112, 2795), (113, 2798), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (150, 3155), (151, 3158), (156, 3191), (162, 3221), (178, 3344), (186, 3404),

Gene: Santhid_4 Start: 2353, Stop: 3651, Start Num: 13
Candidate Starts for Santhid_4:
(Start: 13 @2353 has 69 MA's), (Start: 14 @2356 has 3 MA's), (19, 2380), (25, 2410), (44, 2482), (58, 2599), (82, 2731), (86, 2749), (111, 2905), (119, 2977), (131, 3118), (134, 3127), (136, 3139), (138, 3154), (144, 3211), (145, 3223), (150, 3277), (151, 3280), (152, 3295), (156, 3313), (159, 3334), (178, 3460),

Gene: Sapo_2 Start: 1792, Stop: 3132, Start Num: 13
Candidate Starts for Sapo_2:
(Start: 13 @1792 has 69 MA's), (72, 2155), (94, 2260), (95, 2263), (111, 2374), (124, 2497), (131, 2587), (135, 2602), (142, 2662), (144, 2680), (145, 2692), (146, 2695), (149, 2728), (161, 2809),

Gene: Schmidt_6 Start: 3556, Stop: 4848, Start Num: 13
Candidate Starts for Schmidt_6:
(Start: 13 @3556 has 69 MA's), (18, 3574), (27, 3619), (39, 3652), (46, 3706), (54, 3787), (58, 3811), (64, 3853), (66, 3865), (71, 3904), (72, 3907), (75, 3922), (83, 3949), (94, 4009), (95, 4012), (99, 4042), (101, 4048), (103, 4063), (129, 4315), (130, 4321), (131, 4336), (139, 4381), (144, 4429), (145, 4441), (147, 4450), (149, 4477), (156, 4531), (168, 4594), (174, 4648), (175, 4651), (178, 4678), (180, 4693),

(182, 4705), (183, 4711), (188, 4744), (191, 4762), (193, 4792),

Gene: Schnauzer_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Schnauzer_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Scitech_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Scitech_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Shambre1_5 Start: 3925, Stop: 5259, Start Num: 7
Candidate Starts for Shambre1_5:
(Start: 7 @3925 has 1 MA's), (37, 4069), (41, 4084), (50, 4165), (68, 4306), (69, 4324), (70, 4327), (82, 4372), (93, 4438), (110, 4540), (117, 4600), (131, 4747), (137, 4771), (142, 4825), (149, 4888), (150, 4906), (164, 4981), (172, 5041), (176, 5074), (182, 5116), (184, 5131), (186, 5149), (189, 5161), (190, 5167),

Gene: ShrimpFriedEgg_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for ShrimpFriedEgg_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Shweta_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Shweta_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Silvafighter_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Silvafighter_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Silvy_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Silvy_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: SkinnyPete_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for SkinnyPete_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Smurph_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Smurph_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Snekmaggedon_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Snekmaggedon_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Spinach_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for Spinach_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: Splinter_8 Start: 5071, Stop: 6363, Start Num: 12
Candidate Starts for Splinter_8:
(3, 4993), (Start: 12 @5071 has 8 MA's), (Start: 13 @5080 has 69 MA's), (40, 5176), (47, 5230), (66, 5386), (70, 5422), (81, 5461), (87, 5485), (95, 5533), (96, 5536), (101, 5566), (103, 5581), (104, 5584), (109, 5626), (125, 5782), (129, 5833), (131, 5854), (145, 5959), (148, 5971), (149, 5995), (156, 6049), (162, 6079), (163, 6085), (178, 6196), (191, 6280),

Gene: SpongeBob_4 Start: 2263, Stop: 3552, Start Num: 13
Candidate Starts for SpongeBob_4:
(Start: 13 @2263 has 69 MA's), (21, 2299), (36, 2350), (42, 2356), (44, 2392), (47, 2404), (54, 2482), (65, 2557), (81, 2629), (83, 2638), (84, 2644), (86, 2650), (87, 2653), (103, 2740), (116, 2839), (118, 2854), (119, 2872), (131, 3010), (138, 3046), (145, 3115), (147, 3124), (150, 3169), (156, 3205), (162, 3235), (175, 3331), (178, 3358), (189, 3430),

Gene: TZGordon_10 Start: 5216, Stop: 6508, Start Num: 12
Candidate Starts for TZGordon_10:
(3, 5138), (Start: 12 @5216 has 8 MA's), (Start: 13 @5225 has 69 MA's), (40, 5321), (47, 5375), (66, 5531), (70, 5567), (81, 5606), (87, 5630), (95, 5678), (96, 5681), (101, 5711), (103, 5726), (104, 5729), (109, 5771), (125, 5927), (131, 5999), (145, 6104), (148, 6116), (149, 6140), (156, 6194), (162, 6224), (163, 6230), (178, 6341),

Gene: Tapioca_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Tapioca_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Tarzan_4 Start: 2353, Stop: 3654, Start Num: 13
Candidate Starts for Tarzan_4:
(Start: 13 @2353 has 69 MA's), (Start: 14 @2356 has 3 MA's), (19, 2380), (25, 2410), (44, 2482), (58, 2599), (82, 2731), (86, 2749), (111, 2905), (119, 2977), (131, 3118), (134, 3127), (136, 3139), (138, 3154), (144, 3211), (145, 3223), (150, 3277), (151, 3280), (152, 3295), (156, 3313), (159, 3334), (178,

3460),

Gene: Tessdabest_3 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Tessdabest_3:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543),
(84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155),
(156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: TinaLin_11 Start: 5838, Stop: 7127, Start Num: 12
Candidate Starts for TinaLin_11:
(1, 5550), (Start: 12 @5838 has 8 MA's), (Start: 13 @5847 has 69 MA's), (47, 5997), (63, 6138), (69,
6186), (70, 6189), (89, 6261), (96, 6303), (100, 6330), (101, 6333), (103, 6348), (109, 6393), (119,
6483), (125, 6549), (131, 6621), (142, 6696), (145, 6726), (149, 6762), (156, 6816), (168, 6879), (178,
6963), (193, 7077),

Gene: Tortoise12_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Tortoise12_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543),
(84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110),
(150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Trine_3 Start: 2126, Stop: 3523, Start Num: 13
Candidate Starts for Trine_3:
(Start: 13 @2126 has 69 MA's), (17, 2135), (26, 2177), (30, 2192), (38, 2213), (44, 2261), (49, 2294),
(62, 2405), (69, 2462), (71, 2468), (78, 2498), (79, 2501), (89, 2540), (106, 2654), (115, 2723), (117,
2741), (131, 2903), (139, 2948), (142, 2978), (145, 3008), (150, 3062), (156, 3098), (164, 3137), (165,
3149), (167, 3164), (168, 3167), (170, 3179), (174, 3221), (178, 3251), (183, 3284), (184, 3293),

Gene: Upyo_3 Start: 2133, Stop: 3530, Start Num: 13
Candidate Starts for Upyo_3:
(Start: 13 @2133 has 69 MA's), (17, 2142), (25, 2187), (38, 2226), (69, 2475), (73, 2487), (74, 2490),
(76, 2505), (87, 2544), (91, 2577), (94, 2589), (99, 2619), (106, 2667), (109, 2685), (131, 2916), (135,
2931), (139, 2961), (142, 2991), (145, 3021), (150, 3075), (160, 3135), (165, 3162), (170, 3192), (173,
3228), (174, 3234), (177, 3261), (178, 3264), (202, 3510),

Gene: Vendetta_8 Start: 5071, Stop: 6363, Start Num: 12
Candidate Starts for Vendetta_8:
(3, 4993), (Start: 12 @5071 has 8 MA's), (Start: 13 @5080 has 69 MA's), (40, 5176), (47, 5230), (66,
5386), (70, 5422), (81, 5461), (87, 5485), (95, 5533), (96, 5536), (101, 5566), (103, 5581), (104, 5584),
(109, 5626), (125, 5782), (129, 5833), (131, 5854), (145, 5959), (148, 5971), (149, 5995), (156, 6049),
(162, 6079), (163, 6085), (178, 6196), (191, 6280),

Gene: Widow_3 Start: 2078, Stop: 3436, Start Num: 13
Candidate Starts for Widow_3:
(Start: 13 @2078 has 69 MA's), (17, 2087), (25, 2135), (48, 2243), (59, 2339), (69, 2423), (79, 2462),
(100, 2570), (103, 2588), (106, 2615), (110, 2642), (115, 2684), (123, 2747), (131, 2864), (142, 2939),
(145, 2969), (150, 3023), (158, 3077), (164, 3098), (178, 3212), (182, 3239),

Gene: Xeno_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Xeno_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543),
(84, 2630), (103, 2726), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110),
(150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),

Gene: Xerxes_4 Start: 2249, Stop: 3538, Start Num: 13
Candidate Starts for Xerxes_4:
(Start: 13 @2249 has 69 MA's), (36, 2336), (42, 2342), (44, 2378), (47, 2390), (54, 2468), (65, 2543), (84, 2630), (116, 2825), (118, 2840), (123, 2882), (131, 2996), (145, 3101), (147, 3110), (150, 3155), (156, 3191), (162, 3221), (178, 3344), (189, 3416), (190, 3422),