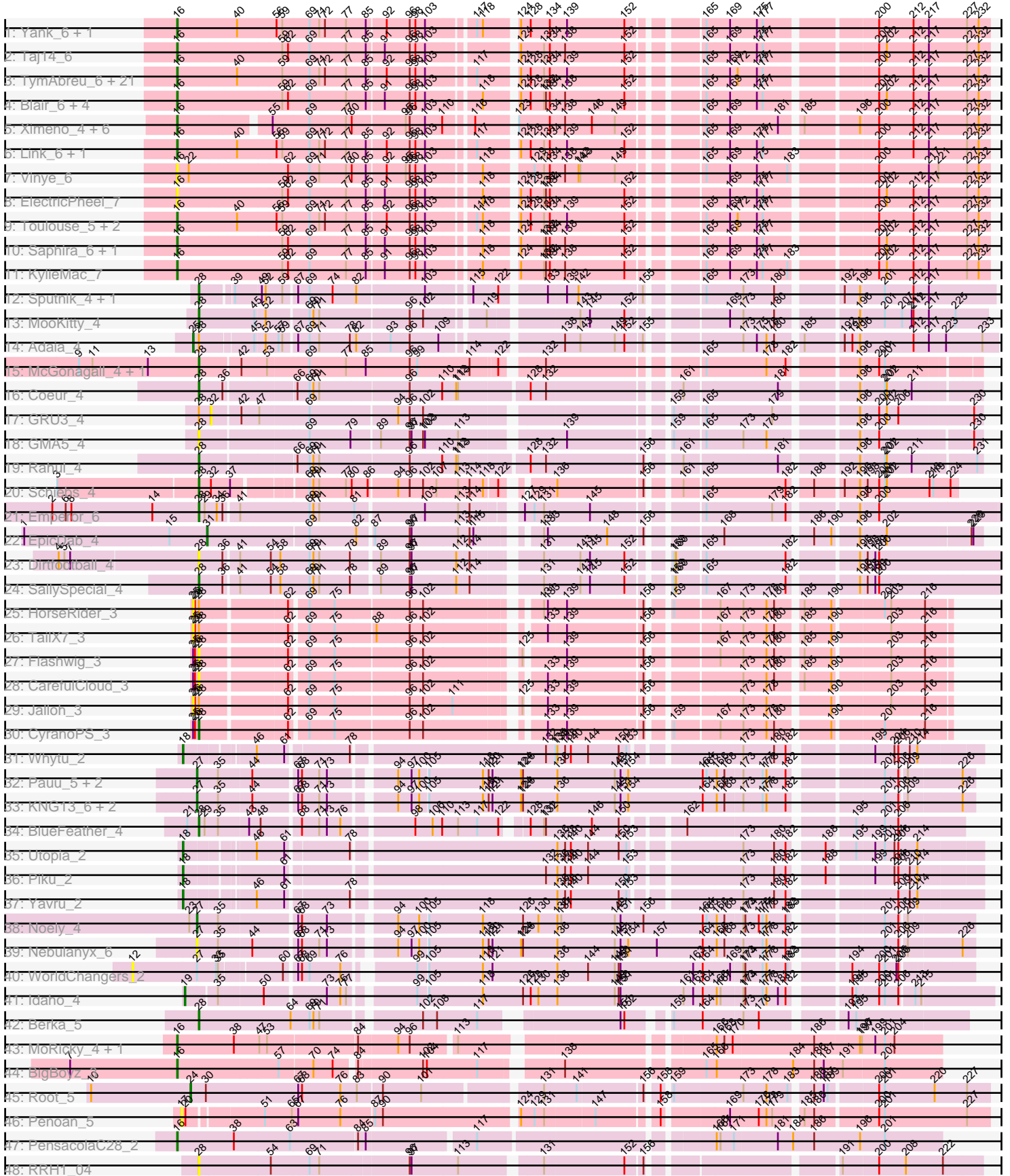


Pham 311462



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 311462 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311462 has 91 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Yank_6, Decurro_6
- Track 2 : Taj14_6
- Track 3 : TymAbreu_6, Copper_6, Courtney3_6, Maggie_6, Jessica_7, Stratus_6, CGermain_6, Inspire2_6, Sandman_6, Guntur_6, Arby_6, Azathoth_6, Mariposa_6, LouisXIV_6, Moloch_6, Chestnut_6, Hunnie_6, Massimo_6, TinoCrisci_6, Ronnie_6, Prospero_6, Dewayne_6
- Track 4 : Blair_6, Lore_6, Elkhorn_6, Laila_7, StewieGriff_6
- Track 5 : Ximeno_4, FirePit_4, Kels_4, SerialPhiller_4, Eyoseyas_4, StrawberryLem_4, Arielagos_4
- Track 6 : Link_6, Muttlie_6
- Track 7 : Vinye_6
- Track 8 : ElectricPheel_7
- Track 9 : Toulouse_5, Seume_6, Sourignavong_7
- Track 10 : Saphira_6, Swenson_6
- Track 11 : KylieMac_7
- Track 12 : Sputnik_4, Atraxa_4
- Track 13 : MooKitty_4
- Track 14 : Adaia_4
- Track 15 : McGonagall_4, Jeanie_4
- Track 16 : Coeur_4
- Track 17 : GRU3_4
- Track 18 : GMA5_4
- Track 19 : Rahul_4
- Track 20 : Schiebs_4
- Track 21 : Emperor_6
- Track 22 : EpicDab_4
- Track 23 : Dirtfootball_4
- Track 24 : SallySpecial_4
- Track 25 : HorseRider_3
- Track 26 : TailX7_3
- Track 27 : Flashwig_3
- Track 28 : CarefulCloud_3
- Track 29 : Jalloh_3
- Track 30 : CyranoPS_3
- Track 31 : Whytu_2
- Track 32 : Pauu_5, LauKoruNamu_5, CabbageMan_4
- Track 33 : KNG13_6, Corgi_6, CheeseDanish_6

- Track 34 : BlueFeather_4
- Track 35 : Utopia_2
- Track 36 : Piku_2
- Track 37 : Yavru_2
- Track 38 : Noely_4
- Track 39 : Nebulanyx_6
- Track 40 : WorldChangers_2
- Track 41 : Idaho_4
- Track 42 : Berka_5
- Track 43 : MoRicky_4, Smilerella_4
- Track 44 : BigBoyz_3
- Track 45 : Root_5
- Track 46 : Penoan_5
- Track 47 : PensacolaC28_2
- Track 48 : RRH1_04

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

The start number called the most often in the published annotations is 16, it was called in 48 of the 76 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arby_6, Arielagos_4, Azathoth_6, BigBoyz_3, Blair_6, CGermain_6, Chestnut_6, Copper_6, Courtney3_6, Decurro_6, Dewayne_6, ElectricPheel_7, Elkhorn_6, Eyoseyas_4, FirePit_4, Guntur_6, Hunnie_6, Inspire2_6, Jessica_7, Kels_4, KylieMac_7, Laila_7, Link_6, Lore_6, LouisXIV_6, Maggie_6, Mariposa_6, Massimo_6, MoRicky_4, Moloch_6, Muttie_6, PensacolaC28_2, Prospero_6, Ronnie_6, Sandman_6, Saphira_6, SerialPhiller_4, Seume_6, Smilerella_4, Sourignavong_7, StewieGriff_6, Stratus_6, StrawberryLem_4, Swenson_6, Taj14_6, TinoCrisci_6, Toulouse_5, TymAbreu_6, Vinye_6, Ximeno_4, Yank_6,

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

-

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

- Adaia_4, Atraxa_4, Berka_5, BlueFeather_4, CabbageMan_4, CarefulCloud_3, CheeseDanish_6, Coeur_4, Corgi_6, CyranoPS_3, Dirtfootball_4, Emperor_6, EpicDab_4, Flashwig_3, GMA5_4, GRU3_4, HorseRider_3, Idaho_4, Jalloh_3, Jeanie_4, KNG13_6, LauKoruNamu_5, McGonagall_4, MooKitty_4, Nebulanyx_6, Noely_4, Pauu_5, Penoan_5, Piku_2, RRH1_04, Rahul_4, Root_5, SallySpecial_4, Schiebs_4, Sputnik_4, TailX7_3, Utopia_2, Whytu_2, WorldChangers_2, Yavru_2,

Summary by start number:

Start 12:

- 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: WorldChangers_2 (FE),

Start 16:

- Found in 51 of 91 (56.0%) of genes in pham
- Manual Annotations of this start: 48 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arby_6 (AN), Arielagos_4 (AN), Azathoth_6 (AN), BigBoyz_3 (GH), Blair_6 (AN), CGermain_6 (AN), Chestnut_6 (AN), Copper_6 (AN), Courtney3_6 (AN), Decurro_6 (AN), Dewayne_6 (AN), ElectricPheel_7 (AN), Elkhorn_6 (AN), Eyoseyas_4 (AN), FirePit_4 (AN), Guntur_6 (AN), Hunnie_6 (AN), Inspire2_6 (AN), Jessica_7 (AN), Kels_4 (AN), KylieMac_7 (AN), Laila_7 (AN), Link_6 (AN), Lore_6 (AN), LouisXIV_6 (AN), Maggie_6 (AN), Mariposa_6 (AN), Massimo_6 (AN), MoRicky_4 (GH), Moloch_6 (AN), Muttlie_6 (AN), PensacolaC28_2 (singleton), Prospero_6 (AN), Ronnie_6 (AN), Sandman_6 (AN), Saphira_6 (AN), SerialPhiller_4 (AN), Seume_6 (AN), Smilerella_4 (GH), Sourignavong_7 (AN), StewieGriff_6 (AN), Stratus_6 (AN), StrawberryLem_4 (AN), Swenson_6 (AN), Taj14_6 (AN), TinoCrisci_6 (AN), Toulouse_5 (AN), TymAbreu_6 (AN), Vinye_6 (AN), Ximeno_4 (AN), Yank_6 (AN),

Start 17:

- 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: Penoan_5 (UNK),

Start 18:

- Found in 4 of 91 (4.4%) of genes in pham
- Manual Annotations of this start: 4 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Piku_2 (FE), Utopia_2 (FE), Whytu_2 (FE), Yavru_2 (FE),

Start 19:

- Found in 1 of 91 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Idaho_4 (FE),

Start 24:

- Found in 1 of 91 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Root_5 (JC),

Start 25:

- Found in 7 of 91 (7.7%) of genes in pham
- Manual Annotations of this start: 1 of 76
- Called 57.1% of time when present
- Phage (with cluster) where this start called: Adaia_4 (AX), HorseRider_3 (ER), Jalloh_3 (ER), TailX7_3 (ER),

Start 27:

- Found in 9 of 91 (9.9%) of genes in pham
- Manual Annotations of this start: 7 of 76
- Called 88.9% of time when present

- Phage (with cluster) where this start called: CabbageMan_4 (FE), CheeseDanish_6 (FE), Corgi_6 (FE), KNG13_6 (FE), LauKoruNamu_5 (FE), Nebulanix_6 (FE), Noely_4 (FE), Pauu_5 (FE),

Start 28:

- Found in 23 of 91 (25.3%) of genes in pham
- Manual Annotations of this start: 13 of 76
- Called 78.3% of time when present
- Phage (with cluster) where this start called: Atraxa_4 (AX), Berka_5 (FE), BlueFeather_4 (FE), CarefulCloud_3 (ER), Coeur_4 (CW2), CyranoPS_3 (ER), Dirtfootball_4 (DM), Emperor_6 (DM), Flashwig_3 (ER), GMA5_4 (CW2), Jeanie_4 (CW1), McGonagall_4 (CW1), Mookitty_4 (AX), RRH1_04 (singleton), Rahul_4 (CW2), SallySpecial_4 (DM), Schiebs_4 (CW3), Sputnik_4 (AX),

Start 31:

- Found in 1 of 91 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EpicDab_4 (DM),

Start 32:

- Found in 2 of 91 (2.2%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: GRU3_4 (CW2),

Summary by clusters:

There are 12 clusters represented in this pham: UNK, singleton, DM, JC, CW1, CW3, CW2, AN, FE, AX, ER, GH,

Info for manual annotations of cluster AN:

- Start number 16 was manually annotated 44 times for cluster AN.

Info for manual annotations of cluster AX:

- Start number 25 was manually annotated 1 time for cluster AX.
- Start number 28 was manually annotated 3 times for cluster AX.

Info for manual annotations of cluster CW1:

- Start number 28 was manually annotated 2 times for cluster CW1.

Info for manual annotations of cluster CW2:

- Start number 28 was manually annotated 2 times for cluster CW2.

Info for manual annotations of cluster CW3:

- Start number 28 was manually annotated 1 time for cluster CW3.

Info for manual annotations of cluster DM:

- Start number 28 was manually annotated 2 times for cluster DM.
- Start number 31 was manually annotated 1 time for cluster DM.

Info for manual annotations of cluster ER:

- Start number 28 was manually annotated 1 time for cluster ER.

Info for manual annotations of cluster FE:

- Start number 18 was manually annotated 4 times for cluster FE.
- Start number 19 was manually annotated 1 time for cluster FE.
- Start number 27 was manually annotated 7 times for cluster FE.
- Start number 28 was manually annotated 2 times for cluster FE.

Info for manual annotations of cluster GH:

- Start number 16 was manually annotated 3 times for cluster GH.

Info for manual annotations of cluster JC:

- Start number 24 was manually annotated 1 time for cluster JC.

Gene Information:

Gene: Adaia_4 Start: 2060, Stop: 3190, Start Num: 25

Candidate Starts for Adaia_4:

(Start: 25 @2060 has 1 MA's), (Start: 28 @2069 has 13 MA's), (45, 2144), (52, 2159), (57, 2177), (59, 2183), (67, 2201), (69, 2219), (71, 2234), (78, 2282), (82, 2291), (93, 2339), (96, 2369), (109, 2414), (138, 2576), (143, 2600), (149, 2654), (152, 2669), (155, 2693), (173, 2819), (175, 2840), (178, 2855), (180, 2867), (185, 2900), (192, 2954), (194, 2966), (196, 2978), (212, 3059), (217, 3083), (223, 3110), (233, 3167),

Gene: Arby_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Arby_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Arielagos_4 Start: 2175, Stop: 3320, Start Num: 16

Candidate Starts for Arielagos_4:

(Start: 16 @2175 has 48 MA's), (55, 2304), (69, 2361), (77, 2418), (80, 2427), (95, 2505), (96, 2511), (103, 2535), (110, 2562), (116, 2598), (123, 2649), (134, 2697), (138, 2718), (146, 2760), (149, 2796), (165, 2904), (169, 2940), (181, 3015), (185, 3042), (196, 3120), (200, 3147), (212, 3201), (217, 3225), (227, 3285), (232, 3303),

Gene: Atraxa_4 Start: 2128, Stop: 3240, Start Num: 28

Candidate Starts for Atraxa_4:

(Start: 28 @2128 has 13 MA's), (39, 2170), (49, 2209), (52, 2215), (59, 2239), (67, 2257), (69, 2275), (74, 2311), (82, 2347), (103, 2449), (115, 2509), (122, 2545), (133, 2605), (139, 2632), (142, 2650), (155, 2746), (165, 2815), (173, 2872), (180, 2920), (192, 3007), (196, 3031), (201, 3067), (212, 3112), (217, 3136),

Gene: Azathoth_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Azathoth_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Berka_5 Start: 2445, Stop: 3521, Start Num: 28

Candidate Starts for Berka_5:

(Start: 28 @2445 has 13 MA's), (64, 2589), (69, 2619), (70, 2625), (71, 2634), (102, 2772), (108, 2793), (117, 2856), (151, 3042), (152, 3048), (159, 3096), (164, 3141), (173, 3201), (176, 3225), (193, 3339), (195, 3351),

Gene: BigBoyz_3 Start: 1897, Stop: 3003, Start Num: 16

Candidate Starts for BigBoyz_3:

(7, 1729), (Start: 16 @1897 has 48 MA's), (57, 2053), (70, 2104), (74, 2134), (84, 2161), (102, 2257), (104, 2263), (117, 2341), (138, 2446), (165, 2644), (166, 2659), (184, 2776), (186, 2809), (187, 2824), (191, 2851), (201, 2914),

Gene: Blair_6 Start: 2549, Stop: 3709, Start Num: 16

Candidate Starts for Blair_6:

(Start: 16 @2549 has 48 MA's), (59, 2708), (62, 2717), (69, 2750), (77, 2807), (85, 2837), (91, 2861), (96, 2900), (98, 2909), (103, 2924), (118, 2999), (124, 3041), (128, 3056), (131, 3077), (132, 3080), (134, 3086), (138, 3107), (152, 3200), (165, 3293), (169, 3329), (175, 3371), (177, 3380), (200, 3536), (202, 3548), (212, 3590), (217, 3614), (227, 3674), (232, 3692),

Gene: BlueFeather_4 Start: 2400, Stop: 3476, Start Num: 28

Candidate Starts for BlueFeather_4:

(21, 2385), (Start: 28 @2400 has 13 MA's), (29, 2409), (35, 2430), (43, 2472), (48, 2490), (68, 2544), (71, 2571), (73, 2583), (76, 2604), (98, 2703), (106, 2730), (110, 2745), (113, 2769), (117, 2799), (122, 2832), (128, 2859), (131, 2880), (132, 2883), (146, 2955), (150, 2997), (162, 3075), (195, 3309), (201, 3351), (206, 3372),

Gene: CGermain_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for CGermain_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: CabbageMan_4 Start: 2437, Stop: 3570, Start Num: 27

Candidate Starts for CabbageMan_4:

(Start: 27 @2437 has 7 MA's), (35, 2470), (44, 2521), (67, 2584), (68, 2590), (71, 2617), (73, 2629), (94, 2716), (97, 2737), (100, 2749), (105, 2761), (118, 2845), (120, 2854), (121, 2860), (124, 2905), (126, 2908), (136, 2962), (149, 3052), (151, 3061), (154, 3073), (164, 3190), (165, 3196), (166, 3211), (168, 3223), (173, 3250), (177, 3280), (178, 3286), (182, 3316), (201, 3442), (206, 3463), (209, 3472), (226, 3553),

Gene: CarefulCloud_3 Start: 1864, Stop: 2898, Start Num: 28

Candidate Starts for CarefulCloud_3:

(Start: 25 @1855 has 1 MA's), (26, 1858), (Start: 28 @1864 has 13 MA's), (62, 1990), (69, 2014), (75, 2053), (96, 2164), (102, 2185), (133, 2338), (139, 2365), (156, 2479), (173, 2605), (178, 2641), (180, 2653), (185, 2686), (190, 2728), (203, 2809), (216, 2860),

Gene: CheeseDanish_6 Start: 2604, Stop: 3737, Start Num: 27

Candidate Starts for CheeseDanish_6:

(Start: 27 @2604 has 7 MA's), (35, 2637), (44, 2688), (67, 2751), (68, 2757), (71, 2784), (73, 2796), (94, 2883), (97, 2904), (100, 2916), (105, 2928), (118, 3012), (120, 3021), (121, 3027), (124, 3072), (126, 3075), (136, 3129), (149, 3219), (151, 3228), (154, 3240), (164, 3357), (166, 3378), (168, 3390),

(173, 3417), (177, 3447), (178, 3453), (182, 3483), (201, 3609), (206, 3630), (209, 3639), (226, 3720),

Gene: Chestnut_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Chestnut_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Coeur_4 Start: 2156, Stop: 3262, Start Num: 28

Candidate Starts for Coeur_4:

(Start: 28 @2156 has 13 MA's), (36, 2192), (66, 2294), (69, 2312), (70, 2318), (71, 2327), (96, 2462), (110, 2513), (112, 2534), (113, 2537), (128, 2636), (132, 2660), (161, 2843), (181, 2984), (196, 3089), (201, 3125), (202, 3128), (211, 3167),

Gene: Copper_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Copper_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Corgi_6 Start: 2604, Stop: 3737, Start Num: 27

Candidate Starts for Corgi_6:

(Start: 27 @2604 has 7 MA's), (35, 2637), (44, 2688), (67, 2751), (68, 2757), (71, 2784), (73, 2796), (94, 2883), (97, 2904), (100, 2916), (105, 2928), (118, 3012), (120, 3021), (121, 3027), (124, 3072), (126, 3075), (136, 3129), (149, 3219), (151, 3228), (154, 3240), (164, 3357), (166, 3378), (168, 3390), (173, 3417), (177, 3447), (178, 3453), (182, 3483), (201, 3609), (206, 3630), (209, 3639), (226, 3720),

Gene: Courtney3_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Courtney3_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: CyranoPS_3 Start: 1864, Stop: 2898, Start Num: 28

Candidate Starts for CyranoPS_3:

(Start: 25 @1855 has 1 MA's), (26, 1858), (Start: 28 @1864 has 13 MA's), (62, 1990), (69, 2014), (75, 2053), (96, 2164), (102, 2185), (133, 2338), (139, 2365), (156, 2479), (159, 2503), (167, 2569), (173, 2605), (178, 2641), (180, 2653), (190, 2728), (201, 2800), (216, 2860),

Gene: Decurro_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Decurro_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (56, 2697), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (118, 2997), (124, 3039), (128, 3054), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Dewayne_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Dewayne_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131,

3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Dirtfootball_4 Start: 2124, Stop: 3284, Start Num: 28

Candidate Starts for Dirtfootball_4:

(4, 1908), (5, 1917), (7, 1926), (Start: 28 @2124 has 13 MA's), (36, 2160), (41, 2181), (54, 2229), (58, 2244), (69, 2289), (70, 2295), (71, 2304), (78, 2352), (89, 2391), (96, 2436), (97, 2439), (112, 2508), (114, 2526), (131, 2616), (143, 2670), (145, 2685), (152, 2739), (159, 2787), (160, 2790), (165, 2832), (182, 2955), (196, 3048), (198, 3057), (199, 3069), (200, 3075),

Gene: ElectricPheel_7 Start: 2623, Stop: 3783, Start Num: 16

Candidate Starts for ElectricPheel_7:

(Start: 16 @2623 has 48 MA's), (59, 2782), (62, 2791), (69, 2824), (77, 2881), (85, 2911), (91, 2935), (96, 2974), (98, 2983), (103, 2998), (118, 3073), (124, 3115), (128, 3130), (131, 3151), (132, 3154), (134, 3160), (152, 3274), (169, 3403), (175, 3445), (177, 3454), (200, 3610), (202, 3622), (212, 3664), (217, 3688), (227, 3748), (232, 3766),

Gene: Elkhorn_6 Start: 2549, Stop: 3709, Start Num: 16

Candidate Starts for Elkhorn_6:

(Start: 16 @2549 has 48 MA's), (59, 2708), (62, 2717), (69, 2750), (77, 2807), (85, 2837), (91, 2861), (96, 2900), (98, 2909), (103, 2924), (118, 2999), (124, 3041), (128, 3056), (131, 3077), (132, 3080), (134, 3086), (138, 3107), (152, 3200), (165, 3293), (169, 3329), (175, 3371), (177, 3380), (200, 3536), (202, 3548), (212, 3590), (217, 3614), (227, 3674), (232, 3692),

Gene: Emperor_6 Start: 3262, Stop: 4419, Start Num: 28

Candidate Starts for Emperor_6:

(2, 3034), (6, 3055), (8, 3064), (14, 3190), (Start: 28 @3262 has 13 MA's), (29, 3271), (34, 3289), (36, 3298), (41, 3319), (69, 3427), (70, 3433), (71, 3442), (81, 3496), (103, 3598), (113, 3649), (114, 3667), (127, 3724), (129, 3739), (131, 3754), (145, 3823), (165, 3970), (179, 4072), (182, 4093), (196, 4186), (200, 4213),

Gene: EpicDab_4 Start: 2166, Stop: 3242, Start Num: 31

Candidate Starts for EpicDab_4:

(1, 1884), (15, 2109), (Start: 31 @2166 has 1 MA's), (69, 2313), (82, 2385), (87, 2406), (96, 2460), (97, 2463), (113, 2535), (114, 2553), (115, 2559), (131, 2628), (133, 2634), (148, 2724), (156, 2775), (168, 2871), (186, 2997), (190, 3024), (196, 3060), (202, 3099), (228, 3225), (229, 3228),

Gene: Eyoseyas_4 Start: 2175, Stop: 3320, Start Num: 16

Candidate Starts for Eyoseyas_4:

(Start: 16 @2175 has 48 MA's), (55, 2304), (69, 2361), (77, 2418), (80, 2427), (95, 2505), (96, 2511), (103, 2535), (110, 2562), (116, 2598), (123, 2649), (134, 2697), (138, 2718), (146, 2760), (149, 2796), (165, 2904), (169, 2940), (181, 3015), (185, 3042), (196, 3120), (200, 3147), (212, 3201), (217, 3225), (227, 3285), (232, 3303),

Gene: FirePit_4 Start: 2175, Stop: 3320, Start Num: 16

Candidate Starts for FirePit_4:

(Start: 16 @2175 has 48 MA's), (55, 2304), (69, 2361), (77, 2418), (80, 2427), (95, 2505), (96, 2511), (103, 2535), (110, 2562), (116, 2598), (123, 2649), (134, 2697), (138, 2718), (146, 2760), (149, 2796), (165, 2904), (169, 2940), (181, 3015), (185, 3042), (196, 3120), (200, 3147), (212, 3201), (217, 3225), (227, 3285), (232, 3303),

Gene: Flashwig_3 Start: 1864, Stop: 2898, Start Num: 28

Candidate Starts for Flashwig_3:

(Start: 25 @1855 has 1 MA's), (26, 1858), (Start: 28 @1864 has 13 MA's), (62, 1990), (69, 2014), (75, 2053), (96, 2164), (102, 2185), (125, 2311), (139, 2365), (156, 2479), (167, 2569), (173, 2605), (178, 2641), (180, 2653), (185, 2686), (190, 2728), (203, 2809), (216, 2860),

Gene: GMA5_4 Start: 2108, Stop: 3199, Start Num: 28

Candidate Starts for GMA5_4:

(Start: 28 @2108 has 13 MA's), (69, 2267), (79, 2330), (89, 2372), (96, 2417), (97, 2420), (102, 2438), (103, 2441), (113, 2492), (139, 2633), (159, 2771), (165, 2816), (173, 2873), (178, 2909), (196, 3032), (200, 3059), (230, 3188),

Gene: GRU3_4 Start: 2171, Stop: 3247, Start Num: 32

Candidate Starts for GRU3_4:

(Start: 28 @2153 has 13 MA's), (32, 2171), (42, 2213), (47, 2240), (69, 2309), (94, 2441), (96, 2459), (102, 2480), (159, 2813), (165, 2858), (179, 2960), (196, 3074), (200, 3101), (202, 3113), (206, 3131), (230, 3236),

Gene: Guntur_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Guntur_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: HorseRider_3 Start: 1855, Stop: 2898, Start Num: 25

Candidate Starts for HorseRider_3:

(Start: 25 @1855 has 1 MA's), (26, 1858), (Start: 28 @1864 has 13 MA's), (62, 1990), (69, 2014), (75, 2053), (96, 2164), (102, 2185), (131, 2332), (133, 2338), (139, 2365), (156, 2479), (159, 2503), (167, 2569), (173, 2605), (178, 2641), (180, 2653), (185, 2686), (190, 2728), (201, 2800), (203, 2809), (216, 2860),

Gene: Hunnie_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Hunnie_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Idaho_4 Start: 2408, Stop: 3580, Start Num: 19

Candidate Starts for Idaho_4:

(Start: 19 @2408 has 1 MA's), (35, 2453), (50, 2519), (73, 2609), (76, 2630), (77, 2639), (99, 2726), (105, 2741), (118, 2825), (126, 2888), (128, 2900), (130, 2912), (136, 2942), (149, 3032), (150, 3038), (151, 3041), (161, 3140), (163, 3155), (164, 3170), (166, 3191), (167, 3197), (173, 3230), (174, 3233), (177, 3260), (178, 3266), (181, 3284), (182, 3296), (194, 3374), (195, 3380), (200, 3413), (201, 3422), (206, 3443), (213, 3464), (215, 3473),

Gene: Inspire2_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Inspire2_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Jalloh_3 Start: 1854, Stop: 2897, Start Num: 25

Candidate Starts for Jalloh_3:

(Start: 25 @1854 has 1 MA's), (26, 1857), (Start: 28 @1863 has 13 MA's), (62, 1989), (69, 2013), (75, 2052), (96, 2163), (102, 2184), (111, 2229), (125, 2310), (133, 2337), (139, 2364), (156, 2478), (173, 2604), (178, 2640), (190, 2727), (203, 2808), (216, 2859),

Gene: Jeanie_4 Start: 2157, Stop: 3251, Start Num: 28

Candidate Starts for Jeanie_4:

(9, 1971), (11, 1992), (13, 2079), (Start: 28 @2157 has 13 MA's), (42, 2217), (53, 2256), (69, 2316), (77, 2373), (85, 2403), (96, 2472), (99, 2484), (114, 2565), (122, 2604), (132, 2655), (165, 2868), (178, 2961), (182, 2991), (196, 3084), (200, 3111), (201, 3120),

Gene: Jessica_7 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Jessica_7:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: KNG13_6 Start: 2604, Stop: 3737, Start Num: 27

Candidate Starts for KNG13_6:

(Start: 27 @2604 has 7 MA's), (35, 2637), (44, 2688), (67, 2751), (68, 2757), (71, 2784), (73, 2796), (94, 2883), (97, 2904), (100, 2916), (105, 2928), (118, 3012), (120, 3021), (121, 3027), (124, 3072), (126, 3075), (136, 3129), (149, 3219), (151, 3228), (154, 3240), (164, 3357), (166, 3378), (168, 3390), (173, 3417), (177, 3447), (178, 3453), (182, 3483), (201, 3609), (206, 3630), (209, 3639), (226, 3720),

Gene: Kels_4 Start: 2100, Stop: 3245, Start Num: 16

Candidate Starts for Kels_4:

(Start: 16 @2100 has 48 MA's), (55, 2229), (69, 2286), (77, 2343), (80, 2352), (95, 2430), (96, 2436), (103, 2460), (110, 2487), (116, 2523), (123, 2574), (134, 2622), (138, 2643), (146, 2685), (149, 2721), (165, 2829), (169, 2865), (181, 2940), (185, 2967), (196, 3045), (200, 3072), (212, 3126), (217, 3150), (227, 3210), (232, 3228),

Gene: KylieMac_7 Start: 2536, Stop: 3696, Start Num: 16

Candidate Starts for KylieMac_7:

(Start: 16 @2536 has 48 MA's), (59, 2695), (62, 2704), (69, 2737), (77, 2794), (85, 2824), (91, 2848), (96, 2887), (98, 2896), (103, 2911), (118, 2986), (124, 3028), (131, 3064), (132, 3067), (134, 3073), (138, 3094), (152, 3187), (165, 3280), (169, 3316), (175, 3358), (177, 3367), (183, 3406), (200, 3523), (202, 3535), (212, 3577), (217, 3601), (227, 3661), (232, 3679),

Gene: Laila_7 Start: 2549, Stop: 3709, Start Num: 16

Candidate Starts for Laila_7:

(Start: 16 @2549 has 48 MA's), (59, 2708), (62, 2717), (69, 2750), (77, 2807), (85, 2837), (91, 2861), (96, 2900), (98, 2909), (103, 2924), (118, 2999), (124, 3041), (128, 3056), (131, 3077), (132, 3080), (134, 3086), (138, 3107), (152, 3200), (165, 3293), (169, 3329), (175, 3371), (177, 3380), (200, 3536), (202, 3548), (212, 3590), (217, 3614), (227, 3674), (232, 3692),

Gene: LauKoruNamu_5 Start: 2437, Stop: 3570, Start Num: 27

Candidate Starts for LauKoruNamu_5:

(Start: 27 @2437 has 7 MA's), (35, 2470), (44, 2521), (67, 2584), (68, 2590), (71, 2617), (73, 2629), (94, 2716), (97, 2737), (100, 2749), (105, 2761), (118, 2845), (120, 2854), (121, 2860), (124, 2905), (126, 2908), (136, 2962), (149, 3052), (151, 3061), (154, 3073), (164, 3190), (165, 3196), (166, 3211), (168, 3223), (173, 3250), (177, 3280), (178, 3286), (182, 3316), (201, 3442), (206, 3463), (209, 3472), (226, 3553),

Gene: Link_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Link_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (56, 2697), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Lore_6 Start: 2549, Stop: 3709, Start Num: 16

Candidate Starts for Lore_6:

(Start: 16 @2549 has 48 MA's), (59, 2708), (62, 2717), (69, 2750), (77, 2807), (85, 2837), (91, 2861), (96, 2900), (98, 2909), (103, 2924), (118, 2999), (124, 3041), (128, 3056), (131, 3077), (132, 3080), (134, 3086), (138, 3107), (152, 3200), (165, 3293), (169, 3329), (175, 3371), (177, 3380), (200, 3536), (202, 3548), (212, 3590), (217, 3614), (227, 3674), (232, 3692),

Gene: LouisXIV_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for LouisXIV_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Maggie_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Maggie_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Mariposa_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Mariposa_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Massimo_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Massimo_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: McGonagall_4 Start: 2157, Stop: 3251, Start Num: 28

Candidate Starts for McGonagall_4:

(9, 1971), (11, 1992), (13, 2079), (Start: 28 @2157 has 13 MA's), (42, 2217), (53, 2256), (69, 2316), (77, 2373), (85, 2403), (96, 2472), (99, 2484), (114, 2565), (122, 2604), (132, 2655), (165, 2868), (178, 2961), (182, 2991), (196, 3084), (200, 3111), (201, 3120),

Gene: MoRicky_4 Start: 2059, Stop: 3159, Start Num: 16

Candidate Starts for MoRicky_4:

(Start: 16 @2059 has 48 MA's), (38, 2143), (47, 2182), (53, 2194), (84, 2329), (94, 2389), (96, 2407), (113, 2470), (166, 2815), (168, 2827), (170, 2839), (186, 2962), (196, 3031), (197, 3034), (199, 3055),

(201, 3070), (204, 3085),

Gene: Moloch_6 Start: 2621, Stop: 3781, Start Num: 16

Candidate Starts for Moloch_6:

(Start: 16 @2621 has 48 MA's), (40, 2711), (59, 2780), (69, 2822), (71, 2837), (72, 2846), (77, 2879), (85, 2909), (92, 2936), (96, 2972), (98, 2981), (103, 2996), (117, 3062), (124, 3113), (128, 3128), (131, 3149), (134, 3158), (139, 3182), (152, 3272), (165, 3365), (169, 3401), (172, 3413), (175, 3443), (177, 3452), (200, 3608), (212, 3662), (217, 3686), (227, 3746), (232, 3764),

Gene: MooKitty_4 Start: 2089, Stop: 3195, Start Num: 28

Candidate Starts for MooKitty_4:

(Start: 28 @2089 has 13 MA's), (45, 2170), (52, 2185), (69, 2245), (70, 2251), (71, 2260), (96, 2395), (102, 2416), (119, 2497), (143, 2620), (145, 2635), (152, 2689), (169, 2818), (173, 2839), (180, 2887), (196, 2998), (201, 3034), (207, 3061), (211, 3076), (212, 3079), (217, 3103), (225, 3145),

Gene: Muttie_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Muttie_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (56, 2697), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Nebulanyx_6 Start: 2604, Stop: 3737, Start Num: 27

Candidate Starts for Nebulanyx_6:

(Start: 27 @2604 has 7 MA's), (35, 2637), (44, 2688), (67, 2751), (68, 2757), (71, 2784), (73, 2796), (94, 2883), (97, 2904), (100, 2916), (105, 2928), (118, 3012), (120, 3021), (121, 3027), (124, 3072), (126, 3075), (136, 3129), (149, 3219), (151, 3228), (154, 3240), (157, 3285), (164, 3357), (166, 3378), (168, 3390), (173, 3417), (177, 3447), (178, 3453), (182, 3483), (201, 3609), (206, 3630), (209, 3639), (226, 3720),

Gene: Noely_4 Start: 2576, Stop: 3709, Start Num: 27

Candidate Starts for Noely_4:

(23, 2564), (Start: 27 @2576 has 7 MA's), (35, 2609), (67, 2723), (68, 2729), (73, 2768), (94, 2855), (100, 2888), (105, 2900), (118, 2984), (126, 3047), (130, 3071), (136, 3101), (137, 3107), (149, 3191), (151, 3200), (156, 3236), (164, 3329), (165, 3335), (166, 3350), (168, 3362), (173, 3389), (174, 3392), (176, 3413), (177, 3419), (178, 3425), (182, 3455), (183, 3458), (201, 3581), (206, 3602), (209, 3611),

Gene: Pauu_5 Start: 2437, Stop: 3570, Start Num: 27

Candidate Starts for Pauu_5:

(Start: 27 @2437 has 7 MA's), (35, 2470), (44, 2521), (67, 2584), (68, 2590), (71, 2617), (73, 2629), (94, 2716), (97, 2737), (100, 2749), (105, 2761), (118, 2845), (120, 2854), (121, 2860), (124, 2905), (126, 2908), (136, 2962), (149, 3052), (151, 3061), (154, 3073), (164, 3190), (165, 3196), (166, 3211), (168, 3223), (173, 3250), (177, 3280), (178, 3286), (182, 3316), (201, 3442), (206, 3463), (209, 3472), (226, 3553),

Gene: Penoan_5 Start: 2899, Stop: 4056, Start Num: 17

Candidate Starts for Penoan_5:

(17, 2899), (20, 2905), (51, 3013), (65, 3055), (67, 3064), (76, 3130), (87, 3178), (90, 3190), (124, 3388), (129, 3409), (131, 3424), (147, 3499), (158, 3583), (169, 3676), (176, 3721), (178, 3733), (179, 3742), (185, 3778), (186, 3793), (200, 3883), (201, 3892), (227, 4021),

Gene: PensacolaC28_2 Start: 1645, Stop: 2775, Start Num: 16

Candidate Starts for PensacolaC28_2:

(Start: 16 @1645 has 48 MA's), (38, 1732), (63, 1819), (84, 1921), (85, 1933), (117, 2092), (166, 2425), (167, 2431), (171, 2452), (181, 2518), (184, 2542), (186, 2575), (196, 2647), (201, 2686),

Gene: Piku_2 Start: 2066, Stop: 3196, Start Num: 18

Candidate Starts for Piku_2:

(Start: 18 @2066 has 4 MA's), (61, 2201), (132, 2576), (136, 2594), (138, 2606), (140, 2615), (144, 2642), (153, 2702), (173, 2855), (180, 2903), (182, 2921), (188, 2966), (199, 3032), (204, 3062), (206, 3068), (210, 3086), (214, 3098),

Gene: Prospero_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Prospero_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: RRH1_04 Start: 2471, Stop: 3589, Start Num: 28

Candidate Starts for RRH1_04:

(Start: 28 @2471 has 13 MA's), (54, 2582), (69, 2639), (71, 2654), (96, 2789), (97, 2792), (113, 2864), (131, 2975), (152, 3098), (156, 3122), (191, 3380), (200, 3434), (208, 3476), (222, 3533),

Gene: Rahul_4 Start: 2153, Stop: 3259, Start Num: 28

Candidate Starts for Rahul_4:

(Start: 28 @2153 has 13 MA's), (66, 2291), (69, 2309), (70, 2315), (71, 2324), (96, 2459), (110, 2510), (112, 2531), (113, 2534), (128, 2633), (132, 2657), (156, 2801), (161, 2840), (181, 2981), (196, 3086), (201, 3122), (202, 3125), (211, 3164), (231, 3251),

Gene: Ronnie_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Ronnie_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Root_5 Start: 2938, Stop: 4086, Start Num: 24

Candidate Starts for Root_5:

(10, 2782), (Start: 24 @2938 has 1 MA's), (30, 2962), (67, 3103), (68, 3109), (76, 3169), (83, 3193), (90, 3229), (101, 3289), (131, 3454), (141, 3502), (156, 3598), (158, 3613), (159, 3622), (173, 3727), (178, 3763), (183, 3796), (186, 3823), (187, 3838), (189, 3844), (200, 3913), (201, 3922), (220, 4000), (227, 4051),

Gene: SallySpecial_4 Start: 2127, Stop: 3287, Start Num: 28

Candidate Starts for SallySpecial_4:

(Start: 28 @2127 has 13 MA's), (36, 2163), (41, 2184), (54, 2232), (58, 2247), (69, 2292), (70, 2298), (71, 2307), (78, 2355), (89, 2394), (96, 2439), (97, 2442), (112, 2511), (114, 2529), (131, 2619), (143, 2673), (145, 2688), (152, 2742), (159, 2790), (160, 2793), (165, 2835), (182, 2958), (196, 3051), (198, 3060), (199, 3072), (200, 3078),

Gene: Sandman_6 Start: 2621, Stop: 3781, Start Num: 16

Candidate Starts for Sandman_6:

(Start: 16 @2621 has 48 MA's), (40, 2711), (59, 2780), (69, 2822), (71, 2837), (72, 2846), (77, 2879), (85, 2909), (92, 2936), (96, 2972), (98, 2981), (103, 2996), (117, 3062), (124, 3113), (128, 3128), (131, 3149), (134, 3158), (139, 3182), (152, 3272), (165, 3365), (169, 3401), (172, 3413), (175, 3443), (177,

3452), (200, 3608), (212, 3662), (217, 3686), (227, 3746), (232, 3764),

Gene: Saphira_6 Start: 2549, Stop: 3709, Start Num: 16

Candidate Starts for Saphira_6:

(Start: 16 @2549 has 48 MA's), (59, 2708), (62, 2717), (69, 2750), (77, 2807), (85, 2837), (91, 2861), (96, 2900), (98, 2909), (103, 2924), (118, 2999), (124, 3041), (131, 3077), (132, 3080), (134, 3086), (138, 3107), (152, 3200), (165, 3293), (169, 3329), (175, 3371), (177, 3380), (200, 3536), (202, 3548), (212, 3590), (217, 3614), (227, 3674), (232, 3692),

Gene: Schiebs_4 Start: 2041, Stop: 3084, Start Num: 28

Candidate Starts for Schiebs_4:

(3, 1825), (Start: 28 @2041 has 13 MA's), (32, 2059), (37, 2086), (69, 2188), (70, 2194), (71, 2203), (77, 2245), (80, 2254), (86, 2278), (94, 2320), (96, 2338), (102, 2359), (107, 2380), (113, 2413), (114, 2431), (118, 2452), (122, 2470), (136, 2524), (156, 2653), (161, 2692), (165, 2722), (182, 2845), (186, 2875), (192, 2914), (196, 2938), (198, 2947), (200, 2965), (201, 2974), (202, 2977), (218, 3043), (219, 3049), (224, 3073),

Gene: SerialPhiller_4 Start: 2175, Stop: 3320, Start Num: 16

Candidate Starts for SerialPhiller_4:

(Start: 16 @2175 has 48 MA's), (55, 2304), (69, 2361), (77, 2418), (80, 2427), (95, 2505), (96, 2511), (103, 2535), (110, 2562), (116, 2598), (123, 2649), (134, 2697), (138, 2718), (146, 2760), (149, 2796), (165, 2904), (169, 2940), (181, 3015), (185, 3042), (196, 3120), (200, 3147), (212, 3201), (217, 3225), (227, 3285), (232, 3303),

Gene: Seume_6 Start: 2343, Stop: 3503, Start Num: 16

Candidate Starts for Seume_6:

(Start: 16 @2343 has 48 MA's), (40, 2433), (56, 2493), (59, 2502), (69, 2544), (71, 2559), (72, 2568), (77, 2601), (85, 2631), (92, 2658), (96, 2694), (98, 2703), (103, 2718), (117, 2784), (118, 2793), (124, 2835), (128, 2850), (131, 2871), (134, 2880), (139, 2904), (152, 2994), (165, 3087), (169, 3123), (172, 3135), (175, 3165), (177, 3174), (200, 3330), (212, 3384), (217, 3408), (227, 3468), (232, 3486),

Gene: Smilerella_4 Start: 2059, Stop: 3159, Start Num: 16

Candidate Starts for Smilerella_4:

(Start: 16 @2059 has 48 MA's), (38, 2143), (47, 2182), (53, 2194), (84, 2329), (94, 2389), (96, 2407), (113, 2470), (166, 2815), (168, 2827), (170, 2839), (186, 2962), (196, 3031), (197, 3034), (199, 3055), (201, 3070), (204, 3085),

Gene: Sourignavong_7 Start: 2648, Stop: 3808, Start Num: 16

Candidate Starts for Sourignavong_7:

(Start: 16 @2648 has 48 MA's), (40, 2738), (56, 2798), (59, 2807), (69, 2849), (71, 2864), (72, 2873), (77, 2906), (85, 2936), (92, 2963), (96, 2999), (98, 3008), (103, 3023), (117, 3089), (118, 3098), (124, 3140), (128, 3155), (131, 3176), (134, 3185), (139, 3209), (152, 3299), (165, 3392), (169, 3428), (172, 3440), (175, 3470), (177, 3479), (200, 3635), (212, 3689), (217, 3713), (227, 3773), (232, 3791),

Gene: Sputnik_4 Start: 2128, Stop: 3240, Start Num: 28

Candidate Starts for Sputnik_4:

(Start: 28 @2128 has 13 MA's), (39, 2170), (49, 2209), (52, 2215), (59, 2239), (67, 2257), (69, 2275), (74, 2311), (82, 2347), (103, 2449), (115, 2509), (122, 2545), (133, 2605), (139, 2632), (142, 2650), (155, 2746), (165, 2815), (173, 2872), (180, 2920), (192, 3007), (196, 3031), (201, 3067), (212, 3112), (217, 3136),

Gene: StewieGriff_6 Start: 2549, Stop: 3709, Start Num: 16

Candidate Starts for StewieGriff_6:

(Start: 16 @2549 has 48 MA's), (59, 2708), (62, 2717), (69, 2750), (77, 2807), (85, 2837), (91, 2861), (96, 2900), (98, 2909), (103, 2924), (118, 2999), (124, 3041), (128, 3056), (131, 3077), (132, 3080), (134, 3086), (138, 3107), (152, 3200), (165, 3293), (169, 3329), (175, 3371), (177, 3380), (200, 3536), (202, 3548), (212, 3590), (217, 3614), (227, 3674), (232, 3692),

Gene: Stratus_6 Start: 2621, Stop: 3781, Start Num: 16

Candidate Starts for Stratus_6:

(Start: 16 @2621 has 48 MA's), (40, 2711), (59, 2780), (69, 2822), (71, 2837), (72, 2846), (77, 2879), (85, 2909), (92, 2936), (96, 2972), (98, 2981), (103, 2996), (117, 3062), (124, 3113), (128, 3128), (131, 3149), (134, 3158), (139, 3182), (152, 3272), (165, 3365), (169, 3401), (172, 3413), (175, 3443), (177, 3452), (200, 3608), (212, 3662), (217, 3686), (227, 3746), (232, 3764),

Gene: StrawberryLem_4 Start: 2100, Stop: 3245, Start Num: 16

Candidate Starts for StrawberryLem_4:

(Start: 16 @2100 has 48 MA's), (55, 2229), (69, 2286), (77, 2343), (80, 2352), (95, 2430), (96, 2436), (103, 2460), (110, 2487), (116, 2523), (123, 2574), (134, 2622), (138, 2643), (146, 2685), (149, 2721), (165, 2829), (169, 2865), (181, 2940), (185, 2967), (196, 3045), (200, 3072), (212, 3126), (217, 3150), (227, 3210), (232, 3228),

Gene: Swenson_6 Start: 2672, Stop: 3832, Start Num: 16

Candidate Starts for Swenson_6:

(Start: 16 @2672 has 48 MA's), (59, 2831), (62, 2840), (69, 2873), (77, 2930), (85, 2960), (91, 2984), (96, 3023), (98, 3032), (103, 3047), (118, 3122), (124, 3164), (131, 3200), (132, 3203), (134, 3209), (138, 3230), (152, 3323), (165, 3416), (169, 3452), (175, 3494), (177, 3503), (200, 3659), (202, 3671), (212, 3713), (217, 3737), (227, 3797), (232, 3815),

Gene: TailX7_3 Start: 1855, Stop: 2898, Start Num: 25

Candidate Starts for TailX7_3:

(Start: 25 @1855 has 1 MA's), (26, 1858), (Start: 28 @1864 has 13 MA's), (62, 1990), (69, 2014), (75, 2053), (88, 2113), (96, 2164), (102, 2185), (133, 2338), (139, 2365), (156, 2479), (167, 2569), (173, 2605), (178, 2641), (180, 2653), (185, 2686), (190, 2728), (203, 2809), (216, 2860),

Gene: Taj14_6 Start: 2528, Stop: 3688, Start Num: 16

Candidate Starts for Taj14_6:

(Start: 16 @2528 has 48 MA's), (59, 2687), (62, 2696), (69, 2729), (77, 2786), (85, 2816), (91, 2840), (96, 2879), (98, 2888), (103, 2903), (124, 3020), (131, 3056), (134, 3065), (138, 3086), (152, 3179), (165, 3272), (169, 3308), (175, 3350), (177, 3359), (200, 3515), (202, 3527), (212, 3569), (217, 3593), (227, 3653), (232, 3671),

Gene: TinoCrisci_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for TinoCrisci_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Toulouse_5 Start: 2343, Stop: 3503, Start Num: 16

Candidate Starts for Toulouse_5:

(Start: 16 @2343 has 48 MA's), (40, 2433), (56, 2493), (59, 2502), (69, 2544), (71, 2559), (72, 2568), (77, 2601), (85, 2631), (92, 2658), (96, 2694), (98, 2703), (103, 2718), (117, 2784), (118, 2793), (124, 2835), (128, 2850), (131, 2871), (134, 2880), (139, 2904), (152, 2994), (165, 3087), (169, 3123), (172, 3135), (175, 3165), (177, 3174), (200, 3330), (212, 3384), (217, 3408), (227, 3468), (232, 3486),

Gene: TymAbreu_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for TymAbreu_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (124, 3039), (128, 3054), (131, 3075), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (172, 3339), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Utopia_2 Start: 2063, Stop: 3193, Start Num: 18

Candidate Starts for Utopia_2:

(Start: 18 @2063 has 4 MA's), (46, 2156), (61, 2198), (78, 2285), (136, 2591), (138, 2603), (140, 2612), (144, 2639), (150, 2687), (153, 2699), (173, 2852), (180, 2900), (182, 2918), (188, 2963), (195, 3002), (199, 3029), (201, 3044), (204, 3059), (206, 3065), (214, 3095),

Gene: Vinye_6 Start: 2541, Stop: 3701, Start Num: 16

Candidate Starts for Vinye_6:

(Start: 16 @2541 has 48 MA's), (22, 2559), (62, 2709), (69, 2742), (71, 2757), (77, 2799), (80, 2808), (85, 2829), (92, 2856), (95, 2886), (96, 2892), (98, 2901), (103, 2916), (118, 2991), (129, 3054), (131, 3069), (134, 3078), (138, 3099), (142, 3120), (143, 3123), (149, 3177), (165, 3285), (169, 3321), (175, 3363), (183, 3411), (200, 3528), (217, 3606), (221, 3621), (227, 3666), (232, 3684),

Gene: Whytu_2 Start: 2029, Stop: 3159, Start Num: 18

Candidate Starts for Whytu_2:

(Start: 18 @2029 has 4 MA's), (46, 2122), (61, 2164), (78, 2251), (132, 2539), (135, 2554), (136, 2557), (138, 2569), (140, 2578), (144, 2605), (150, 2653), (153, 2665), (173, 2818), (180, 2866), (182, 2884), (199, 2995), (204, 3025), (206, 3031), (210, 3049), (214, 3061),

Gene: WorldChangers_2 Start: 1995, Stop: 3206, Start Num: 12

Candidate Starts for WorldChangers_2:

(12, 1995), (Start: 27 @2094 has 7 MA's), (33, 2124), (35, 2127), (60, 2217), (67, 2232), (68, 2238), (69, 2250), (76, 2298), (99, 2385), (105, 2400), (118, 2484), (121, 2499), (136, 2601), (144, 2649), (149, 2691), (150, 2697), (151, 2700), (163, 2814), (164, 2829), (169, 2871), (173, 2889), (174, 2892), (177, 2919), (178, 2925), (182, 2955), (183, 2958), (194, 3033), (200, 3072), (201, 3081), (205, 3099), (206, 3102),

Gene: Ximeno_4 Start: 2175, Stop: 3320, Start Num: 16

Candidate Starts for Ximeno_4:

(Start: 16 @2175 has 48 MA's), (55, 2304), (69, 2361), (77, 2418), (80, 2427), (95, 2505), (96, 2511), (103, 2535), (110, 2562), (116, 2598), (123, 2649), (134, 2697), (138, 2718), (146, 2760), (149, 2796), (165, 2904), (169, 2940), (181, 3015), (185, 3042), (196, 3120), (200, 3147), (212, 3201), (217, 3225), (227, 3285), (232, 3303),

Gene: Yank_6 Start: 2547, Stop: 3707, Start Num: 16

Candidate Starts for Yank_6:

(Start: 16 @2547 has 48 MA's), (40, 2637), (56, 2697), (59, 2706), (69, 2748), (71, 2763), (72, 2772), (77, 2805), (85, 2835), (92, 2862), (96, 2898), (98, 2907), (103, 2922), (117, 2988), (118, 2997), (124, 3039), (128, 3054), (134, 3084), (139, 3108), (152, 3198), (165, 3291), (169, 3327), (175, 3369), (177, 3378), (200, 3534), (212, 3588), (217, 3612), (227, 3672), (232, 3690),

Gene: Yavru_2 Start: 2070, Stop: 3203, Start Num: 18

Candidate Starts for Yavru_2:

(Start: 18 @2070 has 4 MA's), (46, 2163), (61, 2205), (78, 2292), (136, 2598), (138, 2610), (140, 2619), (150, 2694), (153, 2706), (173, 2859), (180, 2907), (182, 2925), (206, 3072), (210, 3090), (214, 3102),