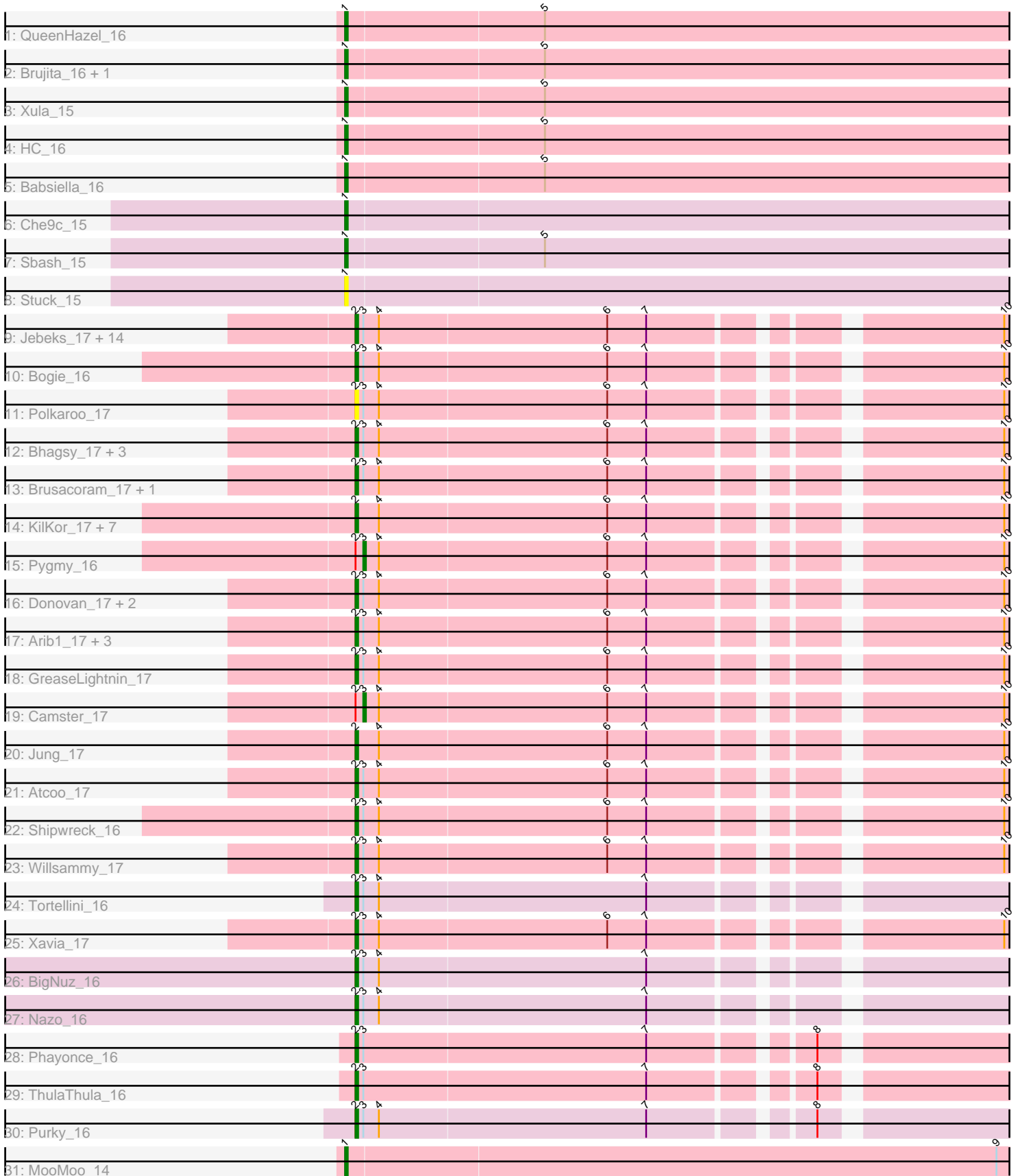


Zoomed Pham 224585



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 224585 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224585 has 62 members, 6 are drafts.

Phages represented in each track:

- Track 1 : QueenHazel_16
- Track 2 : Brujita_16, Island3_16
- Track 3 : Xula_15
- Track 4 : HC_16
- Track 5 : Babsiella_16
- Track 6 : Che9c_15
- Track 7 : Sbash_15
- Track 8 : Stuck_15
- Track 9 : Jebeks_17, HUHilltop_17, Dynamo_17, Fishburne_17, Langerak_17, Zilizebeth_17, Necropolis_17, StevieRay_17, Phineas_17, Vidya_17, Etoile_17, Kari_17, FirstPlacePfu_17, Venti_17, Bartholomew_17
- Track 10 : Bogie_16
- Track 11 : Polkaroo_17
- Track 12 : Bhagsy_17, Juniormint_17, Bunnies_17, Ksquared_17
- Track 13 : Brusacoram_17, Thespis_17
- Track 14 : KilKor_17, Phalm_17, Gavriela_17, StressBall_17, CactusJack_17, Malithi_17, Glaske_17, Megiddo_17
- Track 15 : Pygmy_16
- Track 16 : Donovan_17, Techage_17, Sonah_17
- Track 17 : Arib1_17, Mangethe_17, Majeke_17, Phegasus_17
- Track 18 : GreaseLightnin_17
- Track 19 : Camster_17
- Track 20 : Jung_17
- Track 21 : Atcoo_17
- Track 22 : Shipwreck_16
- Track 23 : Willsammy_17
- Track 24 : Tortellini_16
- Track 25 : Xavia_17
- Track 26 : BigNuz_16
- Track 27 : Nazo_16
- Track 28 : Phayonce_16
- Track 29 : ThulaThula_16
- Track 30 : Purky_16
- Track 31 : MooMoo_14

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

The start number called the most often in the published annotations is 2, it was called in 45 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arib1_17, Atcoo_17, Bartholomew_17, Bhagsy_17, BigNuz_16, Bogie_16, Brusacoram_17, Bunnies_17, CactusJack_17, Donovan_17, Dynamo_17, Etoile_17, FirstPlacePfu_17, Fishburne_17, Gavriela_17, Glaske_17, GreaseLightnin_17, HUHilltop_17, Jebeks_17, Jung_17, Juniormint_17, Kari_17, KilKor_17, Ksquared_17, Langerak_17, Majeke_17, Malithi_17, Mangethe_17, Megiddo_17, Nazo_16, Necropolis_17, Phalm_17, Phayonce_16, Pegasus_17, Phineas_17, Polkaroo_17, Purky_16, Shipwreck_16, Sonah_17, StevieRay_17, StressBall_17, Techage_17, Thespis_17, ThulaThula_16, Tortellini_16, Venti_17, Vidya_17, Willsammy_17, Xavia_17, Zilizebeth_17,

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

- Camster_17, Pygmy_16,

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

- Babsiella_16, Brujita_16, Che9c_15, HC_16, Island3_16, MooMoo_14, QueenHazel_16, Sbash_15, Stuck_15, Xula_15,

Summary by start number:

Start 1:

- Found in 10 of 62 (16.1%) of genes in pham
- Manual Annotations of this start: 9 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Babsiella_16 (I1), Brujita_16 (I1), Che9c_15 (I2), HC_16 (I1), Island3_16 (I1), MooMoo_14 (singleton), QueenHazel_16 (I1), Sbash_15 (I2), Stuck_15 (I2), Xula_15 (I1),

Start 2:

- Found in 52 of 62 (83.9%) of genes in pham
- Manual Annotations of this start: 45 of 56
- Called 96.2% of time when present
- Phage (with cluster) where this start called: Arib1_17 (P1), Atcoo_17 (P1), Bartholomew_17 (P1), Bhagsy_17 (P1), BigNuz_16 (P4), Bogie_16 (P1), Brusacoram_17 (P1), Bunnies_17 (P1), CactusJack_17 (P1), Donovan_17 (P1), Dynamo_17 (P1), Etoile_17 (P1), FirstPlacePfu_17 (P1), Fishburne_17 (P1), Gavriela_17 (P1), Glaske_17 (P1), GreaseLightnin_17 (P1), HUHilltop_17 (P1), Jebeks_17 (P1), Jung_17 (P1), Juniormint_17 (P1), Kari_17 (P1), KilKor_17 (P1), Ksquared_17 (P1), Langerak_17 (P1), Majeke_17 (P1), Malithi_17 (P1), Mangethe_17 (P1), Megiddo_17 (P1), Nazo_16 (P4), Necropolis_17 (P1), Phalm_17 (P1), Phayonce_16 (P5), Pegasus_17 (P1), Phineas_17 (P1), Polkaroo_17 (P1), Purky_16 (P6), Shipwreck_16 (P1), Sonah_17 (P1), StevieRay_17 (P1), StressBall_17 (P1), Techage_17 (P1), Thespis_17 (P1), ThulaThula_16 (P5), Tortellini_16 (P2), Venti_17 (P1), Vidya_17 (P1), Willsammy_17 (P1), Xavia_17 (P3), Zilizebeth_17 (P1),

Start 3:

- Found in 43 of 62 (69.4%) of genes in pham
- Manual Annotations of this start: 2 of 56
- Called 4.7% of time when present
- Phage (with cluster) where this start called: Camster_17 (P1), Pygmy_16 (P1),

Summary by clusters:

There are 9 clusters represented in this pham: P2, P3, singleton, P1, P6, P4, P5, I1, I2,

Info for manual annotations of cluster I1:

- Start number 1 was manually annotated 6 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 1 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster P1:

- Start number 2 was manually annotated 38 times for cluster P1.
- Start number 3 was manually annotated 2 times for cluster P1.

Info for manual annotations of cluster P2:

- Start number 2 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 2 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster P4:

- Start number 2 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 2 was manually annotated 2 times for cluster P5.

Info for manual annotations of cluster P6:

- Start number 2 was manually annotated 1 time for cluster P6.

Gene Information:

Gene: Arib1_17 Start: 10864, Stop: 14649, Start Num: 2

Candidate Starts for Arib1_17:

(Start: 2 @10864 has 45 MA's), (Start: 3 @10867 has 2 MA's), (4, 10873), (6, 10960), (7, 10975), (10, 11092), (14, 11221), (16, 11263), (26, 11473), (27, 11530), (33, 11626), (45, 11842), (51, 11992), (52, 12046), (53, 12079), (55, 12130), (58, 12187), (62, 12358), (63, 12382), (66, 12436), (69, 12442), (75, 12508), (90, 12751), (92, 12778), (95, 12820), (98, 12862), (101, 12895), (106, 12967), (108, 12982), (109, 13021), (110, 13054), (116, 13162), (120, 13228), (125, 13324), (139, 13474), (142, 13495), (151, 13636), (153, 13687), (154, 13693), (156, 13717), (157, 13720), (172, 13867), (175, 13897), (188, 14074), (195, 14233), (198, 14278), (200, 14335), (204, 14392), (205, 14404), (208, 14551), (209, 14584),

Gene: Atcoo_17 Start: 10877, Stop: 14518, Start Num: 2

Candidate Starts for Atcoo_17:

(Start: 2 @10877 has 45 MA's), (Start: 3 @10880 has 2 MA's), (4, 10886), (6, 10973), (7, 10988), (10, 11105), (14, 11234), (16, 11276), (26, 11486), (33, 11639), (45, 11855), (51, 12005), (52, 12059), (55, 12143), (58, 12200), (62, 12371), (63, 12395), (66, 12449), (69, 12455), (90, 12767), (92, 12791), (95, 12833), (98, 12875), (101, 12908), (108, 12995), (109, 13034), (110, 13067), (111, 13118), (116, 13175), (120, 13241), (124, 13325), (125, 13328), (133, 13376), (134, 13379), (136, 13409), (138, 13436), (150, 13583), (152, 13607), (153, 13637), (155, 13661), (179, 13844), (184, 13913), (188, 13943), (193, 14075), (195, 14102), (198, 14147), (204, 14261), (205, 14273), (208, 14420), (209, 14453),

Gene: Babsiella_16 Start: 10772, Stop: 14539, Start Num: 1

Candidate Starts for Babsiella_16:

(Start: 1 @10772 has 9 MA's), (5, 10847), (13, 11105), (20, 11327), (21, 11330), (22, 11342), (24, 11384), (25, 11408), (27, 11486), (35, 11600), (36, 11636), (46, 11819), (49, 11885), (51, 11948), (52, 12002), (53, 12035), (57, 12134), (64, 12341), (73, 12473), (79, 12512), (80, 12524), (81, 12605), (83, 12719), (90, 12758), (95, 12812), (96, 12833), (97, 12836), (99, 12875), (103, 12923), (104, 12938), (105, 12944), (108, 12974), (109, 13013), (110, 13046), (114, 13121), (119, 13214), (121, 13238), (122, 13256), (130, 13331), (135, 13355), (144, 13484), (146, 13505), (158, 13646), (161, 13670), (163, 13688), (164, 13697), (185, 13937), (189, 14012), (192, 14111), (193, 14123), (197, 14180), (199, 14240), (201, 14252), (207, 14375), (210, 14495), (211, 14531),

Gene: Bartholomew_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for Bartholomew_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: Bhagsy_17 Start: 10880, Stop: 14650, Start Num: 2

Candidate Starts for Bhagsy_17:

(Start: 2 @10880 has 45 MA's), (Start: 3 @10883 has 2 MA's), (4, 10889), (6, 10976), (7, 10991), (10, 11108), (14, 11237), (16, 11279), (26, 11489), (33, 11642), (45, 11858), (51, 12008), (52, 12062), (55, 12146), (58, 12203), (63, 12398), (66, 12452), (69, 12458), (90, 12770), (92, 12797), (95, 12839), (98, 12881), (101, 12914), (106, 12986), (108, 13001), (109, 13040), (110, 13073), (111, 13124), (116, 13181), (120, 13247), (139, 13493), (142, 13514), (151, 13655), (153, 13706), (154, 13712), (156, 13736), (157, 13739), (172, 13886), (175, 13916), (188, 14075), (195, 14234), (198, 14279), (204, 14393), (205, 14405), (208, 14552), (209, 14585),

Gene: BigNuz_16 Start: 10599, Stop: 14387, Start Num: 2

Candidate Starts for BigNuz_16:

(Start: 2 @10599 has 45 MA's), (Start: 3 @10602 has 2 MA's), (4, 10608), (7, 10710), (14, 10956), (16, 10998), (26, 11208), (34, 11370), (45, 11577), (51, 11727), (90, 12480), (95, 12543), (98, 12585), (101, 12618), (109, 12744), (110, 12777), (127, 13071), (136, 13143), (146, 13287), (149, 13329), (159, 13464), (165, 13518), (186, 13755), (188, 13815), (193, 13947), (200, 14076), (202, 14088), (205, 14145), (208, 14289), (209, 14322),

Gene: Bogie_16 Start: 10596, Stop: 14366, Start Num: 2

Candidate Starts for Bogie_16:

(Start: 2 @10596 has 45 MA's), (Start: 3 @10599 has 2 MA's), (4, 10605), (6, 10692), (7, 10707), (10, 10824), (14, 10953), (16, 10995), (26, 11205), (33, 11358), (51, 11724), (52, 11778), (55, 11862), (58, 11919), (62, 12090), (63, 12114), (66, 12168), (69, 12174), (75, 12243), (90, 12486), (92, 12513), (95,

12555), (98, 12597), (101, 12630), (106, 12702), (108, 12717), (109, 12756), (110, 12789), (116, 12897), (120, 12963), (125, 13059), (139, 13209), (142, 13230), (151, 13371), (153, 13422), (154, 13428), (156, 13452), (157, 13455), (172, 13602), (175, 13632), (188, 13791), (195, 13950), (198, 13995), (204, 14109), (205, 14121), (208, 14268), (209, 14301),

Gene: Brujita_16 Start: 10774, Stop: 14604, Start Num: 1

Candidate Starts for Brujita_16:

(Start: 1 @10774 has 9 MA's), (5, 10849), (13, 11107), (20, 11329), (21, 11332), (22, 11344), (24, 11386), (25, 11410), (26, 11431), (27, 11488), (35, 11602), (36, 11638), (46, 11821), (49, 11887), (51, 11950), (52, 12004), (53, 12037), (57, 12136), (64, 12343), (73, 12475), (79, 12514), (80, 12526), (81, 12607), (83, 12721), (85, 12742), (90, 12766), (95, 12820), (96, 12841), (97, 12844), (99, 12883), (103, 12931), (104, 12946), (105, 12952), (108, 12982), (109, 13021), (110, 13054), (114, 13129), (119, 13222), (121, 13246), (146, 13537), (150, 13582), (164, 13741), (168, 13780), (169, 13804), (170, 13810), (171, 13816), (176, 13849), (180, 13927), (181, 13930), (182, 13945), (183, 13960), (189, 14077), (192, 14176), (193, 14188), (195, 14212), (196, 14215), (197, 14245), (199, 14305), (201, 14317), (207, 14440), (210, 14560), (211, 14596),

Gene: Brusacoram_17 Start: 10876, Stop: 14643, Start Num: 2

Candidate Starts for Brusacoram_17:

(Start: 2 @10876 has 45 MA's), (Start: 3 @10879 has 2 MA's), (4, 10885), (6, 10972), (7, 10987), (10, 11104), (14, 11233), (16, 11275), (26, 11485), (33, 11638), (45, 11854), (51, 12004), (52, 12058), (55, 12142), (58, 12199), (62, 12370), (63, 12394), (66, 12448), (69, 12454), (90, 12766), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: Bunnies_17 Start: 10889, Stop: 14665, Start Num: 2

Candidate Starts for Bunnies_17:

(Start: 2 @10889 has 45 MA's), (Start: 3 @10892 has 2 MA's), (4, 10898), (6, 10985), (7, 11000), (10, 11117), (14, 11246), (16, 11288), (26, 11498), (33, 11651), (45, 11867), (51, 12017), (52, 12071), (55, 12155), (58, 12212), (63, 12407), (66, 12461), (69, 12467), (90, 12788), (92, 12812), (95, 12854), (98, 12896), (101, 12929), (106, 13001), (108, 13016), (109, 13055), (110, 13088), (111, 13139), (116, 13196), (120, 13262), (139, 13508), (142, 13529), (151, 13670), (153, 13721), (154, 13727), (156, 13751), (157, 13754), (172, 13901), (175, 13931), (188, 14090), (195, 14249), (198, 14294), (204, 14408), (205, 14420), (208, 14567), (209, 14600),

Gene: CactusJack_17 Start: 10881, Stop: 14531, Start Num: 2

Candidate Starts for CactusJack_17:

(Start: 2 @10881 has 45 MA's), (4, 10890), (6, 10977), (7, 10992), (10, 11109), (14, 11238), (16, 11280), (26, 11490), (33, 11643), (45, 11859), (51, 12009), (52, 12063), (53, 12096), (55, 12147), (58, 12204), (62, 12375), (63, 12399), (66, 12453), (69, 12459), (90, 12771), (92, 12795), (95, 12837), (98, 12879), (101, 12912), (108, 12999), (109, 13038), (110, 13071), (111, 13122), (116, 13179), (120, 13245), (125, 13332), (129, 13359), (133, 13386), (134, 13389), (136, 13419), (138, 13446), (150, 13593), (152, 13617), (153, 13647), (155, 13671), (179, 13854), (184, 13923), (188, 13956), (195, 14115), (198, 14160), (204, 14274), (205, 14286), (208, 14433), (209, 14466),

Gene: Camster_17 Start: 10877, Stop: 14644, Start Num: 3

Candidate Starts for Camster_17:

(Start: 2 @10874 has 45 MA's), (Start: 3 @10877 has 2 MA's), (4, 10883), (6, 10970), (7, 10985), (10, 11102), (14, 11231), (16, 11273), (26, 11483), (33, 11636), (34, 11645), (45, 11852), (51, 12002), (52, 12056), (53, 12089), (55, 12140), (58, 12197), (62, 12368), (63, 12392), (66, 12446), (69, 12452), (90, 12764), (92, 12791), (95, 12833), (98, 12875), (101, 12908), (106, 12980), (108, 12995), (109, 13034),

(110, 13067), (116, 13175), (120, 13241), (125, 13337), (139, 13487), (142, 13508), (151, 13649), (153, 13700), (154, 13706), (156, 13730), (157, 13733), (172, 13880), (175, 13910), (188, 14069), (195, 14228), (198, 14273), (204, 14387), (205, 14399), (208, 14546), (209, 14579),

Gene: Che9c_15 Start: 10303, Stop: 13944, Start Num: 1

Candidate Starts for Che9c_15:

(Start: 1 @10303 has 9 MA's), (12, 10627), (18, 10843), (19, 10858), (20, 10873), (21, 10876), (22, 10888), (24, 10930), (25, 10954), (26, 10975), (35, 11146), (37, 11194), (39, 11209), (41, 11242), (49, 11431), (52, 11548), (53, 11581), (57, 11680), (81, 12118), (90, 12265), (91, 12271), (95, 12322), (96, 12343), (99, 12385), (105, 12454), (108, 12484), (109, 12523), (110, 12556), (114, 12631), (148, 13057), (150, 13078), (167, 13255), (188, 13408), (190, 13456), (191, 13504), (192, 13519), (193, 13531), (196, 13558), (201, 13660),

Gene: Donovan_17 Start: 10865, Stop: 14632, Start Num: 2

Candidate Starts for Donovan_17:

(Start: 2 @10865 has 45 MA's), (Start: 3 @10868 has 2 MA's), (4, 10874), (6, 10961), (7, 10976), (10, 11093), (14, 11222), (16, 11264), (20, 11372), (26, 11474), (27, 11531), (33, 11627), (45, 11843), (51, 11993), (52, 12047), (53, 12080), (55, 12131), (62, 12359), (66, 12437), (69, 12443), (75, 12509), (90, 12752), (92, 12779), (95, 12821), (98, 12863), (101, 12896), (106, 12968), (108, 12983), (109, 13022), (110, 13055), (116, 13163), (120, 13229), (125, 13325), (139, 13475), (142, 13496), (151, 13637), (153, 13688), (154, 13694), (156, 13718), (157, 13721), (172, 13868), (175, 13898), (188, 14057), (195, 14216), (198, 14261), (204, 14375), (205, 14387), (208, 14534), (209, 14567),

Gene: Dynamo_17 Start: 10873, Stop: 14652, Start Num: 2

Candidate Starts for Dynamo_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12529), (90, 12772), (92, 12799), (95, 12841), (98, 12883), (101, 12916), (106, 12988), (108, 13003), (109, 13042), (110, 13075), (116, 13183), (120, 13249), (125, 13345), (139, 13495), (142, 13516), (151, 13657), (153, 13708), (154, 13714), (156, 13738), (157, 13741), (172, 13888), (175, 13918), (188, 14077), (195, 14236), (198, 14281), (204, 14395), (205, 14407), (208, 14554), (209, 14587),

Gene: Etoile_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for Etoile_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: FirstPlacePfu_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for FirstPlacePfu_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: Fishburne_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for Fishburne_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: Gavriela_17 Start: 10881, Stop: 14531, Start Num: 2

Candidate Starts for Gavriela_17:

(Start: 2 @10881 has 45 MA's), (4, 10890), (6, 10977), (7, 10992), (10, 11109), (14, 11238), (16, 11280), (26, 11490), (33, 11643), (45, 11859), (51, 12009), (52, 12063), (53, 12096), (55, 12147), (58, 12204), (62, 12375), (63, 12399), (66, 12453), (69, 12459), (90, 12771), (92, 12795), (95, 12837), (98, 12879), (101, 12912), (108, 12999), (109, 13038), (110, 13071), (111, 13122), (116, 13179), (120, 13245), (125, 13332), (129, 13359), (133, 13386), (134, 13389), (136, 13419), (138, 13446), (150, 13593), (152, 13617), (153, 13647), (155, 13671), (179, 13854), (184, 13923), (188, 13956), (195, 14115), (198, 14160), (204, 14274), (205, 14286), (208, 14433), (209, 14466),

Gene: Glaske_17 Start: 10881, Stop: 14531, Start Num: 2

Candidate Starts for Glaske_17:

(Start: 2 @10881 has 45 MA's), (4, 10890), (6, 10977), (7, 10992), (10, 11109), (14, 11238), (16, 11280), (26, 11490), (33, 11643), (45, 11859), (51, 12009), (52, 12063), (53, 12096), (55, 12147), (58, 12204), (62, 12375), (63, 12399), (66, 12453), (69, 12459), (90, 12771), (92, 12795), (95, 12837), (98, 12879), (101, 12912), (108, 12999), (109, 13038), (110, 13071), (111, 13122), (116, 13179), (120, 13245), (125, 13332), (129, 13359), (133, 13386), (134, 13389), (136, 13419), (138, 13446), (150, 13593), (152, 13617), (153, 13647), (155, 13671), (179, 13854), (184, 13923), (188, 13956), (195, 14115), (198, 14160), (204, 14274), (205, 14286), (208, 14433), (209, 14466),

Gene: GreaseLightnin_17 Start: 10873, Stop: 14649, Start Num: 2

Candidate Starts for GreaseLightnin_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (90, 12772), (92, 12796), (95, 12838), (98, 12880), (101, 12913), (106, 12985), (108, 13000), (109, 13039), (110, 13072), (116, 13180), (120, 13246), (125, 13342), (139, 13492), (142, 13513), (151, 13654), (153, 13705), (154, 13711), (156, 13735), (157, 13738), (172, 13885), (175, 13915), (188, 14074), (193, 14206), (195, 14233), (198, 14278), (204, 14392), (205, 14404), (208, 14551), (209, 14584),

Gene: HC_16 Start: 10774, Stop: 14595, Start Num: 1

Candidate Starts for HC_16:

(Start: 1 @10774 has 9 MA's), (5, 10849), (13, 11107), (20, 11329), (21, 11332), (22, 11344), (24, 11386), (25, 11410), (26, 11431), (27, 11488), (35, 11602), (36, 11638), (46, 11821), (49, 11887), (51, 11950), (53, 12037), (57, 12136), (64, 12343), (73, 12475), (79, 12514), (80, 12526), (81, 12607), (83, 12721), (90, 12760), (95, 12814), (96, 12835), (97, 12838), (99, 12877), (103, 12925), (104, 12940), (105, 12946), (108, 12976), (109, 13015), (110, 13048), (114, 13123), (119, 13216), (121, 13240), (146, 13531), (150, 13576), (164, 13735), (168, 13774), (169, 13798), (170, 13804), (171, 13810), (176, 13840), (180, 13918), (181, 13921), (182, 13936), (183, 13951), (189, 14068), (192, 14167), (193, 14179), (197, 14236), (199, 14296), (201, 14308), (207, 14431), (210, 14551), (211, 14587),

Gene: HUHilltop_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for HUHilltop_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: Island3_16 Start: 10774, Stop: 14604, Start Num: 1

Candidate Starts for Island3_16:

(Start: 1 @10774 has 9 MA's), (5, 10849), (13, 11107), (20, 11329), (21, 11332), (22, 11344), (24, 11386), (25, 11410), (26, 11431), (27, 11488), (35, 11602), (36, 11638), (46, 11821), (49, 11887), (51, 11950), (52, 12004), (53, 12037), (57, 12136), (64, 12343), (73, 12475), (79, 12514), (80, 12526), (81, 12607), (83, 12721), (85, 12742), (90, 12766), (95, 12820), (96, 12841), (97, 12844), (99, 12883), (103, 12931), (104, 12946), (105, 12952), (108, 12982), (109, 13021), (110, 13054), (114, 13129), (119, 13222), (121, 13246), (146, 13537), (150, 13582), (164, 13741), (168, 13780), (169, 13804), (170, 13810), (171, 13816), (176, 13849), (180, 13927), (181, 13930), (182, 13945), (183, 13960), (189, 14077), (192, 14176), (193, 14188), (195, 14212), (196, 14215), (197, 14245), (199, 14305), (201, 14317), (207, 14440), (210, 14560), (211, 14596),

Gene: Jebeks_17 Start: 10858, Stop: 14628, Start Num: 2

Candidate Starts for Jebeks_17:

(Start: 2 @10858 has 45 MA's), (Start: 3 @10861 has 2 MA's), (4, 10867), (6, 10954), (7, 10969), (10, 11086), (14, 11215), (16, 11257), (26, 11467), (33, 11620), (45, 11836), (51, 11986), (52, 12040), (55, 12124), (58, 12181), (61, 12319), (62, 12352), (63, 12376), (66, 12430), (69, 12436), (75, 12505), (90, 12748), (92, 12775), (95, 12817), (98, 12859), (101, 12892), (106, 12964), (108, 12979), (109, 13018), (110, 13051), (116, 13159), (120, 13225), (125, 13321), (139, 13471), (142, 13492), (151, 13633), (153, 13684), (154, 13690), (156, 13714), (157, 13717), (172, 13864), (175, 13894), (188, 14053), (195, 14212), (198, 14257), (204, 14371), (205, 14383), (208, 14530), (209, 14563),

Gene: Jung_17 Start: 10919, Stop: 14569, Start Num: 2

Candidate Starts for Jung_17:

(Start: 2 @10919 has 45 MA's), (4, 10928), (6, 11015), (7, 11030), (10, 11147), (14, 11276), (16, 11318), (26, 11528), (33, 11681), (45, 11897), (51, 12047), (52, 12101), (55, 12185), (58, 12242), (62, 12413), (63, 12437), (66, 12491), (69, 12497), (90, 12809), (92, 12833), (95, 12875), (98, 12917), (101, 12950), (108, 13037), (109, 13076), (110, 13109), (111, 13160), (116, 13217), (120, 13283), (125, 13370), (129, 13397), (133, 13424), (134, 13427), (136, 13457), (138, 13484), (150, 13631), (152, 13655), (153, 13685), (155, 13709), (179, 13892), (184, 13961), (188, 13994), (195, 14153), (198, 14198), (204, 14312), (205, 14324), (208, 14471), (209, 14504),

Gene: Juniormint_17 Start: 10893, Stop: 14669, Start Num: 2

Candidate Starts for Juniormint_17:

(Start: 2 @10893 has 45 MA's), (Start: 3 @10896 has 2 MA's), (4, 10902), (6, 10989), (7, 11004), (10, 11121), (14, 11250), (16, 11292), (26, 11502), (33, 11655), (45, 11871), (51, 12021), (52, 12075), (55, 12159), (58, 12216), (63, 12411), (66, 12465), (69, 12471), (90, 12792), (92, 12816), (95, 12858), (98, 12900), (101, 12933), (106, 13005), (108, 13020), (109, 13059), (110, 13092), (111, 13143), (116, 13200), (120, 13266), (139, 13512), (142, 13533), (151, 13674), (153, 13725), (154, 13731), (156, 13755), (157, 13758), (172, 13905), (175, 13935), (188, 14094), (195, 14253), (198, 14298), (204, 14412), (205, 14424), (208, 14571), (209, 14604),

Gene: Kari_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for Kari_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: KilKor_17 Start: 10881, Stop: 14531, Start Num: 2

Candidate Starts for KilKor_17:

(Start: 2 @10881 has 45 MA's), (4, 10890), (6, 10977), (7, 10992), (10, 11109), (14, 11238), (16, 11280), (26, 11490), (33, 11643), (45, 11859), (51, 12009), (52, 12063), (53, 12096), (55, 12147), (58, 12204), (62, 12375), (63, 12399), (66, 12453), (69, 12459), (90, 12771), (92, 12795), (95, 12837), (98, 12879), (101, 12912), (108, 12999), (109, 13038), (110, 13071), (111, 13122), (116, 13179), (120, 13245), (125, 13332), (129, 13359), (133, 13386), (134, 13389), (136, 13419), (138, 13446), (150, 13593), (152, 13617), (153, 13647), (155, 13671), (179, 13854), (184, 13923), (188, 13956), (195, 14115), (198, 14160), (204, 14274), (205, 14286), (208, 14433), (209, 14466),

Gene: Ksquared_17 Start: 10889, Stop: 14665, Start Num: 2

Candidate Starts for Ksquared_17:

(Start: 2 @10889 has 45 MA's), (Start: 3 @10892 has 2 MA's), (4, 10898), (6, 10985), (7, 11000), (10, 11117), (14, 11246), (16, 11288), (26, 11498), (33, 11651), (45, 11867), (51, 12017), (52, 12071), (55, 12155), (58, 12212), (63, 12407), (66, 12461), (69, 12467), (90, 12788), (92, 12812), (95, 12854), (98, 12896), (101, 12929), (106, 13001), (108, 13016), (109, 13055), (110, 13088), (111, 13139), (116, 13196), (120, 13262), (139, 13508), (142, 13529), (151, 13670), (153, 13721), (154, 13727), (156, 13751), (157, 13754), (172, 13901), (175, 13931), (188, 14090), (195, 14249), (198, 14294), (204, 14408), (205, 14420), (208, 14567), (209, 14600),

Gene: Langerak_17 Start: 10857, Stop: 14627, Start Num: 2

Candidate Starts for Langerak_17:

(Start: 2 @10857 has 45 MA's), (Start: 3 @10860 has 2 MA's), (4, 10866), (6, 10953), (7, 10968), (10, 11085), (14, 11214), (16, 11256), (26, 11466), (33, 11619), (45, 11835), (51, 11985), (52, 12039), (55, 12123), (58, 12180), (61, 12318), (62, 12351), (63, 12375), (66, 12429), (69, 12435), (75, 12504), (90, 12747), (92, 12774), (95, 12816), (98, 12858), (101, 12891), (106, 12963), (108, 12978), (109, 13017), (110, 13050), (116, 13158), (120, 13224), (125, 13320), (139, 13470), (142, 13491), (151, 13632), (153, 13683), (154, 13689), (156, 13713), (157, 13716), (172, 13863), (175, 13893), (188, 14052), (195, 14211), (198, 14256), (204, 14370), (205, 14382), (208, 14529), (209, 14562),

Gene: Majeke_17 Start: 10864, Stop: 14649, Start Num: 2

Candidate Starts for Majeke_17:

(Start: 2 @10864 has 45 MA's), (Start: 3 @10867 has 2 MA's), (4, 10873), (6, 10960), (7, 10975), (10, 11092), (14, 11221), (16, 11263), (26, 11473), (27, 11530), (33, 11626), (45, 11842), (51, 11992), (52, 12046), (53, 12079), (55, 12130), (58, 12187), (62, 12358), (63, 12382), (66, 12436), (69, 12442), (75, 12508), (90, 12751), (92, 12778), (95, 12820), (98, 12862), (101, 12895), (106, 12967), (108, 12982), (109, 13021), (110, 13054), (116, 13162), (120, 13228), (125, 13324), (139, 13474), (142, 13495), (151, 13636), (153, 13687), (154, 13693), (156, 13717), (157, 13720), (172, 13867), (175, 13897), (188, 14074), (195, 14233), (198, 14278), (200, 14335), (204, 14392), (205, 14404), (208, 14551), (209, 14584),

Gene: Malithi_17 Start: 10918, Stop: 14568, Start Num: 2

Candidate Starts for Malithi_17:

(Start: 2 @10918 has 45 MA's), (4, 10927), (6, 11014), (7, 11029), (10, 11146), (14, 11275), (16, 11317), (26, 11527), (33, 11680), (45, 11896), (51, 12046), (52, 12100), (53, 12133), (55, 12184), (58,

12241), (62, 12412), (63, 12436), (66, 12490), (69, 12496), (90, 12808), (92, 12832), (95, 12874), (98, 12916), (101, 12949), (108, 13036), (109, 13075), (110, 13108), (111, 13159), (116, 13216), (120, 13282), (125, 13369), (129, 13396), (133, 13423), (134, 13426), (136, 13456), (138, 13483), (150, 13630), (152, 13654), (153, 13684), (155, 13708), (179, 13891), (184, 13960), (188, 13993), (195, 14152), (198, 14197), (204, 14311), (205, 14323), (208, 14470), (209, 14503),

Gene: Mangethe_17 Start: 10864, Stop: 14649, Start Num: 2

Candidate Starts for Mangethe_17:

(Start: 2 @10864 has 45 MA's), (Start: 3 @10867 has 2 MA's), (4, 10873), (6, 10960), (7, 10975), (10, 11092), (14, 11221), (16, 11263), (26, 11473), (27, 11530), (33, 11626), (45, 11842), (51, 11992), (52, 12046), (53, 12079), (55, 12130), (58, 12187), (62, 12358), (63, 12382), (66, 12436), (69, 12442), (75, 12508), (90, 12751), (92, 12778), (95, 12820), (98, 12862), (101, 12895), (106, 12967), (108, 12982), (109, 13021), (110, 13054), (116, 13162), (120, 13228), (125, 13324), (139, 13474), (142, 13495), (151, 13636), (153, 13687), (154, 13693), (156, 13717), (157, 13720), (172, 13867), (175, 13897), (188, 14074), (195, 14233), (198, 14278), (200, 14335), (204, 14392), (205, 14404), (208, 14551), (209, 14584),

Gene: Megiddo_17 Start: 10881, Stop: 14531, Start Num: 2

Candidate Starts for Megiddo_17:

(Start: 2 @10881 has 45 MA's), (4, 10890), (6, 10977), (7, 10992), (10, 11109), (14, 11238), (16, 11280), (26, 11490), (33, 11643), (45, 11859), (51, 12009), (52, 12063), (53, 12096), (55, 12147), (58, 12204), (62, 12375), (63, 12399), (66, 12453), (69, 12459), (90, 12771), (92, 12795), (95, 12837), (98, 12879), (101, 12912), (108, 12999), (109, 13038), (110, 13071), (111, 13122), (116, 13179), (120, 13245), (125, 13332), (129, 13359), (133, 13386), (134, 13389), (136, 13419), (138, 13446), (150, 13593), (152, 13617), (153, 13647), (155, 13671), (179, 13854), (184, 13923), (188, 13956), (195, 14115), (198, 14160), (204, 14274), (205, 14286), (208, 14433), (209, 14466),

Gene: MooMoo_14 Start: 9011, Stop: 12727, Start Num: 1

Candidate Starts for MooMoo_14:

(Start: 1 @9011 has 9 MA's), (9, 9260), (13, 9344), (15, 9452), (18, 9551), (20, 9581), (21, 9584), (23, 9623), (24, 9638), (25, 9662), (26, 9683), (29, 9773), (30, 9785), (33, 9836), (34, 9845), (37, 9902), (42, 9971), (44, 10037), (46, 10073), (47, 10103), (48, 10118), (49, 10139), (51, 10202), (53, 10289), (56, 10361), (57, 10388), (59, 10430), (81, 10835), (88, 10985), (93, 11018), (95, 11057), (96, 11078), (97, 11081), (99, 11120), (102, 11162), (104, 11183), (105, 11189), (107, 11207), (109, 11258), (110, 11291), (112, 11351), (113, 11363), (114, 11366), (115, 11384), (117, 11402), (118, 11411), (128, 11582), (131, 11591), (132, 11594), (138, 11681), (145, 11792), (147, 11816), (150, 11846), (160, 11969), (166, 12020), (174, 12068), (177, 12086), (178, 12116), (192, 12296), (193, 12308), (194, 12311), (196, 12335), (200, 12434), (201, 12437), (206, 12533),

Gene: Nazo_16 Start: 10599, Stop: 14387, Start Num: 2

Candidate Starts for Nazo_16:

(Start: 2 @10599 has 45 MA's), (Start: 3 @10602 has 2 MA's), (4, 10608), (7, 10710), (14, 10956), (16, 10998), (26, 11208), (34, 11370), (45, 11577), (51, 11727), (52, 11781), (90, 12480), (95, 12543), (98, 12585), (101, 12618), (109, 12744), (110, 12777), (127, 13071), (136, 13143), (146, 13287), (149, 13329), (159, 13464), (165, 13518), (186, 13755), (188, 13815), (193, 13947), (200, 14076), (202, 14088), (205, 14145), (208, 14289), (209, 14322),

Gene: Necropolis_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for Necropolis_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033),

(110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: Phalm_17 Start: 10881, Stop: 14531, Start Num: 2

Candidate Starts for Phalm_17:

(Start: 2 @10881 has 45 MA's), (4, 10890), (6, 10977), (7, 10992), (10, 11109), (14, 11238), (16, 11280), (26, 11490), (33, 11643), (45, 11859), (51, 12009), (52, 12063), (53, 12096), (55, 12147), (58, 12204), (62, 12375), (63, 12399), (66, 12453), (69, 12459), (90, 12771), (92, 12795), (95, 12837), (98, 12879), (101, 12912), (108, 12999), (109, 13038), (110, 13071), (111, 13122), (116, 13179), (120, 13245), (125, 13332), (129, 13359), (133, 13386), (134, 13389), (136, 13419), (138, 13446), (150, 13593), (152, 13617), (153, 13647), (155, 13671), (179, 13854), (184, 13923), (188, 13956), (195, 14115), (198, 14160), (204, 14274), (205, 14286), (208, 14433), (209, 14466),

Gene: Phayonce_16 Start: 10531, Stop: 14337, Start Num: 2

Candidate Starts for Phayonce_16:

(Start: 2 @10531 has 45 MA's), (Start: 3 @10534 has 2 MA's), (7, 10642), (8, 10696), (14, 10888), (16, 10930), (18, 11008), (20, 11038), (26, 11140), (27, 11197), (38, 11359), (40, 11383), (43, 11434), (45, 11509), (51, 11659), (52, 11713), (54, 11758), (58, 11854), (60, 11953), (61, 11992), (62, 12025), (65, 12073), (82, 12355), (86, 12388), (90, 12409), (95, 12478), (98, 12520), (100, 12550), (101, 12553), (109, 12679), (110, 12712), (116, 12820), (139, 13135), (151, 13297), (156, 13381), (175, 13561), (187, 13738), (188, 13768), (200, 14029), (202, 14041), (205, 14098),

Gene: Phegasus_17 Start: 10864, Stop: 14649, Start Num: 2

Candidate Starts for Phegasus_17:

(Start: 2 @10864 has 45 MA's), (Start: 3 @10867 has 2 MA's), (4, 10873), (6, 10960), (7, 10975), (10, 11092), (14, 11221), (16, 11263), (26, 11473), (27, 11530), (33, 11626), (45, 11842), (51, 11992), (52, 12046), (53, 12079), (55, 12130), (58, 12187), (62, 12358), (63, 12382), (66, 12436), (69, 12442), (75, 12508), (90, 12751), (92, 12778), (95, 12820), (98, 12862), (101, 12895), (106, 12967), (108, 12982), (109, 13021), (110, 13054), (116, 13162), (120, 13228), (125, 13324), (139, 13474), (142, 13495), (151, 13636), (153, 13687), (154, 13693), (156, 13717), (157, 13720), (172, 13867), (175, 13897), (188, 14074), (195, 14233), (198, 14278), (200, 14335), (204, 14392), (205, 14404), (208, 14551), (209, 14584),

Gene: Phineas_17 Start: 10861, Stop: 14640, Start Num: 2

Candidate Starts for Phineas_17:

(Start: 2 @10861 has 45 MA's), (Start: 3 @10864 has 2 MA's), (4, 10870), (6, 10957), (7, 10972), (10, 11089), (14, 11218), (16, 11260), (26, 11470), (33, 11623), (45, 11839), (51, 11989), (52, 12043), (55, 12127), (58, 12184), (61, 12322), (62, 12355), (63, 12379), (66, 12433), (69, 12439), (75, 12517), (90, 12760), (92, 12787), (95, 12829), (98, 12871), (101, 12904), (106, 12976), (108, 12991), (109, 13030), (110, 13063), (116, 13171), (120, 13237), (125, 13333), (139, 13483), (142, 13504), (151, 13645), (153, 13696), (154, 13702), (156, 13726), (157, 13729), (172, 13876), (175, 13906), (188, 14065), (195, 14224), (198, 14269), (204, 14383), (205, 14395), (208, 14542), (209, 14575),

Gene: Polkaroo_17 Start: 10889, Stop: 14659, Start Num: 2

Candidate Starts for Polkaroo_17:

(Start: 2 @10889 has 45 MA's), (Start: 3 @10892 has 2 MA's), (4, 10898), (6, 10985), (7, 11000), (10, 11117), (14, 11246), (16, 11288), (26, 11498), (27, 11555), (33, 11651), (45, 11867), (51, 12017), (52, 12071), (53, 12104), (55, 12155), (58, 12212), (62, 12383), (63, 12407), (66, 12461), (69, 12467), (75, 12536), (90, 12779), (92, 12806), (95, 12848), (98, 12890), (101, 12923), (106, 12995), (108, 13010), (109, 13049), (110, 13082), (116, 13190), (120, 13256), (125, 13352), (139, 13502), (142, 13523), (151, 13664), (153, 13715), (154, 13721), (156, 13745), (157, 13748), (172, 13895), (175, 13925), (188, 14084), (195, 14243), (198, 14288), (204, 14402), (205, 14414), (208, 14561), (209, 14594),

Gene: Purky_16 Start: 10549, Stop: 14229, Start Num: 2

Candidate Starts for Purky_16:

(Start: 2 @10549 has 45 MA's), (Start: 3 @10552 has 2 MA's), (4, 10558), (7, 10660), (8, 10714), (16, 10945), (17, 10987), (20, 11053), (26, 11155), (28, 11233), (31, 11284), (35, 11326), (36, 11362), (49, 11611), (52, 11728), (53, 11761), (67, 12115), (70, 12145), (71, 12151), (76, 12211), (81, 12301), (82, 12403), (89, 12463), (92, 12493), (95, 12535), (98, 12577), (101, 12610), (108, 12697), (109, 12736), (110, 12769), (116, 12877), (123, 13027), (126, 13054), (133, 13081), (134, 13084), (136, 13114), (150, 13288), (152, 13312), (153, 13342), (155, 13366), (179, 13549), (184, 13618), (193, 13786), (195, 13813), (198, 13858), (200, 13915), (202, 13927), (205, 13984), (209, 14164),

Gene: Pygmy_16 Start: 10599, Stop: 14366, Start Num: 3

Candidate Starts for Pygmy_16:

(Start: 2 @10596 has 45 MA's), (Start: 3 @10599 has 2 MA's), (4, 10605), (6, 10692), (7, 10707), (10, 10824), (14, 10953), (16, 10995), (26, 11205), (33, 11358), (51, 11724), (52, 11778), (55, 11862), (58, 11919), (62, 12090), (63, 12114), (66, 12168), (69, 12174), (75, 12243), (90, 12486), (92, 12513), (95, 12555), (98, 12597), (101, 12630), (106, 12702), (108, 12717), (109, 12756), (110, 12789), (116, 12897), (120, 12963), (125, 13059), (139, 13209), (142, 13230), (151, 13371), (153, 13422), (154, 13428), (156, 13452), (157, 13455), (172, 13602), (175, 13632), (188, 13791), (195, 13950), (198, 13995), (204, 14109), (205, 14121), (208, 14268), (209, 14301),

Gene: QueenHazel_16 Start: 10779, Stop: 14600, Start Num: 1

Candidate Starts for QueenHazel_16:

(Start: 1 @10779 has 9 MA's), (5, 10854), (13, 11112), (20, 11334), (21, 11337), (22, 11349), (24, 11391), (25, 11415), (27, 11493), (35, 11607), (36, 11643), (46, 11826), (49, 11892), (51, 11955), (52, 12009), (53, 12042), (57, 12141), (64, 12348), (73, 12480), (79, 12519), (80, 12531), (81, 12612), (83, 12726), (90, 12765), (95, 12819), (96, 12840), (97, 12843), (99, 12882), (103, 12930), (104, 12945), (105, 12951), (108, 12981), (109, 13020), (110, 13053), (114, 13128), (119, 13221), (121, 13245), (137, 13410), (141, 13482), (143, 13509), (146, 13536), (150, 13581), (164, 13740), (168, 13779), (169, 13803), (170, 13809), (171, 13815), (176, 13845), (180, 13923), (181, 13926), (182, 13941), (183, 13956), (189, 14073), (192, 14172), (193, 14184), (197, 14241), (199, 14301), (201, 14313), (207, 14436), (210, 14556), (211, 14592),

Gene: Sbash_15 Start: 10276, Stop: 13941, Start Num: 1

Candidate Starts for Sbash_15:

(Start: 1 @10276 has 9 MA's), (5, 10351), (12, 10600), (18, 10816), (19, 10831), (20, 10846), (21, 10849), (22, 10861), (24, 10903), (25, 10927), (26, 10948), (35, 11119), (37, 11167), (39, 11182), (41, 11215), (49, 11404), (50, 11446), (52, 11521), (53, 11554), (57, 11653), (68, 11908), (70, 11938), (71, 11944), (72, 11962), (77, 12001), (78, 12004), (81, 12094), (84, 12214), (87, 12223), (90, 12241), (91, 12247), (94, 12268), (95, 12298), (96, 12319), (97, 12322), (99, 12361), (105, 12430), (108, 12460), (109, 12499), (110, 12532), (114, 12607), (145, 13006), (150, 13060), (162, 13198), (188, 13405), (191, 13501), (192, 13516), (193, 13528), (196, 13555), (201, 13657), (206, 13753),

Gene: Shipwreck_16 Start: 10574, Stop: 14344, Start Num: 2

Candidate Starts for Shipwreck_16:

(Start: 2 @10574 has 45 MA's), (Start: 3 @10577 has 2 MA's), (4, 10583), (6, 10670), (7, 10685), (10, 10802), (14, 10931), (16, 10973), (26, 11183), (33, 11336), (45, 11552), (51, 11702), (52, 11756), (55, 11840), (58, 11897), (62, 12068), (63, 12092), (66, 12146), (69, 12152), (90, 12464), (92, 12491), (95, 12533), (98, 12575), (101, 12608), (106, 12680), (108, 12695), (109, 12734), (110, 12767), (116, 12875), (120, 12941), (125, 13037), (139, 13187), (142, 13208), (151, 13349), (153, 13400), (154, 13406), (156, 13430), (157, 13433), (172, 13580), (175, 13610), (188, 13769), (195, 13928), (198, 13973), (204, 14087), (205, 14099), (208, 14246), (209, 14279),

Gene: Sonah_17 Start: 10866, Stop: 14633, Start Num: 2

Candidate Starts for Sonah_17:

(Start: 2 @10866 has 45 MA's), (Start: 3 @10869 has 2 MA's), (4, 10875), (6, 10962), (7, 10977), (10, 11094), (14, 11223), (16, 11265), (20, 11373), (26, 11475), (27, 11532), (33, 11628), (45, 11844), (51, 11994), (52, 12048), (53, 12081), (55, 12132), (62, 12360), (66, 12438), (69, 12444), (75, 12510), (90, 12753), (92, 12780), (95, 12822), (98, 12864), (101, 12897), (106, 12969), (108, 12984), (109, 13023), (110, 13056), (116, 13164), (120, 13230), (125, 13326), (139, 13476), (142, 13497), (151, 13638), (153, 13689), (154, 13695), (156, 13719), (157, 13722), (172, 13869), (175, 13899), (188, 14058), (195, 14217), (198, 14262), (204, 14376), (205, 14388), (208, 14535), (209, 14568),

Gene: StevieRay_17 Start: 10864, Stop: 14634, Start Num: 2

Candidate Starts for StevieRay_17:

(Start: 2 @10864 has 45 MA's), (Start: 3 @10867 has 2 MA's), (4, 10873), (6, 10960), (7, 10975), (10, 11092), (14, 11221), (16, 11263), (26, 11473), (33, 11626), (45, 11842), (51, 11992), (52, 12046), (55, 12130), (58, 12187), (61, 12325), (62, 12358), (63, 12382), (66, 12436), (69, 12442), (75, 12511), (90, 12754), (92, 12781), (95, 12823), (98, 12865), (101, 12898), (106, 12970), (108, 12985), (109, 13024), (110, 13057), (116, 13165), (120, 13231), (125, 13327), (139, 13477), (142, 13498), (151, 13639), (153, 13690), (154, 13696), (156, 13720), (157, 13723), (172, 13870), (175, 13900), (188, 14059), (195, 14218), (198, 14263), (204, 14377), (205, 14389), (208, 14536), (209, 14569),

Gene: StressBall_17 Start: 10881, Stop: 14531, Start Num: 2

Candidate Starts for StressBall_17:

(Start: 2 @10881 has 45 MA's), (4, 10890), (6, 10977), (7, 10992), (10, 11109), (14, 11238), (16, 11280), (26, 11490), (33, 11643), (45, 11859), (51, 12009), (52, 12063), (53, 12096), (55, 12147), (58, 12204), (62, 12375), (63, 12399), (66, 12453), (69, 12459), (90, 12771), (92, 12795), (95, 12837), (98, 12879), (101, 12912), (108, 12999), (109, 13038), (110, 13071), (111, 13122), (116, 13179), (120, 13245), (125, 13332), (129, 13359), (133, 13386), (134, 13389), (136, 13419), (138, 13446), (150, 13593), (152, 13617), (153, 13647), (155, 13671), (179, 13854), (184, 13923), (188, 13956), (195, 14115), (198, 14160), (204, 14274), (205, 14286), (208, 14433), (209, 14466),

Gene: Stuck_15 Start: 10294, Stop: 13941, Start Num: 1

Candidate Starts for Stuck_15:

(Start: 1 @10294 has 9 MA's), (12, 10618), (18, 10834), (19, 10849), (20, 10864), (21, 10867), (22, 10879), (24, 10921), (25, 10945), (26, 10966), (35, 11137), (37, 11185), (39, 11200), (41, 11233), (49, 11422), (50, 11464), (52, 11539), (53, 11572), (57, 11671), (68, 11926), (71, 11962), (72, 11980), (77, 12019), (78, 12022), (81, 12112), (84, 12232), (87, 12241), (91, 12265), (94, 12286), (95, 12316), (96, 12337), (97, 12340), (99, 12379), (105, 12448), (108, 12478), (109, 12517), (110, 12550), (114, 12625), (115, 12643), (148, 13051), (150, 13072), (167, 13249), (173, 13285), (188, 13402), (190, 13450), (191, 13498), (192, 13513), (193, 13525), (196, 13552), (201, 13654),

Gene: Techage_17 Start: 10867, Stop: 14634, Start Num: 2

Candidate Starts for Techage_17:

(Start: 2 @10867 has 45 MA's), (Start: 3 @10870 has 2 MA's), (4, 10876), (6, 10963), (7, 10978), (10, 11095), (14, 11224), (16, 11266), (20, 11374), (26, 11476), (27, 11533), (33, 11629), (45, 11845), (51, 11995), (52, 12049), (53, 12082), (55, 12133), (62, 12361), (66, 12439), (69, 12445), (75, 12511), (90, 12754), (92, 12781), (95, 12823), (98, 12865), (101, 12898), (106, 12970), (108, 12985), (109, 13024), (110, 13057), (116, 13165), (120, 13231), (125, 13327), (139, 13477), (142, 13498), (151, 13639), (153, 13690), (154, 13696), (156, 13720), (157, 13723), (172, 13870), (175, 13900), (188, 14059), (195, 14218), (198, 14263), (204, 14377), (205, 14389), (208, 14536), (209, 14569),

Gene: Thespis_17 Start: 10876, Stop: 14643, Start Num: 2

Candidate Starts for Thespis_17:

(Start: 2 @10876 has 45 MA's), (Start: 3 @10879 has 2 MA's), (4, 10885), (6, 10972), (7, 10987), (10, 11104), (14, 11233), (16, 11275), (26, 11485), (33, 11638), (45, 11854), (51, 12004), (52, 12058), (55, 12142), (58, 12199), (62, 12370), (63, 12394), (66, 12448), (69, 12454), (90, 12766), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: ThulaThula_16 Start: 10537, Stop: 14343, Start Num: 2

Candidate Starts for ThulaThula_16:

(Start: 2 @10537 has 45 MA's), (Start: 3 @10540 has 2 MA's), (7, 10648), (8, 10702), (14, 10894), (16, 10936), (18, 11014), (20, 11044), (26, 11146), (27, 11203), (38, 11365), (40, 11389), (43, 11440), (45, 11515), (51, 11665), (52, 11719), (58, 11860), (60, 11959), (61, 11998), (62, 12031), (65, 12079), (82, 12361), (86, 12394), (90, 12415), (95, 12484), (98, 12526), (100, 12556), (101, 12559), (109, 12685), (110, 12718), (116, 12826), (139, 13141), (151, 13303), (156, 13387), (175, 13567), (187, 13744), (188, 13774), (200, 14035), (202, 14047), (205, 14104),

Gene: Tortellini_16 Start: 10557, Stop: 14246, Start Num: 2

Candidate Starts for Tortellini_16:

(Start: 2 @10557 has 45 MA's), (Start: 3 @10560 has 2 MA's), (4, 10566), (7, 10668), (11, 10818), (16, 10956), (18, 11034), (26, 11166), (32, 11310), (33, 11319), (36, 11373), (52, 11739), (53, 11772), (59, 11913), (67, 12126), (70, 12156), (72, 12180), (74, 12204), (76, 12222), (81, 12312), (82, 12414), (89, 12474), (92, 12507), (95, 12549), (97, 12573), (98, 12591), (101, 12624), (108, 12711), (109, 12750), (110, 12783), (116, 12891), (123, 13041), (126, 13077), (133, 13104), (138, 13164), (140, 13206), (141, 13212), (150, 13311), (152, 13335), (153, 13365), (155, 13389), (172, 13506), (179, 13563), (184, 13632), (188, 13668), (190, 13716), (195, 13827), (198, 13872), (200, 13929), (203, 13965), (205, 13998), (209, 14181),

Gene: Venti_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for Venti_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: Vidya_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for Vidya_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),

Gene: Willsammy_17 Start: 10879, Stop: 14535, Start Num: 2

Candidate Starts for Willsammy_17:

(Start: 2 @10879 has 45 MA's), (Start: 3 @10882 has 2 MA's), (4, 10888), (6, 10975), (7, 10990), (10, 11107), (14, 11236), (16, 11278), (26, 11488), (33, 11641), (45, 11857), (51, 12007), (52, 12061), (53, 12094), (55, 12145), (58, 12202), (62, 12373), (63, 12397), (66, 12451), (69, 12457), (90, 12778), (92,

12802), (95, 12844), (98, 12886), (101, 12919), (108, 13006), (109, 13045), (110, 13078), (111, 13129), (116, 13186), (120, 13252), (125, 13339), (129, 13366), (133, 13393), (134, 13396), (136, 13426), (138, 13453), (150, 13600), (152, 13624), (153, 13654), (155, 13678), (179, 13861), (184, 13930), (188, 13960), (195, 14119), (198, 14164), (204, 14278), (205, 14290), (208, 14437), (209, 14470),

Gene: Xavia_17 Start: 10877, Stop: 14647, Start Num: 2

Candidate Starts for Xavia_17:

(Start: 2 @10877 has 45 MA's), (Start: 3 @10880 has 2 MA's), (4, 10886), (6, 10973), (7, 10988), (10, 11105), (14, 11234), (16, 11276), (26, 11486), (33, 11639), (45, 11855), (51, 12005), (52, 12059), (53, 12092), (55, 12143), (58, 12200), (62, 12371), (63, 12395), (66, 12449), (69, 12455), (90, 12767), (92, 12794), (95, 12836), (98, 12878), (101, 12911), (106, 12983), (108, 12998), (109, 13037), (110, 13070), (116, 13178), (120, 13244), (139, 13490), (142, 13511), (151, 13652), (153, 13703), (154, 13709), (156, 13733), (157, 13736), (172, 13883), (175, 13913), (188, 14072), (193, 14204), (195, 14231), (198, 14276), (204, 14390), (205, 14402), (208, 14549), (209, 14582),

Gene: Xula_15 Start: 10408, Stop: 14232, Start Num: 1

Candidate Starts for Xula_15:

(Start: 1 @10408 has 9 MA's), (5, 10483), (13, 10741), (20, 10963), (21, 10966), (22, 10978), (24, 11020), (25, 11044), (27, 11122), (35, 11236), (36, 11272), (46, 11455), (49, 11521), (51, 11584), (52, 11638), (53, 11671), (57, 11770), (64, 11977), (73, 12109), (79, 12148), (80, 12160), (81, 12241), (83, 12355), (90, 12394), (95, 12448), (96, 12469), (97, 12472), (99, 12511), (103, 12559), (104, 12574), (105, 12580), (108, 12610), (109, 12649), (110, 12682), (114, 12757), (119, 12850), (121, 12874), (137, 13039), (141, 13111), (143, 13138), (150, 13210), (164, 13369), (168, 13408), (169, 13432), (170, 13438), (171, 13444), (176, 13477), (180, 13555), (181, 13558), (182, 13573), (183, 13588), (189, 13705), (192, 13804), (193, 13816), (197, 13873), (199, 13933), (201, 13945), (207, 14068), (210, 14188), (211, 14224),

Gene: Zilizebeth_17 Start: 10873, Stop: 14643, Start Num: 2

Candidate Starts for Zilizebeth_17:

(Start: 2 @10873 has 45 MA's), (Start: 3 @10876 has 2 MA's), (4, 10882), (6, 10969), (7, 10984), (10, 11101), (14, 11230), (16, 11272), (26, 11482), (33, 11635), (45, 11851), (51, 12001), (52, 12055), (55, 12139), (58, 12196), (61, 12334), (62, 12367), (63, 12391), (66, 12445), (69, 12451), (75, 12520), (90, 12763), (92, 12790), (95, 12832), (98, 12874), (101, 12907), (106, 12979), (108, 12994), (109, 13033), (110, 13066), (116, 13174), (120, 13240), (125, 13336), (139, 13486), (142, 13507), (151, 13648), (153, 13699), (154, 13705), (156, 13729), (157, 13732), (172, 13879), (175, 13909), (188, 14068), (195, 14227), (198, 14272), (204, 14386), (205, 14398), (208, 14545), (209, 14578),