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Shell model and intruder states in the middle of the"Island of inversion": spectroscopy of the 32Mg nucleus[1] SERGEY ILYUSHKIN, Colorado School of Mines, THE GRIFFIN COLLABORATION — The beta decay of ^{32}Na [$t_{1/2} = 13.2(4)$ ms] to levels in ^{32}Mg has been investigated at TRIUMF with the GRIFFIN spectrometer, instrumented with the SCintillating Electron Positron Tagging ARray (SCEPTAR). The nucleus ^{32}Mg is at the center of the so-called "Island of Inversion," where the weakened N=20 shell gap yields a region of deformation dominated by intruder states. Despite many studies, the structure of the low-energy states in ^{32}Mg remains mostly elusive. New transitions and levels are placed in the level scheme of ^{32}Mg from an analysis of gamma-gamma and beta-gamma coincidences. Spins and parities of several states were deduced and interpreted based on the analysis of gamma gamma angular correlations. The motivation for this measurement along with the preliminary results will be presented.

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