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GRIFFIN's Fast-Timing Array BRUNO OLAIZOLA, Univ of Guelph, GRIFFIN COLLABORATION — The Gamma-Ray Infrastructure For Fundamental Investigations of Nuclei (GRIFFIN) is the new β-decay spectrometer facility at TRIUMF-ISAC. Consists of an array of 16 large-volume HPGe clover detectors with an unparalleled efficiency of 19% at 1.33 MeV. Its strongest advantage is the versatility of the ancillary detectors that can be coupled to the main array to tag on β particles, neutrons or precisely measure conversion electron spectra. An ancillary array of 8 $LaBr_3$(Ce) detectors for γ-rays and a fast plastic scintillator for β-particles has been optimized for fast-timing experiments with GRIFFIN. The 51 mm x 51 mm cylindrical $LaBr_3$(Ce) crystals are coupled to Hamamatsu R2083 photomultipliers. Timing resolutions as good as FWHM$\sim$ 200 ps and time-walks below $\pm$30 ps have been obtained for individual crystals using analog electronics. There is also an ongoing project to develop an active BGO shield for the $LaBr_3$(Ce) crystals. The $LaBr_3$(Ce) array commissioning experiment to measure the ^{145,146}Cs decay to ^{145,146}Ba will test its capabilities over a wide range of lifetimes. Preliminary results on the lifetimes of some of the low-laying states will be presented.

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