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BVIT: A visible imaging, photon counting instrument on the Southern African Large Telescope for high time resolution astronomy

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The Berkeley Visible Imaging Tube (BVIT) was installed on the Southern African Large Telescope (SALT) in January 2009 and subsequently refurbished in August 2010. BVIT is an imaging, photon counting camera with multi-color (U, B, V, R –U was replaced by H- α post- refurb.) capability. At the heart of BVIT is a 25 mm, microchannel plate sealed tube device with a visible photocathode and a cross-delay line readout. For each detected event the readout electronics record an X, Y position, an event pulse size (P), and an arrival time (T) –recorded with 25 ns precision. Post-acquisition processing of the X, Y, P, T photon lists can be used to build images and light curves (to whatever sampling rate is supported by the SNR of the source). The instrument design is presented as well as some examples of data acquired with the instrument on SALT.

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