

## A SWIR/MWIR Imaging Fourier Transform Spectropolarimeter

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A short-wavelength and middle-wavelength imaging Fourier transform spectropolarimeter is presented. The instrument is referred to as the infrared hyperspectral imaging polarimeter (IHIP). The sensor includes a pair of sapphire Wollaston prisms and several high-order retarders to form an imaging Fourier transform spectropolarimeter. The Wollaston prisms serve as a birefringent interferometer with reduced sensitivity to vibration versus an unequal path interferometer, such as a Michelson. Polarimetric data are acquired through the use of channeled spectropolarimetry to modulate the spectrum with the Stokes parameter information. The collected interferogram is filtered and reconstructed to recover the spatially and spectrally varying Stokes vector data across the image. The IHIP operates over a +/- 5 degree full field of view and implements a dual-scan false signature reduction technique to suppress polarimetric aliasing (cross talk) artifacts. In this talk we present the optical layout and operation of the IHIP sensor, our calibration techniques, and spectral and spectropolarimetric results from the laboratory and outdoor tests with the instrument.

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