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SUBJECT: SD97 (William.L.Barnes)

1. SUBMIT TO: SD97 (William L. Barnes)

27 Jul-01 Aug97, San Diego SPIE
Conference Title: Earth Observing Systems 11
Conference Chair: William L. Barnes

2. ABSTRACT TITLE

On-Board Calibrator for the Multi-angle Imaging SpectroRadiometer

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4. PRESENTATION

Oral Presentation

5. ABSTRACT TEXT

The EOS/ MISR instrument includes nine pushbroom cameras, each at different view angles to Earth, and an on-board calibrator. The latter includes photodiode detectors, used as the radiometric standards for the experiment, and two Spectralon diffuse panels. The team has completed preflight calibration and characterization of these elements, and more recently demonstrated their operation at the instrument level of assembly. The consistency of the system-level and camera-level tests will be explored in this paper. That is, the validation of the preflight calibration data sets will be made, by comparing calibration of the cameras as determined by the on-board calibrator to that determined from the laboratory integrating sphere. Corrections for the

spectral response differences between the photodiodes and cameras are needed, as well as accurate knowledge of the diffuse panels relative hi-directional reflectance factor. The discussion will conclude with a description of the approach used in the in-flight **radiometric** calibration of the cameras, using these on-board calibrator elements.

6. KEY WORDS

Radiometric calibration, EOS, MISR

7. BRIEF BIOGRAPHY

Carol J. (Kastner) Bruegge received BA and MS degrees in Applied Physics at the University of California, San Diego, in 1978, and MS and Ph.D. degrees in Optical Sciences at the University of Arizona, Tucson, in 1985. Her experience is in the areas of terrestrial remote sensing, calibration of remote sensing sensors, radiative transfer, and use of ground-truth measurements for validation and calibration of airborne or in-orbit sensors and sensor data. Presently employed by JPL, she serves as the Instrument Scientist for the Earth Observing System (EOS)/ Multi-angle Imaging **SpectroRadiometer (MISR)**. Additionally, she has provided support in the absolute **radiometric** calibration of the Landsat Thematic Mapper, and other airborne and spaceborne instruments. She has been a Principal Investigator in the First International Satellite Land Surface Climatology Program (ISLSCP) Field Experiment (FIFE), a ground-truth hydrology experiment conducted from 1987 through 1989.