

SSEC/CIMSS Participation in the NPP PEATE Program

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The NPOESS Preparatory Project (NPP) mission scheduled to launch in 2009 will provide a first look at a new generation of products from U.S. operational polar orbiting Earth observing satellites. Production of Sensor Data Record (SDR) and Environmental Data Record (EDR) products will be accomplished by the Interface Data Processing Segment (IDPS) of the NPOESS Ground System. The NASA NPP Science Team has been tasked with evaluation of the operational products from the IDPS within a facility known as the Science Data Segment (SDS). Within the SDS, NASA has established five Product and Evaluation and Test Elements (PEATEs) to enable the NPP Science Team to efficiently and effectively evaluate the operational SDRs and EDRs from NPP. The PEATEs are organized into categories including Atmosphere, Land, Ocean, Ozone and Sounder. The Atmosphere PEATE has been established within SSEC/CIMSS.

The Atmosphere PEATE will enable the NPP Science Team to: (a) assess the impact of on-orbit instrument performance on SDRs and subsequently on Atmosphere EDRs; (b) evaluate the quality of Atmosphere EDRs at sensor resolution over a wide range of spatial and temporal conditions; (c) validate Atmosphere EDRs against ground-based and satellite-based measurements; (d) develop improved Atmosphere EDR algorithms; and (e) evaluate the climate quality of the Atmosphere EDRs. Computing resources will be provided by a cluster of Linux servers, and the system will be designed to allow global SDR and EDR product generation at more than 100 times real-time processing speed, enabling one month of data to be processed in one day. This will allow the NPP Science Team to rapidly assess the impact of calibration and science algorithm changes on climatologically significant subsets of the NPP data record.

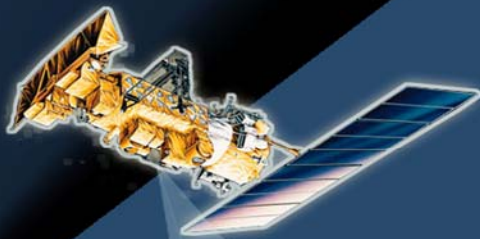
The project has begun with the design and development of a 1st generation computing system that will enable a demonstration of the data processing capability. The demonstration will use NASA EOS MODIS and AIRS data and science team algorithms as a testbed to evaluate the processing capability to fulfill requirements for NPP. The Atmosphere PEATE has also begun evaluating the NPOESS contractor algorithm for atmosphere and cloud products from NPP, and has also established a calibration/validation facility for automated comparison of NPP and precursor products against satellite and ground based data.

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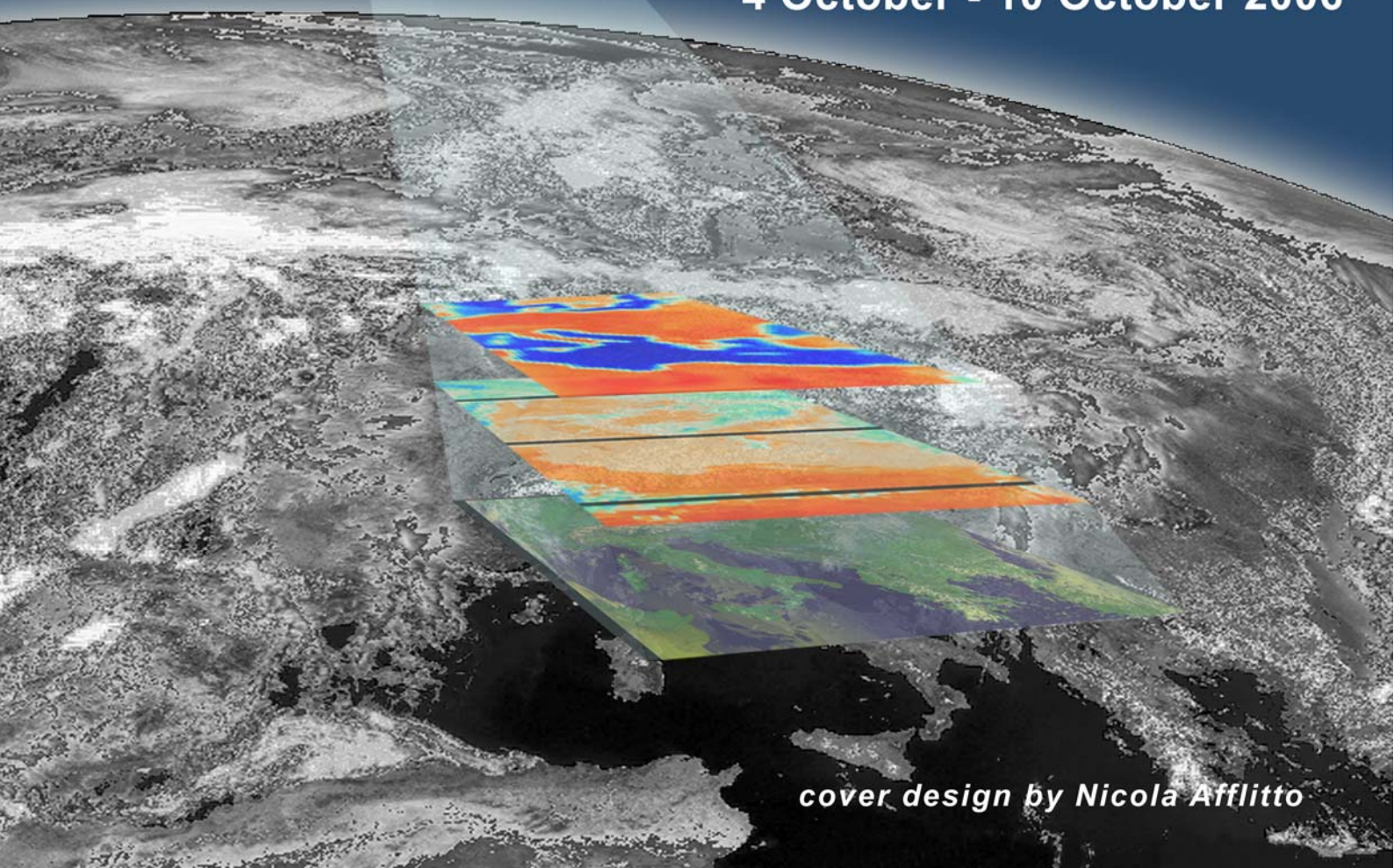
using space-based observations



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