Techniques for Processing Oil--Chip Mosaic (OCM) Images From Galileo

Thomas F. Thaller, Amy Culver, Gary M. Yagi, Helen B. Mortensen

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, Ca

With the partial deployment of Galileo's high-gain antenna came the need for alternate techniques for maximizing the amount of science data returned for the Solid State Imaging (SSI) Camera through the low-gain antenna system. One such technique is called an On-Chip Mosaic (OCM). The OCM technique instructs the SSI camera to store more than one image or shuttered event in its 800 line x 800 sample CCD array. These multiple shutter events are downloaded simultaneously in the form of a single image. Thus the Galileo spacecraft is able to return multiple images in the same amount of bits for one image. Both flight and ground based software was developed for the OCM technique. JPL's Multimission Image Processing System (MIPS) developed the ground base software to reconstruct both OCM and the individually shuttered images to be used in scientific analysis by the SSI Team. The focus of the poster will be to explore the challenges and solutions of OCM image mosaicking procedures. Specifically, procedures to identify and extract a single shutter event from an OCM image, link that image with the associated ancillary data through use of SPICE kernels and register multiple shutter events together to generate a color composite image.