

PROJECT DETAILS

Keck (and Palomar) Interferometer Science Operation Systems

Designed and implemented data base schema for archiving science data products from the Keck Interferometer, as well as the operational pipeline to populate that schema. Concurrently deployed on Oracle and MySQL data bases; now porting to Informix. Also tested and deployed codes authored by other team members, and assisted on system architecture. Now maintaining and updating all related Web services. Extended this application suite to support second archive for the Palomar Testbed Interferometer.

Space Interferometer Mission MAM Experiment Archive

Designed and implemented data base schema for archiving experiment metadata in a prototype deployment for SIM R&D effort. Authored software to populate that schema on a PostgreSQL data base.

Mars Odyssey Micro-Helm

Created a multi-threaded GUI for a Distributed Modeling and Visualization tool, employing an Excel-based front end (GUI) and C++ back end (existing modeling libraries), cemented together using DCOM technology with C++, Basic, and MIDL on Windows 2000. Implemented client-server technology.

Flight System Testbed Automated Calibration Suite

Authored C++ library for automatically generating target images for use in calibrating a CCD camera. Concept was proven using a "virtual model" of a CCD camera. Created GUI using Excel, COM, C++, Basic, and MIDL on Windows NT. Also authored C++ library for RS232 link with calibration lamp.

Galaxy Evolution Explorer (GALEX) UV Instrument

As team member, authored flight software for Digital Processing Unit of UV instrument, using C on VxWorks via Solaris. Updated ground-support equipment (GSE) software using Visual C++ on Windows NT. Implemented configuration management for DPU flight software team.

Athena Precursor Experiment Panorama Camera (APEX PanCam)

Drafted test plan for the PanCam/Mast flight software (JPL Document Number D-18104). As team member, authored GUI and suite of test software for calibrating stereo-CCD imager, employing C++ and X/Motif. Assisted in configuration management of the GSE on Solaris and VxWorks.

SGI "Origin" System Calibration for EOS Data & Information System

Co-authored report (JPL D-15998) comparing memory and file-system performance of multiprocessor "Origin" system versus "Challenge" system. Personally conducted benchmark tests on Origin at NASA Langley Research Center. Performed data reduction for all Origin and Challenge results.

EOS/MISR Science Data Distributed Product Generation System (PGS)

Developed an automated system for distributing the processing of science data for the MISR instrument (EOS Terra spacecraft) to multiple processors on an SGI "Origin" system. This intensive R&D effort was conducted in C++ and X/Motif on Solaris and SGI IRIX. It required coordination of existing codes with EOS production software still under development, plus the creation of several compilers. Documented its results (JPL D-15997).