A Demonstration of Large-Scale Team Science in the 21st Century

A Tribute to:
Al Diaz
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*Goddard Space Flight Center
Building 28, Room S121*

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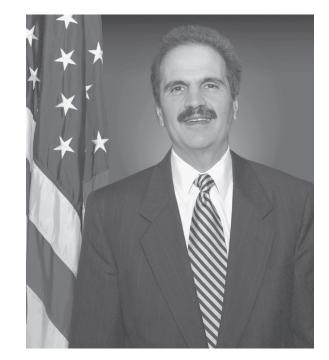Nicholas Schwarz
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A History of the Goddard Space Flight Center Lambda Network Project

March 2004 — GSFC IRAD Award for "Preparing Goddard for Large Scale Team Science in the 21st Century: Enabling an All Optical Goddard Network Cyberinfrastructure"

September 2004 — National LambdaRail CAVEwave lit

November 2004 — SC2004 Conference (Pittsburgh, PA) demo of GSFC/UCSD/UIC science applications over the National LambdaRail

July 2005 — 10-Gbps Coast-to-Coast Network established between UCSD and GSFC

August 2005 — Demonstration of "Large-Scale Team Science in the 21st Century"

10 Gbps CaveWave lambda
10 Gbps WASH-STAR lambda
Pacific Ocean
NLR POP (Seattle)
StarLight (Chicago)
Atlantic Ocean
SIO/UCSD (San Diego, CA)
NASA/GSFC (Greenbelt, MD)
Kevin Fisher 7/28/2005

Program

Welcome
Milt Halem, Goddard Space Flight Center/University of Maryland, Baltimore County
Larry Smarr, Calit2, University of California, San Diego

Real-Time Hurricane Forecasting Animations – Front Screen
Chris Henze, Ames Research Center

Visualizations of every time-step from NASA finite-volume General Circulation Model (fvGCM) forecasts running on Columbia at Ames Research Center in California are assembled and compressed into MPEG movies and then delivered over the Internet.

Land Information System (LIS) – HyperWall
Christa Peters-Lidard, Goddard Space Flight Center

a. Viewing large LIS data sets from the University of California, San Diego (UCSD) using the SAGE and JuxtaView software running on the OptIPuter.
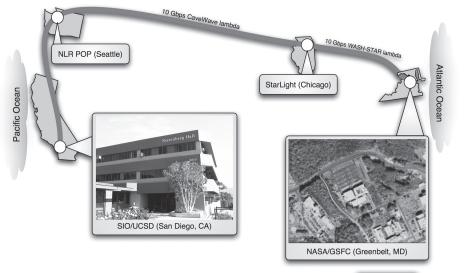
b. Sending ultra-large LIS data sets (100 gigabytes) to UCSD from the GSFC Thunderhead cluster and receiving data back for GrADS display on the Hydra cluster.

Coordinated Enhanced Observing Period (CEOP) – Lambda Display
Arlindo da Silva (for Michael Bosilovich), Goddard Space Flight Center

Analyzing hydrological data sets prepared by 10 national meteorological centers as part of the World Climate Research Program and MAP '05 hurricane data sets employing GrADS-DODS across the continent.

Future Collaborative Science
Milt Halem and Larry Smarr

An HD viewing tool for establishing the Scripps Institution of Oceanography as a fifth "virtual wing" of GSFC's Earth Sciences Building (33). Predicting the future of IT and science.