HyspIRI Preparatory Airborne Mission Update

HyspIRI 2013 Products Symposium, NASA GSFC Bldg. 34, Rm W150

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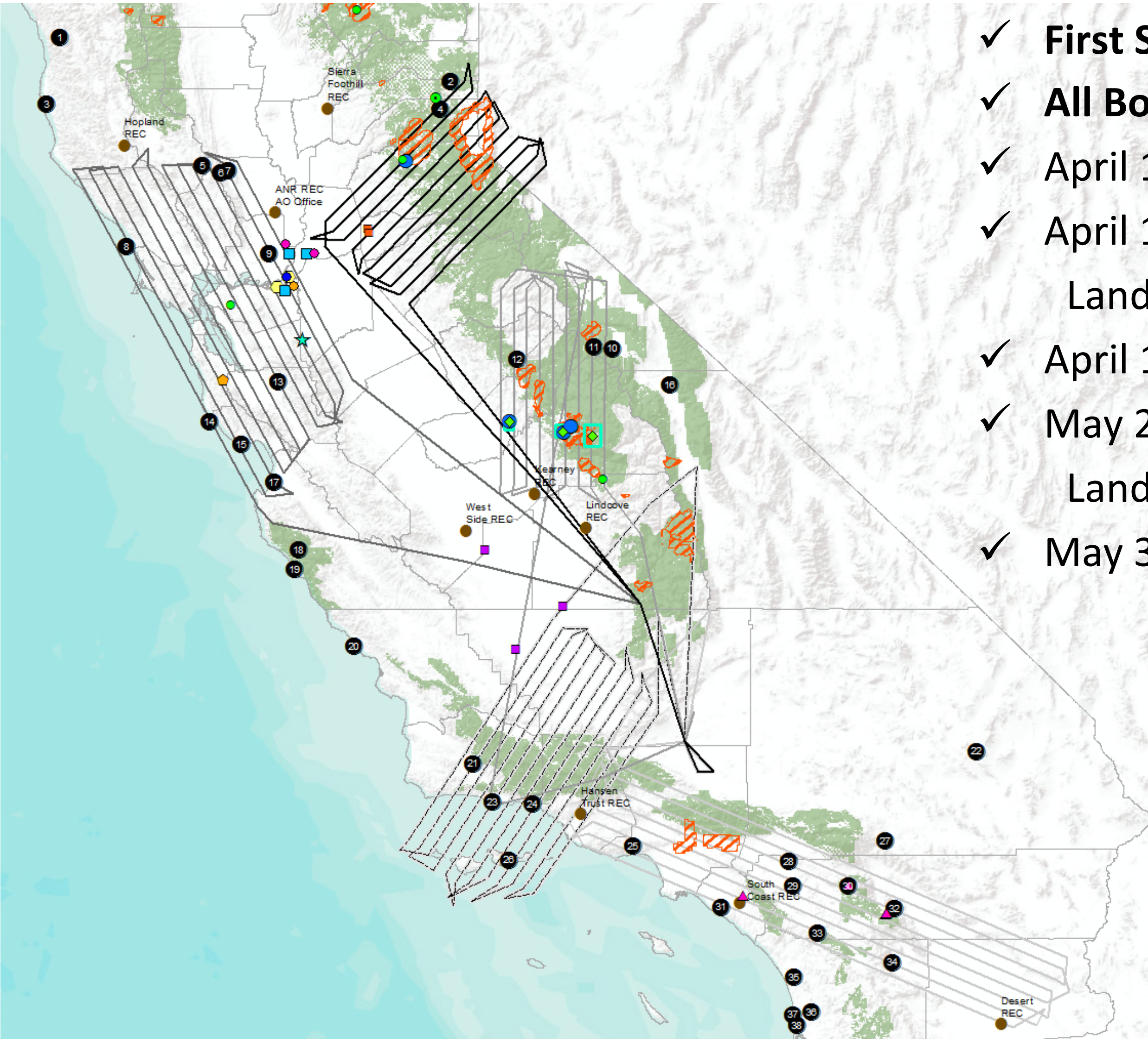
(Slides Provided by JPL/Ian McCubbin)

HyspIRI Airborne Preparatory Mission



- ✓ **First Spring Collection Success**
- ✓ **All Boxes Collected**
- ✓ April 10, 2013 – San Francisco Bay
- ✓ April 11, 2013 – Santa Barbara Box
  Landsat 8 Under-flight over LA
- ✓ April 19, 2013 – Southern California
- ✓ May 2, 2013 – Lake Tahoe Box
  Landsat 8 Under-flight over SF Bay
- ✓ May 3, 2013 Yosemite and NEON Box

Current Status:

1. *Level 1a Data being Processed*
2. *Level 2 Pipeline being Finalized*
3. *Mosaic Pipeline of Large Datasets is in final stages*
4. *Next set of flights start May 22*
5. *Flights with NEON Airborne Observatory June 8-11, 2013*
6. *More field work by PI Teams*

Charts by JPL/Ian McCubbin

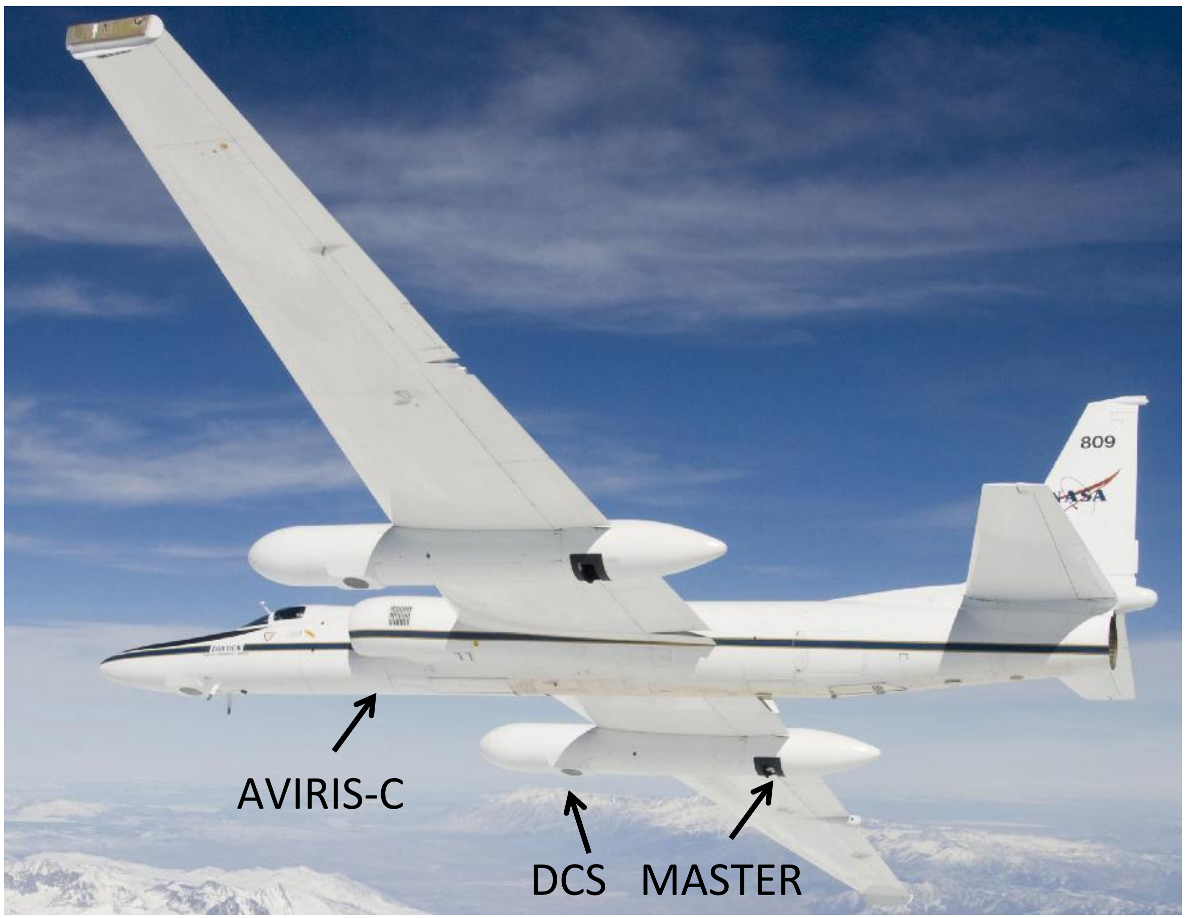
HyspIRI Airborne Preparatory Mission

AVIRIS and MASTER on ER-2 with 3 Seasonal Flights in 2013 and 2014

Datasets to Simulate Future HyspIRI Satellite

Flights Over California Based from NASA Dryden

ER-2 Altitude	*AVIRIS Resolution*	*AVIRIS Swath*	*MASTER Resolution*	*MASTER Swath*
65,000 ft	*20 m*	*12 km*	*50 m*	*35 km*



2013 Dates:

✓ Mar 20 - April 22

2. May 22 - June 10
3. Fall Flights
   - A. Aug 15 – 29
   - B. Sept 9 – 20
   - C. Oct 7 – 18

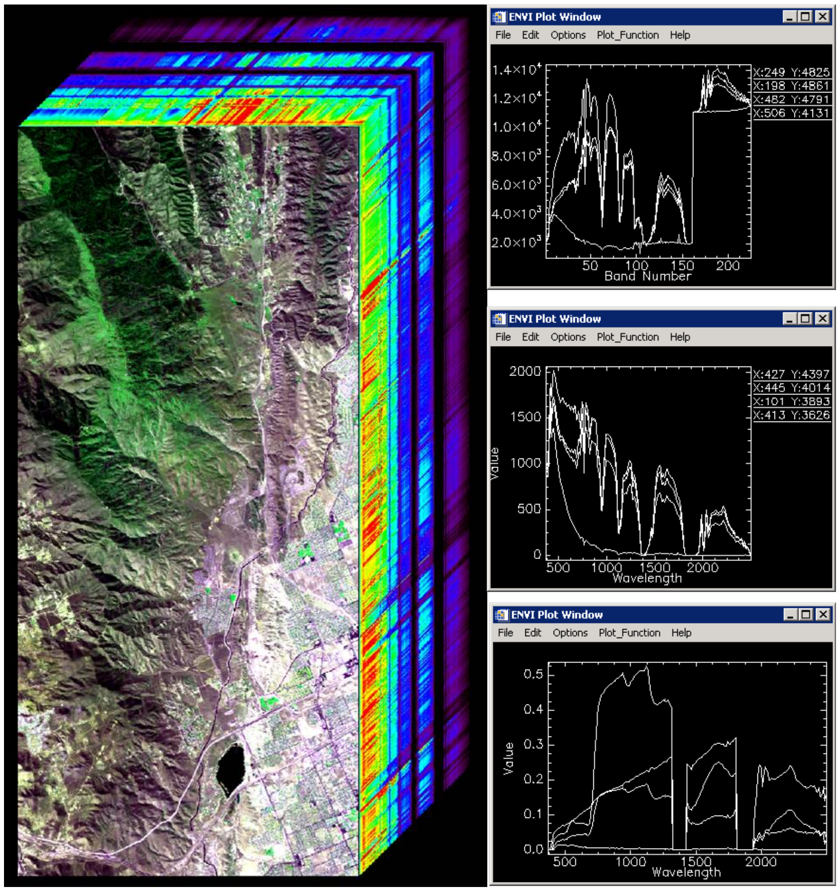
PI TEAM:

Wendy Calvin/University of Nevada - Reno
Matthew Clark/Sonoma State University
Bo-Cai Gao/Naval Research Laboratory
Bernard Hubbard/U. S. Geological Survey
George Jenerette/University of California Riverside
Thomas Kampe/National Ecological Observatory Network Incorporation
Raphael Kudela/University of California Santa Cruz
Ira Leifer/University of California, Santa Barbara
Shunlin Liang/University of Maryland
Paul Moorcroft/Harvard University
Dar Roberts/University of California, Santa Barbara
Philip Townsend/University of Wisconsin-Madison
Susan Ustin/University of California, Davis
Jan van Aardt/Rochester Institute of Technology

HyspIRI Airborne Preparatory Mission

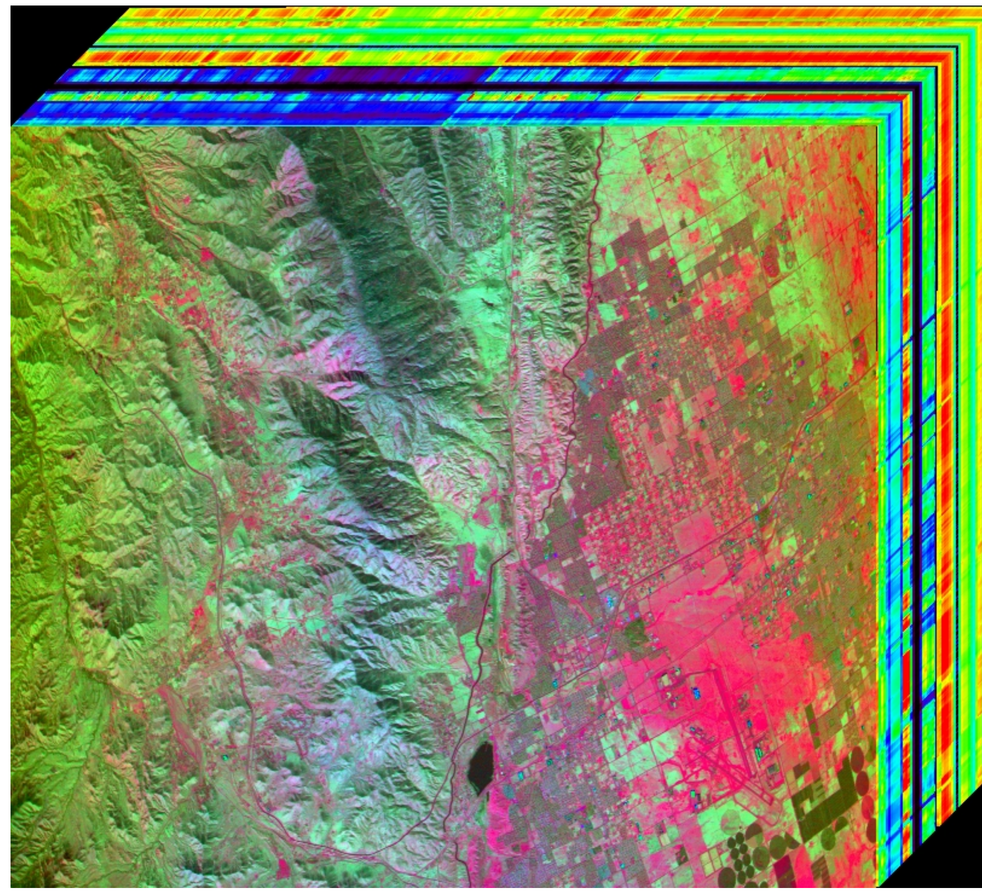
First HyspIRI Test Flights March 29, 2013, Palmdale CA

AVIRIS



AVIRIS image cube and Level 1a, 1b and 2 spectra. The reflectance spectra (L2) will be used to address the full range of science objectives including ecosystems and climate.

MASTER

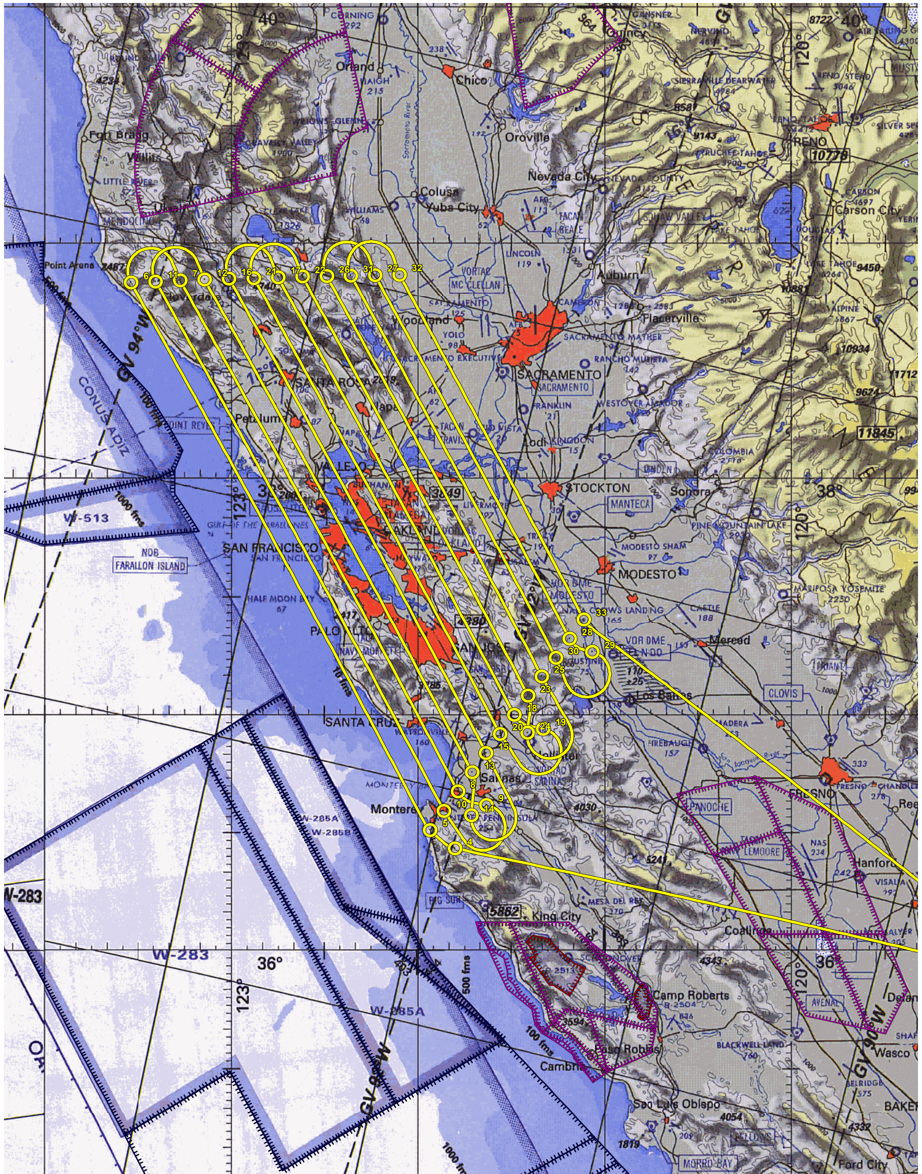


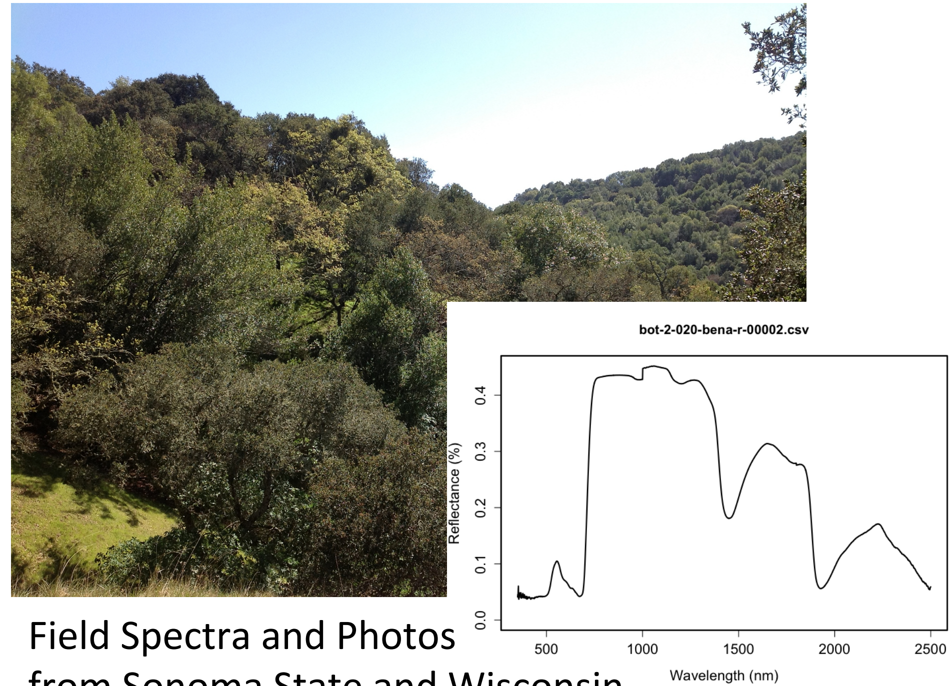
MASTER image cube. Temperature information is shown as color intensity and mimics topography and composition (emissivity) information is shown as color. Red areas are composed of minerals with high silica such as urban areas Water and heavily vegetated areas are dark indicating they are cooler. HyspIRI temperature and composition information are key to addressing a range of objectives.

April 10, 2013 – San Francisco Bay - 6.5 hours

UCSC and Ames Team on R/V Martin in Monterey Bay – Sonoma State in Bay Area

UCD in Sacramento Delta



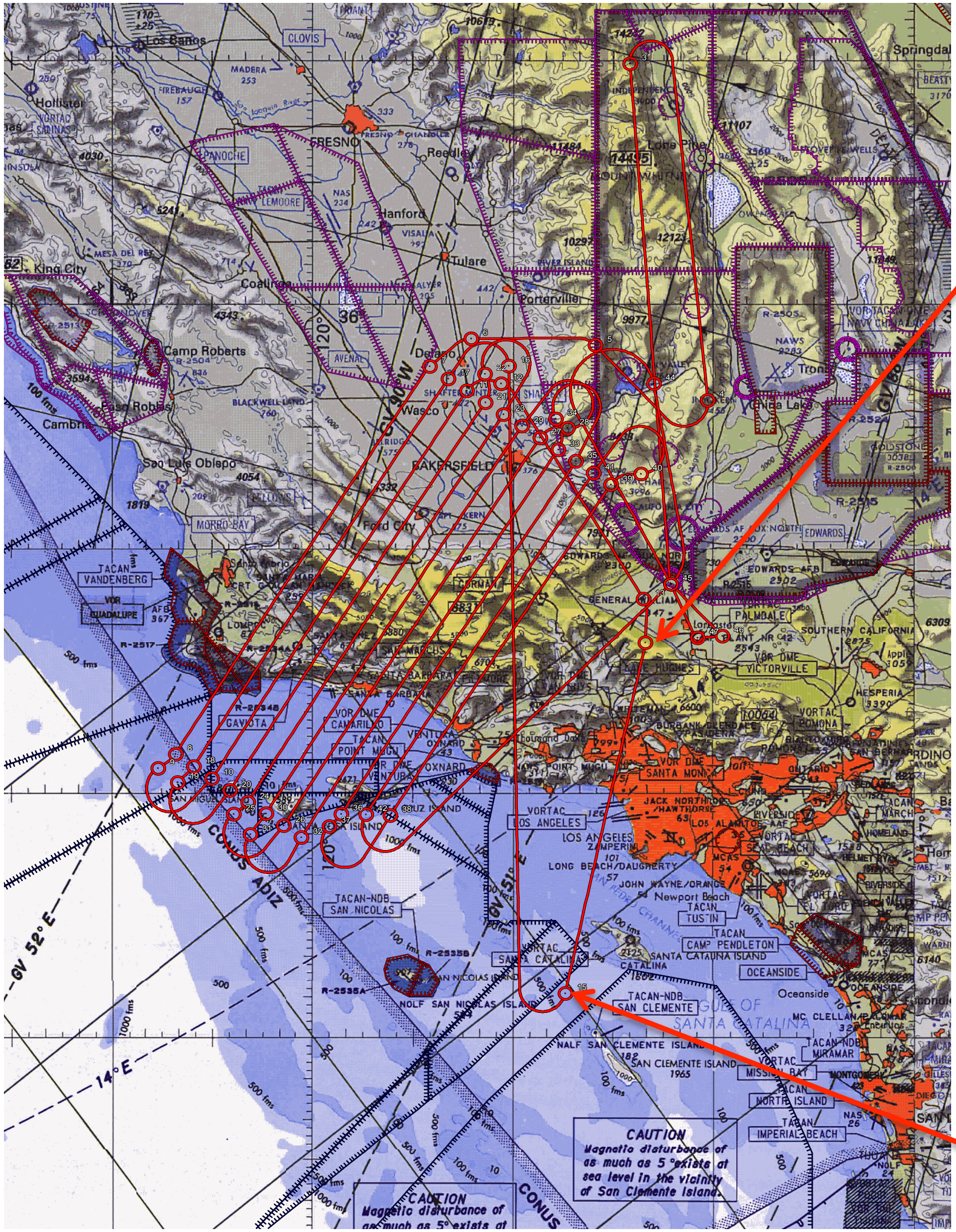


Field Spectra and Photos from Sonoma State and Wisconsin

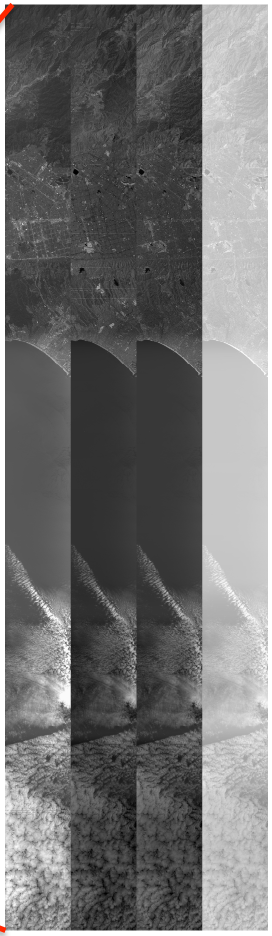
R/V Martin used by UCSC/Ames Ocean Remote Sensing Team at Monterey Bay

April 11, 2013 – Santa Barbara Box - 4.1 hours
Landsat 8 Under-flight over Los Angeles

NASA/NOAA UCSB Plumes and Blumes
Cruise in SB Channel During Overflight



AVIRIS Data



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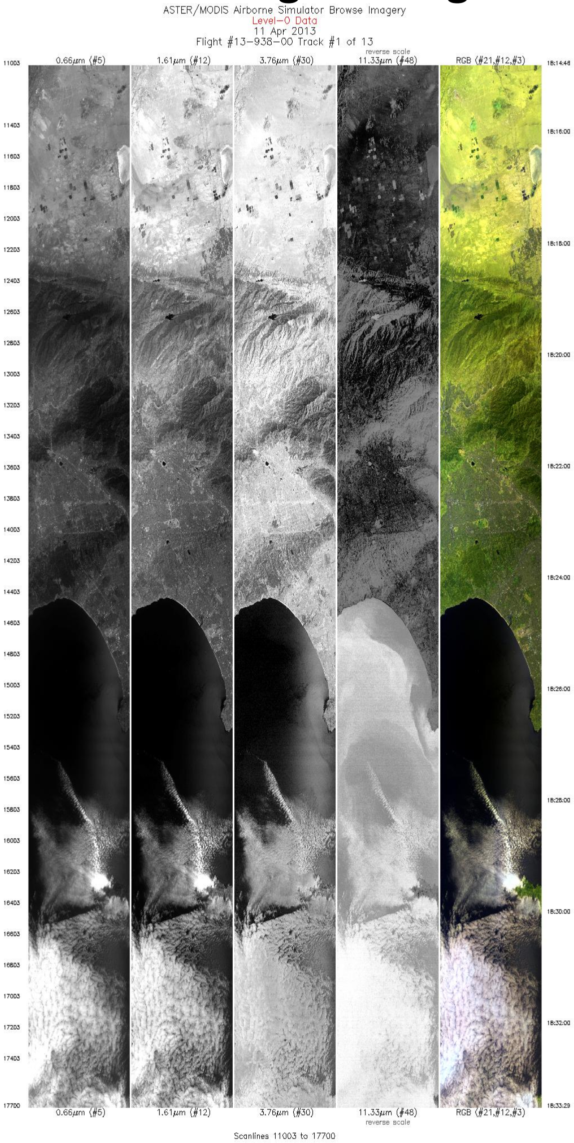
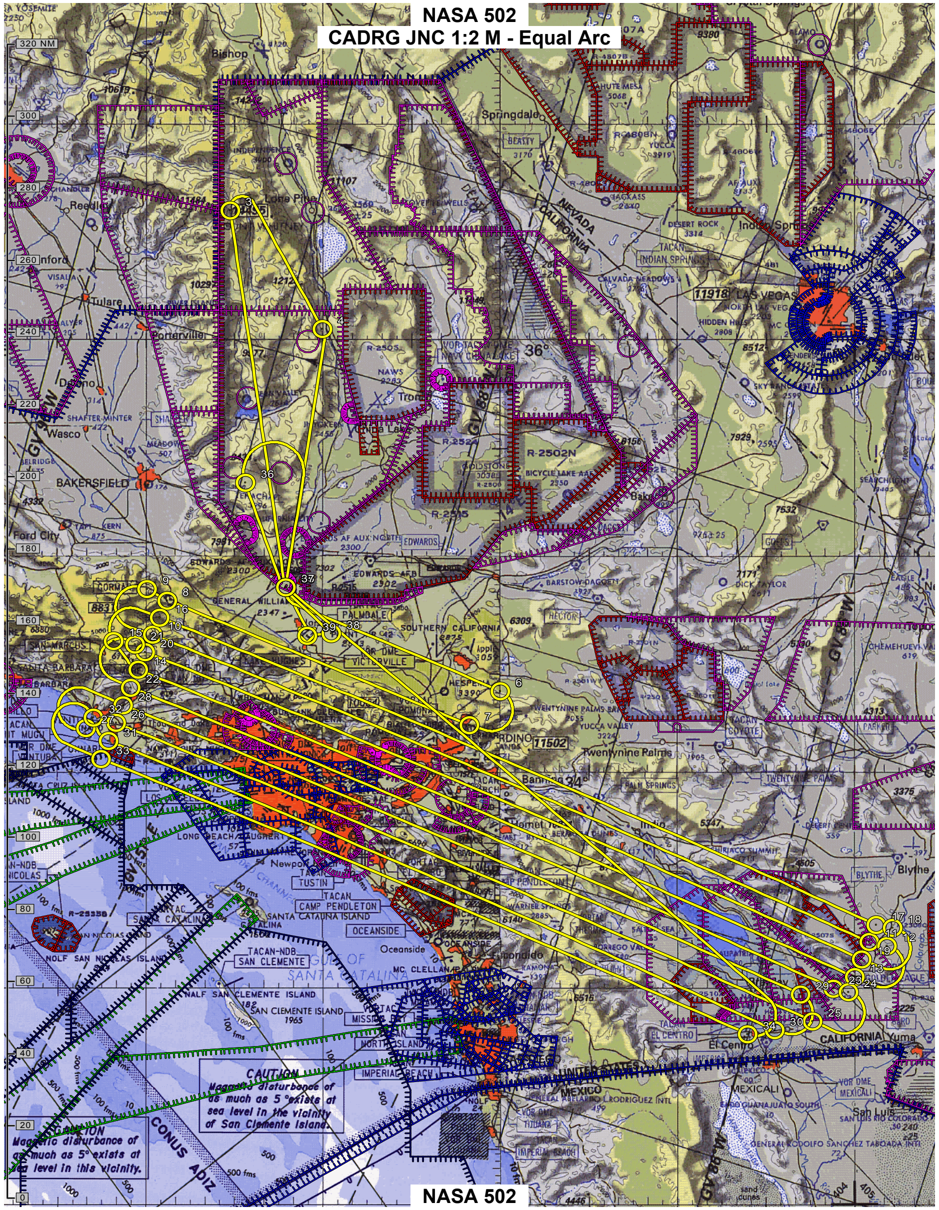


MASTER Data

April 19, 2013 – Southern California Box

7.6 hour Flight Time

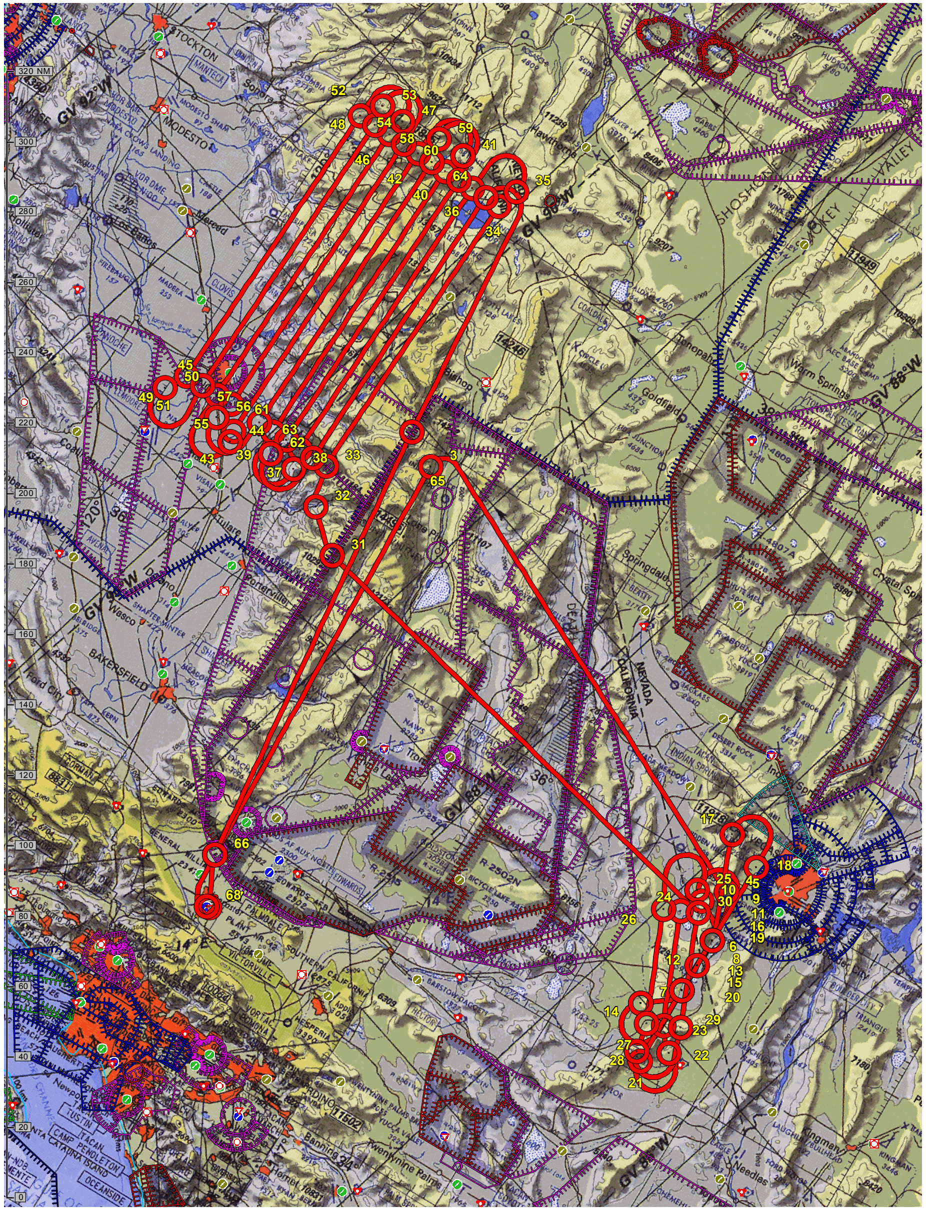
Plus: AirMSPI



May 3, 2013 Yosemite and NEON Box

4.3 hours of Flight Time and ASO Overflight

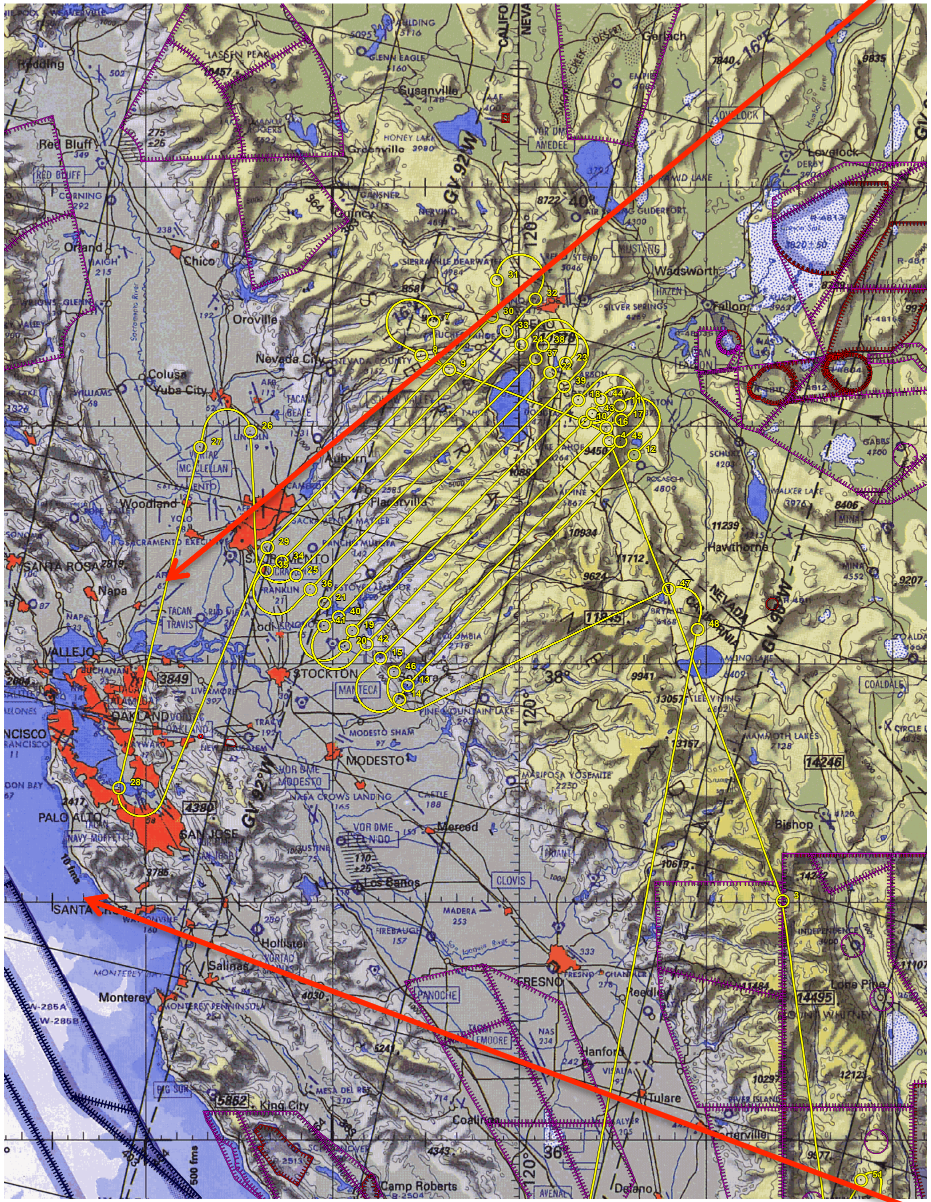
Plus: NAST-I, SHIS, AirMSPI, & NAST-M



May 2, 2013 – Lake Tahoe Box

Landsat 8 Under-flight over CA Delta and SF Bay

4.4 hour Flight Plus: NAST-I, SHIS, & AirMSPI



AVIRIS Data

MASTER Data