HysplRI Preparatory Airborne Campaign

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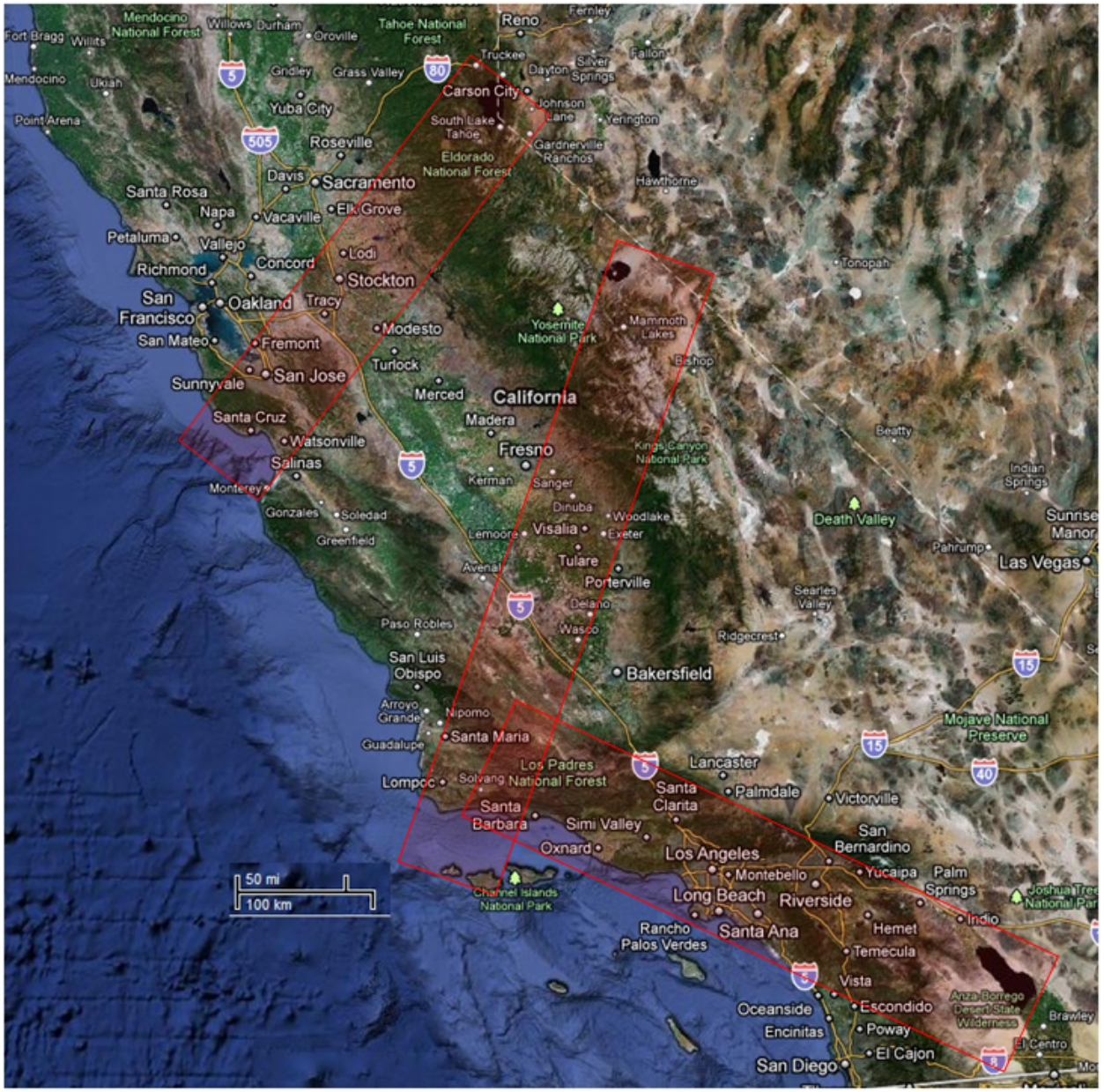
ROSES 11 Solicitation A.26

- Preceded by two HyspIRI Preparatory Activities solicitations in ROSES 2009 and 2010 calling for the use of existing imagery
  - Thank you Jack Kaye!
- ROSES 11 A.26 entitled: *HyspIRI Preparatory Airborne Activities and Associated Science and Applications Research*, released via amendment to ROSES 11 on December 23, 2011
- Purpose and Approach: To support HyspIRI mission development and prepare community for HyspIRI-enabled science and applications research, NASA plans to fly the Airborne Visible/ Infrared Imaging Spectrometer (AVIRIS) and the MODIS/ASTER Airborne Simulator (MASTER) instruments on the NASA ER-2 high-altitude aircraft to collect data sets in concert with other instruments for precursor science and applications research
  - Flights in California in 2013 and 2014 along 3 transects from capturing ecological/climatic gradients
  - Plan to fly these 3 transects 3 times per year for the two years; 3-year awards solicited
  - Other relevant datasets welcome, with limited support for *in situ* acquisitions; other airborne datasets must be contributed
- Proposals asked to address science or applications research topics aligned with science questions for the HyspIRI mission
- Transects to allow simulation of HyspIRI datasets
- Seeking important science and applications research results that are uniquely enabled by HyspIRI-like data

Possible Transects from Proposal



Solicitation Outcome

- 49 Proposals received by the March 21, 2012 due date
  - Only 5 sought applications research support
- Peer Review Panel and Earth Science Division Steering Committee Approval in mid-summer 2012
- Notifications sent at the end of July 2012
- 14 proposals selected for funding
- Organizational teleconferences in September and October 2012
- Initial planning meeting in November 2012 at UCSB
- Planning meeting will set the dates and transects for the flights as we cross-compare site and acquisition needs

HyspIRI Preparatory Airborne Activities Projects

- UNV/Wendy Calvin - *Energy and Mineral Resources: Surface composition mapping that identifies resources and the changes and impacts associated with their development*
- Sonoma State/Matthew Clark - *Spectral and temporal discrimination of vegetation cover across California with simulated HyspIRI imagery*
- NRL/Bo-Cai Gao - *Characterization and Atmospheric Corrections to the AVIRIS-Classic and AVIRISng Data to Support the HyspIRI Preparatory Airborne Activities*
- USGS/Bernard Hubbard - *Using simulated HyspIRI data for soil mineral mapping, relative dating and flood hazard assessment of alluvial fans in the Salton Sea basin, Southern California*
- UC Riverside/George Jenerette - *Assessing Relationships Between Urban Land Cover, Surface Temperature, and Transpiration Along a Coastal to Desert Climate Gradient*
- NEON/Thomas Kampe - *Synergistic high-resolution airborne measurements of ecosystem structure and process at NEON sites in California*
- UC Santa Cruz/Raphael Kudela - *Using HyspIRI at the Land/Sea Interface to Identify Phytoplankton Functional Types*
- Bubbleology/Ira Leifer - *Hyperspectral imaging spectroscopic investigation of California natural and anthropogenic fossil methane emissions in the short-wave and thermal infrared*

HyspIRI Preparatory Airborne Activities Projects Continued

- UMD/Shunlin Liang - *Characterizing surface energy budget of different surface types under varying climatic conditions from AVIRIS and MASTER data*
- Harvard/Paul Moorcroft - *Linking Terrestrial Biosphere Models with Imaging Spectrometry Measurements of Ecosystem Composition, Structure, and Function*
- UC Santa Barbara/Dar Roberts - *HyspIRI discrimination of plant species and functional types along a strong environmental-temperature gradient*
- UWI/Philip Townsend - *Measurement of ecosystem metabolism across climatic and vegetation gradients in California for the 2013-2014 NASA AVIRIS/MASTER airborne campaign*
- UC Davis/Susan Ustin - *Identification of Plant Functional Types By Characterization of Canopy Chemistry Using an Automated Advanced Canopy Radiative Transfer Model*
- RIT/Jan van Aardt - *Investigating the impact of spatially-explicit sub-pixel structural variation on the assessment of vegetation structure from HyspIRI data*

HysplRI Preparatory Airborne Year 1 Tentative Flight Schedule

PI	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Green												
Calvin												
Clarke												
Gao												
Hubbard												
Jenerette												
Kampe												
Kudela												
Leifer												
Liang												
Moorcroft												
Roberts												
Townsend												
Ustin												
van Aardt												

Next Steps

- Planning Meeting next month
- Flights likely to begin in early spring 2013
- Stay tuned for discussions at next year's workshop

Thank You