SPURS-1 Follow-up

Frederick Bingham
UNC - Wilmington

Tom Farrar
Woods Hole Oceanographic Institution

Graphic by Sam Levang

US CLIVAR Meeting, Aug. 2015, PSMI Panel. With contributions from E. Lindstrom
SPURS-1 Organization

- Organizing committee: R. Schmitt/T. Farrar (lead), E. Lindstrom (agency rep), Y. Chao/G. Li (modeling), F. Bingham (data management), A. Gordon, S. Riser
- Stage: analysis and synthesis phase. The field campaign concluded in 2013
- Sponsoring agencies: NASA, with significant contributions from NSF, NOAA and ESA
Program Highlights 2014-2015

- JGR Special Issue on SSS - 6 papers related to SPURS-1 (Asher et al., Hernandez et al., Busecke et al., etc.). ~25 papers total.
Program Highlights 2014-2015

- March 2015 Oceanography special issue – 16 papers
- Background & Overview
- SPURS-1 Descriptions
- Upper-ocean salinity budgets
- Data Management
- Education / outreach
Program Highlights 2014-2015

• Results presented at March 2015 meeting in La Jolla

• See spurs1.jpl.nasa.gov (Meetings -> San Diego 2015)
Science Results from Oceanography Issue
Shcherbina et al., Variability and Interleaving of Upper-ocean Water Masses in the NA SSS-max
Farrar et al., S&T Balances at the SPURS Central Mooring

Mixed-layer salinity budget closed during the cooling season, main balance between tendency and horizontal advection
Reverdin et al., SSS in the NA Subtropical Gyre during the STRASSE/SPURS Summer 2012 Cruise

SSS from Thalassa TSG in space (left) and relative to the motion of a cluster of drifters (top right)
Data Management Accomplishments

• Developed a project website with all information relevant to the SPURS project (spurs.jpl.nasa.gov).
• Developed a Google Earth-based interactive visualization system to display observing asset deployment and SPURS in situ measurements real-time
• Displayed data assimilation analyses and model forecasts for use in cruise planning
Data Management

Shipboard Google Earth-based interactive visualization display

Bingham et al., 2015
Data Management

• Most SPURS in situ data are available on the SPURS Mission page at PO.DAAC (podaac.jpl.nasa.gov/spurs)
• Data also available at SPURS website (spurs1.jpl.nasa.gov)
• Processed and unprocessed data
• Website and mission page serve as repositories of SPURS-related publications, reports, meeting agendas, education/outreach products, etc.
Data Management Lessons Learned

• Data management about more than data
• Conversion to netCDF is crucial for data sharing and archival
• Modeling and data management are highly synergistic
• Need to better accommodate needs of Chief Scientist at sea, especially with regards to bandwidth and products provided
Summary

• SPURS-1 is nearing completion
• Data are archived and available to anyone
• Upper-ocean salinity budgets have been evaluated on a number of different time and space scales and by different types of instruments