



May 2017

LOS ANGELES BASIN GEOLOGICAL SOCIETY MEETING ANNOUNCEMENT

May 25 (Thursday) – 11:30 AM

Joann Stock, Ph.D.

**Professor of Geology and Geophysics
California Institute of Technology, Pasadena, CA**

THE SOUTHERN END OF THE SAN ANDREAS FAULT: ACTIVE TECTONICS, BURIED BASINS, AND MAGMATISM

Abstract

The Salton Trough and Imperial Valley contain pull-apart basins formed by on-going oblique extension between the Pacific and North America plates. New crust is being formed along the plate boundary in this area, with plate boundary slip thought to be primarily concentrated along the San Andreas and Imperial faults. To better understand the geological structure of this region, an active source seismic survey, the 2011 Salton Seismic Imaging Project (SSIP), was performed, using explosions in shallow boreholes, to derive the crustal structure and fault orientations. Dr. Stock's talk will highlight some recently published results from the SSIP, including the following:

1. A 3-D P-wave velocity model to a depth of 8 kilometers (km) in the northern Imperial Valley shows buried basins and faults, and indicates there are more northeast-striking faults than previously recognized.
2. A 2-D seismic velocity profile to a depth of 15 km extending east-northeast from the Peninsular Ranges to the Chocolate Mountains shows seismic velocity anomalies associated with active faults, possibly due to damage zones along these faults.
3. Velocity models and geological interpretations of the crust beneath the Salton Sea indicate there is a layer of new mafic crust beneath the lowest part of the basin that is not detected farther south in the Imperial Valley.

4. Seismic reflectors on two northeast-oriented profiles in the Coachella Valley show the southern San Andreas fault has an approximately northeast dip here.

These results have important implications for how this part of the plate boundary evolved, as well as for modern concerns outside the study area, such as earthquake shaking in the Los Angeles Basin and the distribution of active faults in the Mexicali Valley.

Speaker's Biography

Joann Stock received her BS, MS, and PhD degrees from the Massachusetts Institute of Technology. She worked at the United States Geological Survey as a geophysicist involved in the Hydraulic Fracturing Stress Measurement project, performing field work in Nevada and California. She is presently a Professor of Geology and Geophysics at the California Institute of Technology in Pasadena, California, USA. She

Her major research interests are tectonics of plate boundaries (especially rifted and strike-slip margins), stress in the earth's crust, and constraints on plate motion history. Her research includes field work performed on ships in the Pacific and Southern Oceans, and on-land field work in California and Mexico.

***Join us for this interesting talk about
our nearby San Andreas Fault!***

Meeting Time, Place, Cost, and Reservations

When:

Thursday, May 25, 2017

Meeting Agenda

Lunch Served: 11:30 AM to 12:00PM
Announcements: 11:45 AM to 12:00 PM
Guest Speaker: 12:00 PM to 12:45 PM
Questions/Close: 12:45 PM to 1:00 PM

Place:

The Grand at Willow Street Conference Center located at 4101 East Willow Street, Long Beach, CA (562-426-0555). Take Lakewood Boulevard south from the San Diego Freeway (I-405), turn west onto Willow Street, and turn right onto Grand Avenue at the sign for the Center. Park for free in the multi-level garage structure.

Cost:

Lunch and Speaker: \$25.00 *with reservations*
\$30.00 *without reservations*
Retired: \$20.00
Student: \$5.00

PAYMENTS IN CASH OR CHECK ONLY

Meeting Reservations:

We encourage you to make your reservations using the LABGS web site, at www.labgs.org

Otherwise, call Ryan Weller at (562) 637-6019, or e-mail ryweller@gmail.com.

Reservations must be made by: **10:00 AM Tuesday May 23rd** to receive the discount price noted above.
As always, walk-ins are welcome.

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ANNOUNCEMENTS:

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