



Los Angeles Basin Geological Society Newsletter

January Meeting: Thursday, January 23, 2003

**Mark Legg of the Legg Geophysical, Will Speak on
Large Crater Structures Offshore Southern California**

Speaker Synopsis / Abstract

Dr. Mark Legg received a B.S. in Space Sciences & Mechanical Engineering, with graduate work in Physical Oceanography, from the Florida Institute of Technology in 1973, an M.S. in Oceanography at the Scripps Institution of Oceanography in 1980 and his Ph.D. in Geological Sciences in 1985 at the University of California, Santa Barbara.

Dr. Legg has devoted most of his academic and professional career to understanding the geologic structure and tectonics of the Southern California borderland. This includes projects that helped acquire Multichannel Seismic Reflection Profiles in the borderland to study the 3-D fault structure and earthquake locations in the northern San Diego Trough. Making dives in research submersibles to examine faulting and seafloor tectonic geomorphology directly.

As President of Legg Geophysical, a small consulting firm that specializes in Earth Sciences and Risk Analysis, Dr. Legg is involved in many diverse projects relating to both natural and man-made hazards funded by both government and commercial agencies. He is a participating scientist with the Southern California Earthquake Center, an adjunct professor at San Diego State University, and a Visiting Assistant Research Geophysicist at UC Santa Barbara. He was the 2002 FEMA/EERI NEHRP Professional Fellow working with Professor Costas Synolakis at University of Southern California to study tsunami hazards from southern California offshore faults. He has published numerous research papers regarding his studies in natural hazards and risk analysis.

Digital mosaics of swath and conventional bathymetry data reveal large, distinct near-circular crater structures in the inner California Continental Borderland offshore of southern California. Two have maximum crater diameters that exceed 30 km, and a third has a crater diameter of about 12.5 km. One of these, Catalina Crater, exhibits well-defined crater morphology—raised outer rim, ring moat, and elevated central peak—that resembles an impact site. The others have a similar morphology but more disrupted by later tectonic or volcanic activity. Preliminary analyses of available seismic, gravity and magnetic data over Catalina Crater reveal similarities and differences in geometry, structure, and geophysical signature to known impacts. All three crater structures occur within the Catalina terrane, a highly extended volcanic and metamorphic province floored by Catalina Schist basement. An alternative origin may thus involve explosive volcanism, caldera collapse and resurgent magmatism, and/or possibly schist remobilization, associated with the Catalina terrane. Timing of crater formation postdates the initial rifting and rotation of the western Transverse Ranges, and predates major right-slip along the San Clemente and San Diego Trough fault systems—or about 18 to 16 Ma. No single model for impact, caldera, or other crater forming mechanism fully accounts for all of the present observations and data regarding the morphology, internal structure, and known lithology of these craters. Regardless of their origin, these complex craters represent some of the largest structures of their kind in western North America and provide a unique opportunity to better understand crater forming processes.

Time, Place, And Cost

Time:

Thursday, January 23, 2003

Meeting Agenda

Lunch Served: 11:30 AM to 12:00PM

Announcements: 11:50 AM to 12:05 PM

Guest Speaker: 12:05 PM to 12:45 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 (405), turn west onto Willow Street and turn right onto Grand Avenue at the sign for the Center. Park free in the garage structure.

Cost:

Lunch and Speaker: **\$17.00 with reservations**
 \$20.00 without reservations
Student: **\$ 6.00 (Lunch and Speaker)**

Reservations Are Essential

Please note the change in reservation policy and make your reservations with **Mike Mills** by Tuesday, November 19. **Phone: (714) 220-9138 Ext. 13** or e-mail Mike at MILLSLABGS@HOTMAIL.COM

Luncheon Meeting Student Bonus

The first five (5) students to show up for the luncheon meeting will have their meal costs paid for courtesy of Mike Mills and Pacific Soils Engineering and the LABGS. In addition, **all students** attending the LABGS meeting will receive a free SEPM publication courtesy of the Pacific Section SEPM.

DAVID B. DEL MAR
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California Registered Geologist #634

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LABGS Future Meetings

Lunch meetings are held at *The Grand at Willow Street Conference Center*. Lunch starts at 11:30 AM

Winter Schedule 2003

January 23, 2003

Mark Legg – *Large Crater Structures in the Offshore California Borderland*

February 27, 2003

Bjorn Paulsson / Karen Blake – *Imaging the Wilmington Oil Field Structure*

March 27, 2003

TBA

April 24, 2003

TBA

May 22, 2003

PSAAPG / WRSPE Convention - Long Beach Hilton, with 3 days of technical sessions

June 26, 2003

TBA

Announcements / Information

AAPG House of Delegates Needed

Two of our four *House of Delegates* to AAPG are open. If you are a national AAPG active member and are interested in filling this vital position please contact Dalton Lockman. **These are vital positions to the leadership for the AAPG, and for the future of the LABGS.**

The LABGS.org Web Site Up and Running!

The LABGS is finally moving into the digital era. On November 21, 2002, we retired our rock tablet chisels and ignited our web site. This web site may be accessed at www.labgs.org. It will be a great place to keep informed over what is going on in the LABGS. The web site will not replace our newsletter but will provide a place to retrieve past issues. As all web sites we will continually change it to meet the needs of our members and friends. If you haven't done so already, you will discover that you can access our newsletter, make reservations for the lunch meeting, contact an LABGS

officer, or learn about LA Basin Geology by touring the LA Basin Geology 101 tab.



Is that a New LABGS Logo ?

YES! - The LABGS has updated its logo. The old logo, which has been used by the society since the 70's, has been retired into the archives. The new logo updates our image to reflect the LABGS today. Thanks to Ivan Aburto and Juan Benitez for getting the artwork completed. You will spot this logo on the newsletter and on the new Web site.



The LABGS is Hosting the 2003 PSAAPG / SPE-WR convention Long Beach, CA

Yes it's true, the LABGS along with the LA basin section of the Society of Petroleum Engineers will be hosting The 2003 Pacific Section AAPG Convention and Western Regional SPE Meeting. The meeting will be held at the Hilton Hotel in Long Beach, California with technical sessions running from May 21-23, 2003.

What does hosting a convention mean you ask? It means we have a responsibility to welcome the PSAAPG and help make the convention a success. For doing this, we should get rewarded with additional income (from the convention) so we can provide scholarships, quality programs, and services to our members and community.

This joint conference of petroleum engineers and geoscientists should present a stimulating forum for the exchange of ideas and innovations across disciplines. If you would like to help out with the planning please contact Dalton Lockman.

Call For Papers Ends January 31, 2003

The Pacific Section of the American Association of Petroleum Geologists and the Western Region of the Society of Petroleum Engineers will once again join forces 21-23 May 2003 in Long Beach, California. Continuing with the tradition of combined AAPG-SPE meetings (Long Beach 2000 and Anchorage 2002), a technical program will be assembled to maximize appeal to both geoscientists and engineers.

The theme of the meeting, *LA Basin: Original Urban Oilfield Legend*, has been chosen to highlight one of the meeting's primary focus areas: parallel discovery and development of subsurface and surface resources. Numerous technical presentations, symposia, forum topics, short courses, and poster sessions will be devoted to other west coast-oriented aspects of geoscience and petroleum engineering as well. A preliminary schedule of geoscience technical sessions is printed on the next page of this newsletter. We will have additional sessions to accommodate papers and posters that don't fit into that schedule so help us make this meeting a great technical success by documenting and sharing some of your best work. Geoscientists and petroleum engineers will be able to acquire technical and practical benefits by participating in this combined conference, where the exchange of ideas and innovations should stimulate cross discipline communication and action.

For details regarding abstract submission for an oral paper or a poster presentation can be viewed on the web at www.psaapg.org or by contacting:

John Cooper PSAAPG Program Chair
(714) 278-2662 jcooper@fullerton.edu,

Glenn Swanson SPE Program Chair
(562) 595-6440 gswanson@shpi.net

MEETING ROOM	WEDNESDAY		THURSDAY		FRIDAY	
	AM	PM	AM	PM	AM	PM
ONE	Stratigraphic applic. to solving ground-water res. issues R.Blake/K.Ehman DEG	Reservoir Modeling and Characterization JOINT	Recent Advances at Elk Hills: Marrying Geology with Technology B. Countryman and B. Long JOINT		Reservoir Characterization JOINT	Contrib. to Pz strat of Great Basin: Sym honoring J. Cooper S. Finney SEPM
TWO	Geological, Geophysical, and Petroleum Engineering Aspects of Deep-Water Deposits T. Nilsen, D. Miller, H. Camacho AAPG		Environ. Geology in the Petrol industry: new ideas, new strategies S. Testa DEG	Active tectonics and struc. Evol. of SoCal continental margin M. Legg AAPG	Neotectonics and Geologic Hazards of Southern California C. Walls/E. Gath AAPG	
THREE	Monterey Formation and chert development J. Schwalbach AAPG	High resolution imaging in urban oil fields B. Paulsson SEG	Neogene Stratigraphy, sedimentology and tectonics R. Behl SEPM	Tectonics and Sedimentation: an integrated approach M. Sullivan SEPM	Fluid flow in active cont. margin of CA: past and present P. Eichhubl AAPG	Petroleum-related activities in the LA Basin R. Suchsland AAPG
FOUR						
FIVE						
SIX	Earthquake monitoring and fault imaging B. Paulsson SEG	Formation Evaluation S. Grayson SPWLA				
	JOINT GEOSCIENCE AND ENGINEERING SESSIONS (6)		SPWLA = Geoscience and engineering application to Formation Evaluation/Log Analysis that do not fit into topical sessions			
	ENGINEERING SESSIONS (15)		PTTC = Geoscience and engineering sessions			
	GEOSCIENCE SESSIONS (15)					

The table above is a preliminary schedule that shows the geoscience sessions our technical chairperson; John Cooper is coordinating.

Contact Us – The LABGS board

President: Dalton Lockman (323) 298-2242

dlockman@plainsxp.com

Vice President: Mike Mills (714) 220-9138, ext. 13

millslabgs@hotmail.com

Treasurer: Kristi Darby (213) 225-5900

kdarby@breitburn.com

Secretary: Ivan Aburto (213) 225-5900

iaburto@breitburn.com

Your Name Here!

Advertising in this newsletter is now available!

Advertising rates for a business card size add are \$60.00 for six issues. These fees help offset our publishing costs.

If interested, please contact Dalton Lockman



Los Angeles Basin Geological Society Membership Form

Join the LABGS and become a member of the Pacific Section AAPG all for one low price of \$12.00 per year - 2 West Coast Geoscience Organizations for the price of one



Membership Benefits

- LABGS Membership
- Monthly Luncheon Meetings with Strong Technical Programs
- Pacific Section AAPG Membership
- Pacific Section AAPG Bi-Monthly Newsletter
- Discounts for PSAAPG Bookstore Publications
- Bi-Annual West Coast Geoscience Directory - *next edition 6/03*
- Networking and Social Opportunities with Fellow Geoscientists

Current Annual LABGS/PSAAPG Dues

1 Year Option = \$12.00 \$ _____
3 Year Option = \$36.00 \$ _____

Extended E-Mail Announcement List Fees

To receive meeting notices from SJGS and CGS

1 Year Option = \$12.00 \$ _____
3 Year Option = \$36.00 \$ _____

PSAAPG Foundation Contributions

B. Hacker Publication Fund \$ _____
Martin Van Couvering Fund \$ _____
Dibble Map Foundation \$ _____
California Well Sample Repository \$ _____
John Kilkenny Scholarship Fund \$ _____
PSAAPG Foundation Trust Fund \$ _____

TOTAL PAYMENT

Total Amount Enclosed \$ _____

Essential Member Information

Last Name _____
First Name _____
Middle Initial _____
E-Mail Address _____
Mail Address _____
Res or Bus ? _____

Additional Directory Information

Employer _____
Position / Title _____
Bus Phone # _____
Res Phone # _____
Fax Phone # _____
Spouse's Name _____
Education *Highest Degree* _____ *Year* _____
School _____

Signature _____

Annual membership is handled through PSAAPG and runs from July 1, through June 30. If you are already a current member of PSAAPG and you selected LABGS affiliation you are already a member of the LABGS.

**Please Make Checks out to PSAAPG and mail along with member form to:
PSAAPG P.O. Box 1072, Bakersfield, CA 93302**