

Inland Geological Society

February 2017

Newsletter of the Inland Geological Society

Volume 32 No. 2

Thursday,
February 2nd

Time:
Social: 6:00pm
Dinner: 7:00pm
Lecture: 7:30pm

Location:
LSA Associates
1500 Iowa Ave.
Suite 200
Riverside, CA
92507
(Map on Pg. 4)

Coming to
Dinner?
Please RSVP:
By Tuesday 01/31
(909) 227-7704
Baircrystal@ca.rr.com

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February Speaker:

Dr. W. Britt Leatham, Ph.D.
California State University—San Bernardino, San Bernardino, CA

Disruptions in Passive Sedimentation—Clastic Dikes, Paleocaves, Neptunian Dikes and Breccias, Karst Surfaces and Karst Breccias

Abstract

Although karst surfaces in carbonate rocks are the quintessential definition of sequence boundaries, recognizable paleocave systems are comparatively rare. Recognition of paleocave systems requires careful lithologic and stratigraphic analysis. Paleocave systems seem to be found in carbonate or carbonate-cemented facies deposited at or near a fluctuating paleobase level. Features used for mapping such systems include, but are not limited to breccia (karst) fill, speleothem deposits (which may be recrystallized), stratigraphically repetitive (not faulted) lithologies, and sharp laterally distinct lithofacies.

Conditions for paleocave development appear to be widespread in miogeoclinal carbonate-dominated belts of the Ordovician-Devonian western Cordillera. Significant Late Ordovician (Katian) paleocave systems occur near the edge of the miogeoclinal platform in central Nevada at Lone Mountain, NV, and in the vicinity of the California-Nevada border near the Nopah Range, CA. The paleocave systems are probably about as old as their fill, based on conodont elements recovered from clasts in the fill, lateral in situ facies, and superjacent lithologies. Those conodont elements are assigned to species correlated with the late Edenian-early Maysvillian of the Cincinnati Series of North America (mid Katian).

(Continued on p. 2)

Abstract:

(Continued from p. 1)

Surprisingly at both localities, the paleocaves are associated with deposits that are stratigraphically above the Sauk-Tippecanoe Sequence boundary of Sloss (1963), which is probably just below the contact of the subjacent Eureka Quartzite and the superposed Ely Springs Dolomite in the Basin and Range.

At Lone Mountain, the paleocave system is elongate, and its base is in the upper Antelope Valley Limestone. The fill of the system includes quartz sand and quartzite clasts from the Eureka Quartzite, and dark dolostone clasts of the Ely Springs. Without careful stratigraphic, paleontological, and lithologic analysis, the paleocave would be identified in the field as a mountain front normal fault.

At Silica Quarry in the southern Arrow Canyon Range, NV, about 10 meters of intensely karsted, light-gray, cryptalgal Sevy Dolomite occurs below the overlying Lippincott Member of the Lost Burro Formation and above the Silurian Laketown Dolomite. Caverns filled with angular dolostone clasts indicate post-Sevy, pre-Lippincott karstification that may be coeval with the Tippencanoe-Kaskaskia sequence boundary, which may be the culprit for the great Redwall/Temple Butte-Muav Limestone unconformity in the Grand Canyon to the south.

New discoveries of clastic dikes at the classic trilobite locality in the Latham Shale also indicate either volumetric changes associated with clay-rich sedimentation or potential seismic activity in the Early Cambrian.

Biography:

For several decades, W.B. Leatham has been involved with field and laboratory analyses focused on defining the geostatigraphic history of our planetary home. Those studies range from the Caribbean/Bahamas/Antilles, to Australia, to the South Pacific, to Mexico, to Europe, to both the continental margin of the western Iapetus and the "western" Cordillera; to the North American epicontinental seaways; and to large and small lacustrine, fluvial, and pedogenic sediments of the western United States. He is local learning facilitator for science and philosophy, and estimates having interfaced with over 15000 students at several institutions of higher learning. Courses "taught" include both general education (introductory geology, historical geology, environmental geology, oceanography, Earth science for educators) as well as advanced Earth science topics (including clastic and carbonate sedimentology, sedimentary petrology, stratigraphy, paleontology, biostratigraphy, and the history of science), and graduate-level STEM workshops and courses. He is also been the advisor on a plethora of student research projects. Dr. Leatham has a couple of degrees including a diploma from Bonneville High School, Utah

STUDENTS! Several scholarship and internship opportunities are currently available.
Some of the deadlines are very close, so check these out immediately!

Scholarships

AEG Foundation: www.aegfoundation.org (February 1st deadline!)

Internships

UNAVCO: <http://www.unavco.org/education/student-opportunities/student-opportunities.html>
(February 1st and February 15th deadlines!)

Upcoming Meetings/Events

Inland Geological Society Meetings

March 2, 2017 (Thursday)

Ed Hernandez, P.E.
Project X Corrosion Engineering
TBD

April 6, 2017 (Thursday)

Claudia Faunt, Ph.D., P.E.
USGS / David Keith Todd Lecturer
Water Availability and Sustainability in California's Central Valley: Past, Present, and Future
Joint meeting with Groundwater Resources Association (GRA)

AEG—So. California Section Meeting



The next AEG-SoCal Chapter meeting will be held Wednesday, February 15th, venue TBA. Mr. Steve Miller of Jensen Precast will discuss Large Precast Retaining Structures and Sound Walls. For more info., visit www.aegsc.org.

AEG—Inland Empire Section Meeting



The February meeting for AEG-IES has not been announced yet. For more info., visit www.aegsc.org/chapters/inlandempire/.

South Coast Geological Society Meeting



Join SCGS on **February 6, 2017, 6:00-9:00 pm** at the DoubleTree Club Hotel in Santa Ana, CA. We are hosting Greg K. Johnson, PG, CEG, of the Los Angeles County Department of Public Works. Greg Johnson will talk about his topic titled "*Pacoima Dam, Los Angeles County, California.*" For more info., visit their website at www.southcoastgeo.org.

Rock & Gem Shows—Various locations

Various rock and mineral shows will be throughout So. California. To find one near you, visit www.rockngem.com, then select the Show Dates tab.

San Diego Assoc. of Geologists Meeting



The next SDAG meeting will be held on Wednesday, February 15th, at the Marina Village Conference Center, San Diego. Geoff Cromwell, Scott Rugh, and Wes Danskin (USGS) Will be speaking on "Using Well Data to create 3D Geologic Model of SD-Tijuana Area". For more info, visit their website at www.sandiegogeologists.org.

Los Angeles Basin Geological Society Meeting



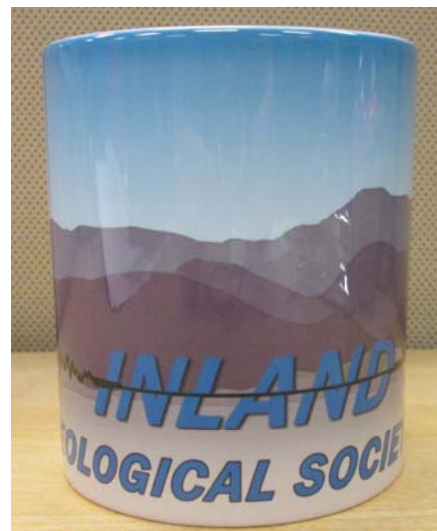
The February meeting hasn't been posted online, but is typically the 4th Thursday of the month. For more info., visit their website at www.labgs.org.

Annual Desert Symposium

The Annual Desert Symposium, hosted by the California State University Desert Studies Center, is scheduled for April 14-17th. This year's field trip theme is the Eastern California Shear Zone: Changes in Latitude, Changes in Altitude. For more information and registration forms, visit <http://nsm.fullerton.edu/dsc/desert-studies-additional-info>.

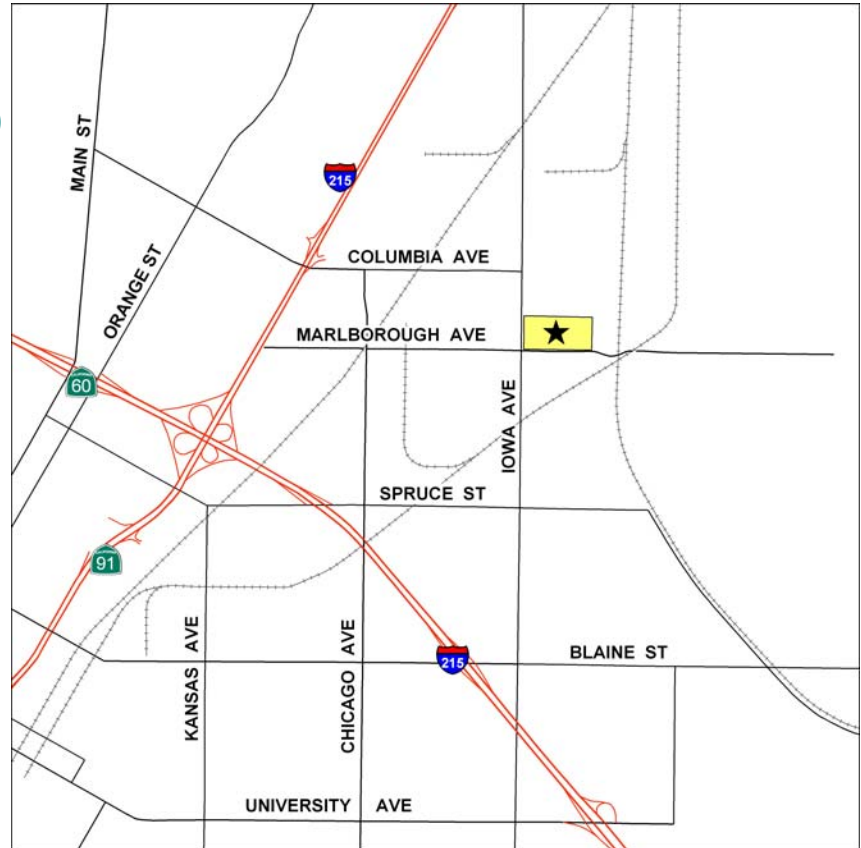
Get Your IGS Coffee Mug!

IGS will now be selling IGS coffee mugs at the monthly meetings. They will be on sale for \$10.



IGS MEETING LOCATION:

**LSA Associates, Inc.
1500 Iowa Ave, Suite 200
Riverside, CA 92507**

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