



Geological Society of Nevada

SOUTHERN NEVADA CHAPTER

Newsletter

May, 2001

Modern and Late Pleistocene Hydrology of Owens Valley, California.

PRESIDENT

Chris Riecken
Consultant

VICE PRESIDENT

Jean Cline
UNLV Dept. of Geoscience

TREASURER

Paul Bowen
Consultant

SECRETARY

Jim O'Donnell
UNLV Dept of Geoscience

FIELD TRIP MANAGER

Jean Cline

HOSTESS

Amy Brock
UNLV Dept of Geoscience

NEWSLETTER

John Van Hoesen
UNLV Dept of Geoscience

DATE: Thursday, May 24, 2001

SPEAKER: Dr. Elizabeth A. Jacobson and Dr. Richard L. Orndorff

LOCATION: Room 102 Lilly Fong Geoscience Building

TIME: 5:30 p.m. Social hour
6:30 p.m. Presentation

Announcements:

- 1) The Southern Chapter of GSN now has a website!**
<http://www.unlv.edu/Colleges/Sciences/Geoscience/GSN/gsnsc.htm>
Bookmark the page to stay on top of the Southern Chapter events.
- 2) A flyer outlining the dates, times, and general logistics of the AEG/GSN fieldtrip to the Alamo Impact Crater is attached to this newsletter or can be accessed at the website.**

Modern and Late Pleistocene Hydrology of Owens Valley, California.

Dr. Elizabeth A. Jacobson - UNLV Assistant Professor of Geology

Dr. Richard L. Orndorff - UNLV Assistant Professor of Geology

Abstract (GSN- Las Vegas meeting on May 24, 2001)

Owens Valley in eastern California lies between the Sierra Nevada on the west and the White and Inyo Mountains on the east. It is presently an arid desert basin with a broad playa in the southern end. During the Pleistocene Epoch, however, this valley periodically filled with water and overflowed into China and Searles Basins to the south. They in turn filled and overflowed into Panamint Valley, forming a large lake there. The terminus of this cascading system was Death Valley, which last held a large body of water called Lake Manley about 120,000 years ago. Based on lake core studies, scientists believe that Owens Valley held water throughout the Pleistocene and Holocene Epochs; at the turn of the last century Owens Lake covered 290 km² of the valley floor. In the early 1900's, however, the city of Los Angeles began diverting water from Owens Valley to meet its own growing urban needs. Amidst much uproar (involving gunfire and explosions), a thriving agricultural valley was reduced to its present state, wherein gnarled and desiccated trunks give voice to the blossoming orchards that once stood here. As a predominately dry playa, Owens Lake contributes to a major dust problem in the area. Ground water resources beneath the lake playa have recently been investigated as a potential source of water for dust mitigation. The primary sources of the ground water beneath the playa are subsurface flow from the upper Owens Valley and recharge in the mountains surrounding the Owens Lake playa basin. The large quantity of mountain block recharge needed to balance a modern steady-state water budget and the age of the ground water based on isotopic measurements indicate that the current hydrologic conditions of the area may still be influenced by wetter climatic conditions.

Elizabeth Jacobson

Dr. Elizabeth (Britt) Jacobson is an Assistant Professor in the Geoscience Department at UNLV specializing in Ground-Water Hydrology. Her education includes a Ph.D. in Hydrology and Water Resources from the University of Arizona, an M.S. in Atmospheric Sciences from the University of Arizona, and a B.A. in Math and Physics from the California State University, San Bernardino. Current interests include research on recharge mechanisms in mountainous terrain in arid regions such as the Great Basin, the interaction of surface and subsurface hydrologic processes for application in regional modeling studies, and the

investigation of various sensitivity and uncertainty techniques as they apply to unsaturated and saturated flow systems (for example, quantifying the uncertainty in infiltration to the water table beneath irrigated fields).

Richard Orndorff

Richard Orndorff is an Assistant Professor in the Department of Geoscience at the University of Nevada, Las Vegas. He is currently conducting research on late Pleistocene glaciation in the Great Basin, stream flow and sediment transport in alpine watersheds, and interactions between long-term climate change and pluvial lakes in the southwest U.S.

Announcements

Look! Its a *NEW* GSN web site!

<http://www.gsnv.org>

If you know of anyone that would like to become a member or if you need to renew your membership in the Geological Society of Nevada, a membership application is attached.

Newsletter Update

Do you know someone who has moved and not told us? A few newsletters are returned because of incorrect addresses following each mailing. If you are aware of someone who hasn't received a newsletter, please have them call or email Paul Bowen at (702)247-7765 or p_jbowen@ix.netcom.com. You may also contact Laura Rudd at GSN headquarters to update this information. Thanks!

PROPOSED DATES FOR TALKS

30 November 2000	Jim O'Donnell
25 January 2001	Dr. Andrew Hanson
22 February 2001	Dr. Stephen Rowland
22 March 2001	Dr. Wanda Taylor
26 April 2001	Student Presentations
24 May 2001	Dr. Elizabeth Jacobson and Dr. Richard Orndorff

GEOLOGICAL SOCIETY OF NEVADA

MEMBERSHIP APPLICATION/RENEWAL

NAME: _____ POSITION/TITLE: _____

CONSULTANT COMPANY NAME: _____

STUDENT UNIVERSITY: _____

ADDRESS: _____

CITY: _____ STATE/PROVINCE _____

ZIP: _____ - _____ COUNTRY: _____

PHONE: WORK _____ FAX: _____

HOME _____ RESIDENCE: _____

E-MAIL: _____ WEBSITE: _____

Do you want to be listed in the membership directory as being available for consulting? Yes No

Do you want to be listed on the website membership page? Yes No

- 1) I would prefer to receive the GSN Newsletter via email in lieu of a hard copy
 - 2) I would prefer to receive the GSN Newsletter via via the postal service
 - 3) I authorize GSN to send me, via e-mail, occasional GSN announcements and publication updates

Regular Membership Dues \$30.00 \$ _____

Student Membership Dues \$15.00 \$ _____

ADDITIONAL DUES

I wish to become a member of the Elko Chapter (\$5.00) \$ _____

I wish to become a member of the Southern Nevada Chapter (\$5.00) \$ _____

I wish to become a member of the Winnemucca Chapter (\$5.00) \$ _____

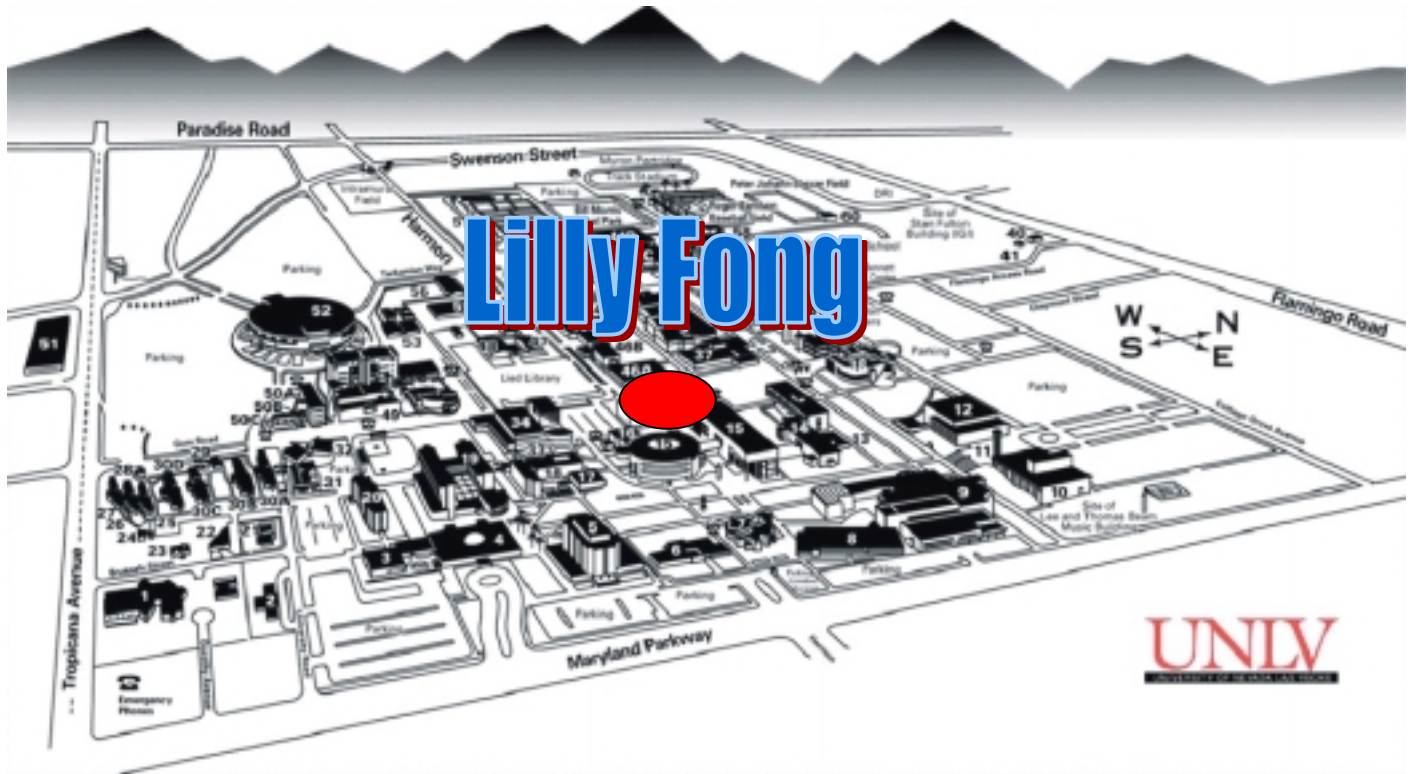
TOTAL DUE \$ _____

Payment: Check/Cash Visa MC Card #: _____

Exp.Date _____ Signature (as it appears on card) _____

Return with payment to: Geological Society of Nevada, P.O. Box 12021, Reno, NV 89510-2021

Fax to 775-323-3599, e-mail: gsn@mines.unr.edu



Publication and mailing of this newsletter has been contributed by The UNLV Department of Geoscience.

Come visit us online at http://www.unlv.edu/Colleges/Sciences/Geoscience/1st_page.html or <http://www.unlv.edu/Colleges/Sciences/Geoscience/GSN/gsnsc.htm>



GSN – Southern Nevada Chapter
Geoscience Department, UNLV
4505 Maryland Pkwy, Box 454010
Las Vegas, NV 89154-4010

**The Southwestern Section of the Association of Engineering Geologists and
The Southern Nevada Chapter of the Geological Society of Nevada**

Present

Field Trip to the Alamo Impact Crater/Alamo Breccia, Alamo, Nevada

Saturday, May 26, 2001

Meet at 7:00 AM at canopy at Gold Coast Hotel

Drivers: Fill up the night before. Passengers will pay for fill up when we return to Las Vegas.

Bring knapsack, lunch, water, hat, camera, rock hammer.

Led by

Brian Ackman

Geologist, Edge Petroleum Company

713-427-8848

backman@edgepet.com

Field Trip Coordinators:

Dr. Marvin (Nick) Saines (702) 896-4049, GREATUNC@aol.com

Max Blanchard (702) 363-9171 Mblanchard1@compuserve.com

Brief Field Trip Itinerary

We meet at 7:00 AM at the Gold Coast, take as few cars as possible. Arrive in Alamo at 9:00 AM where we will meet the field trip leaders. We visit one classic outcrop in the morning, lunch in the field, and one key outcrop in the afternoon. 4:00 PM leave for Las Vegas. Arrive around 6:00 PM.

The Alamo Impact Crater and Alamo Breccia

According to a news release dated October 20, 1997 by Charles Sandberg of the USGS, a massive comet blasted into the Earth 130 miles northeast of Las Vegas 370 million years ago during the Devonian Period. It formed a crater 30 to 50 miles in diameter and 1000 foot waves that led to extinction of many species. It ripped apart a reef on the continental shelf. Chunks of reef as large as one-half mile wide were spewed over an area 120 miles in diameter in Southern Nevada. Shattered blocks of the reef are named the Alamo Breccia. The field trip leaders will take us back to the time of the impact and show us the evidence. (Then we will have a public prayer that it doesn't happen again soon, and this time hit its target.)

Lecture on the Meteor Impact Process

Friday night, May 25 by Max Blanchard former NASA planetary scientist.

Contact Max for details (702) 363-9171; Mblanchard1@compuserve.com

To register for the field trip or for more information:

Contact Nick Saines at (702) 896-4049; GREATUNC@aol.com