



# ASSOCIATION OF ENGINEERING GEOLOGISTS

SOUTHERN CALIFORNIA SECTION

"Serving Professionals in Engineering, Environmental and Ground-Water Geology Since 1957"

February 1996

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**Deadline for submittals to  
the March newsletter:  
February 16**

## THIS MONTH'S MEETING

February 13, 1996

### Rock Avalanches on Earth and Mars

*presented by*  
**Dr. Phillip Shaller**

*and*

### The Geologic Profession — Adapting in a Changing World

*presented by*  
**William V. Knight, CPG, RG**

Reservations must be made by **Friday, January 5!**  
Call GeoSoils at (818) 785-2158  
(leave your name and the number in your party)

### Location:

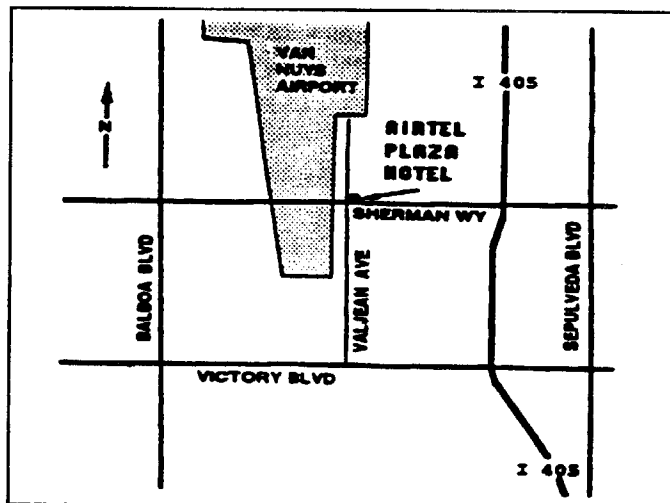
**Airtel Plaza Hotel**  
7277 Valjean Ave.  
Van Nuys

**Cost: \$25.00**

(\$15.00 for full-time students  
with valid I.D.)

**Social Hour: 6:00 pm**  
**Dinner: 7:00 pm**  
**Meeting: 8:00 pm**

### Map to Meeting



## FEBRUARY PROGRAM

### Rock Avalanches on Earth and Mars

**Dr. Phillip J. Shaller**

*Woodward-Clyde Consultants  
2020 east First Street, Suite 400, Santa Ana, CA 92705-4032*

**R**ock avalanches are a common form of mass movement in Earth's mountainous regions, where they pose an ever-increasing geologic hazard to life and infrastructure, as development encroaches into these regions. Despite more than 100 years of scientific investigation, the phenomenon of rock avalanche "long runout" is still hotly debated. Over a dozen disparate theories have been proposed to explain their exceptionally long travel distances, which commonly extend 5-10 times their fall heights. Rock avalanche deposits have more recently been found in the deep ocean off Mars. Despite their occurrence in widely varying environments, these deposits share many common characteristics; comparison of deposits from these different environments provides critical insights into the long-runout mechanism. The presentation will focus primarily on showing the range of rock avalanche characteristics observed on Earth and Mars using air photos, Viking Orbiter images, and ground-based photos taken by the speaker. Discussion will also focus on the destruction of human life and property in such historic rock avalanches as those at Madison, Gros Ventre, and Elm, Switzerland.



#### Biographical Information

Dr. Philip Shaller is a Certified Engineering Geologist, working in the geo-engineering group at Woodward-Clyde Consultants in Santa Ana, California. He received his Bachelor's degree in geochemistry from Occidental College in Los Angeles in 1983. In 1985, he received a Master's degree, also in geochemistry, from the Montana College of Mineral Science and Technology, in Butte, Montana. In 1985, he returned to California to attend Caltech, receiving his doctorate in geology, with a minor in planetary science, in 1991. His thesis investigated rock avalanches on Earth and Mars, with the aim of understanding the phenomenon of the "long runout" of these landslides.

In 1991, Dr. Shaller joined Woodward-Clyde, where he has worked on a number of geotechnical and environmental projects, including the Getty Center in Brentwood, and last spring's Diamond Bar Landslide. He will appear in The Learning Channel's upcoming documentary "The Runaway Mountain."  $\phi$

### The Geologic Profession — Adapting in a Changing World

**William V. Knight, CPG, RG**

*Executive Director - American Institute of Professional Geologists  
7828 Vance Drive, Arvada, CO 80003-2124*

The geologic profession is at a major crossroads in its existence. The environment in which we practice is rapidly changing. If we in the profession are to survive, we must recognize the nature of these changes, the reasons for them, what the future likely holds, and how

we can prepare for it.

Employment in our profession is historically cyclical. The nature of the current changes is similar in both government and industry. They share some of the same reasons for these changes, but only some. The "tradi-

tional" fields of practice will contract, while new fields will expand.

Geologists have, for many years, tended to rely on the leaders in the industries within which they practiced to, in effect, manage their destinies and their careers for them. Petroleum geologists relied on the American Petroleum Institute; mining associations, etc. The future will belong to the geologists who can be self-reliant and who become involved in the decisions that affect their future employment. They must become proactive rather than reactive. This applies to the future both of their own careers and that of the profession. How can we, as professional geologists, become more self-reliant? What do others do for us that we can do ourselves? What must we do?

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## CHAIRMAN'S COLUMN

The AEG Short Course — Seismic Hazards Analysis — held on Saturday, January 20, 1996, was an outstanding success, with 167 participants. Congratulations and thanks to Sue Tanges and Tom Blake for their efforts in coordinating the program; thanks to Tom Henyey and Jill Andrews for logistical arrangements; and thanks to all the speakers — Robert Sewell, Tom Henyey, Tom Rockwell, Mark Peterson, Ken Campbell, and John Kariotis — for a job well done.

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## JOB OPPORTUNITY

*Employment ads are placed in this newsletter free of charge as a service to our readers. We also accept ads from people looking for work in engineering geology and related fields. Ads run one (1) issue. Contact the newsletter editor for further details.*

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**MAA Engineering Consultants, Inc.**, is accepting applications for the position of Project Geologist. Applicants should have an M.S. in a geosciences-related discipline and a minimum of 3 years practical experience in engineering geology. An R.G. qualification is preferred, although not necessarily a barrier to a good applicant. Candidates should possess excellent communication and writing skills. For consideration, mail or fax detailed résumé to:

Fred Chen, President  
MAA Engineering Consultants, Inc.  
3559 North Figueroa Street  
Los Angeles, CA 90065

Fax: 213-226-1538

## NEWS

The recent controversies involving Section 309\* of the Los Angeles County Building Code have been resolved.

It has been concluded that:

- 1) The consultant's disclaimer with the general wording of "test findings and statements of professional opinion do not constitute a guarantee or warranty, expressed or implied" *does not* invalidate the Section 309 statement.
- 2) A typical 309 statement such as "...the site will be safe from the hazard of landslides, settlement, or slippage, and that the proposed work will not affect the geologic stability of property outside of the building site" is acceptable. The word "is" is not acceptable as a substitute for the word "will."

\*NOTE: Future statements must refer to the new (1996) Los Angeles County Code Section designation, ie., section 111 (see New Code Revisions below).

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## NEW CODE REVISIONS

Los Angeles County officially adopted the latest revision of the UBC on January 7, 1996. The chapter numbering in the Uniform Building Code (UBC) has been heavily modified which forced chapter modifications of the L.A. County Building Code (LACBC). Among the changes that will affect you are: chapter 70 of the UBC (Excavation and Grading) is now known as chapter 33; sections 308, 309, 310, and 311 of the LACBC are now known as sections 110, 111, 112, and 113. These, and other changes, are now effective. More information will be included in the next newsletter once your editor has had a chance to read through the new LACBC. The new LACBC will be available for purchase in about one month.

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## NEW COMPETITION

Jim Fisher and Dick Cousineau have formed a new consulting engineering geology firm in Santa Barbara called CFG Consultants. Jim invites AEG friends to keep in touch:

CFG Consultants  
505 Alegria Road  
Santa Barbara, CA 93105-3730

☎ 805-682-6606

**S**olutions  
**L**and  
**W**ater

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ARTHUR C. DEVINE  
EXECUTIVE OFFICER

January 3, 1996

Mr. Charles Nestle  
Association of Engineering Geologists  
6224 W 82nd Street  
Los Angeles, California 90045-2901

All City Licensed Soil Testing Laboratories

**SUBJECT: INCLUSION OF LIQUEFACTION STUDY IN GEOTECHNICAL REPORTS**

On June 28, 1995, the State of California adopted, among others, the 1994 UBC section on "Liquefaction Potential and Soil Strength Loss." Therefrom within six months, the State requires local municipalities to do the same and to begin enforcing that section.

To give private consulting geologists and geotechnical engineers a grace period, the Department of Building and Safety has decided not to enforce this section until February 5, 1996. Specifically, geotechnical reports filed with the Grading Division on or after February 5, 1996, shall evaluate the potential for soil liquefaction and soil strength loss during earthquakes. If there are any liquefaction and soil strength loss, its impact, if any, on differential settlement, lateral movement, and soil-bearing capacity shall be assessed, and appropriate mitigating measures shall be addressed in the report.

Said UBC section on liquefaction is contained in Sec.91.1804.5 of the 1996 Edition of the Los Angeles Building Code (LABC) and is reprinted here for your reference.

**"Liquefaction Potential and Soil Strength Loss.** When a geotechnical report is required by the Department, the potential for soil liquefaction and soil strength loss during earthquakes shall be evaluated during the geotechnical investigation. The geotechnical report shall assess potential consequences of any liquefaction and soil strength loss, including estimation of differential settlement, lateral movement or reduction in foundation soil-bearing capacity, and discuss mitigating measures. Such measures shall be given consideration in the design of the building and may include, but not be limited to, ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements or any combination of these measures.

**EXCEPTION:** 1. The Superintendent of Building may waive this evaluation upon receipt of

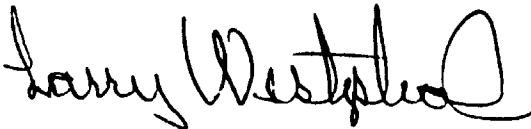
## **INCLUSION OF LIQUEFACTION STUDY IN GEOTECHNICAL REPORTS**

written opinion of a qualified soils engineer or certified engineering geologist that liquefaction is not probable.

2. A detached single-story dwelling of Group R, Division 3 Occupancy with or without attached garages.
3. Group U, Division 1 Occupancies (private garage, carport, shed, agricultural buildings, and fences over 6 ft. high).
4. Fences

The potential for liquefaction and soil strength loss shall be evaluated for a site peak ground acceleration that, as a minimum, conforms to the probability of exceedance specified in Section 1629.2. Peak ground acceleration may be determined based on a site-specified study taking into account soil amplification effects. In the absence of such a study, peak ground acceleration may be assumed equal to the seismic zone factor in Table 16-I."

While the above reprint makes reference to sections in LABC, which may not be available for purchase in the coming months, all the information one needs on this subject is included in the 1994 UBC. It would be appreciated if you would pass this requirement on liquefaction study along to your members and/or staff as soon as possible. Should you have any questions, please call the Grading Division at (213) 485-3435.



Larry Westphal  
Chief of Grading Division

LW:sf  
wp/lique

cc: All Grading Division Staff  
Richard Holguin  
Steve Ikkanda  
Hector Buitrago

# THE BRANNER CLUB

PRESIDENT: Marie Hill, Geologist  
VICE PRESIDENT: Peter Weigand, Professor  
TREASURER: Martine Alter, Geologist

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## FEBRUARY MEETING

DATE: Thursday - February 8, 1996  
PLACE: The Athenaeum, Cal Tech, Pasadena (Hill Avenue and California Boulevard)  
TIME: Social Hour: 6:00 pm; Dinner: 7:00 pm; Meeting and Talk: 8:00 pm  
PRICE: \$30.00 - Students are half-price. Introduce a colleague or friend to the Branner Club and the Athenaeum - special price of \$25 for newcomers  
SPEAKER: Dr. Robert E. Crippen  
TOPIC: Visualizing the Earth's Crust: Geomorphically, Spectrally, Temporally, and Seismically

Dr. Crippen will discuss applications of satellite imagery to geological investigations and how visualization and mergers of data sets enhance the process of information extraction. He will show that the synoptic view, information from non-visible wavelengths, and digital processing can reveal geological features not readily detectable in ground surveys. Several examples of southern California geology will be illustrated including some 3-D images viewable with special glasses.

Dr. Crippen has been a research geologist at the Jet Propulsion Laboratory for the past nine years. He received his Ph. D. at the University of California, Santa Barbara. In recent years, he has been at the forefront of image processing and has shown that ground displacements, such as fault offsets and sand dune migrations, can be seen and measured in optical satellite images even if the displacements are smaller than the resolution of the pixels that make up the image.

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**RESERVATIONS ARE IMPERATIVE** Mail or phone by Tuesday February 6, 1995

Please detach the form below and return it with your check (or pay at the door).

Mail to: Martine Alter Or phone: Martine Alter  
2453 Prospect Avenue (818) 248-7715  
Montrose, California 91020

Next meeting: Thursday, April 25, 1996 - **Our 75th Anniversary Meeting!**  
Dr. Torrence V. Johnson, Chief Scientist of the Galileo Mission at JPL  
will talk on Jupiter and preliminary results from the mission

----- DETACH HERE -----

MEMBER NAME \_\_\_\_\_

NUMBER OF DINNERS \_\_\_\_\_ for the February 6, 1996 meeting.

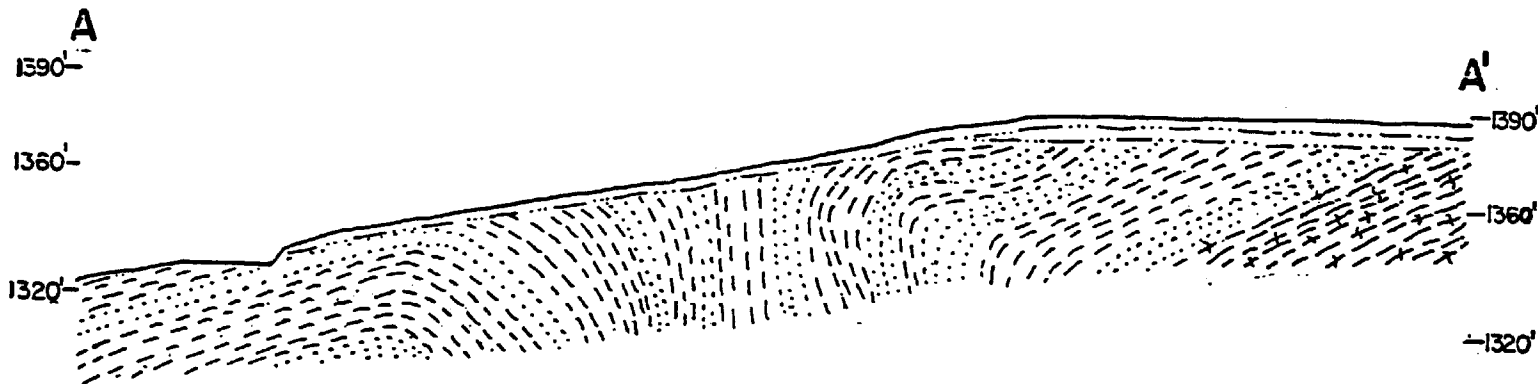
REMITTANCE ENCLOSED (please make check payable to BRANNER CLUB) \$ \_\_\_\_\_

# FIRST EVER AEG SOUTHERN CALIFORNIA SECTION GEOCONTEST!

## WIN A FABULOUS PRIZE!

- Your Mission: COMPLETE THE CROSS SECTION (This requires *INTERPRETATION*)
- The Rules: Pretend you are submitting your work to the USGS for publication (or to the County for review and...cough...approval). This means 35 feet ain't good enough, so what the heck, fill the page. Include the air space. You know, like you had to do in structure so many years ago. Entries need not be originals. You may cheat in any manner you feel is appropriate. No other rules or guarantees are expressed or implied. Your editor and the person who mailed in the cross section are the only people who knew of this contest prior to publication; therefore the two of us are disqualified from winning what ever it is that will be won. Your editor is solely responsible for this contest.
- The Prize: We have absolutely no idea what the prize will be, but we promise it won't be too embarassing.
- Time Limit: However long it takes for a reasonable number of entries to be submitted.

Mail completed entries to your editor at the address on the reverse side of this page.






Charles Nestle  
AEG Newsletter Editor  
6224 W. 82nd Street  
Los Angeles, CA 90045-2901

***STAY OF EXECUTION GRANTED THE BOARD OF REGISTRATION!***

*Details at the meeting and in next month's newsletter.*

 Please Recycle

FIRST CLASS POSTAGE

## **GEOQUOTES OF THE MONTH**

"It is a geostatistical truism, at the 95-percent confidence level, that your site will fall at the mutual juncture of four U.S. Geological Survey 7.5-minute topographic quadrangle sheets. The site itself runs this inconvenience at the 90-percent probability. There is also a 20-percent probability that at least one of the sheets will be out of stock."

— Allen W. Hatheway

"I am not young enough to know everything."

— James M. Barrie

"The trouble with the world is that the stupid are cocksure and the intelligent are full of doubt."

— Bertrand Russell

"The world is full of morons and natural tyrants, sure of themselves, strong in their own opinions, never doubting anything."

— Clarence Darrow

## **COMPUTER CORNER**

Cool site of the month:  
check out <http://execpc.com/~bblick/pinpoint/> for all sorts of earthquake info (in case you haven't yet reached saturation).

For you east coast vacationers (now is a great time) check out <http://mgs.dnr.md.gov/> before you go to learn about geological conditions that affect the State of Maryland. Special consideration is given to the coastal and estuarine concerns of the State.

Seen on the internet...  
a suggested title for a cutting-edge research paper:  
"Chaotic fuzzy neural wavelet genetic multigrid model of greenhouse warming."