



# AGS NEWSLETTER

ARIZONA GEOLOGICAL SOCIETY, INC., TUCSON, ARIZONA

April 2008

## APRIL 1, 2008 DINNER MEETING

Phil Davis  
U.S. Geological Survey

### Remote sensing characterization of the mineral resources of Afghanistan

Armed conflict in Afghanistan over the past few decades has prevented economic development of that country and the scientific education of their people and has also destroyed much of its infrastructure, including the Afghanistan Geological Survey. It is the goal of the U.S. Agency for International Development (USAID) to help rebuild the infrastructure and economy of Afghanistan with the hope that this stabilizes the country in a number of ways. In 2004, USAID enlisted the assistance of the U.S. Geological Survey (USGS) to help rebuild the capabilities within the Afghanistan Geological Survey and to assist in assessing the country's natural resources in order to encourage foreign investment and development of Afghanistan's abundant resources. The USGS efforts are focusing on water, oil, gas, coal, and non-fuel mineral resources.

For much of the country, the most detailed geologic map information is at 1:500,000-scale, produced mainly by the Russians in the early 1970's. The maps are too general and often inaccurate for detailed resource assessments. Therefore, the USGS is training the Afghan geologists in modern field and resource-assessment methods and acquiring and processing remote-sensing data to perform more detailed, accurate resource assessments. These efforts are relying heavily on remote sensing applications because of the extremely rugged terrain, large expanses to be assessed, and the threat of terrorist attacks. This presentation will review our efforts to date in restoring AGS infrastructure, in acquiring remote-sensing data to support the resource assessments, and in processing remote-sensing data directly related to some of the mineral resource assessments.

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## GeoDaze 2008 - 36th Annual Geoscience Symposium

April 3-5, 2008

The annual GeoDaze Symposium is a student-run showcase of graduate and undergraduate research in the Earth Sciences at the University of Arizona.

Keynote Speaker: Tekla A. Harms (Amherst College)

For information: visit <http://earth.geo.arizona.edu/geodaze/2008/>. For questions contact: [geodaze@email.arizona.edu](mailto:geodaze@email.arizona.edu)

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### Dinner Meeting Information — InnSuites, 475 North Granada, Tucson

To reserve your place for dinner, call 520-663-5295 before 5 pm, Friday, March 28, 2008.

**AGS CAN NO LONGER GUARANTEE DINNER SEATING FOR THOSE WHO SHOW UP WITHOUT A RESERVATION.**

Cost: Members \$24, Guests \$27 Students \$10 (+\$3 for late registration)  
Cash Bar @ 6 pm                      Dinner @ 7 pm                      Talk @ 8 pm

For dinner selection, indicate if a low-salt or vegetarian meal is required. Please cancel if you are unable to attend.

## Announcements

Spring 2008 Field Trip - Tucson Water

Free!

## AGS SPRING FIELD TRIP SATURDAY, MARCH 29, 2008

For the spring field trip, AGS has arranged a half-day guided tour of the Hayden Udall Water Treatment Plant (H/U) and the Clearwater Renewable Resource Facility (Recharge and Recovery Project) (CRRF). The trip will be held Saturday, March 29th. Meet at the Tucson Water Building downtown at 7:30 am. The trip is free and compliments of Tucson Water. They have a van that will take up to 14 people; any more than that can carpool behind the van.

### SCHEDULE:

07:30 - 08:00 AM- Meet at Tucson Water Building, 310 W Alameda St Tucson, AZ 85701 (See downtown map, below.)  
08:00 - 08:30 AM- Travel to H/U Water Treatment Plant  
08:30 - 10:00 AM- Tour of H/U Water Treatment Plant  
10:00 - 10:30 AM- Travel to CRRF  
10:30 - 11:30 AM- Tour of CRRFacility  
11:30 AM-12:00 PM- Travel back to Tucson Water Building

For a map and details about the sites, please check "Guided-Tours" at <http://www.tucsonaz.gov/water/ed-outreach.htm>

Please contact Rich Brown if you have any questions.  
rbrown@clearcreekassociates.com

**It's Not Too Early to Put This on Your  
Calendar:  
May 14–22, 2010  
GSN Symposium  
Great Basin Evolution and Metallogeny**

### **New Mexico Geological Society Announces 2008 Fall Field Conference**

The next NMGS Fall Field Conference will be held in mid-October 2008, in Silver City, New Mexico. The trip will focus on Eocene-Oligocene volcanism, Paleozoic and Precambrian stratigraphy, and ore deposits of the Gila Wilderness in southwestern New Mexico. Greg Mack and Jim Witcher are the principal conveners of the 2008 conference. For information, go to the NMGS web site: <http://nmgs.nmt.edu/ffc/home.html>.

## TILLMAN'S CORNER

*A Past Preserved in Stone: A History of Montezuma Castle National Monument* by Josh Protas 2002, Western National Park Association, \$22 trade paper Full text available at: [http://www.nps.gov/moca/historyculture/upload/MOCA\\_hist.pdf](http://www.nps.gov/moca/historyculture/upload/MOCA_hist.pdf)

This interesting history of Montezuma Castle and Montezuma Well, Sinagua Indian ruins in central Arizona's Verde Valley, started out as the author's Ph. D. thesis. It may be more than you really want to know, unless you're a specialist or local resident, but the book is (fortunately) quite well-written, and only occasionally lapses into academic jargon.

Montezuma Castle is a well-preserved cliff-dwelling, built into a shallow cave in a cliff above perennial Beaver Creek. I live nearby, and have visited the Castle and Well countless times in the 30 years I've lived in Arizona. Hence it's fair to say that I'm the intended audience, and I learned a lot about the ruins and their setting. So I recommend the book if you have similar interests—particularly since you can try it (as a pdf) for free!

For geologists, Montezuma Well may be of more interest—it's a large sinkhole in the Pliocene Verde limestone lakebeds—which are also splendidly exposed in the cliffs that the Castle is built into. The Monument also includes an outstanding set of Pliocene elephant and other mammal footprints at the old lakeshore, unfortunately presently covered up due to lack of funds (or interest?). This would make a nice stop on our next Verde Valley field trip, which also might help prompt the Park Service to make them into a permanent display.

Happy reading—  
Peter D. Tillman  
Rimrock, AZ

Science is wonderfully equipped to answer the question "How?" but it gets terribly confused when you ask the question "Why?"

Erwin Chargaff, 1905–2002

**Please make your dinner-meeting  
reservation BEFORE  
Friday, March 28, 2008.  
Call 520-663-5295 today!**

## THE PRESIDENT'S COLUMN

BY LEE ALLISON

lee.allison@azgs.az.gov

Once again, it's the worst of times; it's the best of times.

On the down side, the U.S. economy can only be described charitably as in turmoil. The dollar continues to weaken, pushing up prices for all kinds of commodities. Last week, Microsoft chairman Bill Gates testified to Congress that "...the evidence is mounting that we are failing to make the investments in our young people, our workers, our scientific research infrastructure, and our economy that will enable us to retain our global innovation leadership." Gates declared that we "face a critical shortfall of skilled scientists and engineers who can develop new breakthrough technologies." His second point is that "the public and private sectors are no longer investing in basic research and development (R&D) at the levels needed to drive long-term innovation."

Meanwhile, gold passed \$1,000 per ounce, oil not only went over \$100 per barrel, it briefly topped \$110, and coal is expected to double in price this year, all fueling huge demand for geologists and engineers.

Even as the U.S. economy slows, the global demand for resources is being overwhelmed by explosive growth in developing nations with giant populations. According to the Stockholm-based Raw Materials Group, 1,100 new mining projects were announced last year at an estimated investment of \$308 billion, 50 percent more than a year earlier.

A recent news analysis found that geology grads are now making more than new MBA's, at \$86,700. The demand for geologists, according to the U.S. Labor Department, will grow 22% by 2016, about double the increase for all occupations. On top of that, resource companies are projecting that as many as half their workers will retire in the next five years.

AGS has an important role to play in helping ensure that the current generation of students recognizes the value and rewards of careers in science, and especially in geology. We have to work to see that our K-12 education system offers meaningful science curricula and find ways to attract students who traditionally never thought of science as an option. And we have to make sure that the state and nation invest wisely in innovation to ensure our competitiveness in an increasingly global economy.

One step we are taking is that in addition to the annual AGS Courtright Scholarship, AGS is this year contributing \$1,000 for an "AGS Best Poster Award," at the University of Arizona GeoDaze Symposium for student presentations, April 3-5.

Let's look at other ways those of us in the geologic profession can reach out and bring the benefits to a new generation for their well-being and that of society.

## AGS Elects Walt Heinrichs Honorary Life Member

Walter E. Heinrichs, Jr. was elected an honorary life member of the Arizona Geological Society at the April 4 society dinner meeting. A plaque was presented to Walt at the meeting that stated in part that the award was "...in recognition of his high attainments as a scientist and of his service to the society."

Walt has contributed to and participated in AGS, for 50 years. He is the only original member of the 60-year-old society. Among his many contributions to the geology community, Walt found the Pima ore body, using geophysics.

Walt's wife and sons, who attended the ceremony as guests of AGS, are shown below with Walt holding his plaque.



### 2008 CALENDAR OF EVENTS

- |        |  |
|--------|--|
| 5/6/08 | <b>Adam Schwarz</b> , Resolution Copper: <i>Geology of the Resolution porphyry copper-moly system</i>  |
| 6/3/08 | <b>Mark Myers</b> , Director, USGS: <i>Topic to be determined</i>  |
| 7/1/08 | <b>Steve Enders</b> , Newmont, <i>Bridging the gaps in exploration and mining opportunities for research and development across the life cycle of an ore deposit</i> |
| 8/5/08 | <b>Dick Heermance</b> , USGS: <i>Terrace formation and climate change in southern California</i>   |



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ABOUT THE  
ARIZONA GEOLOGICAL SOCIETY  
AND UPCOMING EVENTS  
VISIT OUR WEBSITE  
www.arizonageologicalsoc.org

AGS books and maps are sold at the monthly dinner meeting and by the Arizona Geological Survey. Visit the AZGS website www.azgs.state.az.us and click on Non-AZGS Publications



*As always, please keep us up to date as you move, change jobs, or change your e-mail address.*

**2008 AGS MEMBERSHIP APPLICATION OR RENEWAL FORM**

Please mail check with membership form to: Arizona Geological Society, P.O. Box 40952, Tucson, AZ 85717. Dues (circle one): 1 year: \$20; 2 years: \$35; 3 years: \$50. (Full-time students receive free membership. The newsletter is by e-mail only, and a membership application form must be returned to AGS annually to remain on the membership list.)



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Please send the newsletter by e-mail only  by regular mail only  by e-mail AND regular mail

If registered geologist or engineer, indicate registration number and state: \_\_\_\_\_

Enclosed is a \_\_\_\_\_ tax-deductible contribution to the J. Harold Courtright Scholarship Fund.