Obsidian Observer

August 2010
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Los Alamos Geological Society
P.O. Box 762, Los Alamos, NM 87544-0762

August Meeting

Time: Tuesday, August 17, 2010, 6:00 pm
Place: Christian Church
92 East Road
Los Alamos, NM 87544

Table of Contents

Journey to the Center of the Sun

Joyce A. Guzik, Ph.D., Los Alamos National Laboratory

Although we know more about the Sun than any other star, only the surface is directly visible. How do we know what is going on inside? This talk will discuss how scientists use a variety of tools, including acoustic waves, to see beneath the Sun's exterior, a subject known as 'helioseismology'. While it might be a welcome companion on a tropical beach, the Sun is actually a turbulent volatile object, shaken by "sun-quakes" and traversed by X-rays streaming from a hot dense core where the equivalent of 100 billion hydrogen bombs explode every second. Also explored will be predictions for the Sun's future and their implications for temperatures on Earth. The talk will close with prospects to use oscillations observed

in other stars to infer their interior structure (asteroseismology).

A version of this talk was given for the Frontiers in Science colloquium series in the spring of 2010.

Joyce Ann Guzik joined X-division at Los Alamos National Laboratory in 1988. She has a Ph.D. degree in astrophysics from Iowa State University and bachelor's degrees in physics, math, and Russian studies from Cornell College in Mt. Vernon, Iowa.

She is currently part of the NASA Kepler Guest Observer program and the Kepler Asteroseismic Science Consortium. Launched in March 2009, the Kepler satellite searches for Earth-like planets orbiting other stars. Guzik's role as a guest observer is to analyze high-precision photometry on the variations of stars to help researchers better understand the interior structure of stars.

Upcoming Meetings

September 21, 2010—Insights on New Mexico's geothermal activities, speaker will be Shari Kelley.

October 19, 2010—to be announced.

November 16, 2010—speaker will be Richard Stead.

Marsupials not from Down Under after all

New study suggests kangroos and their kin are from South America

by Clara Moskowitz
LiveScience

All living marsupials — such as wallabies, kangaroos and opossums — all originated in South America, a new genetic study suggests.

Yep the animals most famous for populating Australia actually started out on another continent alto-

gether. But marsupials a group of mammals known for toting their young in belly pouches on the females are still common in South America, too.

The recent study used new genetic data about some of these species to trace the family tree.

"The two recently sequenced marsupial genomes of the South American opossum (Monodelphis domestica) and a kangaroo, the Australian tammar wallaby (Macropus eugenii), provide a unique opportunity to apply a completely new approach to resolve marsupial relationships," the researchers, led by Maria A. Nilsson of Germany's University of Munster, wrote in a paper published July 27 in the journal PLoS (Public Libary of Science) Biology.

The South American opossum (commonly called simply "possum") looks like a large, furry mouse. Meanwhile, the Australian tammar wallaby is a small member of the kangaroo family that hops around on two legs.

The scientists analyzed genes from these species for special genetic markers called retroposons that can reveal how much the two genomes share in common. They found that these animals and all living members of the marsupial family must have originated from one branch of mammals, because they all share special retroposon patterns that no other mammals have.

The results suggests marsupials started out from a common ancestor in South America, and one major branching-off took place long ago when South America, Antarctica and Australia were all connected to each other as part of a large landmass called Gondwana. This fork would have allowed the animals to populate Australia.

This finding goes against previous ideas that marsupials originated in Australia. Under this scenario, some groups of marsupials would have split off when the landmasses of South America, Antarctica and Australia split around 80 million years ago. The situation is complicated by a lack of strong fossil evidence of this group from ancient times.

A pair of Kangaroos cavort. Marsupials like these, once thought to originate in Australia, may actually have come from South America.

New Theory of Why Mid-continent Faults Produce Earthquakes by Elizabeth K. Gardner, Purdue University, (as seen in ScienceDaily)

A new theory developed at Purdue University may solve the mystery of why the New Madrid fault, which lies in the middle of the continent and not along a tectonic plate boundary, produces large earthquakes such as the ones that shook the eastern United States in 1811 and 1812.

The theory suggests that the energy necessary to produce the magnitude 7-7.5 earthquakes came from stored stress built up in the Earth's crust long ago. Rapid erosion from the Mississippi River at the end of the last ice age reduced forces that had kept the New Madrid fault from slipping and triggered the temblors.

Eric Calais, the Purdue professor of earth and atmospheric sciences who led the study, said the theory is the first to explain how a fault could have had large earthquakes in the recent past but today show no signs of accumulating the forces needed to produce another earthquake.

"We understand why earthquakes happen at the contact between tectonic plates, like in California, but it has always been a puzzle as to why earthquakes occur in the middle of the continent as well, and with no visible surface deformation," Calais said. "Our theory links an external climate-driven process, the melting of the ice sheet, and earthquakes."

Calais and others have analyzed the fault for more than 10 years using global position system measurements to capture movements of the Earth's surface that represent a buildup of energy and have traditionally been used to evaluate the potential for an earthquake. As the data was collected, it became evident that such motion was not occurring along the New Madrid fault.

Andrew Freed, co-author of the paper and an associate professor of earth and atmospheric sciences at Purdue, said with no discernable motions at the surface to explain how the requisite crustal stresses could have built up in this area, these stresses must be left over from past tectonic processes that are no longer active.

"The only way to reconcile the fact that this part of the continent is not deforming but is producing earthquakes is for the stresses to have built up long ago, " Freed said. "Old geologic processes, such as the opening of the Atlantic and the uplift of the Rocky Mountains, may have squeezed the Midwest. The resulting stress remained stored for millions of years until uplift associated with the Mississippi erosion event led to the unclamping of old faults lying beneath."

If this area of the North American continent is preloaded with the stress that can lead to earthquakes, it will be difficult to assess earthquake risk in the region.

The fault segments that ruptured are unlikely to have future earthquakes as there is no current means to reload them, but there remains a risk that other faults in the region could experience large earthquakes in the future, Calais said.

"Unfortunately, this stored stress is invisible to us, and the usual methods of measuring strain and deformation to evaluate a spot's potential for an earthquake may not apply to this region," Calais said. "Under these conditions, once an earthquake occurs on a given fault, it's done; but this also means that other faults in the region that appear quiet today may still be triggered."

Details of the team's work, which was supported by a grant from the U.S. Geological Survey, appear in a paper in the current issue of Nature.

For a period from 16,000 to 10,000 years ago as the ice sheet melted, it steadily rushed water down the Mississippi River. As the river flowed, it washed away sediments and removed weight pressing down on the Earth's crust. With this relatively rapid removal of weight, the crust rebounded and bulged slightly up from its previous position. This slight arching caused the top layers of the Earth's crust to be stretched and the bottom layers to be compacted, exerting forces on the preexisting faults sufficient to trigger the earthquakes that began more than 3,000 years ago in the New Madrid region, culminating with the 1811-1812 events, Calais said.

More data needs to be collected to see whether this mechanism applies to similar seismic zones in the world, he said.

Additional paper co-authors include Roy Van Arsdale of the University of Memphis and Seth Stein of Northwestern University.

Reference: E. Calais, A. M. Freed, R. Van Arsdale, S. Stein. **Triggering of New Madrid seismicity by late-Pleistocene erosion**. *Nature, 2010*; 466 (7306): 608 DOI: 10.1038/nature09258

LAGS Regular Meeting Tuesday, 20th July, 2010

Because the regular meeting was a silent auction and potluck, there are no minutes.

LAGS Board Meeting Wednesday, 28th July, 2010 by Paul Bradley

Paul Bradley, Stuart Schaller, Richard Stead, Emily Schultz-Fellenz, and Rick Kelley met at Ruby K's at 7:30 AM on Wednesday July 28.

Emily started off with a description of speakers she has lined up. August will have Joyce Guzik taking about her research on the Sun, Shari Kelley will speak in September, October is still open, and Richard Stead will talk in November. December is the wrap-a-rock. Emily also brought up the January banquet and suggest Giday Wolde-Gabriel as the speaker. Although he was the banquet speaker about six years ago, he and his colleagues are in the headlines and magazines with their latest work in Ethiopia searching for humanity's ancestors. We have a couple of backup choices if Giday is unavailable. The tentative date for the banquet is Saturday January 22, 2011.

Rick and Paul discussed upcoming field trips. For August 21st Paul is setting up a tour of the Harding Mine. We will try to get a local expert to talk about the geology of the place. Logistics will force signups for this trip to be quite early so we can get things

in to UNM on time. The normal date for the September field trip is the 25th and this conflicts with the New Mexico Geological Society Fall Field Conference. We are considering not having a September trip and instead combining it with October to have an extended trip on Columbus Day weekend to Cooke's Peak. Columbus Day weekend is October 9-11 this year. Cooke's Peak is between Hatch and Deming and has a number of abandoned fluorspar and other mines to explore. If there is interest, we could attempt a trip in late October.

Finally, the board got around to discussing Earth Treasure show. The consensus is to stay with the Masonic Temple this year and continue to explore the possibility of the middle school for future shows or as a backup.

Rick mentioned that we desperately need to schedule a work party morning to re-level the shed on the Mason's property and take advantage of the opportunity to get rid of unused equipment.

The board meeting ended with a re-telling of the field trip up to Salida.

August 2010 Field Trips by Paul Bradley and Rick Kelley

The August field trip will be on Saturday August 21. We plan to visit the Harding Mine near Dixon. It has been some time since LAGS visited this classic locale, mainly because of increase logistical hassles. We will leave the Aquatic Center parking lot in Los Alamos at 8 AM, so be there by 7:50. We will stop at the Santa Clara (aka Big Rock) Casino in Espanola to collect people from other locations. Bring the usual collecting gear, snacks, lunch, sunscreen, rock hammer, camera, water, and the like. Unlike some trips, we need considerable advance notice with the University of New Mexico. Please contact Paul Bradley (Ppbradpp@aol.com) or Rick Kelley (rekelley@lanl.gov or rekelley@ix.netcom.com) no later than Thursday, August 5 so we can fill out the permission slip and get it sent in. If you are in doubt, sign up. It's easier for us to say someone was not able to show up than to get you added at the last minute. Please include your address as that is required on the form.

We are still discussing ideas for September and October. One complicating factor is the NMGS Fall Field Conference is the weekend of September 22 - 25, which is the normal field trip date. That means it will be another weekend. If you have suggestions, please call or e-mail. We did get one about the Cerrillos Hills and we might do that one in October.

July 2010 Field Trip by Paul Bradley and Rick Kelley

Seven members of LAGS met in Salida, Colorado early on the morning of June 24 in the Wal-Mart parking lot. We were eagerly anticipating our climb up Mount Antero. We started off at 8 AM and made it to the Baldwin Gulch trailhead, where we finished consolidating people into the high-clearance pickups. We wound up behind a SUV that had a bunch of young people whose idea of fun was to hang onto the side with their feet on the running boards. We took some pictures of these "citiots, tourons, etc." and their antics. Fortunately, they moved along at a good clip until Baldwin Creek, where they decided to take pictures -- and block the road. Finally, we moved on and were up at the Mount Antero/Mount White Saddle by about 10 AM (see Fig. 1). Shari and Paul both were interested in climbing a Centennial Peak called either "North Carbonate" or as it is now known, Cronin Peak. For added incentive, there was a mine en route called the California Mine. On the way, Paul and Shari found a couple of pieces of aquamarine, which whetted their appetite to check the place out. They made it to top of Cronin Peak and took in the expansive views, which included seven 14,000 foot peaks. The California Mine dumps (see Fig. 2) did not reveal much of interest, although there were some signs of blue beryl. However, the club members on Mount White were having no luck finding anything worth collecting. Mount Antero was not an attractive option, as there were hordes of people that drove up earlier in the day. Through miscommunication, Paul and Shari made it almost to the Mount Antero/Mount White saddle before realizing that the other LAGS members were headed to the California Mine in the trucks. This turned out to be good luck, as Shari found the first indications of an area with a good bit of aquamarine, smoky quartz,

and molybenite on the walk back. Soon a mini-scrum erupted (see Fig. 3) with club members digging and picking up rocks to look for the telltale signs of blue or dark brown. The collecting continued until people decided that it was getting late (see Fig. 4). We then drove back down the rough road to Salida and a good dinner.

Sunday morning was also cool and clear. This time, there were nine of us ready to try our luck at the Calumet Mine, where high quality epidote, magnetite, and actinolite crystals were in the offing (see Fig. 5). We drove up the road to the mine and people embarked up the steep trail to the mine. Paul took off to scout out a corundum prospect. After some searching, Paul did find the corundum locale (see Figure 6) and picked up some samples. It took longer to finish collecting at the Calumet and eat lunch than expected. Only a few people went to the corundum prospect to see what it looked like and get GPS coordinates for a future trip. Everyone drove back home with cool weather. We will be back.

Fig. 1: Mount Antero (left peak) and Mount White (right peak) from the summit of Cronin Peak. The road up the mountain can be seen on the left. LAGS members attempted to collect near the summit of Mount White.

Fig. 2: The dumps of the California Mine (middle distance) with the summit of Cronin Peak in the distance. The dumps did not yield much of interest, but the ridge in the upper right yielded some nice crystals.

Fig. 3: LAGS members happily digging away for aquamarine and smoky quartz. Mount White is in the background.

Fig. 4: Shari doesn't want to give up on a good pit, even though it's 4:30pm!

Fig. 5: Ron and Rachel grab a few small specimens from the Calumet mine.

Fig. 6: The dumps and a prospect pit at the corundum locality near the Calumet Mine. There were about eight little pits perched on the hillside.

ANNOUNCEMENTS

Help! Rocks Need A Home

Paul Bradley and Louise Mendius have overflowing storage spaces due to LAGS rocks and they both need to move them to a more permanent home. If you have room in a garage or storage space, please contact Paul or Louise to help out. We would really appreciate it!!

LAGS Needs A Secretary

Do you like writing stories about meetings? Then we have the job for you. LAGS is looking for someone to take the minutes at the regular and board meetings. If you have some time to volunteer, please consider becoming the LAGS secretary. Contact one of the officers for more information.

2010 GSA Annual Meeting, 31 October - 3 November, Denver, Colorado USA

Reaching New Peaks in Geoscience. This year, GSA is offering 156 Topical Sessions for you to choose from, each designed to promote the exchange of interdisciplinary, state-of-the-art information. You can filter the topical session list by category or sponsor to help find the one you're after. In addition, GSA will have a multitude of Discipline Sessions. Discipline sessions are equally vital to completing our technical program. Finally, there are the prestigious Pardee Keynote Symposia with invited speakers.

For more information see http://www.geosociety.org/meetings/2010/

Albuquerque Geological Society

September 1, 2010 , AGS – Sean Connell – Sediment Magnetism and Isotopes: Dating the Albuquerque Basin and dawn of the Rio Grande Valley.

October 6, 2010 – Mike Darr, Eohydrologic Investigation of the Southern Chupadera Mountains Area: Availability and Sustainability of Water Supplies for Domestic Use

2010 AGU Fall Meeting 13–17 December Moscone Convention Center Howard Street, Between Third & Fifth Sts. San Francisco, California, USA

The Fall Meeting is expected to draw a crowd of over 16,000 geophysicists from around the world. The Fall Meeting provides an opportunity for researchers, teachers, students, and consultants to present and review the latest issues affecting the Earth, the planets, and their environments in space. This meeting will cover topics in all areas of Earth and space sciences.

Registration

Registration for the Fall Meeting is now open. Full conference registration fees prior to 10 Novem-

ber are listed under Registration Rates. Late fees will apply after 10 November. The last day to register online is 19 November.

Meeting Discounted Registration Deadline: 10 November 2010, 2359 UT (Universal Time)

Register online at http://www.agu.org/meetings/fm10/registration/index.php

Abstract Submissions

Abstract Submissions are now being accepted.

The deadline to submit an abstract is 02 September 2010 – 2359 Eastern Daylight Time.

Late submissions cannot be accepted.

Abstract Submission Policies

Abstracts must focus on scientific results or their application. The Program Committee may decline to consider abstracts with other focus.

The person submitting the abstract will automatically be the First Author. This cannot be modified.

The First Author must be an AGU member, or sponsored by an AGU member.

Your membership fee for 2010 must be paid by 27 August in order to be recognized as a member in the abstract submission system. After that date, we cannot guarantee that you will be able to submit as an AGU member. If you have recently joined AGU or renewed your membership, you must wait a minimum of 2 business days before your account will be available to access in Abstract Central.

Non-members may submit an abstract as a First Author, but an AGU sponsor is required. Non-members will need to create an account in Abstract Central. Once their account is complete, they may proceed to submit their abstract as the First Author. You will be asked for the sponsor's AGU membership number in Step 5 of the submission process.

First Authors can have a maximum of one (1) contributed and one (1) invited abstract, or two (2) invited abstracts. The only exemption to this policy is the submission of (1) additional contributed abstract to an Education (ED) or Public Affairs (PA) session.

A flat fee of $60 will be charged for each regular submission, and $30 for each student submission. There is no fee for persons from Qualifying Low and Lower Middle Income Countries.

The abstract submission fee is a non-refundable processing fee, and not based on approval of your abstract submission or attendance at the Fall Meeting.

The only method of payment accepted for abstract fees is by credit card.

Submissions can be saved as drafts and edited prior to the deadline, even after payment has been made.

Oral presentations cannot be requested, although you may request a poster presentation.

The abstract submission fee does not register you for the meeting. Separate registration fees apply. (See Registration page).

Submission of an abstract carries with it the obligation to give a presentation in the designated manner assigned by the Program Committee. It also grants AGU permission to publish the abstract.

Submit abstracts online at http://agu-fm10.abstractcentral.com/index.jsp

Tectonic Crossroads: Evolving Orogens of Eurasia-Africa-Arabia Ankara, Turkey, 4-8 October 2010

Situated at the intersection of the Eurasian, African and Arabian plates, Turkey and the eastern Mediterranean region form one of the most seismically and volcanically active convergent zones in the Alpine-Himalayan orogenic system. This broad zone of convergence is dominated by crustal extension and shortening, as well as strike-slip faulting as part of collision-induced escape tectonics.

The Geological Society of America, in collaboration with the Chamber of Geological Engineers of Turkey, the Directorate of the Mineral Research and Exploration Institute, and the Turkish Association of Petroleum Geologists are convening a thematic, global geoscience meeting, hosted by the Middle East Technical University from 3 to 8 October 2010 in Ankara, Tur-

key. This international meeting is designed as a forum to bring geoscientists from around the world to compare and contrast regional geology and processes with the local experts working in this extraordinary region—so active that it is one of the world's great natural geological laboratories. Conference participants and guests will also examine the geology and regional culture via an array of field trips. Comparative presentations at the meeting will also help improve our understanding of the region's natural hazards and mineral resource potential.

Colorado Scientific Society

The Grand Loop Field Trip—A Tribute to Bruce Bryant, September 24–26, 2010

This Fall's field trip will entail a geologic journey into Bruce's old stomping grounds and go out to Glenwood Springs, up through Aspen, and back around over Independence Pass and through the Upper Arkansas River Valley.

We plan to look at a variety of geologic topics and disciplines from the Proterozoic to the Quaternary. Geologic highlights will include the geology of the Maroon Bells, spectacular glaciated valleys, Quaternary geology of the Roaring Fork Valley, and the Oligocene Grizzly Peak caldera. We plan to stay in Glenwood Springs the first night, with the option of staying at the old hot springs lodge and having a soak. The second night will be around Aspen, with a motel or camping option. Aspens should be in peak color at the time of the trip as well. We are trying to plan this trip as cost efficient as possible so PLEASE let us know as quickly as possible if you are interested in being part of this geologic journey. Final cost will be issued after registration deadline.

Preliminary Cost Estimate: $50/person for transportation

Lodging: Glenwood Springs—Hotel Colorado and Hot Spring Soak $140/room; Holiday Inn $89/room + $17/person for Soaking. Aspen—St. Moritz Hotel $79/room or $33/person for dorm style. Or Camping—FREE!!!

Departure Date: Friday Sept. 24 at 3:30 pm Registration Deadline: Friday, August 20, 2010,

Return Date: Sunday Sept. 26 by 5:00 pm No money down—final cost to be decided after Aug. 20th. PLEASE RSVP ASAP to Cal Ruleman at cruleman@usgs.gov or 303-859-0911

Utah Geological Association

UGA Annual Fall Field Trip, October 1-3, 2010

Mark your calendars! The UGA Fall field trip to south-central Utah will be held October 1-3. Dr. Ben Everitt is coordinating this year's trip, which will likely start near Cedar City and move eastward to Hanksville, with overnights in Kanab, and Escalante or Torrey. Logistics of the trip are still being sorted out, so stay tuned. If you are interested in leading a stop near your field area, please contact Ben at: rockdoc@xmission.com.

October 2010 – China Field Trip – Contact Bill Stone – See his contact info below.

Bill and Mary Stone are conducting a field trip to SW China Karst in October, 2010. As with travel anywhere, and especially in China, be prepared for minor adjustments. Thay have added two days in Chongqing at the end of the trip. Bill and Mary and spent time there in October 2009 and found a wonderful small hotel, fascinating attractions, and a city worthy of traveler's attentions. Chongqing is much more than the "big industrial city" that some guidebooks declare. If this makes your stay in China longer than you would like, they can easily arrange for you to return directly to the USA and skip Chongqing and the associated costs, though they are nominal.

Estimated cost of the entire trip with 15 nights/16 days in China is $4850 per person. Single supplement is estimated at $525. That includes most costs. See the details in the itinerary. We will provide more background information, trip advice, and planning information for those that sign up, including a guidebook that we have written just for this tour. The last trip guidebook was almost 40 pages thick.

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Recently Published from The Geological Society of America

Special Papers

Large Meteorite Impacts and Planetary Evolution IV, edited by Roger L. Gibson, Wolf Uwe Reimold, 2010, ISBN: 978-0-81372-465-2

Impact cratering is now ubiquitously recognized as a fundamental geological and planetological process that has decisively contributed to the formation and evolution of all bodies in the Solar System. In the tradition of the previous Large Meteorite Impacts and Planetary Evolution Special Papers of the Geological Society of America, this volume presents the outcomes of current impact cratering research of both planetological and terrestrial scope. The contents include planetary cratering studies involving both remote sensing analysis and numerical modelling regarding both formation of impact structures on Earth and elsewhere. Furthermore, a range of geological, geophysical, and remote sensing studies of terrestrial crater structures, as well as multidisciplinary laboratory investigations of natural and experimentally produced impactites are reported. This volume relates new discoveries of possible impact structures and confirmation of others, and it is a widely applicable source book for information about the impact cratering process and impact crater studies.

Geology and Tectonic Evolution of the Central-Southern Apennines, Italy, edited by Livio Vezzani, Andrea Festa, Francesca C. Ghisetti, 2010, ISBN: 9780813724690

This richly illustrated book, with its accompanying CD-ROM of full-color geological maps (scale 1:250,000) and stratigraphic-structural documentation, provides a comprehensive review of the geology and tectonics of the central-southern Apennines, one of the classical fold-and-thrust belts of the Alpine orogeny. It is a useful and up-to-date reference for researchers, teachers, and explorationists and can be used to plan either real or virtual field trips to some of the most beautiful mountain areas of Italy.

Late Paleozoic Glacial Events & Postglacial Transgressions, edited by Oscar Lopez-Gamundo, Luis A. Buatois, 2010, ISBN: 978-0-81372-468-3

This collection of papers covers state-of-the-art critical topics related to the Late Paleozoic Glaciation and deglaciation-triggered sea-level rise that affected Gondwana. Those topics include the sequence stratigraphic framework of postglacial transgressions and their influence on the salinity of the postglacial coastlines, faunas (including the Levipustula Fauna) and floras associated with the Late Paleozoic Glaciation, ichnofacies related to this paleoclimatic episode, and relatively less known glacial deposits in some Gondwanan regions. One chapter challenges the popular interpretation that there was a single massive ice sheet over much of Gondwana during the late Paleozoic glaciation.

Recently Published from the American Geophysical Union

Diversity of Hydrothermal Sytems on Slow Spreading Ocean Ridges, edited by Peter Rona, Colin Devey, Jerome Dyment, and Bramley Murton, 2010, ISBN: 978-0-87590-478-8, AGU Code GM1884788

The papers in this volume present a multidisciplinary overview of the remarkable emerging diversity of hydrothermal systems on slow spreading ocean ridges in the Atlantic, Indian, and Arctic oceans.

When hydrothermal systems were first found on the East Pacific Rise and other Pacific ocean ridges beginning in the late 1970s, the community consensus held that the magma delivery rate of intermediate to fast spreading was necessary to support black smoker-type high-temperature systems and associated chemosynthetic ecosystems and polymetallic sulfide deposits.

Contrary to that consensus, hydrothermal systems not only occur on slow spreading ocean ridges but, as reported in this volume, are generally larger and spaced farther apart, exhibit different chemosynthetic ecosystems, produce larger mineral deposits, and occur in a much greater diversity of geologic settings than those systems in the Pacific.

Show Calendar

Aug. 6-8--HILLSBORO, OREGON: Show, “Gem Faire”; Gem Faire Inc.; Washington County Fairgrounds, 873 NE 34th Ave.; Fri. 12-7, Sat. 10-6, Sun. 10-5; weekend pass $5; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

Aug. 6-8--NORTH BEND, OREGON: Show, “Nature’s Wonders”; Far West Lapidary & Gem Society; North Bend Community Center, 2222 Broadway; Fri. 10-6, Sat. 10-6, Sun. 10-5; displays, jewelry, demonstrations, kids’ activities, exhibits, silent auction, raffle, door prizes, dealers, faceted and rough gems, minerals, gold, silver, crystals, beads, mountings, tools; contact Rocky Pribble, P.O. Box 251, Coos Bay, OR 97420, (541) 572-8301

Aug. 7-8--AUSTIN, TEXAS: Show; Austin Bead Society; Palmer Events Center, 900 Barton Springs Rd.; Sat. 10-6, Sun. 11-5; admission $5, $1 off with food donation; handcrafted jewelry, supplies, raffles; contact Austin Bead Society, P.O. Box 656, Austin, TX 78767-0656, or Michele Chesak; e-mail: mchesak@gmail.com; Web site: www.austinbeadsociety.org

Aug. 7-8--SAN FRANCISCO, CALIFORNIA: Show, “Golden Gateway to Gems “In the Pink”; San Francisco Gem & Mineral Society; County Fair Bldg. (Hall Of Flowers), Golden Gate Park, 9th Ave. and Lincoln Way; Sat. 10-6, Sun. 10-5; adults $7, seniors $6, child under 12 free with adult; demonstrations, jade carving, chain maille weaving, wire wrapping, bead stringing, silver metal clay modeling, cabochon cutting, California Academy of Sciences displays; contact Carleen Mont-Eton, 4134 Judah St., San Francisco, CA 94122, (415) 564-4230; e-mail: publicity@show.sfgms.org; Web site: www.sfgms.org

Aug. 12-15--BUENA VISTA, COLORADO: Show, “The Rock Show at Buena Vista: A CONTINental Divide TAILgate”; Contin-tail LLC; Rodeo Grounds, Gregory Rd. and Rodeo Rd.; Thu. 9-5, Fri. 9-5, Sat. 9-5, Sun. 9-5; free admission; more than 120 dealers, rocks, minerals, gemstones, fossils, beads, jewelry, lapidary equipment, demonstrations (glintknapping, stone cutting, wire wrapping, beading, precious metal clay), free rock for children, door prizes, fluorescent mineral display; contact Carolyn Tunnicliff, 1130 Francis #7010, Longmont, CO 80501, (720) 938-4194; e-mail: ctunnicliff@comcast.net; Web site: www.coloradorocks.org

Aug. 13-15--TACOMA, WASHINGTON: Show, “Gem Faire”; Gem Faire Inc.; Tacoma Dome/Exhibition Hall, 2727 E. “D” St.; Fri. 12-7, Sat. 10-6, Sun. 10-5; weekend pass $5; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

Aug. 14-15--LAKEVIEW, OREGON: Show, “Tallman Rock Roundup”; Tallman Rockchippers; Lake Co. Fairgrounds, 1900 N. 4th; Sat. 10-4, Sun. 10-3:30; free admission; kids’ activities, silent auction, dealers, demonstrators, field trips; contact Johanne Deidrich, 244 N. M St., Lakeview, OR 97630, (541) 947-3237; or LeRoy Johnson; e-mail: lostmymarblesor@yahoo.com

Aug. 14-15--WALNUT CREEK, CALIFORNIA: Show, “Contra Costa Crystal Fair”; Pacific Crystal Guild; Civic Park Community Center, 1375 Civic Dr. at Broadway; Sat. 10-6, Sun. 10-4; admission $6; contact Jerry Tomlinson, (415) 383-7837; e-mail: sfxtl@earthlink.net; Web site: www.crystalfair.com

Aug. 19-22--WOODLAND PARK, COLORADO: Show, “Woodland Park Gem, Mineral & Jewelry Show”; Rock Gypsies; Woodland Park Saddle Club, 19250 E. US Hwy. 24; Thu. 9-6, Fri. 9-6, Sat. 9-6, Sun. 9-5; free admission; contact Kim or Bodie Packham, 87 Plum Creek Rd., Divide, CO 80814, (719) 360-9665; e-mail: runninboar@hotmail.com

Aug. 20-22--COSTA MESA, CALIFORNIA: Show, “Gem Faire”; Gem Faire Inc.; OC Fair & Event Center/Bldg. 10, 88 Fair Dr.; Fri. 12-7, Sat. 10-6, Sun. 10-5; weekend pass $5; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

Aug. 20-22--LAKE GEORGE, COLORADO: Outdoor show; Lake George Gem & Mineral Club; U.S. Hwy. 24, next to post office; Fri. 8-5, Sat. 8-5, Sun. 8-5; free admission; 40 dealers, minerals, fossils, jewelry, lapidary, local amazonite, smoky quartz, topaz; contact Becky Blair, (719) 748-3030; e-mail: blairra@hotmail.com; or John Rakowski, (719) 748-3861; e-mail: rakgeologist@yahoo.com

Aug. 20-22--LONG BEACH, CALIFORNIA: Show; MalicJewels Jewelry & Gift Show; Long Beach Convention Center Hall B, 300 E. Ocean Blvd.; Fri. 12-6, Sat. 11-6, Sun. 11-5; free admission; loose diamonds, colored gemstones, contemporary antique, estate, costume, custom designed, gold, silver, titanium and beaded jewelry, beading supplies, mineral specimens, gift items; contact Debbie Williams, 270 E. Hunt Hwy., Suite 16, #323, San Tan Valley, AZ 85143, (480) 458-7600; e-mail: debbie@malicjewels.com; Web site: www.malicjewels.com

Aug. 27-29--SAN DIEGO, CALIFORNIA: Show, "Gem Faire"; Gem Faire Inc.; Scottish Rite Event Center, 1895 Camino del Rio S; Fri. 12-7, Sat. 10-6, Sun. 10-5; weekend pass $5; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

Aug. 27-29--SANTA CLARA, CALIFORNIA: Show; MalicJewels Jewelry & Gift Show; Santa Clara Convention Center, Hall D, 5001 Great America Pkwy.; Fri. 12-6, Sat. 11-6, Sun. 11-5; free admission; loose diamonds, colored gemstones, contemporary, antique, estate, costume, custom designed, gold, silver, titanium and beaded jewelry, beading supplies, mineral specimens, gift items; contact Debbie Williams, 270 E. Hunt Hwy., Suite 16, #323, San Tan Valley, AZ 85143, (480) 458-7600; e-mail: debbie@malicjewels.com; Web site: www.malicjewels.com

Aug. 28-29--JASPER, TEXAS: 16th annual show; Pine Country Gem & Mineral Society; The Event Center, 6258 Hwy. 190 W, 5 miles west of Jasper; Sat. 9-5, Sun. 10-5; adults $2, students and children free; silent auction, Spinning Wheel, door prizes, grand prize raffle, rock food table, lapidary demonstrations, educational exhibits; contact Jonetta Nash, Rte. 2 Box 248, Jasper, TX 75951, (409) 384-3974; e-mail: jonetta.nash@yahoo.com

Sept. 3-5--SANTA BARBARA, CALIFORNIA: Show, "Gem Faire"; Gem Faire Inc.; Earl Warren Showgrounds/Exhibit Hall, 3400 Calle Real; Fri. 12-7, Sat. 10-6, Sun. 10-5; weekend pass $5; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

Sept. 4-6--SILVER CITY, NEW MEXICO: 27th annual show; Rolling Stones Gem & Mineral Society; Grant County Business and Conference Center, 3031 Hwy. 180 E, next to ACE Hardware; Sat. 10-5, Sun. 10-5, Mon. 10-4; free admission; more than 55 dealers, daily free field trips, silent auction, wheel of fortune; contact Marcia Andre, 1311 Peterson Dr., Silver City, NM 88061, (575) 534-0006; e-mail: marciarandre@gmail.com; Web site: www.rollingstonesgms.blogspot.com

Sept. 9-12--TUCSON, ARIZONA: Business-to-business gem trade show; Gem & Lapidary Wholesalers Inc.; Holiday Inn Palo Verde/Holidome, 4550 S. Palo Verde Rd. (I-10 at Palo Verde Rd.); Thu. 10-6, Fri. 10-6, Sat. 10-6, Sun. 10-3; contact G&LW, P.O. Box 98, Flora, MS 39071-0098, (601) 879-8832; e-mail: info@glwshows.com; Web site: glwshows.com

Sept. 9-12--TUCSON, ARIZONA: Business-to-business gem trade show; Gem & Lapidary Wholesalers Inc.; The Grant Inn, 1365 W. Grant Rd. (I-10 and Grant Rd.); Thu. 10-6, Fri. 10-6, Sat. 10-6, Sun. 10-3; contact G&LW, P.O. Box 98, Flora, MS 39071-0098, (601) 879-8832; e-mail: info@glwshows.com; Web site: glwshows.com

Sept. 10-12--FERNDALE, CALIFORNIA: 6th annual show, "Wildcat Gem Fest"; Wildcat Gem & Mineral Society; Humboldt Co. Fairgrounds, 1250 5th St.; Fri. 12-7, Sat. 10-7, Sun. 10-5; free admission; door prizes, raffles, kids' games, demonstrations, classes, gems, minerals, fossils, jewelry, silent auction; contact Mike Martin/The Stonery, P.O. Box 189, Miranda, CA 95553, (707) 499-6194; e-mail: mick-norma@directv.net

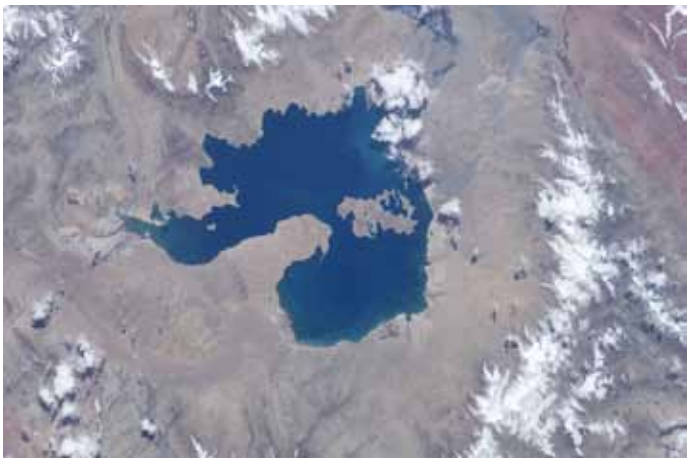
Sept, 10-12--SAN RAFAEL, CALIFORNIA: Show, "Gem Faire"; Gem Faire Inc.; Marin Center/Exhibit Hall, 10 Avenue of the Flags; Fri. 12-7, Sat. 10-6, Sun. 10-5; weekend pass $5; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

Obsidian Observer

Test Your Knowledge

Test your knowledge and see if you can guess where on Earth (or off) this image is from. Answer will be in next month's issue.

Test Your Knowledge — Last Month's Answer



Kara-Kul Impact Structure, Tajikistan

This picture shows the spectacular Kara-Kul structure, which is <10 million years old and 45 kilometers across. Partly filled by the 25-kilometer (16-mile) diameter Kara-Kul Lake, it is located at 3,900 meters (12,900 feet) above sea level in the Pamir Mountain Range near the Afghan border. Only recently have impact shock features been found in local breccias and cataclastic rocks.

Membership News

Next Board Meeting

The next Board Meeting will be Wednesday, Aug. 25, 7:30 a.m. at Ruby K's.

Join the LAGS Google group for the latest club information! http://groups.google.com/group/los-alamos-geological-society

Follow LAGS on Facebook! www.facebook.com

Useful Links (courtesy of AGS Newsletter)

Four Corners Geological Society – www.fourcornersgeologicalsocieity.org

Wyoming Geological Society – www.wyogeo.org

Utah Geological Association – www.geology.com

Club Calendar 2010

Aug. 17—LAGS Regular meeting. Joyce Guzik, former Co-President will speak on the seismology of the Sun and other extraterrestrial bodies.

Aug. 21—Field trip tour of the Harding Mine.

Aug. 25—LAGS board meeting at Ruby K's at 7:30 a.m.

Sept. 21—LAGS Regular meeting. Shari Kelley will be the speaker.

Sept. 22–25—NMGS Annual Fall Field Conference in the Four Corners area.

Sept. 22—LAGS board meeting at Ruby K's at 7:30 a.m.

Oct. 9-11—Field trip to Cooke's Peak.

Oct. 31–Nov. 3—GSA Annual meeting in Denver, CO.

Dec. 13-17—AGU Fall meeting in San Francisco.

Newsletter Deadlines

email: lmendius@hotmail.com

If you have items that you would like to see in the newsletter, please contact Louise Mendius on or before the last Thursday of the month. The deadlines for each newsletter issue are:

September 2010 issue: August 30, 2010

NMGS Annual Fall Field Conference

Every fall since 1950, the Society has held a field conference to some part of New Mexico and, in some cases, to border states. From the beginning, the conference has been accompanied by a guidebook with detailed road logs as well as peer-reviewed papers relevant to the region. These guidebooks remain an invaluable references to the geology of the conference area and most are available for purchase.

Fall 2010: Four Corners Region — September 22-25

The 61st annual NMGS Fall Field Conference will travel through the Four Corners area in northwestern New Mexico. Day 1 will circle the Four Corners Monument with stops in southeastern Utah, northwestern New Mexico and southwestern Colorado. Day 2 will begin in Cortez, CO and end in Farmington and Day 3 will begin in Farmington and end on the Ojo Alamo Sandstone south of Carson. Highlights of this conference will include discussions of Mesozoic stratigraphy, energy and resources from the San Juan Basin and southwestern Colorado and the use of geochronologic methods for refining our understanding of local strata and their fauna and flora.

The conference will be organized this year by: Jim Fassett: jimgeology@qwest.net, and Kate Zeigler: bludragon@gmail.com

Future Conferences:

Widespread enthusiasm for the Fall Field Conferences has led to receipt of many proposals for future conferences. Therefore, the schedule of upcoming field conferences is now outlined for the next several years. The field conference venues and names of organizers are listed below. All members are encouraged to volunteer assistance to the organizers or to contribute to the guidebooks. If you live near or are involved with the geology in the vicinity of the future conference sites, please consider contacting one of the organizers.

Fall 2010: Four Corners Region James Fassett (USGS, retired) and Kate Zeigler

Fall 2011: Tusas Mountains Dan Koning, Shari Kelley, Scott Aby, Kirt Kempter, and Karl Karlstrom

If you have an idea for a future field conference, please contact the President of the NMGS.

Registration is available online at http://nmgs.nmt.edu/ffc/registration/home.cfml.

Creede Mineral Conference, Creede Mineral County, Colorado, September 10-12, 2010

Our conference theme is the Creede Mining District (roughly a 5 hour drive from Denver). Talks will focus on Creede area history, economic geology, mineralogy, current events, and artifacts. There will be displays of classic mineral specimens found in the Creede area, as well as a special micromount display by the Rocky Mountain Micromineral Association.

Dealers will be offering materials for sale. All of Friday's and Saturday's talks will be held in the community center of the Creede Underground Museum (remember to dress warmly).

Optional tours of the Creede Underground Museum will be offered at reduced rates (www.creede.com/mining_museum.htm).

Registration Form must be received by August 25th and is online at http://www.friendsofmineralogy.org/symposia.html.

Symposium registration fees are $34, which includes Friday night's meal, Saturday's light breakfast, refreshment break (snack/drink), lanyard I.D.s, exhibits, symposium proceedings, field trips, and attendance at all talks/posters. Optional Banquet Dinner $26.00 Optional box lunches $10.00 available for Sunday's field trips. Registration does not cover the banquet, alcoholic beverages, field trip costs, lunches, lodging, or museum admission fee.

Some Area Lodging: To avoid any potential endorsements, we recommend that you seek lodging advice from the web, travel agents, or: Creede/Mineral County Chamber of Commerce, P. O. Box 580, Creede, CO 81130. Phone: 719-658-2374, Toll Free: 800-327-2102, FAX: 719-658- 2717, E-mail: chamber@creede.com, Web: www.creede.com. For more information, or to remit checks (payable to Friends of Mineralogy, Colorado Chapter) for registration and optional fees: Lou Conti, 6987 S. Hill Street, Littleton, CO 80120, dlconti@aol.com 303-797-3205

Obsidian Observer

LOS ALAMOS GEOLOGICAL SOCIETY
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Science Fair Judges: Richard Stead and Paul Bradley

Our organization is devoted to studying and promoting interest in geology, mineralogy, archeology, paleontology, and the lapidary arts. Membership is available to any person, family, or institution in sympathy with the objectives of the Society.

General meetings are held on the third Tuesday of the month at the Christian Church, 92 East Road, Los Alamos at 7:30 p.m. The Executive Board meets the fourth Wednesday of the month. Field trips are held the Saturday following the general meeting. Exceptions to the schedules for field trips are published in the Obsidian Observer.

All activities and field trips of the Society are open to the public; reservations may be required for some events. All memberships are family memberships with annual dues of $20. The dues entitle a family to participate in LAGS activities until the end of the calendar year. Any officer of the Society may be contacted for additional information.

The Society is a member of the RMFMS and an affiliate member of the AFMS, and is a sponsor of the New Mexico Symposium at Socorro, NM. Articles may be printed from the Obsidian Observer if credit is given to authors and their publications.

FIRST CLASS