



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

## July Meeting

Time: Tuesday, July 20, 2010, 6:00 pm

Place: Christian Church

92 East Road

Los Alamos, NM 87544

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## Upcoming Meetings

August 17, 2010 is a regular meeting of the club and will feature former LAGS President and LANL Fellow Joyce Guzik will speak on the seismology of the Sun and other extraterrestrial bodies.

September 21, 2010—to be announced.

## July Potluck

### LAGS Potluck and Silent Auction

This month's meeting will be our annual Potluck and Silent Auction. The potluck will begin at 6:00 p.m. Please note that this time is earlier than our regular meetings. The silent auction will follow dinner and all of the proceeds will benefit the LAGS Scholarship Fund.

LAGS will provide the main dish (enchiladas). Please bring a salad, side dish, or dessert to share RSVP to Emily at [emily.s.schultz@gmail.com](mailto:emily.s.schultz@gmail.com) by July 16, 2010.

Everybody come and enjoy a good time and maybe take home a rock or two!



## July 2010 Potluck and Silent Auction

**Tuesday, July 20, 6:00 PM, Los Alamos Christian Church**

### Potluck Dinner

Main entrée provided by LAGS

(enchiladas from El Parasol)

Please bring a side dish, salad, or dessert to share



RSVP by July 16

to [emily.s.schultz@gmail.com](mailto:emily.s.schultz@gmail.com)

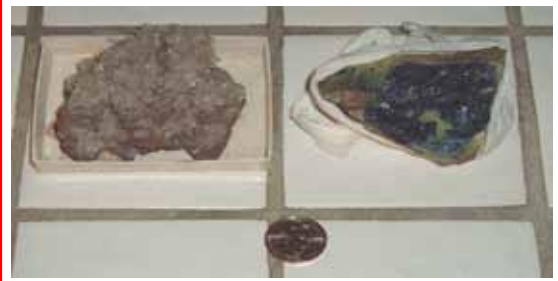
Include # of attendees and dish to share

### Silent Auction

Minerals, Maps, and More  
following the potluck dinner

A look at past silent auction treasures:

Hemimorphite (left) from Santa Eulalia;  
Azurite (right) from Arizona. Coin for scale.



**All Proceeds Benefit The LAGS  
Scholarship Fund**

## *Middle School Project Discovers Cave Skylight on Mars*

*by Robert Burnham,  
School of Earth and  
Space Exploration  
June 20, 2010*

They went looking for lava tubes on Mars — and found what may be a hole in the roof of a Martian cave. The 16 students in Dennis Mitchell's 7th-grade science class at Evergreen Middle School in Cottonwood, Calif., chose to study lava tubes, a common volcanic feature on Earth and Mars. It was their class project for the Mars Student Imaging Program (MSIP), a component of ASU's Mars Education Program, which is run out of the Mars Space Flight Facility on the Tempe campus. The imaging program involves upper elementary to college students in Mars research by having them develop a geological question to answer about Mars. Then the students actually command a Mars-orbiting camera to take an image to answer their question. Since MSIP began in 2004, more than 50,000 students have participated to varying extents.

"The students developed a research project focused on finding the most common locations of lava tubes on Mars," Mitchell said. "Do they occur most often near the summit of a volcano, on its flanks, or the plains surrounding it?" To answer the question, the students examined more than 200 images of Mars taken with the Thermal Emission Imaging System (THEMIS), an instrument on NASA's Mars Od-

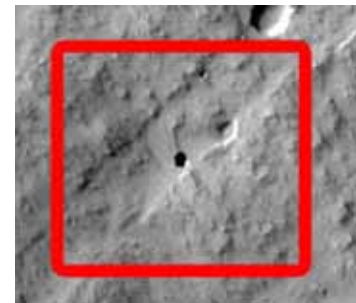
yssey orbiter. Philip Christensen, a Regents' Professor of geological sciences in the School of Earth and Space Exploration, is the instrument's designer and principal investigator. The students chose for their targeted THEMIS image (plus a secondary backup image) areas on Pavonis Mons volcano that had yet to be photographed by THEMIS at highest resolution (18 meters, or 59 feet, per pixel).

On their two targeted images the students found lava tubes, as they had hoped. And on the backup image, they also found a small, round black spot. Many Martian lava tubes are marked by aligned chains of collapse pits, which typically have flat floors and sloping sides. The spot the students found, however, appears to have vertical sides. Such features made a stir in the news in 2007, when Glen Cushing, a U.S. Geological Survey scientist, published a paper showing several Martian examples, which had been located using the heat-sensing capability of THEMIS. He argued that these holes were anomalous as compared to the usual chain pit crater, being smaller and resembling a relatively straight-sided shaft going down into the ground.

Cushing proposed that these anomalous pit craters are "skylights" — places where a small part of the roof of a cave or a lava tube had collapsed, opening the subsurface to the sky. They typically appear cooler than the ground surface by day, but warmer than it by night. This is exactly what would be expected, given that Martian surface temperatures have a large diurnal range, while subsurface temperatures hold

fairly even. "This pit is certainly new to us," Cushing told the students. "And it is only the second one known to be associated with Pavonis Mons." He estimated it to be approximately 190-by-160 meters (620x520 feet) wide and 115 meters (380 feet) deep at least.

In addition, he said, the spot appears clear against the background surface of Pavonis Mons. "It sticks out like a sore thumb in THEMIS predawn thermal observations." The students have submitted their site as a candidate for imaging by the High Resolution Imaging Science Experiment (HiRISE) camera on NASA's Mars Reconnaissance Orbiter. HiRISE can image the surface at about 30 centimeters (12 inches) per pixel, which may allow a look inside the hole in the ground. "The Mars Student Imaging Program is certainly one of the greatest educational programs ever developed," Mitchell said. "It gives the students a good understanding of the way research is conducted and how that research can be important for the scientific community. This has been a wonderful experience."



Sixteen seventh-grade students at Evergreen Middle School in Cottonwood, Calif., found the Martian pit feature at the center of the superimposed red square in this image.

## ***LAGS Regular Meeting Tuesday, 15<sup>th</sup> June, 2010 by Barbara Carlos***

Stuart Schaller opened the meeting at 7:35. Thirty people were present.

Rick Kelley gave a report on the May field trip and told us about the upcoming June 19 field trip to the Petaca district. The July field trip will be to the Salida, Colorado area over the weekend of July 24-25. Participants may camp or stay in a motel. Early reservations are advised. Planned visits are to the Eureka epidote locality, a drive (4-wheel high clearance) up the Mt. Anter jeep trail and a trip to Ruby Mountain if we can get in.

August and September are still open for suggestions for field trips. October is tentatively scheduled to the Eureka Mine and Nacimiento uplift.

Emily Schultz-Fellenz reminded us that next month is the silent auction and pot luck dinner. In August, Joyce Guzik will be speaking on "earthquakes" in the sun.

Emily then introduced our speaker, Dan Aiken, who spoke on the origin of the Hawaiian islands. His title began "The Very Long and Slightly Bent Hawaiian Chain". The Hawaiian Island chain runs NW-SE, but the Emperor seamount chain (oldest rocks 80my) runs almost due north-south and is part of the same system. The bend occurred 50 my ago. The oldest (north) end of the chain is being subducted into the Aleutian trench.

There is much discussion on what caused the bend. Did the

plume move or did the direction of plate motion control the bend? There were a lot of changes in the configuration of the Pacific basin at the time. One hypothesis is that plumes come up where there is weakness in the plate, that melting is caused by upper mantle decompression rather than a deep mantle plume and may be controlled by pre-existing tectonic features. However, the chain cuts across other features such as transform faults, and volcanism doesn't spread out along the transforms, which seems to indicate that the plume is independent of breaks in the plate, and must have a deep mantle source. Currently, the orientation of the chain is determined by the movement of the plate over a hot spot. In the deep mantle plume model, the plume rises to the asthenosphere, gets cut off into blobs that continue to rise to the surface causing separate volcanoes. A conveyor belt model has also been postulated, wherein the ocean floor is subducted at a trench, moves along the core-mantle interface, and is recirculated up in a plume. This model is invoked to explain the abundance of some trace elements such as Hafnium, which would not be expected in basalt but are present in pelagic sediments.

Within the overall NW trend there are two parallel trends, the Loa and Kea, which extend the length of the Hawaiian chain. Aiken also noticed that looking at the ages of the volcanoes, they seem to alternate between the Loa and Kea trend and form an echelon north-south pairs as the activity moves southeast along the chain

(the chain moves northwest over the hot spot).

In the second half of the talk he showed many slides of the big island of Hawaii illustrating different eruptive mechanisms, pahoehoe and a-a flows and interaction of lava with the ocean causing fragmentation into shards. There are six volcanoes on Hawaii: Kohala in the northwest, Mauna Kea on the north coast and southeast of Kohala, Hualalai on the west coast not quite half way down the island and perched on the largest, Mauna Loa, in the center of the island. Kilauea is on the southeast side and is the most active now. Loihi is off the south coast and has not broken the surface yet.

Mauna Kea is the highest mountain in Hawaii and maybe in the Pacific basin. It has seen three glaciations that left moraines on its sides. Hawaii has a wet side (east), which receives over 120 inches of rain a year and a dry side (west), which gets 10-20 inches. This affects the erosion and revegetation of the volcanoes, a difference that can be seen on the two sides of Mauna Kea. Faulting also shapes the land. The rest of the slides illustrated processes.

## ***LAGS Board Meeting Wednesday, 23<sup>rd</sup> June, 2010 by Richard Stead***

The monthly board meeting was held at Ruby K's on June 23 at 7:30am. Emily Schultz-Fellenz, Rick Kelley, and Richard Stead attended. Discussions were brief, given the light turnout.

Rick started the meeting with a recap of the field trip the previous Saturday. We then went on to discuss future trips. July is the weekend trip to Salida, Colorado including a visit to Mt. Antero, among other places. Trips for August, September, and October are less certain, and there is opportunity for members to suggest (or even plan and lead, hint, hint) a trip for the fall. We will likely be planning a trip to the area of Cookes Peak sometime when the weather gets cool, and this would be a weekend trip.

Emily discussed future programs. We talked about getting enchiladas again from El Parasol for the July potluck and silent auction. Joyce Guzik, former co-president of LAGS, will speak in August. Speakers for the fall are not all locked in yet, so there is room to suggest speakers. Richard agreed to consider giving a talk on Death Valley at some point. The Earth Treasure Show is coming up and planning must start in July. There was a lot of discussion about the venue. The Mason's Hall has worked fairly well for us, but the space is small and limits the number of vendors and the flexibility we have for new activities. It is possible that, as an educational organization, we could have access to LAPS space (for example, the Middle School) at a reasonable cost. Pueblo Complex was also mentioned. If we are to consider a change in venue for this year, we would need to do so before the end of July. Emily will make some contacts at LAPS to see what the possibilities are.

### *July 2010 Field Trips by Paul Bradley and Rick Kelley*

This month's field trip will be to the Salida area on the weekend of July 24 and 25. We recommend you drive up Friday night and stay at a local hotel or campground. We plan to visit Mount Antero on Saturday and the nearby Ruby Mountain (so named for spessartine garnets). For Sunday morning, our plan is to visit the Calumet mine and look for a corundum deposit that is on the way. If you are interested in going, please let Paul or Rick know by e-mail (Ppbradpp@aol.com or rekelley@lanl.gov) so we have an idea of the head count. We do not yet have firm plans in place for August onwards. Please call or e-mail suggestions!

### *LAGS June Field Trip Small Fry Fluorite & Big Rock Kyanite by Rick Kelley*

On Saturday June 19th, 2010, thirteen LAGS members traveled north to two separate collecting locations, one that the club has visited in the past and one that is new to LAGS. We stopped first at the "Small Fry" fluorite prospect near El Rito and the to the "Big Rock" kyanite prospect in the Petaca district. It was a beautiful early summer day, but a bit smoky due to the South Fork fire in the northern Jemez.

We gathered at the Aquatic Center parking lot (we will continue to meet here until construction near Sullivan Field is complete) at 8:00am, and traveled to the Santa Claran Casino (formerly the Big

Rock Casino) parking lot where we met the remainder of our group. The drive took us north toward Abiquiu and then about 4 miles toward El Rito, where we parked near the forest boundary for our first stop. A short walk up a gentle canyon led us to the Small Fry fluorite prospect. This area offers easy collecting of nice banded and botryoidal purple fluorite specimens. The area has been under claim in the past, but there were no current claims or signs of recent activity at the time of our visit. The fluorite occurs in narrow bands or seams in the Chama-El Rito sandstone which crops out in this area. The fluorite probably had its origin from a couple of small volcanoes about ¼ mile from the prospect, and mineral rich fluids flowed along faults and bedding planes to this location.

After everyone got all the specimens they wanted, we walked back to the cars and preceded north through El Rito, over the pass to La Madera and Petaca, and then up the Forest Road 45 into the Petaca mining district and the Big Rock kyanite area. This was about a 1-hour drive, so the first task at hand was lunch in the cool pines at 8,600 feet. After lunch, we went in search of kyanite. While easy to find, it's pretty difficult to collect nice fresh specimens because of the hardness and massive nature of the quartzite in which the kyanite is found. Our co-president, Richard, even brought along a full-sized miners pick which also proved to be less than useful. With some careful and difficult hammer work, everyone got a few nice samples of the pale blue-green

kyanite specimens for which this area is known.

When everyone was through collecting, or exhausted from trying, we packed up and drove back to Los Alamos via Ojo Caliente, a beautiful, but on this day a very smoky drive, to end another successful LAGS field trip. Thanks everyone for coming!

PS: Arlene Siddiqi has posted some nice photos of the trip on Picassa page. Copy the link below and paste it into your web browser to view them. <http://picasaweb.google.com/lh/sreDIR?uname=arlene.siddiqi&target=ALBUM&id=5486084483838159889&authkey=Gv1sRgCOjrsJz95vDDEA&feat=email>.



Photo 3: These cows are wondering what a bunch of rockhounds are doing interrupting their quiet day. (Carol Hermes photo)



Photo 4: The "Big Rock" (Rick Kelley photo)



Photo 1: Club members scan the slopes for fluorite (Carol Hermes photo)



Photo 5: Some nice kyanite crystals that could not be extracted from the surrounding quartzite, so this photo is the best "specimen" I collected. (Rick Kelley photo)



Photo 2: A nice band of fluorite in an outcrop at the Small Fry (Robb Hermes photo).

## 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.

## *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

## **CALL FOR PAPERS** *(courtesy of AGS Newsletter)*

International Mine Water Association – Sept 5-9, 2010 Cape Breton, Nova Scotia Call for Papers <http://www.IMWA2010.info>

Conference Themes are:

1. Mine Water Issues & Innovative Mining Methods
2. Mine Water Engineering
3. Mine Water Treatment - Active Systems
4. Mine Water Treatment - Passive Systems
5. Mine Water Uses - Geothermal, Geochemistry, Biochemistry
6. Analysis of Mine Water
7. Coal Mining - Underground Mining, Surface Mining
8. Mine Closure - Coal, Metal
9. Legal Aspects of Mine Water
10. Mine Tailings
11. The 'Cape Breton Development Corporation' Legacy

12. Discussing the concept of a 'Zero Waste Mine'

13. Fracture Flow to Mines

Environmental & Engineering Geoscience (E&EG), a quarterly journal co-published by the Association of Environmental & Engineering Geologists and the Geological Society of America, is seeking new manuscripts. E&EG publishes peer-reviewed contributions, based on original work, in the broadly defined areas of environmental and engineering geosciences (including geomorphology, hydrogeology, low-temperature geochemistry, neotectonics, and other earth surface processes). Both theoretical and empirical contributions related to these areas are welcome, although preference will be given to papers of an applied nature. Specifically, E&EG encourages the submission of the following kinds of papers.

- Results of original research in the environmental and engineering geosciences.
- Case histories describing the solution of new or unusually difficult problems in the applied geosciences.
- Review papers that summarize the state of the science or professional practice in a branch of the applied geosciences, including contributions describing relevant aspects of local or regional geology or the history of environmental and engineering geosciences.
- Short technical notes (six published pages or less) describing new techniques, novel case histories or other

topics in the environmental and engineering geosciences.

- Brief critical discussions of papers and technical notes published in E&EG.

As of August 1, 2006, all manuscript submissions are now electronic via AllenTrack. Authors should visit the AEG website at [www.aegweb.org](http://www.aegweb.org) and click on Publications under the Professionals tab for details on submission, and for a link to AllenTrack.

For more information, contact Co-Editor Abdul Shakoor, [ashakoor@kent.edu](mailto:ashakoor@kent.edu), (330) 672-2968, or Co-Editor Ira Sasowsky, [ids@uakron.edu](mailto:ids@uakron.edu), (330) 972-5389.

## **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/>

***Tectonic Crossroads:  
Evolving Orogens of Eur-  
asia-Africa-Arabia  
Ankara, Turkey, 4-8 Octo-  
ber 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, Turkey. 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.

***Kirt Kempter's Spring/  
Summer Geology Field  
Trips with Southwest  
Seminars and Santa Fe  
Community College***

**July 24, 2010 Georgia O'Keefe's Beloved White Place: A Geo-Walk through the Rocks at Plaza Blanca with Dr. Kirt Kempter** Southwest Seminars, \$95. Located in the Sierra Negra Badlands, this is a day trip to Plaza Blanca with Dr. Kirt Kempter, who will feature his "wise and well-considered" thoughts and research on the geology between Santa Fe and Abiquiu, including a few roadside stops to look at important landscape features, rocks, scenic overlooks, and geologic field maps. Along the way, you will visit the Santa Rosa de Lima historic site overlooking the Chama River and original site of the Abiquiu Valley settlement. At Plaza Blanca, you will take a one-mile hike into this spectacular region, where the canyons are white sandstone and tuff formations. The path is rocky in places, but relatively easy, with less than 150 feet gain/loss in elevation. Includes transportation, casual picnic lunch, and leader honoraria.

***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

## *Recently Published from The Geological Society of America Special Papers*

### ***Miocene Tectonics of the Lake Mead Region, Central Basin and Range***, edited by

Paul J. Umhoefer, L. Sue Beard,  
and Melissa A. Lamb, 2010,  
ISBN: 9780813724638

The Lake Mead region is in the eastern part of the Central Basin and Range, a classic extensional belt. Many seminal papers have been published based on research around Lake Mead: low-angle normal faulting was first recognized here, large-scale extension was demonstrated and quantified, and the rolling hinge hypothesis was first proposed. Ongoing research seeks to address the interplay of extensional and strike-slip faults and shortening features and to understand the driving forces behind deformation in this area. This volume's 19 chapters provide insights that are not only relevant to this area but to extensional processes in general. This Special Paper provides a historical overview of research of the region, a 1:250,000 regional geologic map centered on Lake Mead, and a geophysical analysis of the region's basins and faults. The remaining chapters focus on Miocene basins and structure, new tectonic models, and a new and controversial model of large-volume dissolution accompanying extension in the Mormon Mountains. This volume is dedicated to R. Ernie Anderson, whose contributions

span more than fifty years of research.

### **Stratigraphy and Geology of Volcanic Areas**, edited by Gianluca Gropelli and Lothar Viereck-Goette, 2010, ISBN: 9780813724645

This book represents the state-of-the-art methodological aspects for mapping volcanic areas and highlights recent studies on the stratigraphy, structure, and evolution of active and extinct volcanic terrains, identifying the most important features of a volcano. The papers present new and innovative geological and hazard maps of volcanic terrains, and deal with the definition of mappable units during the field survey. The maps in the book and on the CD-ROM illustrate that the geological map can be a warehouse in which to store data on past eruptions and intereruption phenomena with significant implications for volcanic hazard assessment; volcanological features; petrographic, geochemical, and petrological studies; and geophysical models. Recent geological maps document the applicability of the concept of synthemic units as the main feature that can be used to synthesize and map the volcanic evolution of an area. We hope that this book will be used for further discussions and analyses to help establish a common world methodology for mapping volcanic areas.

***Latest Research—see  
<http://www.geosociety.org/>***

- The mid-Ordovician Osmussaar breccia in Estonia linked to the disruption of the L-chondrite parent body in the asteroid belt

- Fjords as temporary sediment traps: History of glacial erosion and deposition in Muir Inlet, Glacier Bay National Park, southeastern Alaska
- A 48 m.y. history of fracture opening, temperature, and fluid pressure: Cretaceous Travis Peak Formation, East Texas basin
- Displacement profiles and displacement-length scaling relationships of thrust faults constrained by seismic-reflection data
- Record of mega-earthquakes in subduction thrusts: The black fault rocks of Pasagshak Point (Kodiak Island, Alaska)
- Deuterium and oxygen isotopes, paleoelevations of the Sierra Nevada, and Cenozoic climate
- Pyrite framboid study of marine Permian–Triassic boundary sections: A complex anoxic event and its relationship to contemporaneous mass extinction
- First global positioning system results in northern Myanmar: Constant and localized slip rate along the Sagaing fault
- Small-scale convection at the edge of the Colorado Plateau: Implications for topography, magmatism, and evolution of Proterozoic lithosphere
- Origin of large-volume pseudotachylite in terrestrial impact structures

## Show Calendar

Jul. 2-4—FARMINGTON, NEW MEXICO: Show; San Juan County Gem & Mineral Club; Farmington Civic Center, 200 W. Arlington St.; Fri. 10-6, Sat. 10-6, Sun. 10-5; free admission; door prizes, rocks, gems, minerals, Farmington Freedom Days; contact Mickie Calvert, P.O. Box 1482, Farmington, NM 87499, (505) 632-8288; e-mail: mickie2@earthlink.net

Jul. 2-4—PASADENA, CALIFORNIA: Show; International Gem & Jewelry Show Inc.; Pasadena Convention Center, 300 E. Green St.; Fri. 12-6, Sat. 10-6, Sun. 11-5; adults \$8; open to the public, professional jewelers, artists; contact International Gem & Jewelry Show Inc., 120 Derwood Circle, Rockville, MD 20850, (301) 294-1640; e-mail: info@intergem.net; Web site: www.InterGem.com

Jul. 9-11—DURANGO, COLORADO: Show; Four Corners Gem & Mineral Club; La Plata County Fair Grounds, 2500 Main Ave.; Fri. 10-6, Sat. 10-6, Sun. 10-5; free admission; jewelry, kids' activities, gold panning, jewelry making tools, gems, minerals, fossils, beading supplies, door prizes, mineral displays, raffle, silent auction; contact Bill Birza, P.O. Box 955, Durango, CO 81302, (970) 385-6850; e-mail: wcbirzzz@durangolive.net; Web site: www.durangorocks.org

Jul. 9-11—SACRAMENTO, CALIFORNIA: Show, "Gem Faire"; Gem Faire Inc.; Scottish Rite Center, 6151 H St.; Fri. 12-7, Sat. 10-6, Sun. 10-5; weekend pass \$5; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com

com; Web site: www.gemfaire.com

Jul. 9-11—SAN RAFAEL, CALIFORNIA: 2nd annual show, "San Francisco Fine Mineral Show"; FineMineralShow; Embassy Suites Hotel, San Rafael-Marin County, 101 McInnis Pkwy.; Fri. 10-6, Sat. 10-6, Sun. 10-5; contact Dave Waisman, P.O. Box 8543, Spokane, WA 99203; Web site: www.finemineralshow.com

Jul. 10-11—CULVER CITY, CALIFORNIA: 49th annual show, "Fiesta of Gems"; Culver City Rock & Mineral Club; Veterans Memorial Auditorium, 4117 Overland Blvd.; Sat. 10-6, Sun. 10-5; free admission; 27 vendors, rough and polished rocks, minerals, jewelry, beads, demonstrations (glass lampwork bead making, faceting, precious metal clay), half-day classes, kids' games, books, magazines, hourly drawings, grand prize raffle; contact Robert Thirlaway, 28602 Mt. Whitney Way, Rancho Palos Verdes, CA 90275, (310) 213-7677; e-mail: thirlawr@earthlink.net; Web site: http://culvercity-rocks.org

Jul. 16-18—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

Jul. 17-18—SANTA MONICA, CALIFORNIA: Show, "Bead Faire"; Gem Faire Inc.; Santa Monica Civic Auditorium, 1855 Main St.; 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

Jul. 23-25—PORTLAND, OREGON: Show, "Bead Faire"; Gem Faire Inc.; Oregon Convention Center/Exhibit Hall B, 777 NE MLK Jr. Blvd.; 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

Jul. 24-25—FLAGSTAFF, ARIZONA: Show, "Flagstaff Jewelry, Gem, and Mineral Show"; Val Latham, Sharon Szymanski; Radisson Woodlands Hotel Flagstaff; Sat. 10-5, Sun. 10-4; contacts Sharon Szymanski, (480) 671-6191, or Val Latham, (602) 466-3060

Jul. 30-Aug. 1—PRESCOTT, ARIZONA: Show and sale; Prescott Gem & Mineral Club; Prescott Gem & Mineral Club; Embry Riddle Aeronautical University Activity Center, 3700 Willow Creek Rd., Bldg 84; Fri. 9-5, Sat. 9-5, Sun. 9-4; adults \$2, children under 12 free; hand-crafted jewelry, rough rock, slabs, cabochons, beads, fossils, crystals, equipment, raffle; contact Maggi Lieber, 4855 E. Diamond Dr., Prescott, AZ 86301, (520) 831-0017; e-mail: maggiscratch@msn.com; Web site: www.prescottgemmineral.org

## 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



**Soufriere Hills volcano on the Island of Montserrat.**

This is an aerial view of the Soufriere Hills volcano on the island of Montserrat in the Lesser Antilles. The photograph shows one of the volcanic domes that grew and then collapsed into the sea since the volcano became active in 1995. However, there have been far bigger collapse events in the distant past that involve the entire volcanic edifice.

## Membership News

### Next Board Meeting

The next Board Meeting will be Wednesday, July 28, 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](http://www.facebook.com)

### Useful Links (courtesy of AGS Newsletter)

Four Corners Geological Society – [www.fourcornersgeologicalsociety.org](http://www.fourcornersgeologicalsociety.org)

Wyoming Geological Society – [www.wyogeo.org](http://www.wyogeo.org)

Utah Geological Association – [www.geology.com](http://www.geology.com)

## Club Calendar 2010

**July 20, 2010**—LAGS silent auction.

**July 24–25**—Field trip to Colorado to visit Mount Antero, Ruby Mountain, and the Calumet mine

**July 28, 2010**—LAGS board meeting. at Ruby K's at 7:30 a.m.

**Aug. 17, 2010**—LAGS Regular meeting. Joyce Guzik, former Co-President will speak on the seismology of the Sun and other extraterrestrial bodies.

**Aug. 25, 2010**—LAGS board meeting. at Ruby K's at 7:30 a.m.

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

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

## Newsletter Deadlines

email: [lmendius@hotmail.com](mailto: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:

August 2010 issue: July 29, 2010

September 2010 issue: August 30, 2010

October 2010 issue: September 27, 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 north-western 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

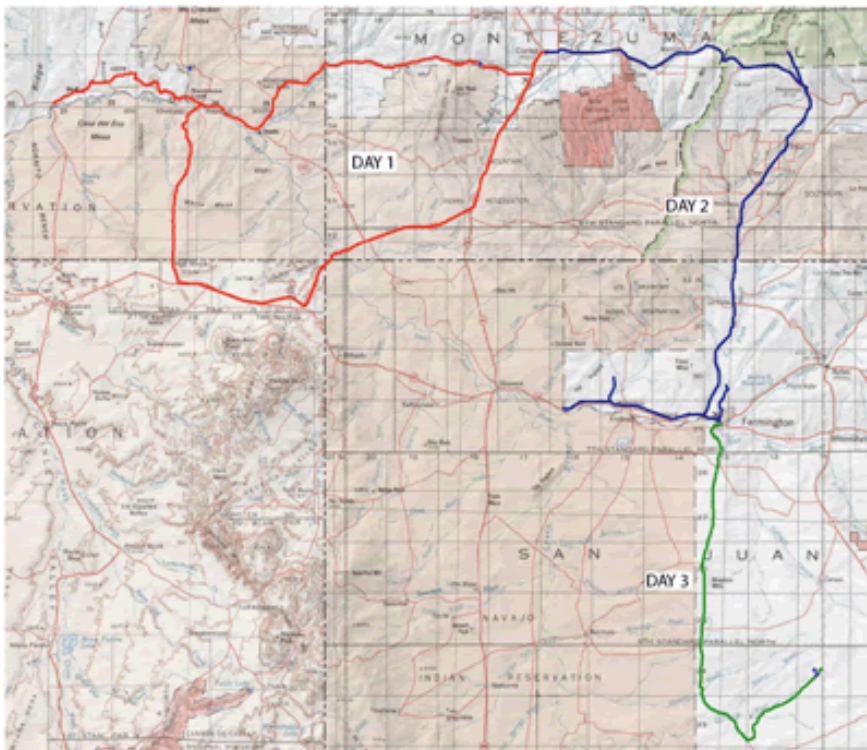
to receipt of many proposals for future conferences. Therefore, the schedule of upcoming field conferences is now outlined for the next several years. The field conference venues and names of organizers are listed below. All members are encouraged to volunteer assistance to the organizers or to contribute 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: online registration is not available yet. Please stay tuned for more information.



2010 NMGS FFC route



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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.

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