



GSA NEWS & INFORMATION

Monthly Newsletter of
The Geological Society of America

VOLUME 9, NUMBER 6

JUNE 1987

New Trustees and Officers Selected for GSA Foundation

The GSA Foundation recently announced new appointments to its Board of Trustees and operating staff, filling vacancies that have arisen over the past year. Harrison C. Jamison was elected chairman, stepping into the position that had been occupied by Caswell Silver since the start of the Foundation in 1980. Jamison was president of ARCO Exploration Company until he retired in 1985. He became a trustee in 1983.

Caswell Silver was the first and only chairman of the Foundation's board. As one of the earliest contributors to the Foundation, he oversaw the successful fund-raising program in the early 1980s that provided the financial wherewithal for the monumental Decade of North American Geology, an undertaking now well on its way to completion. Silver has become an honorary trustee and is continuing to provide valuable support and guidance.

Robert L. Fuchs was named president of the Foundation, filling the vacancy created by the resignation of Dwight V. Roberts last year. Fuchs is managing director of First Fairfield Investment Company, an investment banking firm in Denver. He was a member of the Centennial Development Committee that determined the feasibility of establishing the Foundation, and he served as Foundation vice-chairman from 1980 to 1983. He has been active in GSA financial affairs since 1975 and has been treasurer since 1983.

Three new trustees have been appointed to five-year terms to fill the openings created by departing trustees Silver, Don Carlos, and Thomas Barrow. McLain J. Forman is president and chief executive officer of Forman Petroleum Corporation in New Orleans. Philip E. LaMoreaux is chairman of the board of P. E. LaMoreaux & Associates, Inc., a hydrology, geology, and environmental science

consulting firm based in Tuscaloosa, Alabama. He has recently been elected to the National Academy of Engineering. He has also been a GSA Councilor. Charles J. Mankin is director of the Oklahoma Geological Survey and is state geologist of Oklahoma. Currently he is president of the American Institute of Professional Geologists, and he recently completed several years of service on the GSA Council and Executive Committee.

The new trustees join three others on the board, in addition to Jamison. Lawrence W. Funkhouser retired in 1986 from Standard Oil Company of California, where he served as director and vice-president of exploration and production. Michel T. Halbouty is the chief executive officer and chairman of the board of the Michel T. Halbouty Energy Company in Houston. John C. Maxwell retired in 1984 from the University of Texas in Austin, where he was the William Stamp Farrish Professor of Geological Sciences.

F. Michael Wahl, GSA's Executive Director, was appointed a vice-president by the Foundation trustees. The Foundation's other vice-president is Donna Russell, who has handled administrative matters for the Foundation since 1981.

With the successful funding of DNAG now a matter of history, the GSA Foundation is moving quickly into a new phase of its life. The addition of Forman, LaMoreaux, and Mankin to the board and the strengthening of the operating organization have positioned the Foundation to commence several new programs designed to provide funds for research in the earth sciences. The need for these funds has been increasingly apparent as historical sources have diminished. Over the next few months *GSA News & Information* will be providing you with the details of these programs.



Robert L. Fuchs



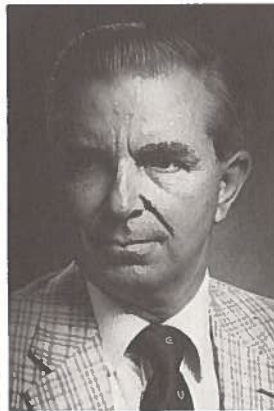
Harrison Jamison



McLain Forman



Phillip LaMoreaux



Charles Mankin



Grand Canyon field trip, 1891. If you have historical photos like this, please contact Centennial Special Projects Subcommittee chairmen listed below.

Centennial Special Projects Need Your Resources Now!

GSA's 1988 Centennial Celebration meeting needs you and your resources now! Although the 100th anniversary celebration meeting is Oct. 31–Nov. 3, 1988, the committee work for the celebration is under way now. Audio-visual subcommittee chairmen Rich Ebens and J. B. Hayes will recreate a field camp of the 1880s *this fall*; they need to borrow camp and geologic field equipment of the time, which can be available to them in August 1987. The needed equipment includes a plane table and alidade, a saddle of the period, and wooden pack frames, which were used on the back of a horse. "We want to have an authentic scene, with a tent of the period and old cooking gear," Hayes said. "It is important that members realize we are assembling the gear *now*."

All of the three special projects subcommittees would like old photos. Even if you do not want to loan a photo for display, the subcommittee chairmen would like to *look* at your photo(s) to take note of the clothing and equipment of the 1880s.

The Special Projects Subcommittee is still seeking items to exhibit: historical materials such as photos, sketches, maps, notebooks, and field equipment for short-term loan or for loan until after the Centennial Celebration in 1988. Do you have any materials that relate to the Founders of GSA? Please let us know.

Below is a list of the subcommittee chairmen. Contact any of them, or Communication Director Nancy Reed at Society headquarters at (303) 447-2020.

F. Michael Wahl, *Chairman*
Executive Director
Geological Society of America
3300 Penrose Place, P.O. Box 9140
Boulder, CO 80301

Norb Cygan
GSA Founders Historical Exhibit
Corporation Stratigraphic Schools
Chevron U.S.A., Inc.
6400 South Fiddler's Green Circle
Englewood, CO 80111
(303) 930-3026

Rich Ebens
Multi-Media, Audio-Visual Project
Manager, Geological Technology
Marathon Oil Company
P.O. Box 269
Littleton, CO 80160
(303) 794-2601, ext. 428

J. B. Hayes
Multi-Media, Audio-Visual Project
1517 West Briarwood Avenue
Littleton, CO 80120
(303) 798-9683

Dick Keefer
Science of Geology Exhibit
773 South Youngfield Court
Lakewood, CO 80228
(303) 988-5346 (home)

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Prepared from contributions from the staff and membership. Executive Director: F. Michael Wahl; Managing Editor: Faith Rogers; Associate Editor: Lee

Gladish; Director of Communications: Nancy A. Reed; Production and Advertising Manager: James R. Clark; Marketing Assistant: Ann H.F. Crawford; Assistant Production Manager: Meredith L. Larson; Production Assistants: Mona T. Gonzales, Joan E. Manly, and Lynn E. Phillips.

*Advertising: Contact James R. Clark or Ann H.F. Crawford (303) 447-2020.



CENTENNIAL NEWS

by Allison (Pete) Palmer

One More DNAG Book Comes On-Line

During March, the Centennial project by the Engineering Geology Division began to bear fruit. Through the first week in April, five chapter manuscripts had been received for *The Heritage of Engineering Geology—The First Hundred Years*, and the editor, George Kiersch, indicates he has more on his desk.

At the Printer

Both the Northeastern and Cordilleran Section Field Guides are now at the printer and will be available for purchase by the time you receive this.

Ready or Nearly Ready

Final numbered pages have been received for *Geomorphic Systems of North America*. As soon as these are cleared by the editor, this will go to the printer.

Only one galley remains to be returned for chapters in the Centennial Field Guide for the Rocky Mountain Section.

The final two chapter revisions for *North America Since the Last Deglaciation* are in the hands of the volume editors and are expected here by mid-April. This will be the second volume completed for *The Geology of North America*.

Color separates for the basic data for the *Magnetic Anomaly Map of North America* were delivered to the U.S. Geological Survey from the Geological Survey of Canada in late February. The geographic and bathymetric bases for this map, which have been prepared by GSA and the USGS are through the proof stage. This map, which will be printed by the USGS and marketed by GSA, is to be published in August.

Summary

Of the 31 books in the DNAG Project that are to be produced by GSA, 23 have reached the production stage. Of these, 3 are published, 2 are at the printer, 2 are completely in hand and will be to the printer probably by the time you receive this, and final revisions of the last two chapters of another are in the hands of the volume editor. This leaves 23 books still in various stages of completion; several need chapter texts from only one or two laggards. There are only 19 months from mid-April, when this is being written, to the time of the Centennial meeting! We had a reachable goal of a complete set of DNAG publications to be presented to the geological community at the time of the Centennial Celebration. The impact of uncompleted commitments is obvious!

More Kudos

The Rocky Mountain Centennial Field Guide will be at the printer's by the time you read this. Thanks and congratulations go to the editor, Stan Beus, of the Department of Geology, Northern Arizona University, and to his regional helpers for producing another fine book in the Centennial Field Guide

series. Listed below are the authors and co-authors whose contributions made this book possible. Acknowledge your colleagues! Including those involved in this book, 513 individuals have now contributed to the Centennial Field Guide series.

R. J. Abitz	A. S. Cohen	W. B. Hansen	J. D. Love	M. P. Russon
D. D. Alt	J. R. Connolly	W. R. Hansen	S. G. Lucas	A. K. Rutledge
R. Y. Anderson	H. R. Covington	D. Hawley	I. Lucchitta	C. Schmidt
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R. W. Barendregt	F. L. DeCourten	F. Karner	J. P. McCalpin	D. R. Spearing
C. W. Barnes	P. T. Delaney	K. R. Kendrick	H. G. McClernan	D. L. Smith
C. B. Beaty	K. J. De Nault	D. W. Kirkland	L. M. Monson	J. R. Steidtmann
R. B. Berg	P. D. Derkey	K. E. Kolm	D. W. Moore	M. C. Stickney
S. S. Beus	R. E. Derkey	A. A. Kopania	R. B. Moore	J. C. Stormer, Jr.
R. C. Blakey	H. H. Doelling	E. H. Koster	P. A. Mueller	G. E. Ulrich
T. M. Bown	J. A. Door, Jr.	B. S. Kues	W. P. Nash	M. A. Warner
A. L. Bowsher	J. A. Ellingson	M. A. Kuntz	J. B. Noble	R. J. Weimer
W. A. Braddock	W. E. Elston	D. R. Lageson	H. T. Ore	R. L. Whitehead
R. F. Bretz	G. F. Embree	T. F. Lawton	S. S. Oriol	G. C. Willis
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R. C. Bright	D. R. Gaylord	R. H. Lefebvre	J. J. Papike	I. J. Witkind
S. Budge	D. A. Gevirtzman	D. V. LeMone	W. G. Pierce	K. H. Wohletz
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R. E. Carroll	P. E. Gretener	P. K. Link	G. M. Richmond	J. L. Wooden
D. E. Champion	M. H. Hait, Jr.	W. W. Locke	J. K. Rigby	L. G. Zeihen
W. L. Chenoweth	D. L. Halvorson	E. M. Loeffler	R. A. Robison	
R. L. Christiansen	W. K. Hamblin	J. C. Lorenz	F. Royse	

1987 GSA COMMITTEES AND REPRESENTATIVES

Committees are the key to GSA's accomplishments in promoting the science of geology. Committee members and representatives contribute their expertise and experience to all areas of GSA endeavor. Listed here are those currently serving the Society and the science as committee members and as GSA representatives to other scientific groups.

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Eldridge M. Moores, Editor of *Geology*
Campbell Craddock, Editor of *Memoirs and Special Papers*
Wallace R. Hansen, Editor of *Maps and Charts*
Conferee: F. Michael Wahl, Executive Director

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GSA COMMITTEES (continued)

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Leon T. Silver, 1980–1987
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Program Coordinator

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Zoltan de Cserna Fernando Ortega-Gutierrez
Kees A. DeJong Amos Salvador
Peter T. Flawn Leon T. Silver

GSA Member of the AGI Member Society Council

M. Gordon Wolman, January 1, 1987–December 31, 1989

**GSA Representatives to American Association for
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J. Thomas Dutro, Jr., June 1, 1985–May 31, 1988
Section W—Atmospheric & Hydrospheric Sciences
William Back, June 1, 1985–May 31, 1988

GSA Delegate to Circum-Pacific Council

Robert L. Fuchs, May 2, 1984–

**GSA Representatives to North American Commission on
Stratigraphic Nomenclature**

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John M. Dennison, 1985–1988
Robert F. Lundin, 1986–1989
Donald E. Hattin, 1987–1990 (Representative-elect; term begins
during NACSN meeting in Phoenix.)

**GSA Designees to Joint ASCE-GSA-AEG Committee on
Engineering Geology (American Society of Civil Engineers)**

LoKesh Chaturvedi, July 1, 1984–June 30, 1987; Robert T. Pack,
July 1, 1985–June 30, 1988

**GSA Representative to National Research Council
Committee on Ground Failure Hazards Mitigation
Research**

Thomas L. Holzer

**GSA Representative to U.S. National Committee
on Rock Mechanics**

Richard W. Galster, July 1, 1986–June 30, 1989

**GSA Representative to U.S. National Committee
on Tunneling Technology**

Richard E. Gray, July 1, 1986–June 30, 1989

**GSA Designees to GSA-SSSA Inter-Disciplinary Committee
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Peter W. Birkeland, Leon R. Follmer, John W. Hawley,
Robert V. Ruhe

**GSA Designee to the Steering Committee of COSUNA
(Correlation of Stratigraphic Units of North America)**

Robert R. Jordan

**GSA Representative to U.S. Committee for the
International Association of Hydrogeologists**

David A. Stephenson, 1978–1987

In Memoriam

John F. Cronin
Concord, Massachusetts
July 30, 1986

Richard Q. Lewis, Sr.
Somerset, Kentucky
January 13, 1987

Thomas W. Fluhr
Liberty, New York
January 22, 1987

Raymond L. Nace
Boise, Idaho
March 6, 1987

Raymond M. Thompson
Denver, Colorado
March 3, 1987

1987 ANNUAL MEETING FIELD TRIPS

Phoenix, Arizona
October 19–November 2, 1987

Since Phoenix '87 will be the first time that an annual meeting of the Geological Society of America has been held in Arizona, it represents the first formal, comprehensive exposé of the geology of Arizona as presented in the context and tradition of an annual GSA meeting. It is our hope that the range of choices, the quality of trip leadership, and the spectacular nature of the geology targeted will make your decision to participate easy, but your selection of trips difficult indeed. Late October–early November is a perfect time for field work in the southern Colorado Plateau and Basin and Range. Above and beyond the quality of exposure and the natural aesthetic appeal of the Southwest, the trips will provide a sense of the discovery and momentum that attends geological research in the Southwest, during this the close of the first century of GSA.

Estimated costs are tentative and for planning purposes. They cover lodging, transportation, and some meals. Registration will begin August 1, 1987. Forms and additional information will be available in the August issue of *GSA News & Information*.

For further information contact George H. Davis (Chairman), Department of Geosciences, University of Arizona, Tucson, Arizona 85721, (602) 621-3592; Jon E. Spencer (Co-Chairman), Bureau of Geology/Mineral Technology, 845 N. Park Avenue, Tucson, Arizona 85719, (602) 621-7906; or the Field Trip Coordinator, GSA headquarters, (303) 447-2020.

PREMEETING TRIPS

Mesozoic Thrust Faults, Tertiary Detachment Faults, and Associated Rocks, Fabrics, and Mineralization, Whipple-Buckskin-Harcuvar Area, Western Arizona and Southeastern California—Jon Spencer and Stephen Reynolds, Bureau of Geology, Tucson, Arizona; Gregory A. Davis and J. Lawford Anderson, University of Southern California, University Park, Los Angeles, California. Three days. Limit: 40 participants. Estimated cost: \$179.

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Photo by Peter Kresan

Colorado River and Pipe Creek, Grand Canyon.



Photo by Peter Kresan

Panorama crater, San Bernardino Valley, Arizona-New Mexico. Field trip: Lower Cretaceous Coral-Algal-Rudist Patch Reefs in Southeastern Arizona.

1987 FIELD TRIPS (continued)

Terraces of the Lower Salt River Valley in Relation to the Late Cenozoic History of the Phoenix Basin, Arizona—Troy L. Péwé, Arizona State University, Tempe, Arizona. One day. Limit: 35 participants. Estimated cost: \$54.

Lower Cretaceous Coral-Algal-Rudist Patch Reefs in Southeastern Arizona—Joseph F. Schrieber, Jr., University of Arizona, Tucson, Arizona; Robert W. Scott, Amoco Production Company, Tulsa, Oklahoma. Three days. Limit: 25 participants. Estimated cost: \$175.

Archaeological Geology of Paleo-Indian Sites in Southeastern Arizona—Michael R. Waters, Texas A&M University, College Station, Texas; C. Vance Haynes, Jr., University of Arizona, Tucson, Arizona. Two days. Limit: 40 participants. Estimated cost: \$194.

Paleoecology and Taphonomy of Recent to Pleistocene Intertidal Deposits, Gulf of California—Karl W. Flessa, University of Arizona, Tucson, Arizona; A. A. Ekdale, University of Utah, Salt Lake City, Utah. Three and one-half days. Limit: 30 participants. Estimated cost: \$283.

Late Paleozoic Depositional Systems, Sedona-Jerome Area, Central Arizona—Ronald C. Blakey and Larry T. Middleton, Northern Arizona University, Flagstaff, Arizona. Two days. Limit: 40 participants. Estimated cost: \$103.

Geomorphology and Structure of Colorado Plateau/Basin and Range Transition Zone, Arizona—Richard A. Young, SUNY Geneseo, Geneseo, New York; H. Wesley Pierce, Bureau of Geology & Mineral Technology, Tucson, Arizona; James E. Faulds, University of New Mexico, Albuquerque, New Mexico. Three days. Limit: 39 participants. Estimated cost: \$132.

Tectonic and Magmatic Contrasts Across a Two-Province Proterozoic Boundary in Central Arizona—Clay M. Conway, USGS, Flagstaff, Arizona; Karl E. Karlstrom, Northern Arizona University, Flagstaff, Arizona; Leon T. Silver, California Institute of Technology, Pasadena, California; Chester Wrucke, USGS, Menlo Park, California. Three days. Limit: 40 participants. Estimated cost: \$163.

Colorado River Float Trip To Examine the Geology of Eastern Grand Canyon, Arizona—Stanley S. Beus, Northern Arizona University, Flagstaff, Arizona; Ivo Lucchitta, USGS, Flagstaff, Arizona. Six and one-half days. Limit: 24 participants. Estimated cost: \$977.

Late Cenozoic Volcanism in the San Francisco and Mormon Volcanic Fields, Southern Colorado Plateau, Arizona—Richard F. Holm, Northern Arizona University, Flagstaff, Arizona; George E. Ulrich, USGS, Hawaii Volcano National Park, Hawaii. Two days. Limit: 38 participants. Estimated cost: \$162.

(continued on p. 124)

1987 FIELD TRIPS (continued from p. 123)

Geology of the Grand Canyon (backpack)—Wayne Ranney and Ralph Hopkins, Flagstaff, Arizona. Three days. Limit: 14 participants. Estimated cost: \$262.

Miocene Extension, Volcanism, and Sedimentation in the Eastern Basin and Range Province, Southern Nevada—Eugene I. Smith, University of Nevada, Las Vegas, Nevada; R. Ernest Anderson, USGS, Denver, Colorado; Robert J. Bohannon, USGS, Menlo Park, California; Gary Axen, Northern Arizona University, Flagstaff, Arizona. Three and one-half days. Limit: 35 participants. Estimated cost: \$226.

Late Pleistocene Alluvium and Megafauna Dung Deposits of the Central Colorado Plateau—Larry D. Agenbroad and Jim I. Mead, Northern Arizona University, Flagstaff, Arizona. Four days. Limit: 16 participants. Estimated cost: \$256.

Large-Scale Silicic Volcanism of the Jemez Mountains and Geology of the Adjacent Rio Grande Rift, New Mexico—Stephen Self and John Wolff, University of Texas, Arlington, Texas; Jamie Gardner and Fraser Goff, LANL, Los Alamos, New Mexico. Three days. Limit: 42 participants. Estimated cost: \$323.

Cretaceous of Black Mesa and Kaiparowits Basins, Northeastern Arizona and Southeastern Utah—Dale Nations, Northern Arizona University, Flagstaff, Arizona; James Kirkland and Jeff Eaton, University of Colorado, Boulder, Colorado; David Carr, Arizona Department of Water Resources, Phoenix, Arizona. Thomas A. Ryer, Research Planning Institute, Boulder, Colorado; Karen Franczyk, USGS, Denver, Colorado. Three days. Limit: 30 participants. Estimated cost: \$226.

Crustal Transect: Colorado Plateau-Detachment Terrane-Salton Trough—Eric G. Frost, CALCRUST, University of California, Santa Barbara, California. Four days. Limit: 69 participants. Estimated cost: \$323.

Coal Deposits and Facies Changes along the Southwestern Margin of the Late Cretaceous Seaway—Gretchen Roybal and Frank E. Kottowski, New Mexico Bureau of Mines and Resources, Albuquerque, New Mexico; Edward C. Beaumont, Albuquerque, New Mexico. Three and one-half days. Limit: 40 participants. Estimated cost: \$320.

Selected Hydrogeologic Problems in Central Arizona—Thomas L. Holzer, U.S. Geological Survey, Menlo Park, California; Mario R. Lluria, Boyle Engineering Corporation, Phoenix, Arizona. One day. Limit: 45 participants. Estimated cost: \$56.

POSTMEETING TRIPS

Geology of the Lower Grand Canyon and Upper Lake Mead by Boat—An Overview—Frederick W. Bachhuber and Stephen Rowland, University of Nevada, Las Vegas, Nevada. Three days. Limit: 45 participants. Estimated cost: \$539.

A Geologic Reconnaissance into the Western Grand Canyon, Arizona—George H. Billingsley, John D. Hendricks, and Ivo Lucchitta, USGS, Flagstaff, Arizona. Three days. Limit: 27 participants. Estimated cost: \$425.

Metamorphic Core Complexes, Mesozoic Thrusts, and Cenozoic Detachments: Old Woman Mountains-Chemehuevi Mountains Transect, California-Arizona—Keith A. Howard, USGS, Menlo Park, California; Barbara E. John, University of California, Santa Barbara, California; Calvin F. Miller, Vanderbilt University, Nashville, Tennessee; Calvin James, University of Texas, El Paso, Texas. Four days. Limit: 50 participants. Estimated cost: \$371.

Alkaline Rocks and Volcanic Structures of the Pinacate Volcanic Field, Sonora—Daniel J. Lynch and Peter Kresan,

University of Arizona, Tucson, Arizona; James T. Gutmann, Wesleyan University, Middletown, Connecticut. Three days. Limit: 40 participants. Estimated cost: \$191.

Land Subsidence and Earth Fissure Formation in Eastern Maricopa and Northern Pinal Counties, Arizona—Troy L. Péwé, Arizona State University, Tempe, Arizona; Herbert Schumann, USGS, Water Resources Division, Phoenix, Arizona; Richard H. Raymond, Tempe, Arizona. One day. Limit: 35 participants. Estimated cost: \$48.

Late Cenozoic Mammal Faunas and Magnetostratigraphy, Southeastern Arizona—Everett Lindsay, University of Arizona, Tucson, Arizona; Neil D. Opdyke, University of Florida, Gainesville, Florida; Noye M. Johnson, Dartmouth College, Hanover, New Hampshire. Two days. Limit: 40 participants. Estimated cost: \$108.

Geology of Porphyry Copper Ores in the Globe-Miami District—Spencer R. Titley, University of Arizona, Tucson, Arizona. One day. Limit: 80 participants. Estimated cost: \$39.

Ductile to Brittle Evolution of the South Mountains Metamorphic Core Complex—Stephen J. Reynolds, Arizona Geological Survey, Tucson, Arizona. One day. Limit: 80 participants. Estimated cost: \$38.

Structural Geology of the Rincon and Pinaléño Metamorphic Core Complexes, Southeastern Arizona—George H. Davis and Stephen J. Naruk, University of Arizona, Tucson, Arizona; Charles H. Thorman, USGS, Denver, Colorado. Two days. Limit: 37 participants. Estimated cost: \$135.

Tectonic Setting and Sedimentological Features of Upper Mesozoic Strata in Southeastern Arizona—William R. Dickinson and Margaret A. Klute, University of Arizona, Tucson, Arizona; William L. Bilodeau, University of Colorado, Denver, Colorado. Three days. Limit: 40 participants. Estimated cost: \$249.

Massive Sulfide Ores at Jerome, Arizona—Paul Lindberg, Sedona, Arizona. One day. Limit: 40 participants. Estimated cost: \$45.

Upper Holocene Alluvium of the Southern Colorado Plateau—Richard Hereford, USGS, Flagstaff, Arizona. Three days. Limit: 30 participants. Estimated cost: \$263.

Mesquite Mine—Stanley Watowich, Goldfields Mining Corporation, Yuma, Arizona. Two days. Limit: 60 participants. Estimated cost: \$144.

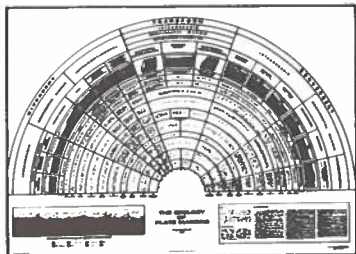
Big Maria-McCoy-Mule-Chocolate Mountains Transect—Warren Hamilton, USGS, Denver, Colorado; Gordon Haxel, Richard Tosdal, and Paul Stone, USGS, Menlo Park, California. Three days. Limit: 40 participants. Estimated cost: \$225.

Cross-bedding and Other Eolian Structures in the Navajo and Entrada Sandstones—David M. Rubin and Ralph E. Hunter, USGS, Menlo Park, California. Three days. Limit: 41 participants. Estimated cost: \$212.

Superstition Volcanic Field—Michael Sheridan, Arizona State University, Tempe, Arizona. One day. Limit: 40 participants. Estimated cost: \$46.

ABSTRACTS COORDINATOR 303/447-8850
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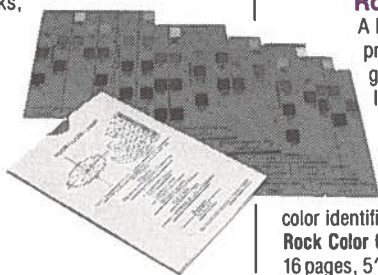


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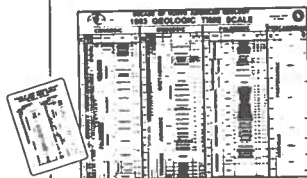
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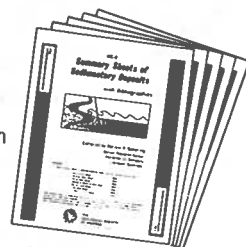
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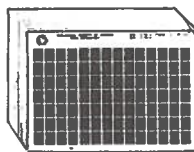


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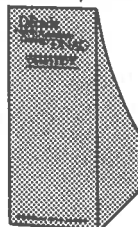


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For color photos, submit one positive color transparency (slide), originals preferred; prints cannot be used. For each black and white photo, submit one 8" x 10" black and white print on double-weight, smooth, nonglossy paper.

Descriptive Text: Submit a manuscript of a short explanatory text, type double-spaced. The manuscript should be at least one double-spaced page in length, but no longer than two double-spaced pages. Write the text so that it can be understood by both scientists and nonscientists.

Address & Deadline: Send all submissions to:
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Submissions should be sent as early as possible, but no later than September 30, 1987—no extensions! Use the street address for express package services; use the box number for U.S. mail.



GSA Congressional Science Fellow Works on Environmental Issues

Congressional Science Fellow Jennifer Hess is concurrently serving on the Senate Committee on Environment and Public Works (chaired by Senator Burdick, South Dakota) and the Subcommittee on Hazardous Wastes and Toxic Substances (chaired by Senator Baucus, Montana). Hess also has some involvement with the Subcommittee on Environmental Protection (chaired by Senator Mitchell, Maine). (The subcommittees are under the full Committee on Environment and Public Works.)

Addressing the specific issues of the greenhouse effect, global climate change, and stratospheric ozone depletion, Hess is also actively involved in the hearings and legislation regarding standards of the Clean Air Act. She is also the interface between the committees and the scientists who are directly involved in research on the "hole" in the ozone layer over Antarctica.

Hess was selected to be GSA's first Congressional Fellow in 1986, for 1987. She earned a doctorate in oceanography at the University of Rhode Island in 1987. The GSA Congressional Fellowship is funded by GSA and by a grant from the U.S. Geological Survey.

Hess's mailing address is Senate Committee on Environment and Public Works, Dirksen Senate Office Building, Room 460, Washington, DC 20510. (The physical location of her office is in the Hart Senate Office Building, Room 408.) To contact her by phone, call (202) 224-6226.

A more extensive report on Hess's activities that concern the earth science community will appear in a future issue of *GSA News & Information*.

GeoTech '87 Meeting to Focus on Use of Small Computers

Computer-Aided Methods and Modeling in Geology and Engineering, the 5th Annual GeoTech meeting, October 3-6, 1987, in Denver, Colorado, will provide a forum for explorationists, earth scientists, and engineers who are current or potential users of small computers. The four-day event will consist of exhibits, two days of workshops, and two days of technical sessions. GSA is one of the meeting sponsors.

Proposed subject areas for papers, with a goal of applications-oriented presentations, are as follows: Case Histories of Computer Use in Geology, Geophysics, and Engineering; Modeling in Hydrogeology; Ground Water and Hazardous Waste Management and Analysis; Applied Geophysical Modeling; Petroleum Exploration; Reservoir Modeling and Characterization; Well Log Analysis Methods; Remote Sensing and Image Processing; Applied Database Management; Applied Artificial Intelligence; Geostatistical Methods; Geotechnical Applications; Mine Design, Modeling, and Simulation; Computer-Aided Mapping/Cartography; Mineral and Petroleum Economics; Minerals Exploration.

Abstracts of papers to be considered for presentation at poster or technical sessions are requested from all interested geoscientists and geo-engineers. Abstracts should be 250 words or less and must be typed double-spaced. Formal presentations are expected to be no more than 20 minutes total (talk and question session). Send two copies of the abstract to Douglas C. Peters, U.S. Bureau of Mines, P.O. Box 25086, Bldg. 20, Federal Center, Denver, CO 80225. The deadline for submittal is June 15, 1987. Extended abstracts (for the Proceedings) will be required by August 31, 1987. Be sure to include the title of the paper and the author's name, full address, and telephone number.

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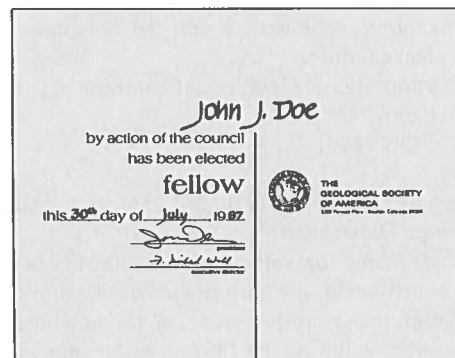
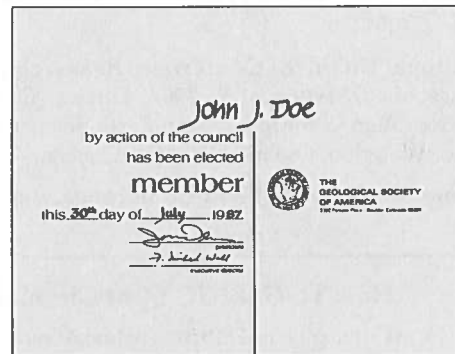
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MEETINGS

(Asterisk indicates new or changed information)

1987

28th U.S. Symposium on Rock Mechanics, June 29–July 1, 1987, Tucson, Arizona. Information: 28th U.S. Symposium on Rock Mechanics, Special Professional Education, Box 9, Harvill Bldg., University of Arizona, Tucson, AZ 85721; (602) 621-5104 or 621-3054.

Society of Professional Well Log Analysts 28th Annual Symposium, June 29–July 3, 1987, London, England. Information: SPWLA Symposium, c/o The Geological Society, Burlington House, Piccadilly, London W1V 0JU, England.

First International Congress, Geochemistry and Cosmochemistry, June 30–July 6, 1987, Paris, France. Information: C. J. Allegre, Lab. de Géochimie et Cosmochimie, 4 place Jussieu, Tour 14, 3 étage, 75252 Paris Cedex, France; telephone 43.54.84.63.

Growth of Continental Crust workshop, July 13–17, 1987, Oxford, England. Information: Pamela Jones, Lunar and Planetary Institute, 3303 NASA Road 1, Houston, TX 77058.

Second Symposium on the South Atlantic Evolution, July 23–25, 1987, Rio de Janeiro, Brazil. Information: Dimas Dias-Brito, Ilha do Fundão, Quadra 7, Rio de Janeiro - 21.910 - Brazil; and P. Y. Berthou, Lab. de Géologie des Bassins Sédimentaires, Tour 14-15, 4 étage, 4 place Jussieu, 75252 Paris Cedex 05, France.

Tectonic Setting of Layered Intrusives, July 27–28, 1987, Pretoria, South Africa. Information: Secretary, Indaba Organising Committee, Dept. of Geology, University of Pretoria, Pretoria, South Africa.

4th International Congress of the Regional Committee on Pacific Neogene Stratigraphy (affiliated with IUGS) and joint meeting of **IGCP Project 246**, July 29–31, 1987, Berkeley, California. Information: Charlotte Brunner, Chairperson of Organizing Committee, Dept. of Paleontology, University of California, Berkeley, CA 94720.

International Union for Quaternary Research (INQUA) 12th Congress, July 31–August 9, 1987, Ottawa, Ontario, Canada. Information: Alan V. Morgan, Dept. Earth Sciences, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada.

5th Magmatic Sulphide Field Conference, August 3–13, 1987,

Zimbabwe. Information: A. Martin, Geological Society of Zimbabwe, P.O. Box 8427, Causeway, Harare, Zimbabwe.

International Symposium on Erosion and Sedimentation in the Pacific Rim, August 3–7, 1987, Corvallis, Oregon. Information: 1987 Corvallis Symposium, Conference Coordinator, College of Forestry, Oregon State University, Corvallis, OR 97331; (503) 754-2004.

Devonian System 2nd International Symposium, August 17–20, 1987, Calgary, Alberta. Information: Second International Symposium Devonian System, c/o Canadian Society of Petroleum Geologists, 505, 206 - 7th Ave. S.W., Calgary, Alberta T2P 0W7, Canada; (403) 264-5610.

***Gordon Research Conference: Atomistic Approaches in Inorganic Geochemistry**, August 17–21, 1987, Andover, New Hampshire. Information: Alexander Cruickshank, Gordon Research Center, University of Rhode Island, Kingston, RI 02881-0801; (401) 783-4011 or 3372.

7th International Conference on Basement Tectonics, August 17–21, 1987, Kingston, Ontario, Canada. Information: Bob Mason, c/o Events Management Inc., 4 Catarauqui St., Suite 209, Kingston, Ontario K7K 1Z7, Canada; (613) 547-5093.

Society of Economic Paleontologists and Mineralogists Fourth Annual Midyear Meeting, August 20–23, 1987, Austin, Texas. Information: SEPM, P.O. Box 4756, Tulsa, OK 74159; (918) 743-9765.

XVI Pacific Science Congress, August 20–30, 1987, Seoul, Korea. Information: Choon Ho Park, XVI Pacific Science Congress, K.P.O. Box 1008, Seoul 110, Korea; telephone (2) 733-4478; Telex ILSKOR 23881.

International Symposium on Nonmarine Cretaceous Correlations, August 25–30, 1987, Urumqi, China. Information: Shen Yanbin, Nanjing Institute of Geology & Paleontology, Nanjing, People's Republic of China; or Niall J. Mateer, 1467 N. 17th, Laramie, WY 82070.

International Congress on Geology, Structure, Mineralization, and Economics of the Pacific Rim, August 26–29, 1987, Queensland, Australia. Information: C/-Aus. IMM Congress Secretariat, P.O. Box 731, Toowong 4066, Queensland, Australia.

Sixth International Congress on Rock Mechanics, August 31–September 3, 1987, Montreal, Quebec, Canada. Information: J. Franklin, Dept. of Earth Sciences, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada.

Third International Symposium on Observation of the Continental Crust through Drilling, September 7–10, 1987, Mora and Orsa, Sweden. Information: Deep Drilling in Crystalline Bedrock, c/o Stockholm Convention Bureau, Box 6911, S-10239 Stockholm, Sweden.

XI International Congress of Carboniferous Stratigraphy and Geology, September 7–11, 1987, Beijing, China. Information: Yang Jingzhi, Nanjing Institute of Geology and Paleontology, Academia Sinica, Nanjing, China.

International Workshop on Computerized Basin Analysis, September 7–12, 1987, Szeged, Hungary. Information: Laszlo Somos, Geological Survey of Hungary, Pf. 106, H-1442, Budapest, Hungary; telephone (36-1) 634 431; Telex 225 220 mafi h.

(continued on p. 129)

How To Get IGC First Circular

The First Circular of the 28th International Geological Congress (IGC), which will be convened in Washington, D.C., July 9–19, 1989, was mailed in February 1987 to more than 100,000 individuals or organizations worldwide. If you did not receive a copy of the circular, please write to

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requesting a copy, or call (918) 584-2555 and request a copy from the Meetings Department.

The deadline for return of the questionnaire in the First Circular was May 15, 1987, for purposes of planning many aspects of the overall program. However, all those who return the questionnaire anytime during the 1987 calendar year will receive a copy of the Second Circular, which is scheduled to be mailed in early 1988.

MEETINGS (continued)

International Symposium on the Terminal Precambrian and Cambrian Geology, September 8–14, 1987, Yichang, China. Information: Wang Xiaofeng, secretariat, Yichang Institute of Geology and Mineral Resources, Chinese Academy of Geological Sciences, P.O. Box 502, Yichang, Hubei, China.

American Association of Petroleum Geologists Rocky Mountain Section meeting, September 13–16, 1987, Boise, Idaho. Information: David H. Hawk, J.R. Simplot Co., 999 Main St., Boise, ID 83707; (208) 336-2110.

***Origin of Granites Symposium**, September 14–16, 1987, Edinburgh, Scotland. Information: Meetings Secretary (Hutton Meeting), Royal Society of Edinburgh, 22–24, George St., Edinburgh EH2 2PQ, Scotland.

***Midcontinent Rift System Scientific Drilling Workshop**, September 23–25, Duluth, Minnesota. Information: William C. Kelly, Institute of Science and Technology, University of Michigan, 220 Bonisteel Blvd., Ann Arbor, MI 48109.

18th Annual Geomorphology Symposium on Catastrophic Flooding, September 26–28, 1987, Oxford, Ohio. Information: Larry Mayer, Dept. of Geology, Miami University, Oxford, OH 45056; (513) 529-3218.

International Conference on Geophysical and Geochemical Exploration for Minerals and Groundwater, September 27–October 1, 1987, Toronto, Ontario. Information: Exploration '87, c/o 222 Snidercroft Rd., Concord, Ontario L4K 1B5, Canada; (416) 669-2280; Telex 06-964570.

Fifth International Flint Symposium, September 27–October 2, 1987, Bordeaux, France. Information: 5th International Flint Symposium, Secrétaire General, c/o Michel Lenoir, Institut du Quaternaire, Batiment de Géologie, Avenue des Facultés, Université de Bordeaux I, 33405 Talence Cedex, France.

National Association of Geology Teachers Far Western Section Fall Conference, October 2–4, 1987, Hayward, California. Information: Elwood Brooks, Dept. Geological Sciences, California State University, Hayward, CA 94542; (415) 881-3486.

***GeoTech '87** (microcomputer applications in earth science), October 3–6, 1987, Denver, Colorado. Information: Stephen A. Krajewski, Geomath, Inc., 165 S. Union Blvd., Suite 410, Lakewood, CO 80228; (303) 980-8625.

***Underwater Mining Institute**, October 4–7, 1987, Newport, Oregon. Information: Allen Miller, UW Sea Grant Advisory Services, 1800 University Ave., Madison, WI 53705; (608) 262-0645.

Troodos 87: Ophiolites and Oceanic Lithosphere, October 5–10, 1987, Nicosia, Cyprus. Information: Troodos 87 Symposium, Geological Survey Dept., Nicosia, Cyprus.

***North American Conference on Tectonic Control of Ore Deposits**, October 6–9, 1987, Rolla, Missouri. Information: Geza Kisvarsanyi, Dept. Geology and Geophysics, University of Missouri, Rolla, MO 65401; (314) 341-4663.

Society of Economic Paleontologists and Mineralogists Great Lakes Section Annual Meeting and fall field trip, October 9–11, 1987, southern Indiana. Information: J. R. Dodd, Dept. of Geology, Indiana University, Bloomington, IN 47405; (812) 335-5322 or 5581.

Geothermal Resources Council Annual Meeting, October 12–16, 1987, Sparks, Nevada. Information: Geothermal Resources Council, P.O. Box 1350, Davis, CA 95617-1350; (916) 758-2360.

Mathematical Methods in Geology, 16th Annual Geochautauqua, October 12–16, 1987, Pribiam, Czechoslovakia. Information: V. Nemeč, Geindustria, Geologicka 2, 152 00 Praha 5, Barrandov, Czechoslovakia; telephone (42-2) 590228 or (42-2) 7811801.

Indiana Geological Survey Sesquicentennial Celebration, October 15–16, 1987, New Harmony, Indiana. Information: Robert H. Shaver, Indiana Geological Survey, 611 North Walnut Grove, Bloomington, IN 47405; (812) 335-7428.

***79th Annual New England Intercollegiate Geological Conference**, October 16–18, 1987, Montpelier, Vermont. Information: David S. Westerman, Dept. Earth Science, Norwich University, Northfield, VT 05663; (802) 485-2337.

***32nd Annual Midwest Groundwater Conference**, October 28–30, 1987, Madison, Wisconsin. Information: Jim Krohelski, U.S. Geological Survey, 6417 Normandy Lane, Madison, WI 53719-1133; (608) 276-3850.

***International Waste Management Conference**, November 29–December 5, 1987, Hong Kong. Information: Gloria Greene, ASME Professional Development Dept., 345 East 47th St., New York, NY 10017; (212) 705-7398.

Society of Economic Paleontologists and Mineralogists Gulf Coast Section 8th Annual Research Conference, Paleontological Applications in Petroleum Exploration, December 6–9, 1987, Houston, Texas. Information: Charles L. McNulty, Dept. of Geology, University of Texas, UTA Box 19049, Arlington, TX 76019; (817) 273-2979.

(continued on p. 130)

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MEETINGS (continued from p. 129)

American Geophysical Union Fall Meeting, December 7–11, 1987, San Francisco, California. Information: Ann E. Singer, American Geophysical Union, 2000 Florida Ave., N.W., Washington, DC 20009; (202) 462-6903.

First Arab Conference on Geological Education, December 12–14, 1987, Baghdad, Iraq. Information: Conference Secretariat, Arab Conference on Geological Education, Arab Geologist Association, P.O. Box 1247, Baghdad, Iraq; Telex 212197 JAMIT IK.

GSA 1987

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Penrose Conferences

Geological Decisions for the 21st Century, July 12–17, 1987, Steamboat Springs, Colorado. Information: David A. Stephenson, Dames & Moore, Pointe Corporate Centre, 7500 North Dreamy Draw Dr., Suite 145, Phoenix, AZ 85020; (602) 371-1110.

Paleoenvironmental Interpretation of Paleosols, September 11–17, 1987, Warm Springs Indian Reservation, Oregon. Information: Greg Retallack, Dept. of Geology, University of Oregon, Eugene, OR 97403-1272; (503) 686-4573.

Cordilleran Metamorphic Core Complexes, Revisited: Implications for Crustal Extension and Shortening in the North American Cordillera, September 13–18, 1987, Elko, Nevada. Information: Arthur W. Snoke, Dept. of Geology and Geophysics, University of Wyoming, P.O. Box 3306, Laramie, WY 82071; (307) 766-5457.

Exposed Cross Sections through the Continental Crust, September 27–October 2, 1987, Killarney, Ontario, Canada. Information: David M. Fountain, Dept. of Geology & Geophysics, University of Wyoming, P.O. Box 3006, University Station, Laramie, WY 82071.

1988

***Australian Association of Exploration Geophysicists-Society of Exploration Geophysicists International Geophysical Conference and Exhibition**, February 14–21, 1988, Adelaide, Australia. Information: ASEG/SEG Adelaide '88 Conference, c/o Ellisservice Convention Management, P.O. Box 753, Norwood 5067, South Australia, Australia; (08) 332-4068; Telex AA87129.

***American Association of Petroleum Geologists Annual Meeting**, March 20–23, 1988, Houston, Texas. Information: AAPG Convention Dept., P.O. Box 979, Tulsa, OK 74101; (918) 584-2555.

***Anadarko Basin Symposium**, April 5–6, 1988, Norman, Oklahoma. Information: Kenneth S. Johnson, Oklahoma Geological Survey, University of Oklahoma, Norman, OK 73019; (405) 325-3031.

V. M. Goldschmidt Conference for geochemistry, May 11–13, 1988, Baltimore, Maryland. Information: Goldschmidt Conference Coordinator, Pennsylvania State University, 410 Keller Bldg., University Park, PA 16802. (*Abstracts due December 18, 1987.*)

Sixth Thematic Conference on Remote Sensing for Exploration Geology, May 16–19, 1988, Houston, Texas. Information: Thematic Conference, Environmental Research Institute of Michigan, P.O. Box 8618, Ann Arbor, MI 48107; (313) 994-1200, ext. 3382; Telex 4940991 ERIMARB.

American Geophysical Union Spring Meeting, May 16–20, 1988, Baltimore, Maryland. Information: Ann E. Singer, American Geophysical Union, 2000 Florida Ave., N.W., Washington, DC 20009; (202) 462-6903.

Bicentennial Gold 88, May 16–20, 1988, Melbourne, Australia. Information: R. R. Keays, Dept. of Geology, University of Melbourne, Parkville, Victoria 3052, Australia; telephone (03) 345 1844; Telex AA35185. (*Abstracts due September 30, 1987.*)

Geological Association of Canada-Mineralogical Association of Canada-Canadian Society of Petroleum Geologists Joint Annual Meeting, May 22–25, 1988, St. John's, Newfoundland. Information: John Fleming, Newfoundland Dept. of Mines and Energy, P.O. Box 4750, St. John's, Newfoundland A1C 5T7, Canada; (709) 576-2768.

Case Histories in Geotechnical Engineering 2nd International Conference, June 1–5, 1988, St. Louis, Missouri. Information: Shamsheer Prakash, Room 308, Dept. of Civil Engineering, University of Missouri, Rolla, MO 65401; (314) 341-4461.

***29th U.S. Symposium on Rock Mechanics**, June 13–16, 1988, Minneapolis, Minnesota. Information: Jan Becker, Dept. Professional Development, University of Minnesota, 315 Pillsbury Dr. S.E., Minneapolis, MN 55455; (612) 626-1358. (*Abstracts deadline is September 15, 1987.*)

Seismic Probing of the Continents and Their Margins International Symposium, July 6–8, 1988, Canberra, Australia. Information: Jim Leven, Bureau of Mineral Resources, P.O. Box 378, Canberra, ACT 2601, Australia; telephone (062) 499111; Telex AA62109.

Permafrost 5th International Conference, August 2–5, 1988, Trondheim, Norway. Information: V International Conference on Permafrost, Norwegian Institute of Technology, Studies Administration, N-7034 Trondheim-NTH, Norway.

***International Symposium on Geochemistry and Mineralization of Proterozoic Mobile Belts**, September 6–10, 1988, Beijing, China. Information: Proterozoic Geochemistry Symposium, c/o Prof. Sun Dazhong, Tianjin Inst. Geology and Mineral Resources, CAGS No. 4, 8th Rd., Dazhigu, Tianjin 300170, People's Republic of China.

International Symposium on Engineering Geology: Study, Preservation and Protection of Ancient Works, Monuments and Historical Sites, September 19–23, 1988, Athens, Greece. Information: Paul G. Marinos, Greek Committee of Engineering Geology, 1988 Symposium Secretariat, P.O. Box 19140, GR-117 10 Athens, Greece; Telex 45 4312 POLX.

American Geophysical Union Fall Meeting, December 5–9, 1988, San Francisco, California. Information: Ann E. Singer, American Geophysical Union, 2000 Florida Ave., N.W. Washington, DC 20009; (202) 462-6903.

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