

GSA NEWS & INFORMATION

Monthly Newsletter of
The Geological Society of America

VOLUME 9, NUMBER 7

JULY 1987

Call for Penrose Conference Proposals

GSA is soliciting proposals for its Penrose Conference program. If you have been thinking about submitting a proposal, now is the time to put it in writing!

Purpose

The conferences provide opportunities for exchange of current information and exciting ideas pertaining to the science of geology and related fields. They are intended to stimulate and enhance individual and collaborative research and to accelerate the advance of the science by the interactions and development of new ideas.

Participants

Penrose Conferences consist of a critical mass of active scientists from the Society, the national and international science communities, and students, sequestered in an attractive meeting place for several days of focused discussion. Participants do not seek simply to resolve technical controversies; their objectives are to provide stimulus and excitement for their field, to air new ideas and develop new associations, and to provoke new research on important questions.

No Increase in 1988 Dues

The 1988 membership dues statements are now being prepared for mailing about the first part of August. Please note that all dues-paying Fellows, Members, and Student Associates receive three monthly publications, the *Geological Society of America Bulletin*, *Geology*, and *GSA News & Information*, as part of their membership package.

The annual dues for a Fellow or Member for 1988 will be \$70 (the same as 1987) for the entire package, including membership and 12 issues each of the *Bulletin*, *Geology*, and *GSA News & Information*. The required dues for Student Associates for the same package will be \$32 (the same as 1984, 1985, 1986, and 1987). Senior Members and Fellows may choose to receive the two journals for 1988 at a cost of \$36 (they already receive *GSA News & Information*).

Married couples who are both current GSA members will be allowed a reduction in 1988 dues. Married couples will pay \$70 for the first member (\$32 for Student Associates) and \$30 for the second. They will receive a single subscription to the *Bulletin* and *Geology*, but both members will continue to receive *GSA News &*

Topics

Ideal subjects for conferences are earth science topics for which recent work suggests a potential for further significant advances in the near future. Each conference subject should be under current investigation and active discussion by able researchers in the field and/or in the laboratory. Topics should be broad enough so that a range of specialists may discuss them from several points of view, but not so broad that a lack of communication can develop.

Attendance

An invitation is not required for an applicant to attend a conference. Conveners do invite a few key speakers who are necessary to the organization and success of their conference; however, anyone interested in a specific conference is encouraged to contact the conveners of that conference.

Guidelines

Penrose Conference guidelines are available from Dorothy M. Palmer, 3300 Penrose Place, P.O. Box 9140, Boulder, CO 80301, telephone (303) 447-2020, 8 a.m.-4:30 p.m. MST. Requests will be filled by return mail.

Dues Statements Coming Next Month

Information and ballots and other miscellaneous mailings. Please identify your spouse and indicate in the spaces provided on the back of the dues form who is requesting a reduction in dues. Please submit separate dues statements. *If a spouse is not currently a member*, do NOT send dues payment without requesting and completing an application for membership. The policy for married couples will apply *only* upon specific instructions from you.

Please inform us as soon as possible of any address change, as it usually takes 6 to 8 weeks to correct the files. Meanwhile, publications continue to be mailed to your former address. They are sent second class; therefore, the Post Office will not forward them without special instructions (and expense to you).

We must receive your 1988 dues payment *no later than November 30, 1987*, to prevent delay in your receipt of your 1988 GSA publications. If you have any questions or do not receive your 1988 dues statement, please contact the GSA Membership Department, P.O. Box 9140, Boulder, CO 80301; phone (303) 447-2020.

The Bad News, Good News Year

by Robert L. Fuchs
President, GSA Foundation

1986 can best be termed a mixed bag for the GSA Foundation. Normally one hears of good news/bad news stories, but the reverse order seems more appropriate. The skies were dark in 1986, but the final tallies for the year contain some interesting positive trends.

The effect of economic problems in the petroleum industry rippled through to the Foundation in 1986. Starting in 1981, 25 large oil companies and the Department of Energy pledged \$3.4 million to finance the Decade of North American Geology (DNAG) project. Eleven companies have now honored their pledges in full, and most of the remaining are proceeding with annual payments on prearranged schedules. However, in the case of Cities Service, Getty, and Texaco, mergers and other corporate problems have derailed the flow of contributions. In the case of Cities Service, which was acquired by Occidental Petroleum, it appears that the unpaid pledge balance of \$60,000 will be lost. Occidental itself made only a token contribution of \$1500 in 1981. Texaco and Getty have also fallen under the acquisition and restructuring hammer, with disastrous effect upon scientific support budgets. We are working with officials of these companies in order to arrive at some resolution that will be acceptable to the companies in these difficult times. Currently it appears as though slightly more than \$200,000—6% of original pledges—may be lost.

With major supporters of the Foundation experiencing hard times, it was entirely prudent for the Foundation to reduce its cost of operation a significant amount. This annual cost, which was \$194,000 in each of 1985 and 1986, has been reduced by approximately 50% for 1987.

Turning to the good news, there were encouraging signs of increased support from individuals in 1986. Total contributors were 1080, a 3% increase over the previous year. Individual gifts increased

2.5%, to \$50,000. Also on the upside, Second Century Club membership gained 25%, to 635 members. These increases in the individual sector are particularly noteworthy because of the economic problems that have been plaguing earth scientists.

The Foundation's cash and investments totaled \$832,000 at year-end. As DNAG costs roll in, this balance will move lower, the decline offset to some extent by corporate contributions to fulfill pledges, by individual giving, and by the net proceeds of sales of DNAG products.

Additional funding is the principal ingredient for a financially viable Foundation capable of meeting the Society's future needs for research support. This funding will come from three areas—members, companies, and special gifts. Programs are being developed to promote access to each of these sources.

The coupon below is intended to facilitate communication with the Foundation. Please take a moment to consider your support. We will be happy to respond promptly to requests for information, and we welcome members who would be willing to assist the Foundation in its work.

Archaeological Geology Division to Offer Annual Meeting Registration for Students

GSA's Archaeological Geology Division wants to encourage its student members to participate more actively in the GSA Annual Meeting. As an incentive to participation, members who attended the division business meeting at the San Antonio Annual Meeting approved a motion authorizing payment from division funds of the annual meeting registration fee for up to three students. The students must be presenting papers either in the Archaeological Geology Division symposium, in a general technical session, or in a poster session at the GSA Annual Meeting. Student abstracts will not be judged separately, and fewer than three awards may be made in any one year.

For more information, write to or call John A. Gifford (Archaeological Geology Division chairman), Dept. of Anthropology, University of Miami, P.O. Box 248106, Coral Gables, FL 33124; (305) 284-2535 or 2380.

In Memoriam

Cordell Durrell Davis, California October 12, 1986	John G. Ferris Bethesda, Maryland March 26, 1987	Harold W. Stuart Portland, Oregon
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GSA Foundation
3300 Penrose Place, P.O. Box 9140
Boulder, CO 80301

I would like to support the GSA Foundation. Please send information on

- General Giving
- Gifts for Research
- Second Century Club
- Corporate Gifts
- Estate Planning
- Personal Service



Please Print:

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
() _____
PHONE _____

Vol. 9, no. 7 GSA News & Information July 1987

GSA NEWS & INFORMATION (ISSN 0164-5854) is the monthly newsletter of The Geological Society of America, Inc., P.O. Box 9140, Boulder, Colorado 80301. Second-class postage rates paid at Boulder, Colorado and additional mailing office.

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

Book Progress

The Northeastern Section and Cordilleran Section *Centennial Field Guides* are now published and can be ordered from GSA. By the end of this month, the Rocky Mountain Section *Centennial Field Guide* should also be published, so 200 of the best geologic sites in the Appalachian region and 200 of the best geologic sites in the western United States, western Canada, Alaska, and Hawaii will be ready for you to enjoy on student field trips in the fall or on late summer vacations. Also, hot off the press and available for purchase is *Geomorphic Systems of North America*.

Map Progress

The geophysical community plans to have printed copies of the *Magnetic Anomaly Map of North America* and proofs of the *Gravity Anomaly Map* and the northwestern quadrant of the *Seismicity Map of North America* on display at the International Union of Geodesy and Geophysics meetings in Vancouver in August.

More Kudos

The second excellent book in the series *The Geology of North America* will probably be at the printer by the time you read this. All substantive chapters for volume K-3, *North America and Adjacent Oceans During the Last Deglaciation*, edited by Bill Ruddiman and Herb Wright, were in hand by early May when this was being written. The editors have done an outstanding job of monitoring the quality of this book. Congratulations to the editors and authors listed below for a job well done!

P. M. Anderson	R. M. Forester	W.S.B. Paterson
J. T. Andrews	R. W. Graham	W. R. Peltier
C. W. Barnosky	E. C. Grimm	W. F. Ruddiman
P. J. Bartlein	C. U. Hammer	S. A. Schumm
L. V. Benson	T. Hughes	D. Stanford
J. L. Betancourt	G. L. Jacobson, Jr.	J. T. Teller
R. Bonnicksen	J. E. Kutzbach	R. S. Thompson
D. B. Booth	J. I. Mead	T. R. Van Devender
G. R. Brakenridge	A. C. Mix	T. Webb III
J. L. Fastook	A. V. Morgan	H. E. Wright, Jr.

Ninth Rocky Mountain Coal Scholarship Awarded

The Rocky Mountain Coal Scholarship Committee has awarded a \$500 scholarship to Kirk R. Johnson, Yale University. Johnson's thesis is titled "Floristic and vegetational change across the Cretaceous-Tertiary boundary from the Rocky Mountains to the Cannonball Sea."



Kirk Johnson

The scholarship is awarded each year by the Symposium on the Geology of Rocky Mountain Coal and GSA's Coal Geology Division. This is the fifth year scholarships have been awarded.

Area of Study

The Rocky Mountain Coal Scholarship Program was established to further interest in and research on coal within the Rocky Mountain and Northern Great Plains coal provinces by providing scholarship funds for field and laboratory expenses, books, and tuition. Funding for the program comes from surplus money accumulated by the Symposium on the Geology of Rocky Mountain Coal. These funds have been invested in the Geological Society of America Foundation, and the interest now forms the basis of the scholarship. There is, however, no assurance of the amount of the funds or that funds will be available every year.

Coal research pertaining to coal in the states or provinces of Arizona, Alberta, British Columbia, Colorado, Idaho, Montana, New Mexico, North Dakota, Utah, Saskatchewan, South Dakota, and Wyoming is considered for support. Applicants for the scholarship must be currently enrolled in a graduate program (M.S. or Ph.D.) at a private or state college or university. The main theme of an applicant's research must be an aspect of coal research, and the research must pertain to coal in the states or provinces listed above (the institution where the research is being conducted need not be in the listed states or provinces). Although the applicant must be involved in coal research, he or she need not be a geology major.

Application and Award

Scholarship applications can be obtained from the Geological Society of America, P.O. Box 9140, Boulder, CO 80301, or from Gary B. Glass, Chairman of the Coal Scholarship Committee, c/o Geological Survey of Wyoming, Box 3008, University Station, Laramie, WY 82071. The deadline for applications for next year's scholarship is *February 1, 1988*.

A committee composed of two ad hoc members of the Symposium on the Geology of Rocky Mountain Coal and two GSA Coal Geology Division members screens applications and selects the most appropriate proposal by May 1. At the time of selection, scholarship monies are transferred directly to the grantee by the GSA Foundation. When the scholarship winner's research is complete, one copy of the dissertation or thesis should be sent to the chairman of the Rocky Mountain Coal Scholarship Committee.

SEARCHING FOR A NEW GEOSCIENTIST?

When was the last time you hired a new employee? Do you remember how much time and effort you wasted in your search for a qualified geoscientist? Let the GSA computerized search file make your job easier.

How does it work? Complete the Employer's Request for Earth Science Applicants on the following page. Remember to specify educational and professional experience requirements as well as the specialty area or areas of expertise your applicant should have. The GSA computer will take it from there.

You will receive a printout that includes the applicants' names, addresses, phone numbers, areas of specialty, type of employment desired, degrees held, years of professional experience, and current employment status. In 1987, the cost of a printout for one or two specialty codes is \$125. (For example, in a recent job search for an analyst of inorganic materials, the employer requested the specialty codes of geochemistry and petrology.) Each additional specialty is \$45. A printout of the entire applicant listing in *all* specialties is available for \$350. (Specialty codes printed in boldface type are considered major headings. If you select a specialty code printed in boldface type, your listing will contain applicants within the related

subspecialties as well. If you request a listing of one of the subspecialties, applicants coded under the major category will be included but not those coded under the other related subspecialties. Résumés for all applicants listed are included with the printout at no additional charge.) If you have any questions about your personalized computer search, GSA's Membership Department will assist you.

The GSA Employment Service is available year long. Now is an excellent time to use the service—in conjunction with the annual Employment *Interview Service*. The interview service is offered each fall at the Society's Annual Meeting. The 1987 Annual Meeting will be held in Phoenix, Arizona, October 26–29. You may rent interview space in half-day increments from GSA. Our staff will schedule all interviews with applicants for you, the recruiter. In addition, GSA offers a message service, complete listing of applicants, copies of résumés at no additional charge, and a posting of all vacancies.

You can attend the GSA Annual Meeting and still have that new position filled before you return to work! See you in Phoenix.

CAN YOU INTERVIEW IN NOVEMBER?

Are you looking for a new position in the field of geology? Would you like to interview with potential employers in October? Take advantage of GSA's Employment Interview Service, which is provided each fall in conjunction with the Society's Annual Meeting. The service brings potential employers and employees together for

face-to-face interviews. Mark your calendar for October 26–29, 1987, in Phoenix, Arizona.

NOTE: If you plan to interview at the GSA Annual Meeting, GSA must receive your material **no later than August 14, 1987**. Complete the application on the following page and send it with a one- or two-page résumé and your check, money order, or charge information to the address on the form. A one-year listing for GSA Members and Student Associates costs \$25; the cost for non-members is \$50. If we receive your materials by August 14, your record will be included in the information that employers receive prior to the meeting. Submit your forms early to receive maximum exposure! Don't forget to indicate on your application form that you would like to interview in October.

Plan now for the annual Interview Service in Phoenix. See you there!

IT'S FREE!

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EMPLOYER AND APPLICANT FORMS ARE
BACK-TO-BACK ON THE FOLLOWING PAGES

For additional information and submission of forms, please contact

Clara Hodgson, Membership Coordinator
Geological Society of America
P.O. Box 9140, Boulder, CO 80301
(303) 447-2020

Memorial Preprints

The following memorial preprints are now available, free of charge, by writing to GSA, P.O. Box 9140, Boulder, CO 80301.

Laurence Lowe Smith, by Donald J. Colquhoun
Harrison Wilson Straley, by John E. Husted
Francis John Turner, by L. E. Weiss
Marcus Luther Thompson, by Charles W. Pitrat
Angeline Myra Keen, by Ellen J. Moore
Harold Thornton Stearns, by John F. Mink
Henry William Menard, by Edwin L. Hamilton



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N&I 0787
FOR ACCTG. USE ONLY
Rec. \$25 \$50
Ck # _____
Ltr. _____
GSA _____
Add. _____

APPLICATION FOR EMPLOYMENT MATCHING SERVICE (Please type or print legibly with **black ink**)

NAME (Mr. (Miss
(Mrs. (Ms.
(Dr. (last name first) _____ Date _____

Mailing Address _____
City _____ State _____ Zip Code _____

Date Available _____ Telephone (_____) _____ Business _____ Home _____ Visa _____
area code If not U.S. citizen, list visa

Members of GSA ONLY: Check here if you **DO NOT WISH** to have this number included in the Membership Directory

EXPERIENCE

Must use specialty codes listed below. Choose three that best describe your expertise in order of importance.

* 1. _____ 2. _____ 3. _____

Interested in

- Academic
 Government
 Industry
 Other

TYPE OF POSITION DESIRED

Specific interest

- Administration
 Exploration/Production
 Field
 Research
 Teaching

Will accept employment in

- U.S. only
 U.S. with foreign assignments
 Either

* **PRESENT SPECIALTY**

Choose one from codes listed below _____ **YEARS EXPERIENCE IN THIS SPECIALTY** _____

PRESENT EMPLOYER _____

Give number of years experience for any of the following that are applicable:

Administrative _____ Exploration/Production _____ Field _____ Research _____ Teaching _____ Total geological working experience _____

KNOWLEDGE OF FOREIGN LANGUAGES: French _____ ; German _____ ; Russian _____ ; Spanish _____ ; Other _____

ACADEMIC TRAINING

College or University	Degree (rec'd or expected)	Year	Major	Minor

Postgraduate work beyond highest degree in (field) _____ Number of years _____

SPECIALTY CODES

Select those that best describe your ability. Use codes in bold face only when other breakdowns are inadequate.

- | | | | | |
|--|----------------------------------|-------------------------------|--------------------------------|--------------------------------|
| 100. Economic Geology | 224. stable isotopes | 352. statistical geology | 501. exploration | 630. Science Editing |
| 101. coal geology | 225. geochronology | 400. Mineralogy | 502. subsurface | 650. Sedimentology |
| 102. geothermal, etc. | 250. Geomorphology | 401. crystallography | stratigraphy | 651. sedimentary processes |
| 103. metallic deposits | 300. Geophysics | 402. clay mineralogy | 520. Petrology | 652. sedimentary environments |
| 104. nonmetallic deposits | 301. seismic | 410. Museum (curator) | 521. igneous | 720. Stratigraphy |
| 105. mining geology | 302. gravity/magnetics | 420. Oceanography | 522. metamorphic | 750. Structural Geology |
| 120. Engineering Geology | 303. seismicity | 421. marine geology | 523. sedimentary (clastic) | 751. tectonics |
| 150. Environmental Geology | 304. paleomagnetism | 422. coastal geology | 524. sedimentary (carbonate) | 752. tectonophysics |
| 160. Public Education & Communication | 320. Hydrogeology | 450. Paleontology | 525. experimental | 753. rock mechanics |
| 200. General Geology | 321. hydrochemistry | 451. invertebrate | 550. Planetology | 800. Volcanology |
| 220. Geochemistry | 322. ground water | 452. vertebrate | 575. Quaternary Geology | |
| 221. organic | 323. surface water | 453. micropaleontology | 600. Regional Geology | |
| 222. high temperature | 330. Library | 454. paleobotany | 620. Remote Sensing | |
| 223. low temperature | 350. Mathematical Geology | 455. paleoecology | 621. photogeology | |
| | 351. computer science | 500. Petroleum Geology | 622. photogrammetry | |

- * **Résumé must be attached, LIMITED TO TWO PAGES, typewritten on one side only, to be acceptable for reproduction to employers. Include your name, address, and phone number; concise details of work experience; and majors/minors on degrees.**
- * **Fee: \$25 if you are a Member or Student Associate of GSA in good standing (Member # _____) \$50 if you are not a member of GSA. Payment in U.S. funds (check, money order, or charge information MUST ACCOMPANY FORM). MAKE CHECK PAYABLE TO THE GEOLOGICAL SOCIETY OF AMERICA.**

Check or Money Order
 MasterCard VISA
 American Exp. Diners Club
 CHOICE Carte Bleue
 Barclay Card Access
 EuroCard Standard Bank Card

Card Expires Mo Yr _____ Card Number _____

Signature _____ (Required for credit card payment)

I agree to release GSA or their representatives from responsibility for errors that may occur in processing or distributing this data. I understand that GSA makes **no guarantees** of contact by an employer in this service. I agree to notify GSA Employment Service immediately of (1) change of address, (2) acceptance of a position.

I will attend the 19____ GSA Annual Meeting in _____

* **SIGNATURE (required)**

* **THESE ITEMS ARE ABSOLUTELY NECESSARY TO PROCESS THIS APPLICATION**

This application will be active for 1 year



**THE
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3300 Penrose Place, P.O. Box 9140
Boulder, Colorado 80301
(303) 447-2020

EMPLOYER'S REQUEST FOR EARTH SCIENCE APPLICANTS

(Please type or print legibly)

Name _____ Date _____

Organization _____

Mailing address _____

City _____ State _____ Zip code _____ Telephone number _____
(Area code) Number

SPECIALTY CODES (see list below)

List the specialty code numbers that you wish to order, or check here if you want entire file of applicants in ALL specialties.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____

POSITION DATA: What position(s) do you expect to fill? _____

In what area(s)? _____

Degree requirements _____ Number of positions available _____

SPECIALTY CODES

100. Economic Geology	224. stable isotopes	352. statistical geology	501. exploration	630. Science Editing
101. coal geology	225. geochronology	400. Mineralogy	502. subsurface stratigraphy	650. Sedimentology
102. geothermal, etc.	250. Geomorphology	401. crystallography	520. Petrology	651. sedimentary processes
103. metallic deposits	300. Geophysics	402. clay mineralogy	521. igneous	652. sedimentary environments
104. nonmetallic deposits	301. seismic	410. Museum (curator)	522. metamorphic	720. Stratigraphy
105. mining geology	302. gravity/magnetics	420. Oceanography	523. sedimentary (clastic)	750. Structural Geology
120. Engineering Geology	303. seismicity	421. marine geology	524. sedimentary (carbonate)	751. tectonics
150. Environmental Geology	304. paleomagnetism	422. coastal geology	525. experimental	752. tectonophysics
160. Public Education & Communication	320. Hydrogeology	450. Paleontology	550. Planetology	753. rock mechanics
200. General Geology	321. hydrochemistry	451. invertebrate	575. Quaternary Geology	800. Volcanology
220. Geochemistry	322. ground water	452. vertebrate	600. Regional Geology	
221. organic	323. surface water	453. micropaleontology	620. Remote Sensing	
222. high temperature	330. Library	454. paleobotany	621. photogeology	
223. low temperature	350. Mathematical Geology	455. palaeoecology	622. photogrammetry	
	351. computer science	500. Petroleum Geology		

Applicants seeking employment in:	Minimum degree required	Minimum professional experience	Experience desired (yrs.)		
			None	1-5	6-plus
<input type="checkbox"/> Academic	<input type="checkbox"/> None	<input type="checkbox"/> None	Administrative	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Government	<input type="checkbox"/> B.A. or B.S.	<input type="checkbox"/> 1-5 yrs.	Exploration/Production	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Industry	<input type="checkbox"/> M.A. or M.S.	<input type="checkbox"/> 6-plus	Field	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other _____	<input type="checkbox"/> Ph.D		Research	<input type="checkbox"/>	<input type="checkbox"/>
			Teaching	<input type="checkbox"/>	<input type="checkbox"/>

Employment in: U.S. only U.S. with foreign assignments Either

Foreign Languages: French German Russian Other _____ Not required

I am interested in interviewing applicants through the GSA Employment Service at the 19____ Annual Meeting in _____

See attached sheet for current fee schedule.

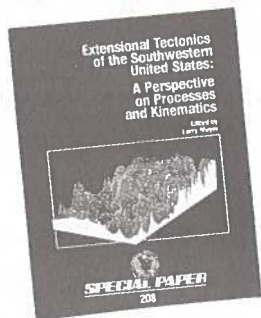
- I agree to use this service for valid recruiting purposes.
- I agree that no placement charges will be assessed to any applicant participating in the GSA Employment Matching Service.

Total fee enclosed\$ _____

or invoice requested\$ _____

Signature (required)

GSA RECENT RELEASES



Extensional Tectonics of the Southwestern United States: A Perspective on Processes and Kinematics

by Larry Mayer, 1986.
The goal of this volume is to provide a better understanding of continental rifting processes in general and in the Basin and Range and Mojave Desert Provinces in particular.
Special Paper 208, 130 p., ISBN 0-8137-2208-X, CIP, paperback, \$17.50.

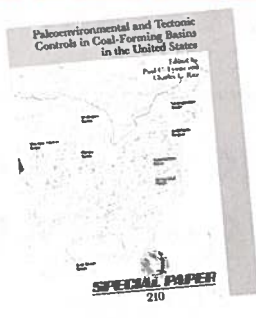


The Cretaceous-Tertiary Boundary in the San Juan and Raton Basins, New Mexico and Colorado

edited by James E. Fassett and J. Keith Rigby, Jr., 1987.
The 10 papers in this volume provide new information about the rocks adjacent to the Cretaceous-Tertiary boundary in the San Juan and Raton basins. The studies represented by the papers in this volume do not support an impact-associated mass extinction in either of these basins at the end of the Cretaceous Period, and it is noted that clearly much more work is needed to resolve questions about this boundary.
Special Paper 209, 204 p., with two 24" x 20" pocket plates, ISBN 0-8137-2209-8, CIP, paperback, \$28.50.

A Survey of Cenozoic Volcanism on Mainland Asia

by J. L. Whitford-Stark, 1987.
The volume presents a catalog of the products of the Cenozoic volcanism on mainland Asia, exclusive of the Koryak and Kamchatka Peninsulas. A synthesis of the available information illustrates that the dominant volcanic landforms are fissures and cinder cones.
Special Paper 213, 82 p., ISBN 8-8137-2213-6, CIP, paperback, \$15.00.

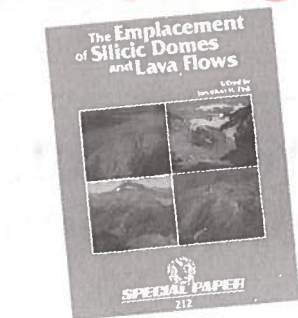
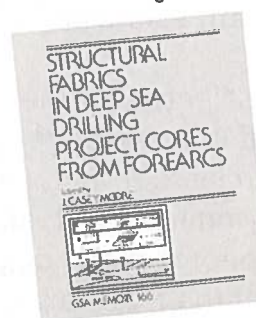


Paleoenvironmental and Tectonic Controls in Coal-Forming Basins of the United States

edited by Paul C. Lyons and Charles L. Rice, 1987.
A wealth of recent coal data and references to important literature on the field of coal-basin modeling in the United States are contained in this volume.
Special Paper 210, 208 p., ISBN 0-8137-2210-1, CIP, paperback, \$25.00.

Structural Fabrics in Deep Sea Drilling Project Cores from Forearcs

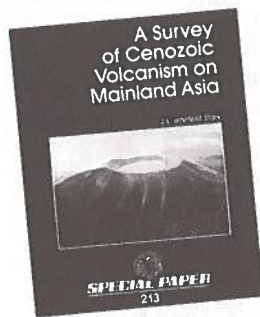
edited by J. Casey Moore, 1987.
DSDP cores from forearcs have a known tectonic setting and catch



The Emplacement of Silicic Domes and Lava Flows

edited by Jonathan H. Fink, 1987.
A symposium held at the 1984 GSA meeting in Reno, Nevada provided the basis for this volume. The symposium emphasized the mechanical, rather than chemical aspects of dome emplacement, and this volume maintains that approach. Several different perspectives are considered and offer insight into many of the key questions that still remain unanswered about domes.
Special Paper 212, 153 p., ISBN 0-8137-2212-8, CIP, paperback, \$18.75.

deformational and diagenetic-metamorphic processes while they are occurring. Analysis of the fabrics from these cores has great potential for furthering our understanding of initial structural processes in accretionary wedges, and for providing new insight into the evolution of ancient subduction complexes. Critical information is brought to a broad geological audience in a uniform and condensed format through a structural study done of virtually all cores collected from forearcs during the DSDP and presented in this volume.
Memoir 166, 168 pg., with two 17" x 26" pocket plates, ISBN 0-8137-1166-5, CIP, hardbound, \$18.00.



NOW AVAILABLE Special Paper 207 The Motion of Allochthonous Terranes Across the Northern Pacific Basin

by M. G. DeBiche, A. Cox, and D. C. Engebretson, 1987. \$11.00

Special Paper 211 Community paleoecology as a geologic tool: The Chinese Ashgillian-Eifelian (latest Ordovician through early middle Devonian) as an example

by Wang Yu, A. J. Boucot, Rong Jia-Yu, and Yang Xue-chang, 1987. \$18.50

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THE GEOLOGICAL SOCIETY OF AMERICA

Call For Submissions of

YOUR GEOLOGIC PHOTOS

Your geologic photography can be part of a unique, quality photo publication.

GSA invites photographic submissions from individuals and organizations throughout the earth-science community for a unique volume of 100 colorful, geologic photo essays. The volume will be of the highest quality, featuring full-color photography accompanied by brief texts. It will be marketed to the scientific community, and to the general public as well.

Photo submissions for this volume should tell an interesting geologic story with a minimum of accompanying text, and should depict the beauty of the geology in our environment, including space, and/or the beauty inherent in the earth sciences.

Each suite of photos selected for the volume will be presented in a two-page layout: a feature photo in large format and full color, an accompanying brief text, and from one to six smaller photos expanding or explaining the geology of the feature photo. Some auxiliary photos will be black and white, others color.

SUBMISSION REQUIREMENTS

General: Multiple submissions are permitted, but each submission must include all materials described below.

Photos: Photos must be of high technical quality, tell an interesting geologic story, and express the beauty of our environment and/or the earth sciences.

For each submission, designate a central photo, *which must be in color*. Supply two to six auxiliary photos, in color or black and white, which further explain or amplify the geology depicted in the feature photo.

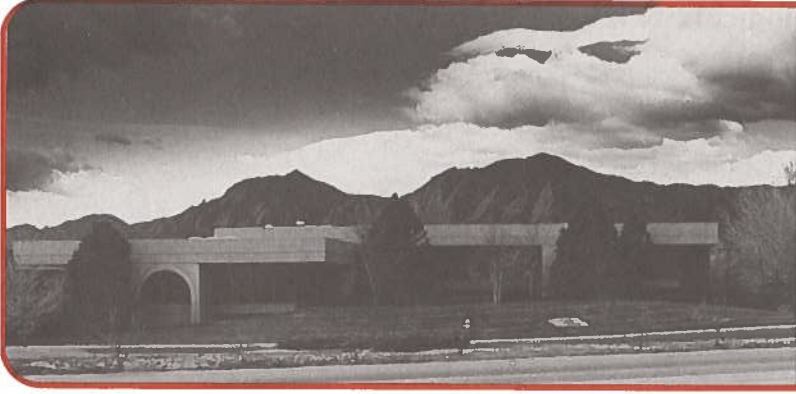
For color photos, submit one positive color transparency (slide), originals preferred; prints cannot be used. For each black and white photo, submit one 8" x 10" black and white print on double-weight, smooth, nonglossy paper.

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:
J. Clark
Geological Society of America
3300 Penrose Place
P.O. Box 9140
Boulder, CO 80301

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 NEWS & INFORMATION

1986 ANNUAL REPORT



M. J. Kraus



C. C. Mathewson



L. D. Kelgwin



W. A. Thomas



J. E. Oliver



E. M. Moores



K. R. Walker



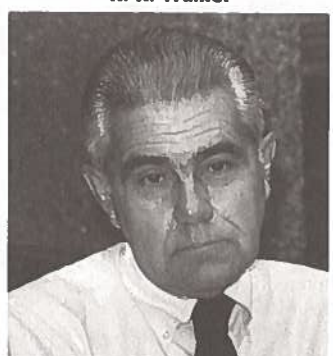
S. Mosher



J. C. Maxwell



J. O. Wheeler



A. Salvador

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Report of the President

by W. G. Ernst



The past year saw the continued growth of the Society as measured by all significant parameters: (1) total membership; (2) increasing attendance at section meetings and the annual meeting; (3) greater volume, diversity, and quality of publications; and (4) appreciation of financial assets. These interrelated phenomena are the consequence of a dedicated and active earth science profession and educational establishment, all segments of which are abundantly represented in GSA. It is also a reflection of the service of able scientists and administrators whose wise advice has guided the Society to an ever brighter future.

We are in the midst of the Decade of North American Geology publication activities, which are accelerating and promise to produce an intellectual hyperventilation in the earth sciences, and an enduring, encompassing geologic legacy for many decades. We are rapidly approaching the 1988 Centennial Celebration of the Society; the Denver meeting will be unique in terms of its introspection, summing up a century of past accomplishments and peering down the geologic road well into the 21st century. During 1989, the International Geological Congress will be held in Washington, D.C.; these sessions will provide a universal perspective on our science and our turf. North American earth scientists are entering a truly exhilarating period of intellectual ferment and development.

Yet it is sobering to contemplate the down-side of our current situation. As the world evolves gradually into an interlocking global economy, domestic minerals extraction industries—metals mining, oil and gas, nuclear—are in varying degrees of advanced decline. Our attempts to predict and ameliorate the devastating effects of geologic hazards such as volcanic eruptions, earthquakes, and land

subsidence are still in a rudimentary state. Anthropogenic CO₂ is causing a buildup of as yet uncertain magnitude in the world's oceans and atmosphere, with the attendant assurance of future climatic changes and pervasive stress on the biosphere. Toxic-waste management, environmental protection commensurate with utilization, and the securing of adequate new supplies of fresh water are not yet realities. Our educational establishment, once the envy of the world, seems to have aged and, given markedly reduced enrollments in the geosciences, may be difficult to modernize in order to successfully meet the scientific challenges of the 21st century.

I believe that, as a professional society, GSA can best help rectify this situation by continuing—and intensifying—what its members do best, namely cutting-edge earth science teaching, research, and development. The problems listed above are at least partly political and/or socioeconomic, and more widespread public involvement by individual geologists is sorely needed; we do have concerned members who now funnel such energies through the GSA Committee on Geology and Public Policy, but greater efforts by more of us are required. However, where geologists can most clearly, unambiguously, and abundantly contribute to problem solution is in the pursuance of our science, the results of which thereby contribute substantially to meeting national needs.

It has been an honor and an education for me to serve as a GSA officer. A resourceful, devoted headquarters staff, Foundation, Council, and, most important, a diverse and dynamic membership, ensure the Society's (and the entire profession's) continued upward trajectory.



S. H. Stow



B. J. Skinner



E-an Zen



M. I. Zoback

Report of the Executive Director

by F. Michael Wahl

The year 1986 was again a good one for the Society. It was steady in terms of programs and activities in spite of depressed conditions that continued to exist in some employment sectors. Highlights of the year included a continued steady increase in membership, expansion of our publication programs, a highly successful marketing and prepublication sales effort for Decade of North American Geology (DNAG) products, reorganization of the headquarters Accounting Department, expanded Society activity in the offering of short courses, combined packaging and mailing of the *Bulletin* and *Geology*, an expanded public relations effort at both the annual and section meetings, and finally, continued expansion of computer applications in Society operations.

On the financial side, we finished the year slightly over budget in the operations category, primarily because of an increase in Membership Department expenses, reduced revenue from the sale of Society publications, and lower annual meeting revenue. In all other budget categories we finished the year better than predicted and realized small surpluses that offset the revenue short fall.

On the positive side, 1986 was a year in which we again benefited from a substantial increase in the capital appreciation of our securities, resulting in an increase in both assets and net worth.

Headquarters Staff

The performance of the headquarters staff during the year was at an all-time high as the level of Society programs and activities continued to increase. Major changes in personnel during the year were the addition of Leonard Cumley as Manager of Finance and Accounting, replacing Richard F. Drozda, who retired. Also in the Accounting Department, Doris Sommers replaced Rose Ann Nyari. In the Production Department, new staff appointments included Joan Manly, replacing June Thomas, who retired, and the addition of Mona Gonzales. In the Membership Department, new appointments included Jennifer Stary and Maggie Villegas. In the Meetings Department, Edna Collis joined the staff as the in-house liaison for Section Meetings and coordinator of all Society short-course programs.

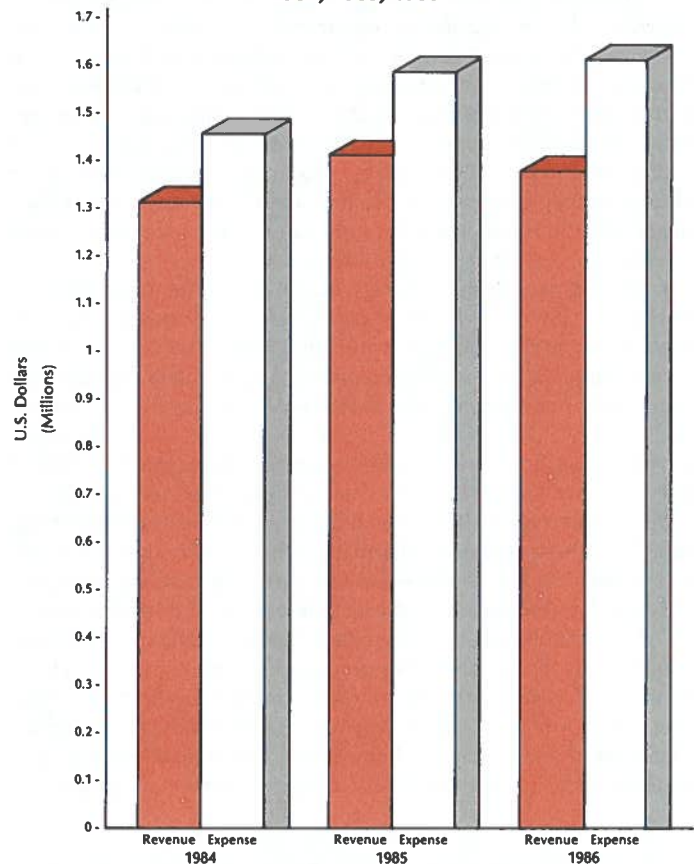
Periodicals

The number of science pages published in the *Bulletin* during 1986 remained essentially the same as in 1985, and all issues consisted of 126 pages. For *Geology*, the number of pages totaled 1092 as compared with 928 in 1985, a net increase of 164 pages.

The number of manuscripts received for possible publication in the *Bulletin* increased from 254 in 1985 to 285 in 1986. A total of 134 articles were accepted for publication during the year, compared with 113 the previous year. For *Geology*, 492 manuscripts were received and 290 were published. The number of months from acceptance to publication now averages 5 months for the *Bulletin* and 3 months for *Geology*.



PUBLICATIONS REVENUE/EXPENSE COMPARISONS
1984, 1985, 1986



S. S. Adams



G. A. Thompson



C. J. Mankin



M. L. Crawford

New Books, Maps, and Other Publications

Five new books were published, totaling 946 pages. These included four Special Papers and one Memoir. In addition, four Memoirs and two volumes of the *Treatise on Invertebrate Paleontology* were reprinted. Seven new maps were published during the year.

In the *Abstracts with Programs* series, a total of five volumes were produced for section meetings, plus a single volume for the 1986 San Antonio Annual Meeting. Page total for the series was 816, slightly more than in 1985.

Miscellaneous publications, including division newsletters and memorials, totaled 736 pages.

Revenue from Society publications in 1986 was slightly less than that received in 1985. Expenses showed a slight increase. Revenue received from dues for member periodicals again fell short of actual periodical costs, but revenue received from nonmember subscriptions showed an increase. As in past years, the subsidy of member periodical costs from endowment investment income was used to balance the difference between publication revenue and expense. For 1986 this subsidy amounted to 20% of total *Bulletin* and *Geology* publication costs.

The first volume of *The Geology of North America* was published during the year, along with the first DNAG Centennial Field Guide, and several continent-ocean transects.

Membership

Society membership continued to grow in 1986, numbering 16,568 as compared with 16,267 at the end of 1985. Of the number of new members recorded, 25% represented students transferring to regular membership status. The categories of Senior Fellow and Senior Member were officially established during 1986, and they totaled 5% of Society membership.

The GSA representative program was expanded during the year to include representatives from the corporate, agency, and consulting sectors. The response from our membership was excellent, and we

now have 67 company representatives, 36 agency representatives, and 35 persons representing the consulting and self-employed sector. There are currently 435 campus representatives.

Employment Service Program

During 1986 the Employment Service program operated at a level slightly above that of 1985. As may be seen from the accompanying statistical comparison, the total number of employers using the system was less than in 1985; however, the total number of positions available showed a substantial increase. This was largely the result of opportunities available with governmental and corporate entities. The total number of applicants attending the annual meeting increased, as did the number of applicants participating in the program throughout the year.

EMPLOYMENT SERVICE STATISTICS

	1981	1982	1983	1984	1985	1986
Employers						
Year-round	57	43	32	27	27	14
Annual Meeting	<u>77</u>	<u>41</u>	<u>42</u>	<u>39</u>	<u>33</u>	<u>31</u>
Total	134	84	74	66	60	45
Positions						
From employers year-round	57	43	32	27	27	76
From employers at Annual Meeting	<u>165</u>	<u>70</u>	<u>71</u>	<u>61</u>	<u>111</u>	<u>132</u>
Total	222	113	103	88	138	208
Types of positions						
Academic						
Year-round	19	33	16	9	14	6
Annual Meeting	95	54	50	46	39	29
Industry						
Year-round	32	8	12	16	10	70
Annual Meeting	58	10	8	11	32	21
Government and other						
Year-round	6	2	4	2	3	-
Annual Meeting	12	6	13	4	40	82
Total applicants at Annual Meeting	309	263	231	218	218	270
Total applicants for year	474	527	422	404	352	385
Total applicant successes (joined year before)	41	22	8	20	19	15

MEMBERSHIP STATISTICS SINCE 1972

	Fellows	Members	Students	Honorary Fellows	Totals
1972	3293	5289	873	49	9504
1973	3332	5452	1871	46	10,701
1974	3327	5975	2917	44	12,263
1975	3347	6438	2224	45	12,054
1976	3334	6771	2377	45	12,527
1977	3282	6972	2095	42	12,391
1978	3251	7208	1903	42	12,404
1979	3237	7306	1874	42	12,459
1980	3229	7500	1834	40	12,603
1981	3214	7633	1828	43	12,718
1982	3199	7901	2243	43	13,386
1983	3164	7922	2871	44	14,001
1984	3182	8422	3713	45	15,362
1985	3143	9074	4001	49	16,267
1986	3108	9335	4076	49	16,568

Meetings

The annual meeting registration in San Antonio was lower than anticipated, but the meeting was certainly a success in all categories. A grand total of 1515 papers were presented in volunteered, poster, and symposia sessions. The number of abstracts volunteered for the program totaled 1541, and of these 1191 were accepted. An additional 324 papers were presented in symposia, a 34% increase over 1985.

Eight premeeting and four postmeeting field trips were attended by 310 registrants. Twelve short courses were offered in conjunction with the meeting, and all were well attended. The Public Policy



W. W. Hay



D. L. Everhart



R. D. Hatcher, Jr.



E. A. Elliott

Forum, "Engineering Geology in Public Policy," was a highlight of the meeting. A total of 143 exhibitors occupied 209 booth spaces and added immeasurably to the quality and success of the meeting. Technical session presentations were again greatly enhanced by the use of two screens and two projectors, and most speakers now appear to have adapted well to that system. James O. Jones and all members of his 1986 San Antonio organizing committee are to be congratulated for an excellent meeting.

A total of 4171 registrants attended GSA section meetings during 1986, at which 1687 papers and posters were presented in 175 half-day sessions. This represents a 3.4% increase in the number of papers presented when compared with 1985.

1986 SECTION MEETING STATISTICS

Section and meeting location	Total registration	No. of papers presented	No. of half-day sessions
Cordilleran Los Angeles, California	1060	535	53
Rocky Mountain Flagstaff, Arizona	828	381	39
North-Central Kent, Ohio	555	221	26
Northeastern Kiamesha Lake, New York	1223	305	32
South-Central and Southeastern (joint meeting) Memphis, Tennessee	505	245	25

Research Grants

The Committee on Research Grants awarded a total of \$146,275 for the support of research in 1986. This sum included \$125,000 from Penrose Endowment income, \$6500 from industrial donations, \$8145 from GSA member contributions, a \$1355 gift from the GSA Foundation, \$4600 from the Harold T. Stearns Fund, and \$675 from the Arthur L. Day Fund. The Gladys W. Cole Memorial Research Award was \$1800. In all, a total of 168 proposals were selected for funding from the 624 proposals received. Of those funded, 133 were for Doctoral research and 35 supported Master's research. The average grant was \$871, and the award rate was 27% of all proposals received.

Recipients of specialized Society awards in 1986 were as follows:

Robert K. Fahnestock Memorial Research Award
Kevin M. Wilson, University of Colorado, Boulder
Harold T. Stearns Fellowship Awards
Kevin J. Kveton, University of Washington, Seattle
Randall Alan Marrett, Cornell University

William C. McClelland, University of Arizona, Tucson
Fang Wu, University of Michigan, Ann Arbor
Gladys W. Cole Memorial Research Award
Peter W. Birkeland, University of Colorado, Boulder

Decade of North American Geology

During 1986, Final Coordinating Conferences for *North America and Adjacent Oceans During the Last Deglaciation*, *Economic Geology: U.S.*, *Surface Water Hydrology*, and *Quaternary Non-glacial Geology, Conterminous U.S.* were held. These completed the developmental phase for the series *The Geology of North America* that will be published by GSA.

Most of 1986 was involved with the processing of manuscripts and accompanying illustrations for 20 of the books in the DNAG Project that were in development or production. Over 500 manuscripts were handled at least once. During the year, 121 chapters were received for review, and 74 chapter revisions were completed and submitted for volumes of *The Geology of North America*. In addition, 360 chapters for Centennial Field Guides and 14 chapters of the Centennial Special Volume *Geomorphic Systems of North America* were received from the volume editors for production.

Two books and four of the Continent/Ocean Transects were published: *The Western North Atlantic Region*, Volume M of *The Geology of North America*; the *Southeastern Section Centennial Field Guide*; one transect across the Arctic continental margin, one transect from western Canada, and two transects from the western United States.

By the end of the year, final revisions for 133 chapters for volumes of *The Geology of North America* had been completed and were either in production or published; an additional 168 chapters were either in review or in revision. Four hundred and sixty-five of the chapters in the Centennial Field Guide series were also in production or had been published.

Three Centennial Field Guide volumes, one Centennial Special Volume, and one volume of *The Geology of North America* were essentially under control, and publication was expected during the first half of 1987. Completion of several other volumes depended on receipt of chapter texts from only one or two overdue contributors.

Penrose Conferences for 1986

The Society sponsored six Penrose Conferences in 1986:

Southern Oklahoma Aulacogen, March 23-28, 1986, Quartz Mountain State Park, Oklahoma; Conveners: M. Charles Gilbert, John S. Wickham, R. Nowell Donovan.

Miocene Reconstruction of Southern California, May 30-June 4, 1986, Oxnard, California; Conveners: Peter W. Weigand, A. Eugene Fritsche, Roy K. Dokka, Judith Terry Smith.



G. M. Ashley



J. C. Reed, Jr.



G. Faure



D. L. Jones

Mechanisms of Reservoir Diagenesis and Their Geological Constraints, June 8-13, 1986, Cannes, France; Conveners: G. Michel Lafon, Jean-Pierre Cassan, Jacques Schott, Henri J. Soudet.

Migmatites and Crustal Melting, June 8-13, 1986, Amherst, Massachusetts; Conveners: Robert J. Tracy, Fred Barker, Elaine R. Padovani.

Synsedimentary Tectonics, September 7-12, 1986, Durango, Colorado; Conveners: William A. Thomas, Donald L. Baars.

Archaeological Geology: Environmental Siting and Material Usage, December 6-11, 1986, Saint Simons Island, Georgia; Conveners: Charles J. Vitaliano, Norman Herz.

Medal and Award Winners for 1986

Penrose Medal: *Laurence L. Sloss*

Day Medal: *E-an Zen*

Archaeological Geology Division Award: *William R. Farrand*

Gilbert H. Cady Award (Coal Geology Division): No award in 1986.

E. B. Burwell Award (Engineering Geology Division):

James F. Quinlan, Ralph O. Ewers

George P. Woollard Award (Geophysics Division):

Drummond H. Matthews

History of Geology Award (History of Geology Division):

Ursula B. Marvin

O. E. Meinzer Award (Hydrogeology Division): *T. N. Narasimhan*

G. K. Gilbert Award (Planetary Geology Division):

Ralph B. Baldwin

Kirk Bryan Award (Quaternary Geology and Geomorphology

Division): *Ronald I. Dorn, Theodore M. Oberlander*

Structural Geology and Tectonics Division Best Paper Award:

Daniel M. Davis, John Suppe, F. Anthony Dahlen

Honorary Fellows elected in 1986

Alexander B. Ronov

V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry

USSR Academy of Sciences

Moscow, USSR

David H. Green

Department of Geology

University of Tasmania

GPO Box 252C

Hobart, Tasmania 7001, Australia

Tu Guangzhi

Institute of Geochemistry

Academia Sinica

Guiyang, Guizhou Province

People's Republic of China

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Committee on Research Grants

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North American Geology

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Ad Hoc Committee on Minorities in the Geosciences

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Report of the Treasurer

by Robert L. Fuchs

In 1986, GSA's financial operations were again positive. The report of the Society's independent auditors, Touche Ross & Company, including financials for the six GSA Sections, indicates total assets as of December 31, 1986, of \$17,402,352, up 8.9% from 1985's \$15,969,740. Liabilities and deferred revenues at the end of 1986 were \$2,847,898, resulting in net worth of \$14,554,454, an increase of 4.8% over 1985's net worth of \$13,882,350. The Society's working capital (current assets less current liabilities) increased by 5.1% from \$1,859,796 at the end of 1985 to \$1,953,744 at the end of 1986.

Increases in assets and net worth continued to be the result of gains in the Society's bond and stock portfolio. Net realized investment gains during 1986 were \$602,845. At year end the carrying value of the portfolio was \$11,286,475, but the market value was some \$1,846,682 higher, at \$13,133,157. Further market value appreciation has occurred during the first part of 1987 as the stock market has risen to new heights.

Direct contributions to GSA dropped by almost 50%, to \$21,254. In part this reflects a shift in member giving to the GSA Foundation, the designated focal point for ongoing fund-raising activity.

The Society's income statement showed a small surplus, an improvement over 1985. Revenue and support items totaling \$3,918,181 exceeded expenses by an amount of \$48,005, as compared to 1985's deficit of \$130,736. Investment income (dividends and interest) increased 18.1% to \$897,462.

In the accompanying diagram, revenues and expenses are allocated to the appropriate major sectors of the Society's activities. Support was required in Member Periodicals, Other Publications, and Membership and Employment Service. The Annual Meeting was essentially a break-even. Support was provided by Nonmember Periodicals and Endowment. Costs of the Decade of North American Geology Program are reimbursed by the GSA Foundation. In this analysis we have placed general and administrative costs

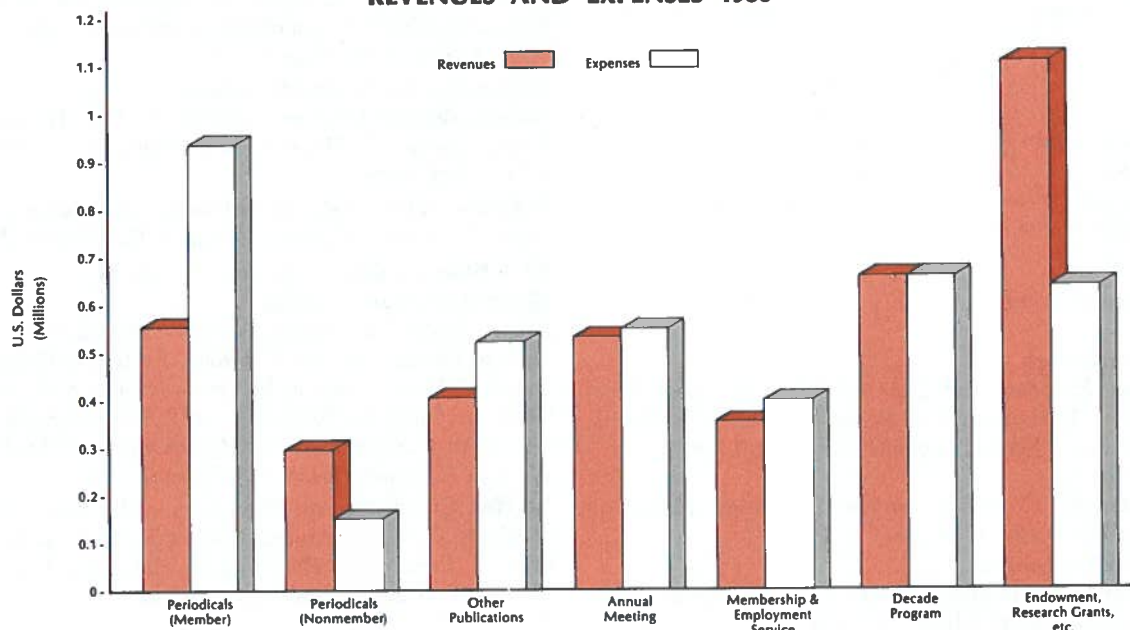


in the Endowment category. The diagram clearly displays the important role played by the Penrose Endowment Fund in subsidizing the many activities and services of GSA.

Real estate has become an increasingly important part of the Society's asset base. New investment in real estate totaled \$523,951, comprising the balance of the warehouse costs and the acquisition of approximately two acres and one building adjacent to headquarters. The depreciated value of GSA real estate was \$1,834,881 at the end of 1986. The market value is on the order of twice that amount.

The investment policy of the Society is reacting to the major increases in portfolio values that have occurred. The ultimate benefit of the portfolio is its ability to generate income over time to support publications, research, and earth science in general. While we bask in the glow of significant capital appreciation, we are planning ways to convert some portion of these assets into income-generating holdings.

REVENUES AND EXPENSES 1986



NEW GSA FELLOWS

The following candidates were elected to Fellowship by Council action at the May 1987 meeting.

John N. Aleinikoff Gail M. Ashley Richard J. Blakely Anthony J. Crone Thomas W. Gardner Richard G. Gordon	Russell S. Harmon Peter R. Hooper Suzanne Mahlburg Kay R. Craig Kochel David H. Lehman Robert A. Levich	John F. Lewry Paul C. Lyons Carla W. Montgomery Daniel R. Muhs Dianne R. Nielson Ross D. Powell	Frank Royse, Jr. Eugene I. Smith Claude Spinosa Richard B. Waitt, Jr. George P.L. Walker
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NEW GSA MEMBERS

The following 552 Members have been elected to Membership by Council action during the period from September 1, 1986, through January 31, 1987 (* indicates transfer from Student Associate to Member).

*Jennifer A. Abrahams Brian K. Alers Rodney L. Allen *Charles N. Alpers Hasin E. Al-Quorashi John J. Amoruso Gregg A. Anderson John R. Anderson, Jr. *Robert S. Anderson Donald M. Andrews *James E. Arnold Nancy A. Atwill Walter B. Ayers, Jr. Judith M. Back Heinrich H. Bahlburg *Patrick S. Baker Muawia Barazangi Bruce Barnum *Enriqueta Barrera Walter J. Bawiec *Dennis E. Beaver *Raymond E. Beiersdorfer *Meg M. Benton Andrew W. Berg *C. Richard Berquist, Jr. *Susan M. Berta *Carol J. Bibler *Frank R. Bickner Douglas M. Bishea Andrew J. Blackmer *Terence C. Blair Daniel B. Blake William W. Bland II Ronald G. Blom Brian J. Bluck John B. Bobbitt *Carolyn L. Boben *John Karl F. P. Bohlke Richard E. Bolich *Margaret E. Bonaker *Gregory N. Bonn *Richard M. Borkowski William J. Borns Clifford R. Bossong Richard L. Bowen William J. Bowen III John H. Brand Stephen I. Brewer *Gregg R. Brooks *Cynthia L. Brown Michael Brown *Michael L. Brown *Weston C. Brownlow *Keith A. Brugger *Marita L. Bryant Rex C. Buchanan *Roman W. Burak *David J. Burdette	*William D. Burgel Douglas A. Burns *Mark R. Byrnes *Susan H. Cannon *Mario V. Caputo *Daniel L. Carlson Ian S. E. Carmichael *Stephen J. Carter *Katharine V. Cashman *Mitch V. Casteel *Ronald L. Catazaro Lawrence M. Cathes III *Thomas Chacko Yi-Maw Chang *Emmanuel G. Charles Wayne A. Charlie Kyle A. Christie *Edward C. Cifu *Douglas H. Clark *Remly Paul Clark *H. Steve Clarke *Ronald James Clendening Jim Cocke Kenneth L. Cole Jane B. Collamer Robert J. Collar Laurel M. Collins *John S. Compton *Brent R. Constantz Theresa M. Cookro *Joseph L. Coronas *Elizabeth Jane Coughlin Jeff T. Courts *Pierre A. Cousineau *Jean Covert *David S. Cowie Ronald C. Crane Richard Crook, Jr. *Laura E. Cummins M. Carmela Cuomo David J. Dahlstrom Mary A. Dale-Bannister *Erik K. Davidsen Beth Davidson J. Everett Davis, Jr. Ralph J. Davis, Jr. Thomas W. Davis *J. Stephen de Albuquerque Karen S. Dean *Vincent Dello Russo Joachim Deramond *Robert P. De Roche Richard M. Deshler Michael D. Dettinger *Cymantha Diaz John H. Dilles *Vincent N. Di Renzo, Jr. Allan F. Divis	James A. Dockal *David M. Dolberg Kenneth D. Donnelson Keith E. Dopson William K. Dornbusch Steven L. Dorobek *Kathleen Duchac *Ernest M. Duebendorfer Ian J. Duncan *Sherilyn K. Dunklau *Stuart J. Dykstra Robert G. Eby Marc B. Edwards *Mark W. Eisner Lynn D. Ellis Russell P. Ellison III *Mary T. Ervin *James P. Evans Ralph O. Ewers *John W. Ewert *Carolyn H. Eyles Jeffrey L. Eyman Tom G. Farr *David E. Fastovsky Michael J. Faust *Carolyn R. Feakes *Jeffery S. Fehr *Bradley F. Feilberg *David S. Felton Gordon W. Fielder III *Michael F. Follo Steven L. Forman *Jonathan M. Forstrom George K. Foster *Christopher J. Fridrich Diana K. Friedhoff *Larry D. Friend A. Kem Fronabarger *Karen H. Fryer *Clark S. Fulton Scott E. Gable *Julie H. Galton *Phillip B. Gans *Alexander E. Gates Ned B. Gates *Edward E. Geary Philip J. Gerla Ann Marie Giarratana Oscar E. Gilbert *Jeanne E. Glahn *Rosemary Thompson Glenn *Robert H. Goldstein *Joan S. Gomberg *Gordon E. Grant *Dennis J. Graves Julian L. Gray *Benjamin B. Greeley John C. Greer	*Joseph H. Griffin Thomas B. Griswold *W. James Griswold George E. Groschen Mark D. Grubb Anita L. Grunder *Ann I. Guhman *Katrin Hafner-Douglass *Kenneth Alan Hagler, Jr. *Susan M. Hall *Michael W. Hamburger John C. Hampson, Jr. *Royce Brooks Hanson *J. Kirk Hardy *Tekla A. Harms *Susan Johnston Harper *Douglas E. Harris David C. Hartsell David D. Harvey *David M. Harwood Syed E. Hasan *Christopher R. Havlicek *Randall S. Hay *Frederick M. Haynes *Kevin Hemphill-Haley James H. Henderson Eric D. Hendrix Anthony R. Herald *Jennifer Hess Katherine K. Hirschboeck *Chester A. Hitchens *Brian D. Ho *Maki Hoashi Randall D. Hobbet *Linda A. Hobert David A. Hodell Drew D. Hoffman *Gunther Hofmann Donald W. Hollenbaugh Elizabeth A. Holt John H. Hoobs *Amy L. Hoover James D. Hoover Ephrem P. Horvitz *Lawrence D. Hoy *Scott A. Huckaby Samuel F. Huffman Camillus B. Huggins Elizabeth H. Hughes William T. Hughes *John D. Humphrey *Paul K. Hunter *Robert B. Hunter *Michael T. Hurd *Jon A. Irvine *Michael J. Jackson William D. Jackson *Gary W. Jacobs	*Robert S. Jacobs *Eric W. James *Creties D. Jenkins, Jr. *Gordon A. Jenner D.G. Brett Jensen *Barbara E. John *Diane M. Johnson *Jeffrey A. Johnson *Priscilla L. Johnson *Theodore D. Johnson William P. Johnson *David D. Johnston Stephen E. Joseph Mahlon G. Justice Pamela R. Justice Jon E. Kalb *James A. Kalinec Paul Karabinos *Carol S. Kazmer *Keith I. Kelson Robert Kerrich *Adeline Y. Kim Kevin A. Kincare George L. King Dave R. Kingston Stephen A. Kish *Ernest A. Klatt, Jr. *Harvey M. Klatt *Michelle A. Kominz *C. Eugene Kooper *Steve C. Kornder *Kerik T. Kouklis *David H. Kraig *Robert W. Krantz *Mark T. Krawetz Peter L. Kresan *Melanie E. Kreutzberger Michael A. Kruge *John F. La Barbera Lloyd W. La Brie Amitava Lahiri Jacqueline L. Lambrichts *Gordon H. Landefeld E. Bruce Lander *Daniel M. Lapointe *Paul W. Layer Kerry A. Lefever *David H. Lerner *Rob B. Leslie *Benjamin P. Leslie-Bole *Ellen M. Limburg *George G. Lingenfelter Mark J. Logsdon Ernest T. Loveless, Jr. *Thomas V. Lowell Craig J. Mach
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(continued on p. 150)

NEW GSA MEMBERS (continued)

- *Thomas L. Mackie
 Faiq H. Massah
 *Debra J. Malek
 *Camille I. Mancuso
 *Vasilios S. Mandros
 *Gregory B. Mandryk
 David S. Mann
 *Lonnie W. Mansell
 Robert E. Marbury
 Jean-Claude Mareschal
 Thomas A. Markham
 Wes Marshburn
 *Angela Martello
 *Joan Marti Molist
 *Charles L. Martin
 Ruben Martinez
 *Daven H. Mashburn
 Michael J. Matheson
 *Diana K. Maxwell
 *Timothy J. Mayotte
 *Jeffie N. McAuley
 Kathleen A. McDonnell
 W. Alan McKay
 *Brent A. McKee
 *Linda H. McKee
 Jerry A. McNeish
 Joyce P. Meints
 John F. Messa
 Mahmoud Hatem M. Metwaly
 *Christopher V. Metzler
 *Lili Mezger
 Laura M. Mikolosky
 Donald G. Mikulic
 *William W. Miller
 *James D. Miller
 *M. Meghan Miller
 *Jeanne A. Miller-Culhane
 Madelyn A. Millholland
 *Douglas E. Millman
 Leanne W. Milton
 Richard A. Mitchells
 *Thomas R. Mize
 *James A. Moore
 Theodore C. Moore, Jr.
 Alan V. Morgan
 Michael T. Morrow
 *Thomas C. Moyer
 *Eric W. Muehlberger
 Wulf U. Mueller
 *William F. Mullen
 *Daniel W. Muller
 *T. Clinton Mullins
- *David W. Murray
 *Sharon A. Myers
 Steven M. Myers
 *Jay C. Nania
 *William L. Neal
 *Kurt E. Neher
 *Craig V. Nelson
 James L. Nelson
 W. John Nelson
 *Linda E. Nemeth
 Paul D. Nunes
 *Curtis M. Obi
 *Michael J. O'Connor
 *Peggy A. O'Day
 *John R. Odermatt
 *Michael D. O'Hagan
 *Ramon A. Olivo
 *Sharon B. O'Loughlin
 *Robert B. Olshansky
 *Caron E. O'Neil
 *Carol L. Ostergren
 Thomas Osthoff-Petrasch
 James O'Tousa
 William R. Page
 *John R. Paquin
 *Lawrence A. Park
 *Scott R. Paterson
 *R. Timothy Patterson
 David R. M. Pattison
 Frank J. Pazzaglia
 R. Thomas Peake
 *Jane N. Pedrick
 *Jane S. Peplinski
 H. Kenneth Peterson
 Robert E. Pexton
 *James C. Phelps
 David W. Phifer
 *Loren F. Phillips
 Cynthia H. Pilskaln
 *Bruce E. Pivetz
 Joseph L. Plesha
 *Patrick S. Plumley
 Thomas G. Plymate
 *James Michael Pollock
 John R. Powell
 *Anthony R. Prave
 *Dave D. Puls
 *Geneva J. Randall
 *Leslie N. Ransbottom
 *William E. Rauch
 *John H. Raymer
 Douglas W. Reaber
- Walter E. Reed
 Warren M. Rehn
 *Charles E. Reynolds
 Douglas W. Reynolds, Jr.
 Werner Ricken
 James M. Rine
 *Randall M. Roberts
 *Craig D. Robertson
 *Sarah M. Roeske
 *Robert W. Root, Jr.
 *Robert G. Roselius
 *Charles R. Ross II
 Gretchen H. Roybal
 *Jeffrey N. Rubin
 *Scott H. Rugg
 *Carolyn Rutland
 Jean-Pierre G. Saheurs
 *Timothy L. Salter
 *Eugenia M. Sangines
 *Vanessa A. Santos
 *Daniel Sarewitz
 Ronald S. Saunders
 *Charles E. Savrda
 *Mindy Sayres
 D. R. Jessica Schiefelbein
 Richard A. Schooler
 Daniel D. Schultz-Ela
 Reed A. Schwimmer
 James W. Sears
 Scott O. Seery
 Lawrence Segerstrom
 Laura F. Serpa
 Deborah H. Shelton
 *Sean M. Sherlock
 *David N. Shirley
 *Tom Shoberg
 *William A. Shoemaker
 William J. Showers
 *D. Scott Singdahlsen
 David W. Sipperly
 Damir S. Skerl
 Marc W. Slechta
 *William R. Slinkard
 Edith Smoot
 Andrew A. Snelling
 *Kent E. Snyder
 *Edward R. Sobel
 *Steven M. Solomon
 Elmer G. Soper
 Marios A. Sophocleous
 Mario Soriano
 *Karen L. Spaulding
 Sharmon M. Stambaugh
 Gary M. Stanczuk
- Frederick T. Stanin
 *Gordon G. Start
 *Holly J. Stein
 Ronald J. Stein
 Mark G. Steltenpohl
 Daniel B. Stephens
 Carol Ann Stephens-La Brie
 Wilbur L. Stevenson
 *Kevin G. Stewart
 *Kurtis W. Stokes
 *Harold H. Stowell
 Harold Strauss
 Christopher P. Strzempka
 Steven W. Sturgess
 Amy E. Sullivan
 *Kathleen Sullivan
 Scott R. Surovchak
 John R. Suter
 *Stephen T. Sutton
 *Michael J. Sweat
 *Lindsay C. Taliaferro III
 Taz Tally
 Martin Tanke
 Patricia M. Tardona
 *Charlene D. Taylor
 *Emily M. Taylor
 Frederick W. Taylor
 *Keith R. Taylor
 *J. Gregory Thomas
 *Lisa A. Thomas
 *Robert B. Thomas
 Robert S. Thompson
 *Todd A. Thompson
 *Kevin Thomson
 Thomas T. Tieh
 *Peter G. Tilke
 Michael E. Tiller
 *Ann L. Tirrell
 *John A. Tokar
 *Laura E. Toran
 Jozsef Toth
 Michael I. Treesh
 Paul L. Tromp
 Eikichi Tsukuda
 Keith W. Turner
 *Kenneth C. Tyson
 *Robert R. Tyson
 John W. Valley
 Kerry W. Van Allen
 Peter J. Van Der Eb
 *Audrey L. Van Dyke
 Jill Van Dyke
 Kristi K. M. Van Kopp
 *Charlotte M. Varlashkin
- Jaume M. Verges
 Chris W. Viani
 *Karl M. Villemez
 George H. Wagner
 *Lisa A. Wainger
 *Kyle D. Walden
 *Kim A. Waldron
 Wilbur L. Walker
 *Nicholas W. Walker
 *David B. Ward
 *Stephen I. Wareham
 David J. Waters
 *John B. Wathen
 *Michael J. Webster
 Thomas C. Webster
 *Bruce S. Wedgeworth
 *Donna E. Weidemann
 *Katherine Beeghly Weir
 *John W. Welty
 *Kenneth P. Wenz, Jr.
 *Bradley T. Werner
 David Wesolowski
 Marla L. Wheeler
 Randall M. Wheeler
 *R. Lee Wheelless
 Stephen M. Wickham
 *Glenn R. Wiedenhoef
 Charles T. Williams
 *Curtis J. Williams
 George L. Williams II
 James R. Williams
 Loretta A. Williams
 Peter G. Williamson
 T. Desmond Wilson
 *Richard B. Winston
 Thomas C. Winter
 Rainer R. Wolf
 Cynthia C. Wong
 William I. Woods
 Charles E. Wright
 Leonard M. Wright
 *Stephen L. Wust
 *Daniel B. Wynne
 *Martin G. Yates
 William C. York-Feirn
 *Rainer Zahn
 Marek H. Zaluski
 Yale Zamore
 *Brian R. Zelenka
 *Edward J. Zofchak
 *J. Stevens Zuker
 *Mark R. Zwaschka

NEW GSA STUDENT ASSOCIATES

Listed are 508 Student Associates who became affiliated with the Society during the period from September 1, 1986, through January 31, 1987.

- Gary D. Acton
 Chim Albrecht
 Carlo Alessio
 A. Gilliam Alexander, Jr.
 Robert J. Alexander
 Jonathan J. Alix
 Gerylyn S. Andrews
 Lori E. Apodaca
 Sara Arav
 Steven M. Archibald
 Antonio Arribas, Jr.
 Andrew J. Arthur
 Tommy R. Asbery
 Pamela A. Aubuchon
 Gretchen M. Augat
- David N. Awwiller
 Diane K. Baclawski
 Mirza S. Baig
 Ann M. Bailey
 Sydney L. Baker
 Carol L. Bangs
 Daniel E. Barnett
 Frank T. Barranco, Jr.
 Reese E. Barrick
 Keith M. Barron
 Bruno Barroux
 Peter S. Barrows
 David A. Baxter
 Dennis J. Bebel
 Leonard P. Belliveau
- Robert J. Benedict
 Tina R. Berry
 Elmer A. Bettis III
 Snehal Bhagat
 Jennifer G. Blank
 Mark A. Bloom
 Theresa M. Bodus
 Mary C. Bohler
 Brian R. Bond
 Gregor B. Bond
 Randy D. Bookshar
 Jeffery L. Borhauer
 Mark D. Boryta
 Brad H. Boschetto
 Susan Q. Boundy-Sanders
- Christopher B. Bowring
 Patrick F. Breen
 James A. Bridges
 Francois P. Brissette
 Edward J. Brook
 Lauren J. Brooker
 Edward C. Brown
 Kathy M. Brown
 Quentin J. Browne
 Keith A. Brunstad
 Jonathan W. Burelbach
 Jennifer L. Burmester
 Emelia A. Burt
 Bradford R. Burton
 Michael K. Burton
- Samuel J. Butcher
 Lizabeth C. Cahill
 David J. Campagna
 William A. Canavan
 Rachel A. Carlin
 Paul S. Carpenter
 Alan R. Carroll
 Alan E. Cartwright
 Stanley J. Caskey
 Michael E. Caughey
 Alan K. Chamberlain
 Mark A. Chandler
 Marshall Chapman
 Richard T. Chen
 Linda J. Christianson

NEW GSA STUDENT ASSOCIATES (continued)

- Jay L. Clausen
 Peter J. Cochrane
 Larry A. Codington
 Edward A. Cohen
 Steven P. Connor
 Helen M. Connor
 David A. Cook
 Charles R. Cooper, Jr.
 Lila J. Cooper
 Thomas F. Corbet
 Christopher L. Corbett
 Holly J. Corner
 Scott Corsair
 Kevin J. Costello
 Kenneth J. Cottrell
 Gary A. Coulter
 Ronadh Cox
 Bruce R. Crabb
 Douglas E. Crowe
 John M. Curless
 Lisel D. Currie
 Andrew P. Czebieniak
 Jesse C. Dann
 Hugh R. Davis
 Kimberly A. Davis
 Jeanne L. De Lanois
 Loren K. Demaree
 Thomas D. Demchuk
 Joseph L. De Morett
 Barbara J. Deshler
 Quentin Deville
 David R. Devoe
 Suzanne J. DeVries
 Steffanie M. Dieke
 William H. Di Guiseppi
 Samuel R. Diner
 Eric F. Doehne
 Peter L. Doorn
 David N. Douglass
 Betsy J. Dransfield
 William Duffy
 Daniel P. Dugas
 Kenneth L. Dugger
 Katherine E. Duncker
 William J. Dunlap
 Ross A. Dunsmoor
 Dietmar Dunst
 William K. Duran
 Carol J. Dye
 Thomas M. Dyehouse
 Dawn R. Eigenberg
 Richard G. Elkins
 Craig F. Erdman
 Ronald D. Eriksen, Jr.
 Eduardo Etchart
 Ray A. Faliskie
 Steven G. Feldmann
 Richard M. Felton
 Jeffery D. Ferguson
 Daniel L. Feuerbach
 Cynthia G. Fisher
 G. Reid Fisher
 Scott W. Fitzpatrick
 Leslie L. Foley
 Michael J. Ford
 Ansley R. Fox
 Thomas P. Fox
 Sharon L. Frank
 Clay A. Frankenreiter
 Richard R. Franklin
 Jeffrey T. Freymueller
 Francis C. Furman
 Louise Gagnon
 Michael P. Gallagher
 Steven L. Garwin
 Paul T. Gayes
 Gretchen M. Gillis
 Michael D. Godwin
 Timothy O. Goist
 Jeanne L. Gonzalez
 York R. Gorzolla
 Francoise M. Goutier
 Monica E. Gowan
 Erik P. Graven
 Robin E. Graves
 Matthew D. Gray
 Miles W. Gray
 Ray Greely
 David C. Greene
 Timothy W. Grover
 Barbara L. Gruver
 Giovanni Guglielmo, Jr.
 Susan H. Gunn
 Steffen G. Hagemann
 Robert B. Hallett
 David E. Hamilton
 Charles E. Hanion
 Kerry M. Hanlon
 Robert H. Hanover
 Thomas S. Hanson
 Vicki M. Harder
 Michael W. Hardy
 Tina M. Harill
 Wayde M. Hartwick
 Karen G. Havholm
 David P. Hawkins
 Marc E. Haws
 Joseph J. Hayes
 Jill N. Haywa
 Ann L. Heatherington
 Timothy H. Heaton
 Katherine A. Heimes
 Marc S. Hendrix
 Loren E. Henning
 Cheryl Anne Hess
 Brittain E. Hill
 Kurt C. Hinaman
 David S. Hirt
 Warren G. Hirt
 Hilary M. Hoagland-Grey
 Matthew R. Hobson
 Cyril J. Hodapp III
 Paul F. Hodkiewicz
 Phillip J. Hogan
 David C. Holmes
 Robert M. Holt
 W. Frank Huber
 Gary J. Huftile
 Alan G. Hull
 Lewis E. Hunter
 Jacqueline E. Huntoon
 Daniel L. Inman
 Clark E. Isachsen
 Alexandra R. Isern
 Ellen Jackson
 Hiram S. Jackson
 E. Garrick Jaurugi
 Samuel W. Joffe
 Mike E. Johns
 David A. Johnson
 Peggy Ann Johnson
 Philip L. Johnson
 Mark E. Jones
 Maurice Kaasa, Jr.
 Suzanne Kairo
 Kimberlee S. Kane
 Matthew A. Kaplinski
 Kurt T. Katsura
 James A. Kearley
 Karan S. Keith
 Randall A. Keller
 Sean Kennedy
 Michael A. Kerr
 Mohammad S. Khan
 M.U.K. Khattak
 Yongje Kim
 Mary B. Kitz
 Charles W. Klassette
 Joanne Kluessendorf
 Carolyn M. Knight
 Douglas G. Knock
 Emmerich Knoebl
 Matthew J. Kramer
 Bryan J. Kriens
 Terryl Ray Kron
 Scot W. Krueger
 John Kubacko, Jr.
 Matthew M. Kuchta
 Conrad C. Labandeira
 Terrance N. Lackey, Jr.
 Alan P. Laferriere
 Christopher M. Lapallo
 Glenn A. Lauman
 Ilona M. Lawless
 Jeffery L. Leberfinger
 Gwang H. Lee
 Katherine L. Lee
 Albert Leger
 Scott J. Lehman
 Eric A. Le Lacheur
 Tina L. Le Page
 David J. Lepse
 Victor M. Levson
 Peter D. Lewis
 Aaron R. Liesch
 David L. Lindbo
 Anne M. Linn
 Gregory E. Little
 Teh-Ching Liu
 Lloyd M. Livingstone
 Kathleen A. Locke
 Donald L. Lofgren
 Mark A. Lohnes
 James P. Lombard
 Virgil W. Lueuth
 Erik R. Lundin
 Kathryn C. Luther
 Stephen B. Mabee
 Judy J. Majoras
 Mitchell J. Malone
 Janet E. Manchester
 Margaret T. Mangan
 Robert G. Mann
 Mark A. Manthey
 Charles Wellington Martin
 Matthew R. Martin
 Richard A. Martin, Jr.
 Luca Masini
 Scott E. Mason
 William R. Mason
 Massimo Massobrio
 Brent A. May
 Cynthia A. McCarten
 R. Scott McCleery
 David A. McConnell
 Danny L. McCrummen
 William R. McCulloch
 Eric V. McDonald
 Stephen M. McDuffie
 Virginia L. McElhone
 Galan W. McInelly
 Kirk D. McIntosh
 William C. McIntosh
 Jana L. McIntyre
 Jude McMurry
 Mark McNaught
 S. T. McWhinnie
 Kimberly A. Meeker
 Andres Meglioli
 Victor V. Melbardis
 George T. Merrifield, Jr.
 Giulio Milazzo
 Lance D. Miller
 Lee E. Mitchell
 James L. Molesworth
 Howard D. Mooers
 Jai-Woon Moon
 James C. Morgan
 Case C. Morris
 William R. Morris
 Maureen T. Muck
 Peter G. Muckenhaupt
 Richard W. Murray
 Peggy L. Myre
 Agi C. Nadai
 Kent E. Nall
 Allison P. Nassau
 Terry R. Naumann
 Martin K. Neudert
 M. Claiborne Newton, III
 Lisa C. Nicholson
 Katharine M. Nightingale
 Patricia L. Nittrouer
 Henry C. Nowak
 Dennis B. O'Connell
 Larry L. Oliveria
 Ernest H. Olsen
 Dave K. Olson
 Nebil I. Orkan
 Paul B. O'Sullivan
 Walter T. Padley
 Jeffrey G. Paine
 Nancy L. Parduhn
 John T. Parker
 Judith G. Patterson
 Kathleen A. Paulson
 Steve M. Pauly
 Caroline Perkins
 Lisa Peters
 Mark T. Peters
 Maria L. Peterson
 Silvio Pezzopane
 Andrew N. Pilant
 Ronald J. Pinkoski
 Jeffrey J. Plaut
 Karl F. Pohlmann
 Michael L. Pomes
 Thomas A. Popowski
 Wayne G. Powell
 Denise Predergast
 Christopher M. Prince
 James E. Prince
 Sabah M.A. Rabiah
 Sara L. Rathburn
 Maureen E. Raymo
 M. Kathryn Reece
 Bently K. Reinhardt
 Claire E. Renault
 Patricia L. Renwick
 Juan F. Restrepo
 John F. Rice
 Bryan W. Richter
 Benoit J. Rivard
 Robert C. Roback
 Barry L. Roberts
 Timothy H. Roberts
 Michael D. Rogers
 Susan H. Rose
 Robin E. Roth
 David A. Rothstein
 Scott K. Rowland
 Phillip D. Royall
 Teresa M. Royek
 Charlie Rubin
 Scott D. Sachs
 Richard W. Saltus
 Charles M. Sanders
 Thad A. Sandford
 Michael H. Sandidge
 Lee E. Sattler
 William Savarese
 Jiri Savrda
 Christopher P. Saxon
 Heidi K. Schatmeier
 Brian S. Schilling
 Nancy Schmidt
 Theresa M. Schneider
 Richard B. Schultz
 Karen J. Schwab
 Jeffrey S. Seewald
 Timothy J. Seiler
 Lorraine K. Shawley
 William T. Shea
 Renata G. Sheffey
 John F. Sherrill
 Alice B. Shilhanek
 Stephen R. Shobe
 Everette L. Shock
 Purusotam L. Shrestha
 Cynthia S. Shroba
 Christopher A. Shuman
 Helen C. Shumway
 William C. Sidle
 Claudette M. Simard
 Gregory C. Simones
 Karen C. Sixt
 Kristina L. Skrine
 Gretchen L. Smith
 Jacqueline A. Smith
 Sue K. Smith
 Victoria J. Smith
 Suzanne E. Smrekar
 Seena S. Sonnad
 Mark D. Sonnenfeld
 Stacia A. Spaulding
 Kathryn A. Sposato
 Charles W. Sprague
 Jeffrey W. Sprague
 Linda Stathoplos
 John-Mark G. Stauder
 Jennifer J. Steen
 Mary Jane A. Stell
 Michael D. Stephenson
 George E. Stewart
 Robert E. Stowers II
 Glenn B. Stracher
 Mark D. Strobel
 Patricia K. Stutts
 Robert J. Sullivan, Jr.
 Tammy D. Suter
 James D. Suydam
 Karen A. Suydam
 Brian J. Swanson
 David W. Swetland
 Anna Maria Szatai
 Ann B. Tabony
 John R. Tabor
 Charles J. Taylor
 Fidele Tchinda
 Mark B. Tellez
 Ray T. D. Teng
 Jeffrey H. Tepper
 Cora G. Terrell
 Richard E. Terry
 Shelly A. Thibaudeau
 Eric B. Thoman
 Amy G. Thompson

(continued on p. 152)

NEW GSA STUDENT ASSOCIATES (continued)

Danny L. Thompson
Gordon D. Thompson
Terrance L. Thonen
Barbara S. Till
Kenneth J. Tobin
Ramon H. Trevino
Charles H. Trupe III
Chung-Tai Tsai
Lisa K. Tuck-Evard
David J. Umstot
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MEETINGS

(Asterisk indicates new or changed information)

1987

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.

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 Qua-

(continued on p. 154)

MEETINGS (continued from p. 153)

ternaire, 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, Geologická 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.

Workshop to Develop Scientific Drilling Initiatives in the Caribbean, November 17-21, 1987, Runaway Bay, Jamaica. Information: R. C. Speed, Dept. Geological Sciences, Northwestern University, Evanston, IL 60201; (312) 491-3238.

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 Geol-

ogy, University of Texas, UTA Box 19049, Arlington, TX 76019; (817) 273-2979.

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

Annual Meeting, October 26-29, 1987, Phoenix, Arizona

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 3006, Laramie, WY 82071; (307) 766-5457.

***Exposed Cross Sections through the Continental Crust**, September 27-October 2, 1987, Killarney, Ontario, Canada, has been canceled.

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

(continued on p. 155)

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MEETINGS (continued)

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: Shamsher Prakash, Room 308, Dept. of Civil Engineering, University of Missouri, Rolla, MO 65401; (314) 341-4461.

9th U.S. Symposium on Rock Mechanics, June 13-16, 1988, Minneapolis, Minnesota. Information: Jan Becker, Dept. Profes-

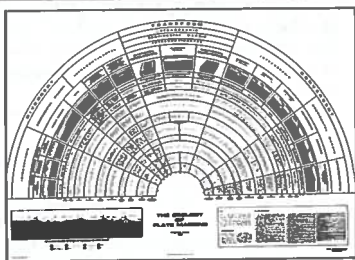
sional Development, University of Minnesota, 315 Pillsbury Dr. S.E., Minneapolis, MN 55455; (612) 626-1358. (Abstracts due September 15, 1987.)

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.

***First International Conference on Radiolaria**, July 18-20, 1988, Marburg, Federal Republic of Germany. Information: Joyce R. Blueford, U.S. Geological Survey, MS 144, 345 Middlefield Rd., Menlo Park, CA 94025; (415) 329-4004, or R. Schmidt-Effing, Internad-Conference, Dept. of Geosciences, Philipps-Universität, Lahnberge, D-3550 Marburg, Federal Republic of Germany.

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.

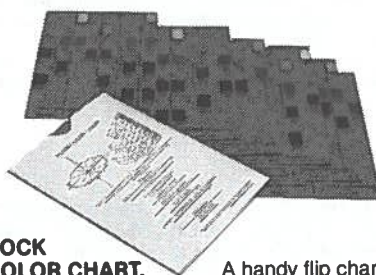
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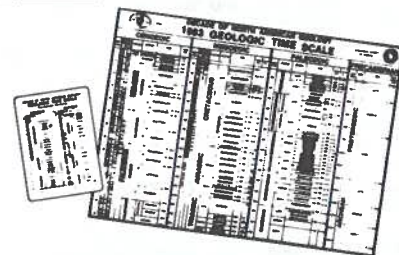
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INSIDE _ _ _

Employment Service	p. 136
Annual Report	p. 141
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