

# The Lattice

## MSA AWARDS LUNCHEON AT 1997 ANNUAL GSA MEETING

The Mineralogical Society of America recognized the accomplishments of several of its members at the annual luncheon held on October 21 during the 1997 annual Geological Society of America meeting in Salt Lake City, Utah.

Ian Carmichael was awarded the Roebling Medal for distinguished research in a wide range of research in theoretical and field-related igneous petrology. Unfortunately, Ian was unable to attend due to heart bypass surgery the day before the luncheon. Fortunately, the surgery was successful. The award was accepted on Ian's behalf by Hal Helgeson. Rebecca Lange, the citationist for Ian, gave a former student's perspective of Ian Carmichael as faculty member, advisor and mentor.

*(Continued on next page)*



*Roebling Medal awarded to Ian Carmichael. MSA President David Veblen presented the medal. Rebecca Lange was citationist and Hal Helgeson accepted the medal for Ian.*

## WHAT'S IN A NAME?

### *A Commentary*

The purpose of this brief essay is to open a dialog on the naming of our journal: American Mineralogist. This comes as a consequence of recent discussions among former officers of our Society on the current plight in academe of such fields of endeavor as Mineralogy, Crystallography, and Petrology, the very subjects to which our Society is dedicated. The problems run deep and can certainly not be solved in entirety by as simple a step as change of name. In fact, most of us -- when we were younger and more conservative -- would have fiercely resisted any such tampering with the name of our beloved journal. Why then do we now think that such a discussion is necessary? -- It is because, whether we like it or *(continued as Name on page 5)*

### *Also in this issue*

From the President.....	3
In Memoriam.....	4
Notes from Washington.....	6
IMA Commission on Ore Mineralogy .....	7
Members in the News.....	7
Report of the Secretary for 1997 .....	8
From the Editors of American Mineralogist .....	10
MSA Member Participation in AGU Meetings.....	12
Mineralogist/Materials Science Position.....	15
MSA's New Web Site.....	16
Meeting Calendar 1997-1998.....	18
Membership Application.....	21
Publications Order Form .....	22
New Members .....	23

*(Continued from page 1)*

Jillian Banfield was presented with the Mineralogical Society of America Award for outstanding research contributions prior to her 35<sup>th</sup> birthday. David Veblen cited Jill's many research accomplishments, particularly in the field of transmission electron microscopy, and noted the highly successful MSA short course on Geomicrobiology that Jill co-organized prior to the GSA meeting. Jill accepted the award thanking everyone that influenced and encouraged her.

Several other MSA members were recognized during the luncheon. R. Lee Penn was noted as the recipient of the 1998 MSA Grant for Student Research in Mineralogy and Petrology. Subarnarekha De was recognized as the 1998 recipient of the Kraus Research Grant for Crystallographic Research. Rosalind Helz and Mark Ghorso were thanked for their service as the 1996-7 MSA Lecturers. They represented the society with numerous lectures given to a variety of colleges and universities. Rich Reeder and Ted Labotka were warmly applauded for their four years of service as editors of *American Mineralogist*.

Finally, outgoing MSA president David Veblen tried to walk away with the gavel of the presidency of MSA. However, before he did walk away he did pass the gavel to the new MSA president, E. Bruce Watson who used the newly obtained gavel to close the 1997 MSA luncheon.

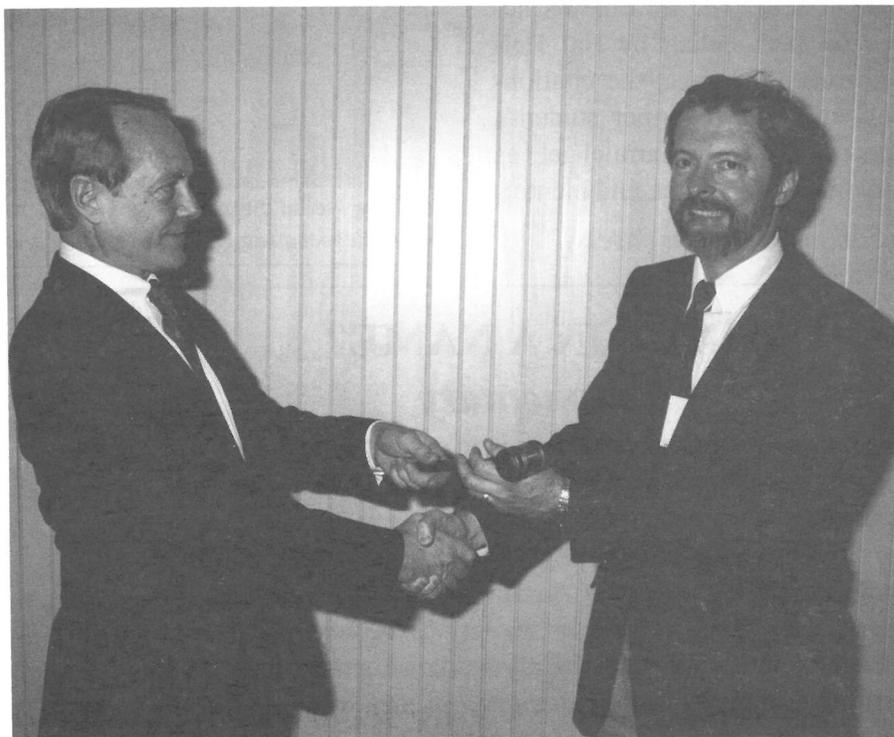
***New MSA website!!!***

<http://www.minsocam.org/>

See page 16 for more details on the web site.



*Jill Banfield accepting the MSA Award from MSA President David Veblen*



*Outgoing MSA President David Veblen passing the gavel of the MSA Presidency to the new MSA President Bruce Watson*

## From the President

### Support your local AGU meeting d other meeting-related issues)...

My first "presidential" letter concerns one of the dilemmas we MSA members face in budgeting our professional time: There are more meetings relevant to our interests than most of us can afford to attend (in terms of both money and time). Even within the restricted domain of North America, the "natural" meetings for the general MSA membership include, at the very least, spring and fall AGU and the annual GSA meeting. Added to these are the more specialized meetings: for example, the Goldschmidt Conference (which alternates between Europe and North America), the Lunar and Planetary Science Conference, and the meetings of the Meteoritical Society and the Clay Minerals Society, as well as cross-disciplinary meetings such as those of Materials Research Society, the American Chemical Society and the American Physical Society. There are so many meetings offering a forum for mineral researchers that many of us could travel from city to city without ever going home to our students and/or families - not to mention to our laboratories and computers, where the results we report on at meetings are generated! In response to this "meeting pressure", each of us develops his or her own strategy for coping.

My personal strategy is to try to participate in some general meetings and some specialized ones -- one or two of each in a typical year. In some ways, specialized meetings such as the Goldschmidt Conference are more productive for me, because there is a higher density of individuals in attendance with whom I share immediate interests. On the other hand, I have come to recognize that I also benefit greatly from interactions with earth

scientists whose perspectives are completely different from my laboratory-anchored view of the world. I try, for example, to appreciate the results of researchers who probe the Earth using physical techniques, or who actually look at rocks in the field. In the funding climate of the present day (in which research proposals are reviewed -- I think appropriately -- in the broadest possible context) it makes sense for me to learn how to cast my relatively esoteric research in the most general light possible (I don't claim to be good at this, but I'm convinced that it's at least a good strategy).

I have particular loyalty to the spring AGU meeting. I feel like I came of age at spring AGU, and it continues to be the one general meeting of earth scientists that is reliably time- and cost-effective for me to attend. Perhaps more importantly, I can also afford to send a van-load of students (no airfare required; quadruple occupancy at a downtown hotel), which might include an undergraduate participating in his or her first professional meeting. The problem with my reliance on spring AGU is that almost no one else in the solid-earth community seems to feel the same way I do (except for Tim Grove, the 1998-1999 president of the VGP section; see p. 12). The former vitality of spring AGU as a "solid-earth" meeting has declined considerably over the past 10 years. Last spring, the Seismology, Tectonophysics and VGP sections of AGU were significantly underrepresented, and abstracts from VGP in particular -- the section with which most MSA members identify -- were at an all-time low of about 60. Attendance by MSA members was very limited.

My informal poll of colleagues has revealed some possible factors  
(continued on the next page)



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The Mineralogical Society of America is composed of individuals interested in mineralogy, crystallography, and petrology. Founded in 1919, the Society promotes, through education and research, the understanding and application of mineralogy by industry, universities, government and the public.

Membership benefits include: *American Mineralogist*, published bi-monthly; 25% discount on volumes in the *Reviews in Mineralogy* series; *The Lattice*; Membership Directory; special subscription rates for *Mineralogical Abstracts*, *Physics and Chemistry of Minerals*, *Journal of Petrology*, and *Journal of Metamorphic Geology*; reduced registration fees at MSA short courses; member rates for the MSA/Geological Society of America annual meeting and member rates at MSA's spring meeting with the American Geophysical Union; participation in a Society that supports the many facets of mineralogy.

Dues for 1997 are \$70 for professional members who elect to receive *American Mineralogist* and \$40 for those who elect not to receive the journal, but who do receive all other membership benefits; membership is \$30 for students. Membership is on a calendar year basis. Individuals who join after January 1, 1997 will be sent all back issues of the journal for volume 82, 1997.

For additional membership information and an application, and/or to receive a price list of the Society's publications, contact the Business Office.

Institutions may subscribe to the 1997 volume of *American Mineralogist* for the annual rate of \$320 in the US, \$325 in Canada and Mexico and \$330 in all other countries. The subscription price includes any new volumes of the *Reviews in Mineralogy* series published during the calendar year of the subscription. Payment must be received in full before a subscription will be started.

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contributing to disinterest in spring AGU: 1) the rise to prominence of the Goldschmidt Conference and consequent siphoning-off the latest research results; 2) the attractive force of the city of San Francisco, the perennial host of the fall AGU meeting; and, conversely, 3) the repulsive force of the city of Baltimore, the host of the spring meeting in recent years (but not next year). Call me an eastern chauvinist, but I have trouble accepting reason number 3. As a cultural and culinary center, Baltimore does not compare with San Francisco, but it's a perfectly good place for a professional meeting, and the weather there in May is arguably better than that of San Francisco in December. I think the reason for the decline of the VGP (and MSA) presence at spring AGU is related more to the general problem of too many meetings and not enough time and travel money, combined, perhaps, with the natural dynamics of the solid-earth sciences research community. Fall AGU seems, for example, to have become the leading annual forum for mineral physics, despite the presence of a strong mineral physics community in the eastern U.S. I gather that in this case the preference for San Francisco is due at least in part to the fact that fall AGU is, understandably, the meeting of choice for seismologists. The desire of mineral physicists to interact with seismologists is easy to appreciate.

Why should my personal concern over the decline of the spring AGU as a "solid-earth" meeting be of interest to individual MSA members and the MSA as a professional society? For one thing, most of the U.S. membership is in the east (a distribution we should seek to change!). At the risk of appearing parochial, I'll restate my view that at least one broad-based annual meeting of North American earth scientists should remain accessible to

the graduate and undergraduate students in our programs. Another reason for MSA members to get involved in spring AGU is that, as a co-sponsor of the meeting, MSA enjoys the same stature as the AGU sections at the spring meeting: Tim Grove reminds us in his letter (p. 12) that we can organize special sessions and lectures, host receptions and present awards at spring AGU. It is not clear that the privileges associated with co-sponsorship can be shifted to San Francisco by renegotiating our arrangement with AGU, because the fall AGU meeting is so heavily subscribed already.

The last -- and perhaps most important -- reason I'll offer for a strong MSA presence at spring AGU concerns the future of mineralogy as a recognizable (if constantly evolving) discipline: I firmly believe that MSA and its members will benefit in the long term by seeking the broadest possible forum in which to describe the research we do and establish its relevance in the greater scheme of the Earth Sciences. To me, that means participating as much as possible in AGU and GSA meetings, and spring AGU may be the place where we can have the biggest impact.

Enough lobbying; on to other meeting-related issues... In order to help develop a strategy for MSA participation in meetings, and also to identify leading-edge topics and organizers for symposia and special sessions, the MSA Council voted to establish a "Meetings Committee", which will be chaired by John Jones (NASA Johnson Space Center) and include those individuals serving MSA as liaisons to AGU, GSA, IMA and CMS: Larry Anovitz, David Bish, Charlie Burnham, Pam Burnley, Mark Bukowski, Jack Cheney, Bob Downs and Craig Manning. The Meetings Committee

will also consider such questions as: 1) Do GSA and AGU provide the best possible forums for research conducted by MSA members?; Should MSA seek a closer association with the Geochemical Society (GS) and European Association for Geochemistry (EAG) with a view toward possible co-sponsorship of the Goldschmidt Conference?; and 3) Should MSA establish its own annual or biennial meeting? Both the Meetings Committee and the MSA Council need input from the membership on these questions, so please don't hesitate to contact any or all of us. I, personally, am not at all opposed to a "yes" answer to questions 2 & 3, but I firmly believe that MSA must maintain a strong presence at the broad-based national meetings of earth scientists. In our effort to keep mineralogy visibly on the forefront of solid-earth research, the last thing we should do is be isolationist in our meeting activities. At least three citing areas of earth materials research -- mineral surfaces, high-pressure mineral physics, and geomicrobiology -- can be appropriately "claimed" as mineralogy (special sessions in all three have been proposed for the Spring AGU in Boston). Let's be sure that the solid-earth science community in general is aware of the vitality and breadth of research encompassed by present-day mineralogy.

*E. Bruce Watson*

*Bruce Watson*

President

### *In Memoriam*

We regret to announce the passing of the following MSA Members. The Society extends its condolences to family and friends of these scientists.

*Joze Duhovnik*, Life Member (1946)

*Eugene B. Gross* Life Member (1943)

(Name - continued from page 1)

not, the language of science is changing, and because the connotations of words change as the language changes. Consider, for example, the changing meanings of the word Liberal in the contentious world of modern politics! Academic politics, alas, can function at an equally low level, and we should, if possible, avoid being victimized by maneuverings with words.

The problem is an old one and has been addressed by some of the greatest poets of our tongue. From Shakespeare we have:

*"What's in a name? that which we call a rose  
By any other name would smell as sweet."*

and from Cowper:

*"Some to the fascination of a name  
Surrender judgment, hoodwinked."*

These statements may appear contradictory, but they are not. Shakespeare is telling us that the essence of something is independent of its name, which is, of course, true. Cowper, on the other hand is warning us that names may mislead, deceive, or do mischief, which is also true! Were roses referred to as "stinkflowers" many would be discouraged from ever learning the truth about them! Names can illuminate, they can also obfuscate. As language and usage change, a name may do first the one than the other. The changes that can be wrought by language are obvious and conspicuous in what has happened to the titles of College and University departments. "Geology" and "Geological Science" have been replaced by "Earth Science" and "Earth and Planetary Science", sometimes by "Geoscience". "Metallurgy" and "Ceramics" have been replaced by "Materials Science". "Mineralogy", as a course name, has (if not dropped from the curriculum) been replaced by "Physics and Chemistry of Minerals" or "Earth Materials". (One wonders what would be left of mineralogy if the physics and chemistry were removed!) Similar changes have taken place in want ads and in applications for jobs. Much of this, of course, is trivial, a playing with words by people with nothing better to do, but even so, these changes have happened, and have to be lived with.

More serious and sinister is the tendency to regard certain fields, by name, as outdated, old fashioned, nineteenth-century (it does no good to point out that MSA was not founded until the twentieth), and hence irrelevant to modern science. (See Presentation of the V. M. Goldschmidt Award of the Geochemical Society, *Geochimica et Cosmochimica Acta*, vol. 50, pp. 1307-1309, 1986).

Specifically, mineralogy and petrology are bad, but geochemistry and geophysics are good. Paleontology is bad but paleobiology is good. In most of these last we find that problem-oriented names are bad and that names indicating the intellectual tools employed are good. The current style is to learn a technique and apply it to a wide variety of earth problems, rather than to study in depth a particular aspect or part of the earth and apply a wide variety of techniques to its problems. To me, both types of science are needed, and neither can function at maximum efficiency without the other. Are we really to be dismissed as a "sleepy, nineteenth-century observational science" and hence as "moribund" -- to quote some recent epithets?

Mineralogy, alas, is one of the fields increasingly identified as bad, and it must therefore be defended vigorously if it is to survive as a recognized academic discipline. Serious mineralogists are dismissed as mere stamp collectors or hobbyists. Other symptoms of the trouble are everywhere. People who should read and need our journal often ignore it. People who should contribute to it do not, lest they be accused of practicing bad science, and thus not score points for advancement or promotion. These matters clearly require a major effort to communicate more effectively with scientists in other disciplines, and to convince academic administrators and the general public that we contribute usefully to society's needs both in a material way, and intellectually. Changing the name of our journal will certainly not cure the ills, but it might be a useful step in improving our communications with others.

We must somehow entice people into reading our journal, to find out what we really do, that our roses are sweet and do not stink, and that between those yellow covers there lies some high quality science! We do not propose renaming our science or our society, but a revision of the name of our journal might be a useful first step. One suggestion that has been discussed is "Earth and Planetary Materials". It is consistent with the current linguistic style and would not sacrifice our principles. After all, such a name would include mineralogy, crystallography, and petrology in a way that perhaps the practitioners of newspeak may readily understand.

We welcome further suggestions and discussions. Let the dialog begin!

*James B. Thompson, Jr.*

Fellow, 1950; MSA President, 1968

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## Notes from Washington

- MSA membership renewals will be mailed in late December. Save your Society money by renewing promptly. If you reside overseas and are interested in faster delivery of the *American Mineralogist*, consider ordering International Surface Airlift service (ISAL) for the journal when you renew your member subscription. It costs \$30 additional and will reduce shipping time from several months to 2-3 weeks, depending on your location. You will also receive a copy of all information contained in your membership record with a request to update and return it. 1998 is the year a new MSA Membership Directory will be produced.

- At its Fall Meeting, the MSA Council voted to make member entries of the MSA Directory available to members primarily through the MSA web site. It is planned that the on-line Directory will be updated at least monthly. Paper copies would be available to members at cost, and printed on demand. Initially the MSA Directory was printed as part of *American Mineralogist*. When this was deemed too expensive, it was printed as a supplement to *The Lattice*. Over the same period, the Directory went from appearing each year, to every other year, then to every 3-4 years because of cost. The appearance of the MSA Directory on-line continues this historic cost-saving trend, but reverses the trend of producing a product that spends most of its life out-of-date.

- MSA's research grant program reached another milestone. At its Fall, 1997 meeting Council approved a recommendation to make a grant from the Edward H. Kraus Crystallographic Research Fund each year, rather than every other year. You may remember from last year the MSA Council approved a similar recommendation to make a grant from the Mineralogy/Petrology Fund each year. What made it possible for MSA to change these research grants from biennial to annual was the continued generosity of contributors to each Fund, and a good stock market. There were 46 applicants this year for grants and, as always, more good science than the Society can fund. With additional contributions, the Funds could make more than one grant from each fund each year. Consider making a contribution when you renew your membership. Detailed information about applying for these grants for 1999 will appear in the next *Lattice*.

- The 1998 MSA Benefactors are: Sponsoring: Exxon Production Research Company and Gemological Institute of America; Contributing: Blake Industries and P. Cargill Laboratories, Inc.; Sustaining Rigaku/USA Inc., John

Wiley & Sons, Inc., and Charles Supper Company. These names will appear on the covers of the 1998 *American Mineralogist*. \$3800 was collected thanks to the efforts of the MSA Benefactor Program Committee, Donald R. Peacor, Chair. This amount will be placed in MSA's Outreach Fund, a fund which will support MSA outreach efforts such as the Lectureship Program. The benefactor program was established as a process so that companies or organizations can contribute to the Society. If you have suggestions as to companies or organizations that might possibly be interested in supporting the Society, the Benefactor Committee would appreciate your input. If you are a terrific fund-raiser, consider volunteering for the Committee. Consult the MSA web site for the latest committee information, or contact the Business Office.

- The Geomicrobiology short course held just before the 1997 MSA Annual Meeting at GSA in Salt Lake City, Utah received its first registrant in March and reached the original, maximum participant level of 100 by the end of July, 1997. After some discussion, this number was increased to 150. This second limit was reached by the end of August, and there was a waiting list of over 20+ even with discouraging late callers that it was unlikely they would be able to attend. By all accounts the short course was a success. This is the third year an MSA short course has reached its limit, and each time the limit was reached earlier. If in the future you wish to attend an MSA short course, register early to guarantee yourself a place.

- The price of some Reviews in Mineralogy volumes will be increased in 1998 by \$2-\$4. To take advantage of the present prices, order any volumes you will want before the end of the year using either the order form that appears elsewhere in this issue or your membership renewal form.

- The Proceedings of the Sixth International Kimberlite Conference (6ikc) have been published as Volume 38 (1997), issues 1 & 2 of *Russian Geology and Geophysics*. These are available from Allerton Press, Inc., 150 Fifth Avenue, New York, NY 10011 for US\$95.00. The Proceedings of the the Fifth International Kimberlite Conference (5ikc) are available from MSA. MSA co-sponsored both the 6ikc held in Novosibirsk, Russia (1995) and the 5ikc held in Brazil (1991).

The 6ikc Proceedings are dedicated to Henry O. A. Meyer, who passed away just before the conference. This appears in the frontpiece of publication. Dr. Meyer

was very active in both the ikc and MSA, and was responsible for the association between the two. He was Secretary of MSA from 1983-7 and played an instrumental role in establishing MSA's Lectureship Program, serving as its first administrator from 1989-95.

- A book review by Jacques Barbier of MSA's publication *Crystal Structures. I. Patterns and Symmetry* by M. O'Keeffe and B. G. Hyde appears in *The Canadian Mineralogist*, volume 35, pp. 802-803.

*J. Alexander Speer*  
MSA Business Office

### ***International Mineralogical Association Commission on Ore Mineralogy***

Though many people in the earth and materials sciences are involved with aspects of "ore mineralogy", communication is limited to established routes such as journals or conferences. The Commission on Ore Mineralogy (COM), one of the working commissions of the International Mineralogical Association (IMA), has set up a COM server at Eötvös University, Budapest, in order to facilitate communications. If you are interested in joining the mailing list please contact Gyorgy Lovas in Budapest. His address is "lovas@ulixes.geobio.elte.hu". In addition, you might be interested to know that an international "Directory of Ore Mineralogists" will be compiled on the basis on a questionnaire available, on-line via the internet at the address "<http://www.ruhr-uni-bochum.de/mineralogie/mineral/zem/ima/form.htm>". We invite those who have not already done so to complete the questionnaire. The information you supply will be used in planning future activities of the COM as well as facilitating communications.

*Louis J. Cabri*  
Chairman, IMA-COM 1994-98

### ***Members in the News***

*Emil Makovicky* (University of Copenhagen, Denmark), MSA fellow 1982, was awarded the *Emanuel Boricky Medal* on October 15, 1997. This Medal is awarded for outstanding contributions in the fields of mineralogy, geochemistry and petrography. Other MSA members who have received this award in the past are *Josef Zemann* (Vienna), *Zdenek Johna* (Orleans), and *Petr Cerny* (Winnipeg).

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### THE DEADLINE FOR THE FEBRUARY ISSUE OF THE LATTICE IS JANUARY 30

Contributions may be sent to Darrell Henry via surface mail at Department of Geology and Geophysics, Louisiana State University, Baton Rouge, LA 70803 or via E-mail at [glhenr@unix1.sncc.lsu.edu](mailto:glhenr@unix1.sncc.lsu.edu).

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Details may be obtained from the MSA Business Office: J. Alex Speer, Mineralogical Society of America, 1015 Eighteenth Street, N. W., Suite 601, Washington D. C. 20036, Telephone: 202-775-4344, Fax: 202-775-0018, E-mail: [business@minsocam.org](mailto:business@minsocam.org). Only camera-ready copy of advertisements can be accepted, and should be sent directly to the MSA Business Office.

## Report of the Secretary for 1997

The seventy-eighth annual business meeting of the Society was held on October 21, 1997 in Salt Lake City, UT in conjunction with the annual meeting of Geological Society of America. This is the meeting of the membership, held each year; same time, same place, i.e. after the Presidential Address, so please put it on your calendar for next year, you won't want to miss it. This report highlights the Society's business over the past year (a substantial distillation of  $\approx 36$  hours of council meetings!).

### MSA at GSA

MSA plays a significant role in the annual GSA meeting. This year MSA sponsored two symposia, two theme sessions and ten technical sessions including poster sessions; igneous petrology-3, metamorphic petrology-3, mineralogy/crystallography-2, volcanology-2. Larry Anovitz and Tamsin McCormick were MSA's representatives to the GSA Joint Technical Program Committee. We thank them for their time and efforts to organize sessions and review abstracts.

Due to peak interest, the symposia and one theme session continued the Short Course theme of "Geomicrobiology: Interactions Between Microbes and Minerals", organized by Jillian Banfield and Ken Nealson. A second theme session, co-sponsored with MSA by the Planetary Geology Division "Volatiles in Planetary Mantles and Basalts" and organized by Charles Shearer and Clive Neal, was also highly popular.

President David R. Veblen's Presidential Address to the Society, entitled "Extracting the Structures of Defects and Grain Boundaries from HRTEM Images", was presented Tuesday, 21 October 1997. After the address, President Veblen called the meeting to order. Verbal, and most importantly, short reports were presented to the membership by the MSA Secretary, Treasurer, and Editors. After discussion by the members, the meeting was adjourned. The MSA Luncheon followed where the Society's awards are presented (see cover story).

The ever-popular MSA joint reception with the Geochemical Society continues its tradition, bringing the MSA Tuesday at GSA to a great finish. Terrific food, libations and a wealth of colleagues, provide a great atmosphere in which to discuss common interests, science and the future of the Society.

### Awards for 1998

MSA is pleased to announce and congratulate our 1998 Medalists and Research Grant Recipients.

Prof. C. Wayne Burnham, Professor Emeritus at Arizona State University, is the 1998 *Roebbling Medalist*

Dr. James Brenan, University of Toronto, is the 1998 *MSA Award* recipient

Dr. Daniel E. Appleman, Director of the Cranbrook Institute of Science, is the 1998 *Public Service award* recipient.

We encourage you all to nominate future Medalists.

Subarnarekha De is the 1998 recipient of the *Kraus Research Grant*, for her work on a "Microstructural Study of carbonado from Brazil and Central African Republic". She is a Ph.D. student at Princeton University with Prof. Peter Heaney.

R. Lee Penn is the 1998 *MSA Research Grant* recipient, for her work on growth mechanisms and morphological evolution of nanocrystalline anatase. Ms. Penn is a Ph.D. student at the University of Wisconsin with Prof. Jillian Banfield.

### Fellowship

The new fellows to the Society are Nikolai V. Sobolev and Peter J. Heaney.

### Council meetings

Council meets three times per year to discuss various affairs of the Society. The first council meeting of 1997 was held the evening of 27 October 1996 in Denver, CO; the second was 31 May 1997 in Baltimore, MA; and the third 19 October 1997 in Salt Lake City, UT. This report summarizes minutes from the three council meetings and various other notable items.

### Results of the 1998 Election

Voting for the 1998 society officers and council members occurred during the summer of 1997 by mail. Members elected to office for 1998 are:

*President:* E. Bruce Watson

*Vice President:* John Ferry

*Treasurer:* Brooks Hanson (1997-1999)

*Secretary:* Barb Dutrow (1998-2000)

*Councilor:* Mark Ghiorso (1998-2000)

*Councilor:* Bob Luth (1998-2000)

A special thank you goes to those who ran for office. Vote tallies were certified by Tellers Richard Abbott and Ken Livi. Thanks to all 651 members ( $\approx 33\%$  of membership) who took the time to vote.

### Membership Statistics:

As of Sept. 30, the total membership for the Society is 2024. There are: 1159 regular members, 74 li members, 334 fellows, 148 life fellows, 3 honorary fellows, 26 senior members, 44 senior fellows, and 236 Students.

These statistics indicate that both our student membership and regular membership has decreased. Remember to remind your students and colleagues to join MSA, it is a great deal. And, if you haven't paid your dues, please don't let another minute pass!

### **Necrology**

It is with regret and sadness that the Society announces the deaths of the following fellows and members reported to us during the past year:

Heinz Ebert, Life Member 1949

Joseph G. Cilen, Member 1970

Lincoln Page, Life Member 1938

John C. Griffiths, Life Fellow 1945

Our condolences are extended to family and friends. Anyone wishing to prepare a memorial, please contact the Business Office that is currently serving in the capacity of the memorialist. We also wish to extend our sincere thanks to our retiring memorialist, Brian Mason who has served in this capacity since 1985.

### **Short courses**

This year's short course "Geomicrobiology; Interactions between Microbes and Minerals" was held prior to the GSA meeting at Alta, UT. Organizers Jillian Banfield and Ken Jealson continued the tradition of putting together a superb course, that again was a sellout. There were 148 participants, with a substantial waiting list.

The next MSA sponsored short course will be held at the International Mineralogical Association meeting in Toronto, in August, 1998. Organizers Brooke T. Mossman, Robert R. Nolan and Malcolm Ross will be offering "Minerals and Health", a previous best seller. Because the GSA meeting is a mere two plus months later and also in Toronto, MSA has elected not to offer a short course in conjunction with the GSA meeting.

Upcoming short courses include: "Mineralogy of the Earth's Deep Interior" (Fall AGU 1998), "Uranium Mineralogy and Geochemistry" (Denver, 1999), "Sulfate Minerals: Crystallography, Geochemistry, and Environmental Significance".

### **New Meetings committee**

In order to increase our visibility at meetings, as well as to have MSA's needs better met at various meetings, council has formed a Meetings committee that consolidates the MSA representatives to the technical programs of different meetings. We hope this will strengthen MSA's presence at these meetings and provide a forum for better realizing our needs.

### **Books**

New books have hit the MSA Shelves that you will not want to be without. In addition to the new RIM volume on Geomicrobiology, which accompanied the short course, a fabulous workbook on Teaching Mineralogy, has appeared. Edited by John Brady, Dave Mogk and Dexter Perkins. The Workbook combines new, innovative, and even traditional labs for mineralogy and petrology into one volume. An outgrowth of the Teaching Mineralogy Workshop held in June of 1996, this volume is a super addition to any instructor's shelf.

The Art's council presents us with a visually stunning and informative 1998 MSA Minerals Calendar. It features fabulous photos from museum mineral collections and will brighten even the dullest of our offices.

### **Lecturers**

The very popular MSA Lecture program continues with requests for speakers reaching an all time high of 85 requests. For the 1997-1998 academic year, Dave Bish is speaking on "Mineral Evolution in Low Temperature Environments", "The Critical Role of Mineralogy in Radioactive Waste Isolation", and "Better Living through Mineralogy: Minerals and Our Environment". Carl Frost is giving lectures entitled "The Archean Wyoming Province: Nucleus of North America" and "Yellowstone Underground: Granites and Crustal Growth". Each speaker visits approximately twelve institutions. We wholeheartedly thank them for their time and effort to spread the intriguing as well as useful aspects of mineralogy around North America, and Guy L. Hovis for serving as Lecture Program Administrator.

### **MSA Web site**

MSA's new web site is now up and operational (see pg. 16). Thanks to the outstanding efforts of Gordon Brown, John Brady, J. Alex Speer and NSF, MSA has secured partial support from NSF for operating our web site and coordinating outreach activities. Visit the web for updates, committee lists, application forms, etc.

John Brady continues to maintain the MSA List-server, which now has over 250 members.

### **Thanks Alex**

I would also like to thank J. Alex Speer, who keeps all of us in line and the operations of the Society running smoothly throughout the year.

Respectfully submitted,

*Barb Dutrow*

*MSA Secretary*

[dutrow@geol.lsu.edu](mailto:dutrow@geol.lsu.edu)

## *From the Editors of American Mineralogist*

We can hardly believe that four years have passed since we took up editors' pens for *American Mineralogist*. It was a bit like jumping on a speeding freight train that never stops. The experience has been exhilarating but also demanding, with challenges of nearly every kind, most of them arising at the least opportune moments. The gratification, however, has been in forms such as casual comments or brief notes scribbled on the bottom of letters to us, indicating the high regard that *American Mineralogist* commands among authors, MSA members, and scientists worldwide. That, of course, is the result of much hard work from reviewers, our associate editors, and especially our authors, all of whom we thank for making our jobs that much easier.

Along with maintaining the journal's high standards for quality, a major goal was to broaden the scope of *American Mineralogist*. Unlike many who were lamenting a diminishing interest in mineralogy and petrology, we believed there was every bit as much interest, but that it is now diffused more broadly among emerging interdisciplinary fields. It was our conviction that *American Mineralogist* must have sufficient breadth to encompass the mineralogic, crystallographic, and petrologic work in such fields. Papers on mineral surfaces, low-temperature geochemistry, and planetary materials, to mention a few, indicate some success here, aided by the efforts of designated interest groups. But broadening the scope of a journal steeped in tradition takes time, and we hope that authors and members will continue to appreciate the need to appeal to broader segments of the scientific community.

We also share some satisfaction in having introduced several procedures that modernized editorial handling of manuscripts and production of the journal. Many of these changes should have gone unnoticed by readers of the journal since they mostly occurred behind the scenes. Beginning with the editorship of Steve Bohlen and Don Peacor, one of the editors was no longer at the same location as the editorial office. When we assumed responsibilities, the editorial office remained in Ann Arbor and we were split between Stony Brook and Knoxville. It was time to join the Internet, as E-mail was necessary to communicate effi-



*Retired American Mineralogist Editors Rich Reeder (left) and Ted Labotka (right) flanking retiring MSA President David Veblen*

ciently and inexpensively among the editorial staff and between the editorial office and authors.

We then introduced a procedure for submission of final manuscripts on floppy disk. The benefits to authors and the editorial staff were immediate. Editorial changes as well as the formatting required by the printer were made on screen and a disk file was submitted to the printer; this saved the cost of rekeying manuscripts by the printer and allowed some reduction in the time for production of the printed manuscript. However, we quickly learned that disk submission is not without its difficulties (TeX and LaTeX writers take note!), and the office staff learned about the quirks of converting various word-processing formats to a standard format. More recently, we have received scanned figures, and in a few instances entire manuscripts, as disk files or by ftp. It may not be long before all parts of a final manuscript are routinely submitted over the network. Further changes in production are inevitable, and the journal should now be ready to take advantage of developments in desktop publishing.

One of the greatest fears in an editorial office is losing track of a manuscript. For many years manuscript tracking in our Editorial Office had been done using an old dBase II program running on an ancient PC. We replaced this system with one based on File-

Maker Pro (on a Macintosh), which is easily customized to produce new forms and follow the progress of manuscripts through the review, revision, and editing process.

We started a web site for *American Mineralogist* late in 1994 to post the tables of contents. We soon added abstracts and supplemental data, making the latter available in a useful format instead of the microfiche documents previously used. The web-based supplemental data should be complete, starting with volume 82. Some authors have discovered that the web site is an excellent format for color graphics or animations that are too costly or impractical for the pages of the journal itself (e.g., look at Helen Lange's garnet pictures in the Nov-Dec 96 issue and David Palmer's Quicktime animation of phase transitions in leucite in the Jan-Feb 97 issue). The web site also has complete contact information for members of the editorial board, as well as an updated instructions to authors and information about preparing disk files for manuscripts and supplemental data. By the end of this year, the site should be moving to a new server in the MSA office, so you'll want to change your bookmarks then.

With support from the MSA Council, we moved the Editorial Office from Ann Arbor to Washington, DC, about one year ago. The main reason was to provide a stable location for the Office and avoid the disruption that occurred when the office moved to the location of new editors. The move was not without uncertainty and some feeling of regret. Managing Editor Tom Cichonski, along with Assistant Editor Heidi Williams, both of whom helped to introduce the many changes, decided they could not sever their strong ties to Ann Arbor. The new Washington staff, however, made the transition nearly seamless. Through the efforts of Managing Editor Rachel Russell, Assistant Editor Everett Johnson, and Editorial Assistant Anna Ewald, lost time was quickly made up, and the Nov-Dec 1997 issue will be mailed out in the first week of November. The result is an improvement in the time between submission and publication of an article to less than one year.

Although we have shared a great sense of pride by contributing to the journal, for both of us the call is strong to devote more time to research. We are pleased to have such able successors in Anne Hofmeister and Bob Dymek, and we are confident that Anne and Bob will be successful in guiding *American Mineralogist*. We appreciate the invaluable help from our editorial staff and especially the Associate Editors over the past four years. The journal works because of all their efforts. We thank them all.

**Ted Labotka**

**Rich Reeder**

***American Mineralogist* Editors (Retired!)**

November, 1997



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## *How can MSA members participate in AGU meetings program?*

The American Geophysical Union hosts two meetings each year; an east coast Spring meeting and a west coast Fall meeting. Over the past 8 years the size of the Spring meeting has remained nearly constant while the Fall Meeting has grown considerably. AGU is trying to improve the Spring meeting and attract more participation by members of the solid earth sections of AGU. An important change for this year is the waiver of the single first-authored abstract rule for the Spring meeting. MSA is a co-sponsor of the Spring meeting along with AGU, the Solar Physics Division of the Astronomical Society of America and the Geochemical Society. What this means to MSA members is that our society participates at a level equal to that of an AGU section (e.g., V, T or S). The MSA program committee can organize special sessions, schedule special lectures, host receptions, present awards, etc. Any MSA members can propose a special session theme to the MSA Program Committee representative and participate in the organization of the session. The MSA representative to the program committee is Pamela Burnley ([burnley@spot.colorado.edu](mailto:burnley@spot.colorado.edu)). She will facilitate the organization of the Spring meeting, and will submit suggestions for special sessions to the Spring meeting program committee.

This 1998 Spring meeting is in Boston from May 26-29. Several exciting special sessions have been planned. A LIST OF SPECIAL SESSIONS OF INTEREST TO MSA MEMBERS, AND THEIR CONVENORS IS GIVEN BELOW. It is not too late to organize a special session for Spring 1998 AGU. See you in Boston!

*Tim Grove*

### **VGP Sponsored, Co-Sponsored and Related Special Sessions at Spring 1998 AGU (Last update 27 Oct 1997)**

#### **V01 Liquid Fractionation and the Formation of Cumulates in the Ocean Crust and Layered Intrusions: Toward a More Unified Perspective**

Fractional crystallization and the formation of cumulates is a process of fundamental importance in igneous petrology. Studies of oceanic cumulates benefit from the knowledge of 1) tectonic setting, 2) liquid composition(s) and 3) seismic imaging of the magma chamber. These provide important constraints on what process can operate. Study of continental layered intrusions allows both small and large scale cumulus and postcumulus processes to be examined. It is likely that many of the processes that operate in continental layered intrusions are also important in the formation of oceanic cumulates. The objective of this session is to bring together petrologists working on cumulate formation in the oceanic crust and/or ophiolites with those studying terrestrial cumulates. The session will

provide a format for discussion of the latest advances in the understanding of cumulus and postcumulus processes with emphasis on how these influence liquid fractionation.

*Conveners:* William P. Meurer, Duke University, Dept. of Geology, Box 90227, Durham, NC 27708-0227, [wpm@geo.duke.edu](mailto:wpm@geo.duke.edu); and Jim Natland, RSMAS, Div. Marine Geol. and Geophys., 4600 Rickenbacker Causeway, Miami, FL 33149-1098, [jnatland@umigw.miami.edu](mailto:jnatland@umigw.miami.edu)

#### **V02 Qualitative and Quantitative Approaches to the Characterization and Interpretation of Textures of Igneous and Metamorphic Rocks (Joint with MSA, GS)**

This session will provide a forum for discussing recent results and advances in textural studies of igneous and metamorphic rocks. Participants will be from a wide range of disciplines that deal with the textural properties of natural, experimental, or virtual rocks, at scales ranging from individual minerals, to plutons and beyond. Recent advances in textural studies include refinement of traditional techniques of microstructural analysis (e.g., measuring inclusion fabrics preserved in porphyroblasts), better methods for the examination and reconstruction of complex features (e.g., 3-D computer-aided visualization and animation), development of analogue materials for studying crystal growth and deformation (e.g., organic polycrystalline melt mixtures), the application of AMS to rock textures, and the application of techniques traditionally used in other disciplines (e.g., x-ray imaging with computed tomography). Topics to be considered include: qualitative and quantitative approaches to texture characterization, nucleation and crystal growth theory, 3-D analysis of textures, the application of high resolution computed x-ray tomography to imaging natural rocks, application of AMS techniques to infer pluton-scale structure, the use of cathodoluminescence as an indicator of growth history, syn- and post-magmatic textural development in plutons, high-T solid-state deformation, supra- and sub-solidus textures, effects of alteration on primary textures, textures associated with ore-systems, discerning high-T metamorphic from magmatic textures, syneusis, and how the analysis of textures has altered traditional ideas in petrology (e.g., fractionation and cumulate theory, kinematics and folding mechanisms in deformed metamorphic rocks, and the origin and significance of magmatic fabrics). The time is right for an interdisciplinary discussion of the characterization, interpretation and significance of textures within Earth's lithosphere, and we invite you to join us in discussing new approaches and results in Boston. We have tentative plans to publish a special issue of papers from this session. A web site, <http://www.geol.umd.edu/~piccoli/agu/textures.htm>, has been set up to provide early information on this special session.

*Conveners:* Phil Piccoli, Department of Geology, University of Maryland, College Park, MD 20742-4211, Phone: +301-405-6966, Fax: +1-301-314-9661, E-mail: [piccoli@geol.umd.edu](mailto:piccoli@geol.umd.edu); John P. Hogan, School of Geology and Geophysics, University of Oklahoma, Norman, OK 73019-0628, Phone: +1-405-325-4428, Fax: +1-405-325-3140, E-mail:

jhogan@ou.edu; and Scott E. Johnson, School of Earth Sciences, Macquarie University, Sydney, NSW 2109, Australia, Phone +61-2-9850-7694, Fax: +61-2-9850-8428, E-mail: scott.johnson@q.edu.au

### **V03 Solid-State Diffusion and Geological Processes**

Much progress has been made in recent years in measuring volume and grain boundary diffusion in minerals, and in developing and implementing models to simulate diffusion and predict diffusion coefficients under various conditions. These experimental results and theoretical determinations have found broad application in interpreting geological and geochemical processes. The purpose of this multidisciplinary symposium is to present and discuss recent advances on these fronts and promote continued collaborative efforts in using diffusion findings in addressing geologic problems.

Conveners: Daniele Cherniak, Rensselaer Polytechnic Institute, Earth and Environmental Sciences, West Hall, Troy, NY 12180, Phone: +1-518-276-8827, Fax: +1-518-276-8627, E-mail: chernid@rpi.edu; and T. Mark Harrison, Dept. of Earth and Space Science, UCLA, Los Angeles, CA 90024, Phone: +1-310-825-7970, Fax: +1-310-825-2779, E-mail: tmh@argon.ess.ucla.edu

### **V04 Mineral Catalysis and the Origin of Life (Joint with M)**

Over the past decade, attention has been focused upon the hypothesis that life began within hydrothermal systems via the interaction of minerals with simple inorganic and organic compounds. Recent discoveries on extraterrestrial bodies of organic compounds and the possibility of liquid water on Europa have extended the range of environments over which these processes may be important. In addition a variety of mechanisms for the abiotic generation of complex organic compounds within the earth have been proposed that also rely upon catalytic properties of minerals. The objective of this session to bring together scientists examining these and other related processes to further our understanding of the transition from rock and simple molecules ( $H_2O$ ,  $CO_2$ , etc.) to more complex organic compounds and eventually to self-replicating systems (e.g., life).

Conveners: Robert Hazen, Geophysical Laboratory, Carnegie Institution of Washington, 5251 Broad Branch Rd., NW, Washington, DC 20015-1305, Phone: +1-202-686-2410, ext. 2470, Fax: +1-202-686-2419, E-mail: hazen@gl.ciw.edu; and Jay Brandes, Geophysical Laboratory, Carnegie Institution of Washington, 5251 Broad Branch Rd., NW, Washington, DC 20015-1305, Phone: +1-202-686-2410, ext. 2419, Fax: +1-202-686-2419, E-mail: brandes@gl.ciw.edu

### **V05 Advances in High-Pressure Petrology**

Recent and accumulated advances in high-pressure equipment and techniques have allowed unprecedented simulation of the conditions within the lower crust, upper mantle, and transition zone. Improved calibration of the pressure and temperature conditions and control of pressure and temperature gradients, volatile fugacities (e.g. oxygen,  $H_2O$ ,  $CO_2$ , sulfur) have prompted sophisticated experiments on the petrology of the deep Earth. These studies aim to determine the high pressure compositions of minerals (including volatile storage in the transition zone) and melts (including hydrous,

undersaturated melts and low melt fraction compositions), transport properties (diffusion, deformation and melt/fluid transport) and trace-element partitioning. These experiments then serve as constraints and input to models of petrologic processes, Earth differentiation and the thermodynamic framework for melt production. Talks and posters presenting innovative experiments and use of experimental data are encouraged. A web site, <http://granite.ciw.edu/~minarik/agu-sp98/>, will provide additional information on this special session.

Conveners: Bill Minarik, Geophysical Laboratory/Dept. Terrestrial Magnetism, Carnegie Institution of Washington, 5251 Broad Branch Rd., NW, Washington, DC 20015-1305, Phone: +1-202-686-2410, ext. 2443, Fax: +1-202-686-2419, E-mail: minarik@gl.ciw.edu; and Kevin Righter, Lunar and Planetary Laboratory, University of Arizona, Tucson, AZ 85721, Phone: +1-520-621-2816, Fax: +1-520-621-4933, E-mail: righter@LPL.Arizona.edu

### **VGP Co-Sponsored Sessions**

#### **M01 Order-Disorder Phenomena in Mantle Minerals (Joint with T, V)**

Most mantle minerals, including olivines, ortho- and clinopyroxenes, garnets, spinels, wadsleyites, and perovskites, display pressure- and temperature-dependent cation ordering. This ordering behavior may strongly affect physical and thermochemical properties, such as molar volume, elasticity, and electrical and thermal transport. Ordering may be especially significant in minerals that incorporate presumably minor mantle cations, including aluminum, ferric iron, calcium, titanium, and sodium. This special session will focus on the synthesis and crystal chemical characterization of high-pressure phases that display order-disorder phenomena, as well as the thermochemical and physical behavior of these phases.

Conveners: Hexiong Yang, Geophysical Laboratory, 5251 Broad Branch Rd., NW, Washington, DC 20015, Phone: +1-202-686-2410, ext. 2470, Fax: +1-202-686-2419, E-mail: yang@gl.ciw.edu; and Robert Hazen, Geophysical Laboratory, 5251 Broad Branch Rd., NW, Washington, DC 20015, Phone: +1-202-686-2410, ext. 2470, Fax: +1-202-686-2419, E-mail: hazen@gl.ciw.edu

#### **S05 The Lower Half of Earth's Mantle (Joint with G, GP, M, T, V)**

The bottom half of Earth's mantle may contain many keys to understanding mantle convection and differentiation. Recent advances in seismic imaging revealed diverse structural features from the mid-lower mantle down to the core-mantle boundary (CMB); these include evidence for mid-mantle slab-like features that may disintegrate at large depths, increased heterogeneity near CMB with evidence for anisotropy and layers of ultra-low velocity, small-scale scatterers of seismic energy throughout the lowermost mantle, and disproportionality between P and S wave speeds at depth larger than approximately 2000 km. Reconciling these phenomena with theoretical and experimental studies of mantle convection and high pressure mineral physics, the (noble

gas) isotope record, and with observations of Earth's magnetic field remains a challenge due to model uncertainties, experimental limitations, and the diversity in the various seismic model features. This session invites contributions from all disciplines and aims to assess the pertinent evidence and further elucidate our understanding of the structure, dynamics, and evolution of Earth's lower mantle.

Conveners: E. Garnero, Seismological Laboratory, University of California, 475 McCone Hall, Berkeley, CA 94720-4760, Phone: +1-510-643-3980, E-mail: eddie@seismo.berkeley.edu; R.D. van der Hilst, Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, Rm. 54-514, Cambridge, MA 01239, Phone: +1-617-253-6977, E-mail: hilst@mit.edu; and C. Bina, Northwestern University, Department of Geological Sciences, 1847 Sheridan Rd., Evanston, IL 60208-2150, Phone: +1-847-491-5097, E-mail: craig@earth.nwu.edu

### **S06 Anisotropy and Rotation of the Inner Core (Joint with G, GP, T, V)**

Seismic imaging of the inner core suggests it is strongly anisotropic with fast propagation directions nearly parallel to the spin axis and that it is rotating faster than the mantle. There is growing evidence for significant lateral variations at many scales. In addition to seismic imaging, this session highlights the causes and consequences of anisotropy and rotation in relation to physical properties, magnetic field, geodynamo, mechanisms for aligning crystals, and inner core convection and evolution.

Conveners: K.C. Creager, Geophysics Program, Box 351650, University of Washington, Seattle, WA 98195-1650, Phone: +1-206-685-2803, E-mail: kcc@geophys.washington.edu; X. Song, Columbia University, Lamont Doherty Earth Observatory, Palisades, NY 10964, Phone: +1-914-365-8828, E-mail: xsong@lamont.ligo.columbia.edu; and B. Buffett, Department of Geophysics and Astronomy, University of British Columbia, 2219 Main Mall, Vancouver, BC V6T 1Z4, Canada, Phone: +1-604-822-2276, E-mail: buffett@geop.ubc.ca.

### **S07 Electromagnetic and Seismological Results From the "MELT Experiment" (Joint with G, T, V)**

The Mantle Electromagnetic and Tomography (MELT) Experiment was designed to provide in situ constraints on mantle flow and melt distribution beneath a fast spreading ridge. More than 100 ocean bottom instruments were deployed over two field seasons on the East Pacific Rise at 17 S to probe the upper mantle with passively recorded seismic and electromagnetic waves. This session will include a detailed description of the results of these observational components of the MELT experiment. Papers are also invited on related topics, especially laboratory, geochemical, and theoretical experiments which are relevant to the interpretation of the MELT data or other observational experiments in the MELT area.

Conveners: D. Forsyth, Department of Geological Sciences, Brown University, Providence, RI 02912, Phone: +1-401-863-1699, E-mail: Donald\_Forsyth@brown.edu; and A. Chave, Woods Hole Oceanographic Institution, Department of Geology & Geophysics, Woods Hole, MA 02543, Phone: +1-508-289-2833, E-mail: achave@whoi.edu

### **T06 The Influence of Granite Emplacement on Tectonics (Joint with V)**

This joint Tectonophysics/Volcanology, Geochemistry, and Petrology session will provide a forum for discussing recent results and advances in the emplacement of granitic rocks and their effects on the rheology of the crust. Topics to be addressed will include: the influence of magma emplacement on strain rates, fault development, metamorphism, uplift, and exhumation; tectonic consequences of granite emplacement; internal, syn-intrusion deformation in granites; wall-rock/contact effects and emplacement mechanisms; strain states in and around granitic plutons; and petrological constraints on the origins and paths of granites through the crust. These interdisciplinary topics have generated considerable interest in the past few years and the time is ripe for a joint session to discuss the new findings and explore new approaches. We hope to publish a thematic set of papers from this session.

Conveners: Keith Benn, Ottawa; Carol Simpson, Boston College; and Drew Coleman, Boston University

### **Special Sessions of Interest to VGP Members**

#### **GP05 Microbial Biomineralization of Magnetic Iron Minerals**

The suggestion that magnetite and other magnetic minerals in a Martian meteorite are of bacterial origin highlights the need for reliable criteria to distinguish biogenic from non-biogenic minerals and a better understanding of the occurrence of bacterially-related magnetic minerals in terrestrial environments. Papers are solicited which discuss all aspects of microbial biomineralization of magnetic iron minerals, including its occurrence in terrestrial environments, new recognition techniques, newly discovered phases and crystal morphologies, its recognition and preservation in ancient environments, and magnetic properties including the ability to record natural remanent magnetization.

Conveners: Bruce M. Moskowitz, Dept. of Geology and Geophysics, University of Minnesota, Minneapolis, MN 55455, Phone: +1-612-624-1547, Fax: +1-612-625-7502, E-mail: bmosk@maroon.tc.umn.edu; and Richard B. Frankel, Physics Dept., California Polytechnic State University, San Luis Obispo, CA 93407, Phone: +1-805-756-1666, Fax: +1-805-765-1670; E-mail: rfrankel@oboe.aix.calpoly.edu

#### **S01 Seismological Studies of the Continental Tectosphere**

The continents comprise assemblages of crustal and mantle rocks that have experienced a complex history of magmatism and metamorphism. In the ancient cratons, the mantle component of this tectosphere appears to be exceptional thick (>200 km). Various models have been proposed to explain the origin and evolution of continental deep structure and its involvement in plate tectonics, mantle convection, and other dynamical processes, but a number of the basic issues have yet to be resolved. New insights into these problems are being obtained from seismological studies of subcontinental structure, especially from

data sets collected by high-density, temporary deployments of broadband seismometers. The purpose of this session is to compare the results from seismological studies of the continental mantle and discuss their implications for dynamical and evolutionary models. The aspects of continental structure to be considered include high-resolution tomography, seismic anisotropy, the structure of upper-mantle discontinuities, scattering by small-scale heterogeneities, and petrological controls on density and seismic velocities.

Conveners: T.H. Jordan, Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, Rm 54-918, Cambridge, MA 01239, Phone: +1-617-253-3382, E-mail: thj@mit.edu; and M. Bostock, Department of Earth and Ocean Sciences, University of British Columbia, 2219 Main Mall, Vancouver, BC V6T 1Z4, Canada, Phone: +1-604-822-2082, E-mail: bostock@geop.ubc.ca

### **S08 Hot Spots, Mantle Plumes, and Passive Margins Volcanism:**

It is generally accepted that magmatic activity associated with intra-plate hotspots, continental flood basalt provinces, oceanic plateaus and volcanic passive continental margins reflects the upwelling of thermally and geochemically distinct mantle plumes from the deep interior of the Earth. Recent advances in our ability to image small-scale, 3D seismic structures in the mantle have shown that there are probably different "classes" of plumes, ranging in size from large-scale features with mushroom-like heads 1000km or more in diameter (e.g., Iceland) to more localised, small-scale upwellings with more finger-like geometries (e.g., Massif Central, France). This observation has far reaching implications for models of mantle convection and raises important questions concerning the source, birth and evolution of convective instabilities in the mantle. The purpose of this symposium is to bring together researchers from all fields of the geosciences (geodynamic modellers, seismologists, petrologists, geochemists, rock physicists, etc.) interested in mantle plumes and mantle dynamics to present and discuss their latest ideas. Abstracts with a multidisciplinary focus are particularly welcome.

Conveners: U. Achauer, EOST Strasbourg, Laboratoire de Sismologie, 5 Rue Rene Descartes, F-67084 Strasbourg, France, Phone: +33-3-88-61-67-47, E-mail: uli@schnuffel.u-strasbg.fr; C. Wolfe, Woods Hole Oceanographic Institution, Department of Geology & Geophysics, Woods Hole, MA 02543, Phone: +1-508-289-3290, E-mail: cwolfe@whoi.edu; and M. Wilson, School of Earth Sciences, Leeds University, Leeds LS2 9JT, United Kingdom, Phone: +44-113-233-5236, E-mail: marge@earth.leeds.ac.uk

### **T01 Strain Partitioning During Continental Rifting**

Conveners: Roger Buck, LDEO; Debbie Hutchinson, USGS; and Luv Lavier, LDEO

### **T02 The Past, Present, and Future of Oceanic Plateaus: Structure, Construction, Composition and Consumption, from Plume-crust Interaction to Accretion**

Conveners: John Diebold, LDEO; and Robert Duncan, University of Washington

### **T05 Plumes and Hotspots Through Time: Archean to Present**

Conveners: Dallas Abbott, LDEO; and Ann Isley, Bryn Mawr College

**Mineralogist/Materials Scientist.** The Department of Earth and Planetary Sciences, University of New Mexico, will fill a faculty position in mineralogy/materials science, anticipated at the Associate or Full Professor level, to begin August 1998. The successful applicant must have a Ph.D. at time of application and a strong record of research and teaching in the areas of mineralogy, crystallography, and the chemistry and/or physics of natural and synthetic solid materials. Applicants must also have a strong record of expertise in the use of analytical electron microscopy for research and experience with X-ray diffraction techniques. The successful applicant should have experience in supervising, supporting and enhancing the operation of analytical electron microscopy facilities. Demonstrated interaction and/or collaboration with researchers in the earth sciences and related fields such as materials science, chemistry, or nuclear engineering is also desired. The new faculty member will teach courses in electron microscopy and other subjects in his/her specialty. He/she will supervise (1) the AEM laboratory equipped with a JEOL 2010 high-resolution TEM and a JEOL 2000FX analytical STEM, both equipped with EDS and other accessories, and (2) the X-ray diffraction laboratory equipped with a Scintag Pad V and an automated powder diffractometer. These laboratories have a strong multi-disciplinary, academic and industrial user base. Laboratory support includes a full-time, Ph.D.-level research scientist (lab manager) and additional technical support. Additional facilities in the Department include a JEOL 733 Superprobe with Link/Oxford analytical EDS and imaging capability and a CAMECA IMS-4f SIMS (operated jointly with Sandia National Laboratories). Applications, including a complete vitae of research and teaching accomplishments, statements of research and teaching objectives, and names of three referees (including mail and e-mail addresses, phone and fax numbers) who may be contacted for letters of recommendation must be received by December 2, 1997. Applications should be addressed to: Dr. Gary Smith, Search Committee Chair, Department of Earth and Planetary Sciences, Northrop Hall, University of New Mexico, Albuquerque, NM, USA, 87131-1116. For information about the Department, refer to <http://eps001.unm.edu>. The University of New Mexico is an Equal Opportunity / Affirmative Action Employer.

## MSA's new web site

*Editor's Note:* MSA has established a new, dynamic web site with many membership services and outreach resources. Dr. Mark Bloom has begun his work as the Coordinator of Internet Resources for the Mineralogical Society of America, funded in part by an NSF grant to the Society. Please join me in welcoming Mark to the Society's business and scientific operations.

Mark is a geochemist who holds a B.Sc. and M.Sc. in geology from The New Mexico Institute of Mining and Technology, and a Ph.D. in geochemistry from The University of British Columbia. Mark was a Lecturer and Senior Lecturer in Economic Geology and Geochemistry at The Victorian Institute of Earth and Planetary Sciences, Monash University (Australia) from 1979 until 1993. His research at Monash focused on the geochemistry of hydrothermal ore deposits and

experimental hydrothermal geochemistry. In 1993, Mark returned to the United States and continued in the geochemistry profession in Boulder, Colorado as a senior geochemist specializing in the environmental geochemistry of mineral deposits. Mark began Rocket geoScience, Inc., an independent consulting practice, in 1996.

Mark's mandate from the Society is to develop membership services and content, and educational outreach for the K-12 community. He will be responsible for building and deploying the Society's web presence, and maintaining the servers that deliver these services to our membership and the public. Mark isn't working alone in these efforts. He holds a similar position with the Geochemical Society and is collaborating with the Geological Society of America on the educational outreach initiative.

### *From the Coordinator of Internet Resources*

These are indeed exciting times for the MSA. We have embarked on a new era of services for our members and an initiative to develop educational outreach for the K-12 community. I hope the vision I share with the Outreach Committee for the MSA web presence conveys the excitement we have for increasing public awareness of the mineral sciences.

The MSA web site, as well as those for the American Mineralogist and the Lattice, have migrated to their new home located in our Business Office in Washington, D.C. The URL for our web site is <http://www.minsocam.org>. There will also be two new Internet services on our domain: <ftp://ftp.minsocam.org/> for file downloads and [msa-talk@lists.minsocam.org](mailto:msa-talk@lists.minsocam.org), the first of several email talk lists. Development of a new look and feel for the web site is underway. The new Home Page will at first be a facade, with our existing web resources lurking behind the new look and gradually being replaced as work proceeds. **The ftp and list servers are not on-line at the time of this writing, but should be live by the time this issue hits the press.**

For those interested in the specifics, the MSA web services are on a distributed array of Apple 8550/200 and 8550/225 Workgroup Servers with a T-1 connection to the Internet. There's Bullwinkle (the primary web server and auxiliary servers for graphics and e-commerce), Boris (a dedicated SQL database server), and Natasha (ftp and list servers, site logging and statistics). Rocky stayed at home in Colorado and is the development platform.

### *A Call for MSA Online Volunteers*

MSA Online is an ambitious undertaking that requires active participation by the society membership for growth and continued success. A number of interactive areas on MSA Online are in need of volunteers to help develop content, to keep database entries accurate and up to date, or to respond to public inquiries. Please support your society by volunteering a small amount of your time. Contact the Coordinator of Internet Resources (E-mail: [msbloom@minsocam.org](mailto:msbloom@minsocam.org)) with your availability for any of the needs described below.

**database  
resources**

The databag will be a searchable database of mineralogic, crystallographic, and petrologic information, with links to resources elsewhere on the web. It will integrate seamlessly with the extensive thermochemical database for solids, gases, and aqueous species planned by the Geochemical Society. Each volunteer will be responsible for maintaining database entries for the mineral(s) of choice, and will be prominently acknowledged for his/her efforts.

## membership directory

Work is in progress to bring on-line a searchable MSA membership directory. Visitors to the web site will be able to search the membership directory by name, geographic location, institution or employer, and key research or interest areas. We would like the membership directory to provide accurate contact information for each member. Please take a few moments of your time to check these details and, if necessary, update your details interactively from the web site

## calendar events FYI

The MSA Events FYI will provide our membership with a calendar of meetings and other events, and will be searchable by date, sponsoring organization, venue, and keywords. We encourage the membership to give Events FYI a local flavor by allowing interactive addition of events of interest to the mineralogical community and the public. While events can be added interactively by any member, we need a volunteer to provide oversight on these entries and to ensure that important events are in the database.

## MSA forums technical

Some, in fact quite a few, MSA members may not actively participate in talk lists. MSA Forums will be an interactive way to keep abreast of the latest ideas, and to discuss topics of mutual interest, in threaded discussion groups. MSA Forums area will kick off soon with a forum focused on general feedback, and on suggestions for expanding the available forums into topical areas. Although it is envisioned that these discussion groups will require little hands-on oversight, volunteers to moderate the technical forums may be desirable. If you have suggestions for technical discussion forums, please contact the Coordinator of Internet Resources.

## educational outreach

The MSA has joined forces with the Geochemical Society and the Geological Society of America to develop a collaborative educational outreach effort via the web. The goal is to provide engaging education materials that would be effective in a classroom setting as well as to the public at large. Our initial efforts will focus on marine geoscience, a topic that is of interest to all three professional groups. Marine geoscience lends itself to a systems approach to understanding earth processes and resources, and has considerable latitude for introducing topics in mineralogy, petrology, and geochemistry. We need volunteers who will suggest or help develop content. There are many possible forms this may take, including on-line activities with real data, student-professional mentoring relationships, data sharing and other technology-enhanced classroom activities.

## employment job board

The MSA job board will list career opportunities in the mineral sciences and be searchable by employer, location, specialization, duration, etc. There are also plans to allow job seekers to enter condensed resumes for inspection by prospective employers. A volunteer will be needed to monitor professional and trade publications, and enter new employment announcements as they become available.

## ask-a-mineralogist discussion forums

Ask-a-Mineralogist will be an open discussion forum to engage the public audience in question-and-answer type activities in the mineral sciences. Ask-a-Mineralogist will contain a number of, as yet, undetermined forums. We need at least one, and preferably two or more, moderators for each forum. Moderators will be notified by e-mail when a question is posted to a forum, and may answer the question or forward the question to a colleague for response.

## collector's corner enthusiast resources

The Collector's Corner is the MSA's outreach initiative to mineral collectors and amateur mineralogists. We hope to provide new content that will attract the public to MSA Online, in addition to links to other resources on the web. One such project may be an on-line museum, with high-resolution images and brief audio descriptions of the most spectacular mineral specimens provided by museum curators. If you are an amateur mineralogist or collector and have ideas on content that will set this initiative apart from other resources on the web, please contact the Coordinator of Internet Resources.

# Meeting Calendar 1997-1998

## 1997

### December

**5-9 Merapi Decade Volcano International Workshop II.** Yogyakarta, Indonesia. *Details:* Merapi Decade Volcano Workshop II Secretariat, Volcanological Survey of Indonesia, Jl. Diponegoro No. 57 Bandlung - 40122, Indonesia. Tel. +62-22-772606, 774706; Fax: +62-22-702761; E-mail: [vsimo@ibm.net](mailto:vsimo@ibm.net) or [merapi@vsi.dpe.go.id](mailto:merapi@vsi.dpe.go.id).

**8-10 Fall American Geophysical Union Meeting.** San Francisco, California. *Details:* AGU meetings department, 1997 Fall Meeting, 2000 Florida Ave., NW, Washington, D.C. 20009. Tel.: (202)-462-6900 or 1-800-966-2481 (in USA), Fax: (202)-328-0566, E-mail: [meetinginfo@kosmos.agu.com](mailto:meetinginfo@kosmos.agu.com), WWW: <http://www.agu.org/meetings/fm97call.html>.

## 1998

### March

**10-13 Workshop on the Geochemical Earth Reference Model (GERM).** San Diego, California. Sponsor: National Science Foundation. *Details:* H. Staudigel, Institute of Geophysics and Planetary Physics, University of California - San Diego-0225, La Jolla, CA 92093-0225. Tel.: (619)-534-8754, Fax: (619)-534-8090, E-mail: [hstaudig@ucsd.edu](mailto:hstaudig@ucsd.edu), WWW: <http://www-rp.es.llnl.gov/germ>.

**16-20 29th Lunar and Planetary Science Conference.** Houston, Texas. *Details:* L. Simmons, Conference Administrator, LPI Publications and Program Services Department, 3600 Bay Area Blvd., Houston, TX 77058-1113. Tel.: (281)-486-2158 Fax: (281)-486-2160, E-mail: [simmons@lpi.jsc.nasa.gov](mailto:simmons@lpi.jsc.nasa.gov), (Abstract Deadline: January 9, 1998).

### March-April

**30-4 International Association of Geochemistry and Cosmochemistry, Water-Rock Interaction - 9.** Taupo, New Zealand. *Details:* B. W. Robinson. Wairakei Research Centre, Institute of Geological & Nuclear Sciences, Private Bag 2000, Taupo, New Zealand Tel.: 64-7-374-8211. Fax: 64-7-374-8199, E-mail: [wri-9@gns.cri.nz](mailto:wri-9@gns.cri.nz), WWW: <http://www.ruamoko.gns.cri.nz/wri-9.html>.

### April

**13-17 7th International Kimberlite Conference.** Rondebosch, South Africa. Field trips April 6-12 and April 19-24. *Details:* J. Gurney, 7IKC, Dept. of Geol. Sci., University of Cape Town, Private Bag, Rondebosch, 7700, South Africa. Tel.: 27-21-531-3162 or 27-82-550-2004; Fax: 27-21-650-3783; E-mail: [7ikc@geology.uct.ac.za](mailto:7ikc@geology.uct.ac.za); WWW: <http://www.uct.ac.za/depts/geolsci/7ikc>.

### May

**18-20 Geological Association of Canada/Mineralogical Association of Canada.** Quebec, Canada. *Details:* A. Morin, Dept. Geologie et de genie geologique, Universite Laval, Pavillon Adreïn-Pouliot Sainte-Fay, Quebec, G1K 7P4 Canada. Tel.: (418) 656-2193; Fax: (418) 656-7339; E-Mail: [quebec1998@ggl.ulaval.ca](mailto:quebec1998@ggl.ulaval.ca); WWW: <http://www.ggl.ulaval.ca/quebec1998.html>.

### QUEBEC '98 MAC SHORT COURSE MINERALIZED PORPHYRY-SKARN SYSTEMS

May 15, 16, and 17, 1998 (2.5 days) - Immediately preceding the Quebec GAC/MAC Conference (May 18-20, 1998).

This 2.5-day Short Course sponsored by the Mineralogical Association of Canada will present a review of the various geochemical systematics involved in the formation of mineralized skarn systems through to regional metallogenic perspectives. The course should be of interest to research economic geologists, to explorationists, and to students interested in understanding these dynamic hydrothermal systems. **Topics include:** an overview of porphyry-skarn systems, intrusion dynamics, phase-equilibria constraints, reaction models, mineral chemistry, stable and radiogenic isotope systematics, fluid-inclusion constraints, and reviews of Au, base-metal, Sn-W, Cu-Au, Mo, Fe, rare-metal, and wollastonite systems in various parts of the world. **Principal participants:** Doreen Ames, Tyson Birkett, John Bowman, Phil Brown, Don Burt, Ken Dawson, Gregg Dipple, Marco Einaudi, Tassos Grammatikopoulos, Jeffrey Keith, Dave Lentz, Lawrence Meinert, Takanori Nakano, Rainer Newberry, Yuanming Pan, Gerry Ray, Jeff Rubin, Robert Wares.

The course will be followed by a two-day MDD-GAC Special Session entitled "Mineralized Hydrothermal Skarn Systems", to be held during the GAC-MAC meeting. A post-meeting porphyry-skarn field trip will include the Gaspé porphyry-skarn Cu (Mo) deposit. **For further information:**

Dave Lentz  
New Brunswick Geological Surveys  
P.O. Box 50, 495 Riverside Drive  
Bathurst, N.B.  
E2A 3Z1 CANADA  
Tel: (506) 547-207  
Fax: (506) 547-7694  
e-mail: [dlentz@gov.nb.ca](mailto:dlentz@gov.nb.ca)

- 14-16 **VII<sup>th</sup> Experimental Mineralogy, Petrology and Geochemistry Meeting (EMPG VII)**. Orleans, France. Sponsors: Societe Francaise de Mineralogie et Cristallographie; European Mineralogical Union; Centre National de al Recherche Scientifique. Details: EMGP VII Organizing Committee, CNRS-CRSM, 1A rue de la Ferrollerie, 45071 Orleans cedex 2, France. Tel.: +1(33) 2 38 25 53 96; Fax: +1(33) 2 38 63 64 88; E-mail: [empg@cnsr-orleans.fr](mailto:empg@cnsr-orleans.fr); WWW: [www.cnsr-orleans.fr](http://www.cnsr-orleans.fr) . (Abstract Deadline: December 1, 1997)

## June

- 1-4 **Pan American Current Research on Fluid Inclusions (PACROFI) VII**. Las Vegas, Nevada. *Details:* Jean S. Cline, Dept. of Geoscience, University of Nevada, Las Vegas, Las Vegas, Nevada, 89154-4010. E Mail: [jcline@nevada.edu](mailto:jcline@nevada.edu); FAX: (702) 895-4064, WWW: <http://www.geology.wisc.edu/~pbrown/fi.html> (Abstract deadline: March 1, 1998)

- 6-11 **Clay Mineral Society 35<sup>th</sup> Annual Meeting**. Cleveland, Ohio, Cleveland Marriott Downtown at Key Center. *Symposia:* Molecular modeling of clays and clay surfaces; Clays in the petroleum and extractive industries; Smectite-rich soils; New developments in the Geochronology of clays, oxides and zeolites; Remote sensing of clays. Field trip: Bedrock and Coastal Geology of Ohio's North Coast. Workshop (Saturday, June 6). *Details:* Samuel M. Savin, Dept. of Geological Sciences, Case Western Reserve Univ., Cleveland OH 44106. Tel.: (216)-368-4413, Fax: (216)-368-3832, E-mail: [sms@po.cwru.edu](mailto:sms@po.cwru.edu).

## June-July

- 28-3 **The Interior of the Earth**. Henniker, New Hampshire. *Details:* M. Gurnis, Seismology Lab, Caltech, Pasadena, CA 91125. Tel.: (818)-395-6979, Fax: (818)-564-0715.

- 29-15 **8<sup>th</sup> International Platinum Symposium (IAGOD/CODMUR)**. Johannesburg, South Africa. *Details:* Dr. C. A. Lee, P.O. Box 68108, Bryanston, South Africa. Tel.: 27-1127-373-2580; Fax: 27-1127-836-0371; E-mail: [clee@amplats.co.za](mailto:clee@amplats.co.za)

## July

- 4-11 **Geological Society of America Penrose Conference on " Processes of Crustal Differentiation: Crust-Mantle Interactions"**. Verbania, Italy. *Details:* T. Rushmer, Dept. of Geology, University of Vermont, Burlington, VT 05405. Tel.: 802-656-8136; Fax: 802-656-0045; E-mail: [trushmer@zoo.uvm.edu](mailto:trushmer@zoo.uvm.edu)

## Call for Posters

The Gemological Institute of America will host the 1999 International Gemological Symposium in San Diego, California on June 21-24. More than 2000 people are expected to attend this pivotal event. The Symposium program - with the theme "Meeting the Millennium" - will feature technical sessions and panel discussions on a variety of topics of vital interest to all members of the gem and jewelry industry. In addition, there will be an open Poster Session featuring original presentations on such topics as new gem materials, synthetic gem materials, treatments, gem identification and grading instrumentation and techniques, gem localities, gem exploration, jewelry manufacturing, and jewelry design.

Contributions are being solicited for this Poster Session. To be considered for this important event (space is limited), please submit a preliminary abstract (no more than 250 words) to one of the Poster Session organizers by October 1, 1998. For further information on the Poster Session, contact Dr. James Shigley at 760-603-4019 (Fax: 760-603-4021, e-mail: [jshigley@gia.edu](mailto:jshigley@gia.edu)) or Ms. Dona Dirlam at 760-603-4154 (Fax: 760-603-4256, e-mail: [ddirlam@gia.edu](mailto:ddirlam@gia.edu)). For more information on the Symposium, contact Carol Moffat at 760-603-4406 ([cmoffat@gia.edu](mailto:cmoffat@gia.edu)).

- 5-10 **18<sup>th</sup> International Congress on Glass**. San Francisco, California. *Details:* 18<sup>th</sup> International Congress on Glass, The American Ceramic Society, 735 Ceramic Place, Westerville, OH 43081. E-mail: [icgxviii@acers.org](mailto:icgxviii@acers.org) , WWW: <http://www.acers.org>

## August

- 9-14 **17<sup>th</sup> General Meeting of the International Mineralogical Association**. Toronto, Canada. *Details:* A. J. Naldrett, Dept. of Geology, University of Toronto, Toronto, Canada M5S 3B1 Tel.: (416) 978-3030; Fax: (416) 978-3938; E-mail: [ima98@quartz.geology.utoronto.ca](mailto:ima98@quartz.geology.utoronto.ca); WWW: <http://www.geology.utoronto.ca/ima98>

- 10-16 **International Ophiolite Symposium and Field Excursion: "Generation and Emplacement of Ophiolites through Time"**. Oulo, Finland. *Details:* J. Vuollo, Dept. of Geology, University of Oulu, FIN-90570 Oulu, Finland. Fax: 358-81-5531484; E-mail: [vuollo@sveka.oulu.fi](mailto:vuollo@sveka.oulu.fi) or E. Hanski, Geol. Survey of Finland, P.O. Box 77, FIN-96101 Rovaniemi, Finland. Fax: 358-60-3297289; E-mail: [eero.hanski@gsf.fi](mailto:eero.hanski@gsf.fi) .

## October

- 26-29 **Geological Society of America Annual Meeting**. Toronto, Canada. *Details:* Geological Society of America, 3300 Penrose Place, Boulder, CO 80301. Tel.: (303)-447-2020, Fax: (303)-447-1133, WWW: <http://geosociety.org/meetings/index.htm> .

# Mineralogical Society of America Membership Application

To join the MSA, please send a completed copy of the application below, along with the required payments in U.S. funds, to the Mineralogical Society of America, 1015 Eighteenth St., NW, Suite 601, Washington, DC 20036-5274

**Preferred Mailing address:** \_\_\_\_\_

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_  
 First Middle Last  
 Dr. \_\_\_\_\_ Fax: \_\_\_\_\_  
 Prof. \_\_\_\_\_ First Line of Address  
 Mr. \_\_\_\_\_ E-mail: \_\_\_\_\_  
 Ms. \_\_\_\_\_ Second Line of Address  
 Other: Specify \_\_\_\_\_ Birth Date: \_\_\_\_\_  
 Third Line of Address

**Membership Category:**  Member  Life Member  Student Member \_\_\_\_\_

**Areas of Interest:** (Circle main, check secondary) \_\_\_\_\_  
 Mineralogy (MI),  Crystallography/Crystal Chemistry (CC),  Material Properties (PP),  Igneous Petrology (IP),  Metamorphic Petrology (MP),  Sedimentary Petrology (SP),  Geochemistry (GE),  Phase Equilibria (PE),  Economic Geology (EG),  Clay Mineralogy (CM),  Industrial Mineralogy (IM),  Environmental Mineralogy (EM),  Gems GM,  Planetary Materials (PM),  Teaching (TC),  Topologic Mineralogy (TP),  Others (Please indicate) \_\_\_\_\_

**Personal Information:** \_\_\_\_\_  
 Highest Degree earned:  Doctorate  Masters  Bachelors  No College Degree  
 Institution at which Highest Degree was earned \_\_\_\_\_ Year \_\_\_\_\_  
 Employer \_\_\_\_\_ Job Title \_\_\_\_\_  
 Job Function(s): \_\_\_\_\_  
 What other professional societies do you belong to? \_\_\_\_\_

**Student Certification:** (Applicants for student membership must supply the following certification of status.) \_\_\_\_\_  
 The applicant is known to me and is a bona fide student at (Name of School): \_\_\_\_\_  
 Address of School (Please Print): \_\_\_\_\_

Faculty Member (Please print): \_\_\_\_\_

Signature (you need not be a member of the Society): \_\_\_\_\_

**Payment:** \_\_\_\_\_  
 \$ \_\_\_\_\_ enclosed (money order, check in US dollars drawn on \_\_\_\_\_ Card # \_\_\_\_\_  
 a US bank and payable to the Mineralogical Society of America)  
 Please charge my:  Mastercard  Visa Exp. Date: \_\_\_\_\_  
 \$ \_\_\_\_\_  Diners Club  American Express Cardholder: \_\_\_\_\_

Signature: \_\_\_\_\_

### 1998 Fee Schedule

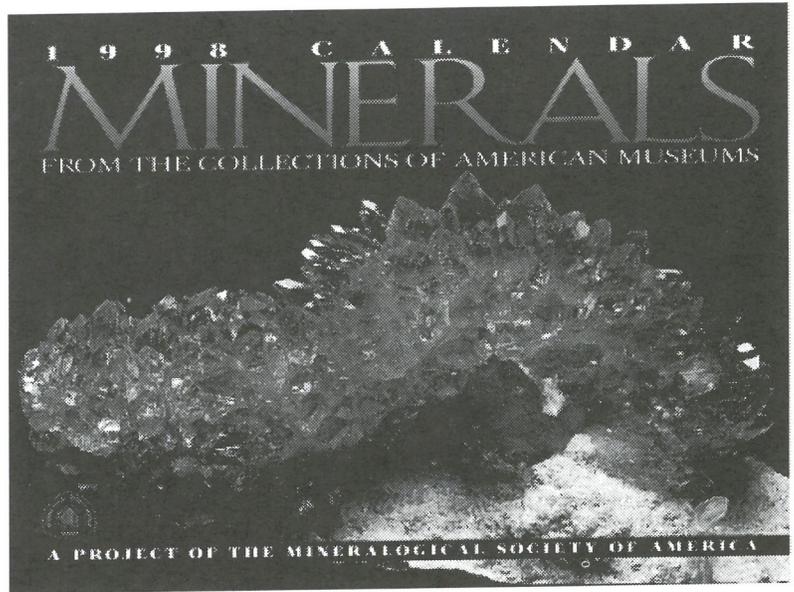
Memberships are entered and renewed on a calendar basis. You will receive all publications for the year you join. Membership applications received after October 1 will be made effective January 1 of the following year unless otherwise requested. Members will receive the newsletter, *The Lattice*, as part of their dues. As an additional benefit, members may elect to receive the *American Mineralogist*, as well as some related publications, at substantially reduced rates. Please indicate all options that apply in the box to the right. Members are entitled to a 25% discount on other MSA publications given on our Publication List.

Member Dues	\$40.00
<i>American Mineralogist</i> (price to members)	\$30.00
International surface airlift service for above	\$30.00
Life Membership Dues (with journal)	\$1750
Student Member Dues (includes <i>American Mineralogist</i> )	\$30.00
<i>Mineralogical Abstracts</i> , published quarterly by the Mineralogical Society of Great Britain & Ireland	\$40.00
<i>Physics and Chemistry of Minerals</i> , published eight times a year by Springer-Verlag	\$4.
<i>Journal of Petrology</i> , published twelve times a year by Oxford University Press	\$330
<b>TOTAL</b>	

# 1998 Mineral Calendar

## Mineralogical Society of America

This calendar celebrates the aesthetic beauty of minerals as well as the wonders of their creation revealed through scientific studies. In doing so, this is not only a source of beautiful mineral images, suitable for framing, but also provides educational information for all mineral enthusiasts about recent advances in mineralogy. Each month you will find a stunning 9" x 11 1/2" photograph of a superlative mineral specimen. In addition, inset in the monthly calendar page is an aesthetic scientific image from the research of mineralogists and petrologists in the MSA. These are accompanied by a short description of the image and its significance. All proceeds go towards MSA educational programs. They make great gifts!



Cost: \$12.00 + Shipping and Handling

Please send \_\_\_\_\_ calendars to:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

City: \_\_\_\_\_

State/Province: \_\_\_\_\_

Zip or Postal Code: \_\_\_\_\_

Country \_\_\_\_\_

I have enclosed \$ \_\_\_\_\_

(\$12 per calendar + shipping and handling, see table at right)

Payment must be in US dollars, Please do not send cash.

Calendars are shipped via priority mail (US) or air printed matter (non-US)

### Order From:

Mineralogical Society of America  
1015 18th Street, NW, Suite 601  
Washington, DC 20036-5274  
U.S.A.

Phone: 202-775-4344

Fax: 202-775-0018

E-mail: [business@minsocam.org](mailto:business@minsocam.org)

### Shipping and Handling:

	US	Non-US
1-4 Calendars:	\$4	\$6
5-8 Calendars:	\$8	\$12

Contact the MSA Business Office  
for larger orders.

Payment is by:  check (in U.S. dollars on a U.S. bank)  money order, or

Visa  Mastercard  Diners Club  American Express

Card # \_\_\_\_\_

Exp. Date \_\_\_\_\_

Name of cardholder (print as it appears on card): \_\_\_\_\_

Signature: \_\_\_\_\_

# Mineralogical Society of America

Publications Price List and Order Form

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