The Geochemical News
Biannual Newsletter of the Geochemical Society

Number 73

V. M. GOLDSCHMIDT CONFERENCE
A Conference to Mark the Centennial
Year of V. M. Goldschmidt's Birth

April 1988

General Information

The V. M. Goldschmidt Conference will be held Wednesday, May 11, to Friday, May 13, 1988 to focus on the chemical aspects of the earth and planetary sciences. It is sponsored by The Geochemical Society, the European Association of Geochemistry, the International Association of Geochemistry and Cosmochemistry, the Mineralogical Society of America, and the Association of Exploration Geochemists. The Society of Environmental Geochemistry and Health is a participating society.

The Goldschmidt Conference will take place at the Hunt Valley Inn, 25 km north of downtown Baltimore. It is scheduled just prior to the spring meeting of the American Geophysical Union, May 15–20, 1988 also in Baltimore.

Registration and Fees (forms on p. 11)

Please be sure to check which sessions you will be attending. If a guest will be accompanying you, and any special activities you and your guest will be interested in attending. This information will help the conference staff estimate the expected attendance at each session and assign appropriate rooms.

The hotel reservation form should be mailed directly to the Hunt Valley Inn. Please be certain to give all the information as requested. Note that early reservations are advised because of limited capacity in the headquarters hotel. Alternative housing locations will be suggested after the headquarters hotel is filled.

The registration fees for the conference are as follows:

| Members of sponsoring societies | $100 |
| Nonmembers                     | 120  |
| Students                       | 50   |
| Accompanying guests            | 30   |

There will be no one-day registrations. Payment of the registration fee may be made in U.S. dollars, by check, money order, VISA or by MasterCard. The fee is completely refundable if written cancellation is received before March 31, 1988; half the fee will be returned for cancellations received between April 1 and May 1 and no refunds will be made after May 1.

The registration fees include the following: attendance at all technical sessions, a conference packet with name badge, the opening reception on Tuesday, May 10, refreshment breaks during the conference, and one copy of the conference abstract volume.

A banquet is planned for the evening of Thursday, May 12 at an additional charge of $27. For reservations, please check the appropriate space on the advance registration form and include with the registration fee the additional amount. Because of space limitations, attendance at the banquet will be limited, so early registration is recommended.

Advance registrations will be acknowledged by letter with a confirmation receipt. Additional information on travel, restaurants, and on-site check-in times will be included.

Accommodations

A block of rooms has been reserved at the Hunt Valley Inn (conference site) for conference participants. Attached is a hotel reservation form which should be filled out and sent directly to the Hunt Valley Inn. Reservations must be made by April 1, 1988. Rates are $96.32 per night including tax, with two double beds or a room with one king size bed.

State your preference on the hotel registration form.

Meals are available at the Hunt Valley Inn and at numerous other restaurants surrounding the conference site.

Conference Schedule

Tuesday, May 10
7:00–9:00 p.m. General Reception (cash bar)

Wednesday, May 11
8:30–12:00 Noon Technical Sessions
9:00–11:00 a.m. Poster Session
1:30–5:00 p.m. Technical Sessions
2:00–4:00 Poster Session
8:00–10:00 Plenary Session
8:00–10:00 Reception for Guests

Thursday, May 12
8:30–12:00 Noon Technical Sessions
9:00–11:00 a.m. Poster Session
1:30–5:00 p.m. Technical Sessions
2:00–4:00 Poster Session
6:30–7:30 Cash Bar Reception
7:30–10:00 Optional Banquet

Friday, May 13
8:30–12:00 Noon Technical Sessions
9:00–11:00 a.m. Poster Session
1:30–5:00 p.m. Technical Sessions
2:00–4:00 Poster Session

Field Trips

The following field trips are planned for Saturday, May 14, or Sunday, May 15:

1. Iron, Copper, and Cobalt/Nickel Mineralization and Ore Genesis, Sykesville, Maryland (half day). Organizers: Phil Candela and Ann Wylie, University of Maryland, Saturday, May 14. Cost: $30
2. Gabbros and Granites in the Maryland Piedmont
   (whole day). A. K. Sinha, Virginia Polytechnic Institute
   and State University, Sunday, May 15, Cost: $45
3. Metamorphosed Sedimentary Rocks of the Central
   Appalachian Piedmont (whole day). George Fisher.
   Johns Hopkins University, Saturday, May 14, Cost: $45
4. Mineral Collecting in the Pegmatites of the Amelia
   District, Virginia (whole day). Keith Frye, Old Dominion
   University, Sunday, May 15, Cost: $45
5. Building Stones of the Washington, D.C. Area and the
   Effects of Acid Rain on the Deterioration of
   Monuments and Buildings (whole day). Mac Ross and
   Harvey Belkin, U.S. Geological Survey, Saturday, May
   14, Cost: $45
6. The Hydrogeology and Environmental Problems of the
   Potomac River Estuary (whole day). John Moore, U.S.
   Geological Survey, Saturday, May 14, Cost: $45
7. Unstructured trip to the Smithsonian Institution and
   Environs, Washington, D.C. (whole day) Sunday, May
   15, Cost: $30

Please check the appropriate space on the
registration form if you plan to attend one or more of these
field trips, and include the fee with your registration.

Special Activities for Guests

The following activities are planned for accompanying guests
Wednesday, May 11 through Friday, May 13:
1. Baltimore: Its History, Culture, and Charm
   Date: Wednesday, May 11 Time: 9:00–4:30 Cost: $24
   A tour guide will lead you on a full-day tour of the city.
   Highlights include Johns Hopkins Hospital, Fort McHenry,
   Maryland Historical Society, Harborplace, and the B&O
   Railroad Museum. Tour includes transportation, guide,
   and all admissions. Lunch on your own at Harborplace.
2. Annapolis: Home of the U.S. Naval Academy
   Date: Wednesday, May 11 Time: 9:00–4:30 Cost: $24
   The colonial costumed guides will take you on a walking
   tour of Annapolis. Visit the Maryland State House, St.
   Johns College, and the U.S. Naval Academy. Tour includes
   transportation and colonial costumed guides.
   Lunch on your own with time for shopping at the many
   antique shops that line the streets and the Annapolis
   Dock.
   Date: Thursday, May 12 Time: 9:00–5:15 Cost: $24
   Tour the McCormick Spice and Tea Company to learn
   the origins of exotic spices with refreshments provided
   in the Tea House. Lunch on your own is available at the
   Lexington Market before leaving for the Walters Art
   Gallery. Board the Patriot for a 1½ hour cruise around
   the port of Baltimore. Tour includes guide, transportation,
   and all admissions.
4. A Day in Baltimore County
   Date: Thursday, May 12 Time: 9:00–4:15 Cost: $24
   Visit the Ladew Topiary Gardens and the home of Henry
   S. Ladew which is filled with English antiques,
   photographs, and sketches. Learn about wine-making at
   the Boordy Vineyards and sample several wines in the
   tasting rooms. Tour includes guide, transportation, and
   admissions. Lunch on your own at a Hunt Valley
   shopping mall.
5. Baltimore: City by the Bay
   Date: Friday, May 13 Time: 9:30–3:30 Cost $24
   Begin this walking tour with a visit to the Maryland
   Science Center and a trip to the National Aquarium. Visit
   the top of the World at the World Trade Center for a
   breath-taking view of the city and browse at the
   International Bazaar on the 27th floor of the World Trade
   Center. Tour includes guide, transportation, and all
   admissions. Lunch on your own at Harborplace.

Please check the appropriate space on the advance
registration form if you or your guest plan to attend one or
more of the activities and include the fee with your
registration.

Short Course

A Mineralogical Society of America short course,
"Spectroscopic Methods in Mineralogy and Geology," organized by Frank Hawthorne, will be held in The Embassy
Suites Hotel, across from the Hunt Valley Inn on May 13–15.
A registration form is available in the November issue of the
M.S.A. newsletter. Contact the M.S.A. business office for
more details (Minerological Society of America, 1625 I Street

Location and Travel

The Hunt Valley Inn is located approximately 25 km north of
downtown Baltimore on Interstate 83. The area is served by
the Baltimore-Washington International Airport, which is
approximately 35 minutes away from the Hunt Valley Inn.
Bus transportation will be available from the airport to the
Hunt Valley Inn. Additional information concerning
transportation will be sent in the registration acknowledgment. (See the area map below.) Please check
the appropriate spaces on the advance registration form
concerning travel.

If further information is necessary, please contact:
Donna Ricketts, Conference Coordinator
409 Keller Building
The Pennsylvania State University
University Park, PA 16802 USA
Phone: (814) 863-1743

Geochemical Society Luncheon: Wed. May 11,
12 noon to 1:30 p.m., Embassy Ballroom,
Embassy Suites Hotel. All are welcome.
Tickets ($13) at Conference Registration
Desk, Hunt Valley Inn (directly across the
road). The Goldschmidt Medal and Strock
Honorary for 1987 will be presented to
Wallace S. Broecker, Columbia University.
### Summary of Sessions

#### WEDNESDAY, MAY 11

<table>
<thead>
<tr>
<th>ROOM</th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maryland 1 + 2</td>
<td>Modern Concepts in Crystal Chemistry (Symposium organized by G. V. Gibbs)</td>
<td>Modern Concepts in Crystal Chemistry (Symposium organized by G. V. Gibbs)</td>
</tr>
<tr>
<td>Maryland 3</td>
<td>Lithosphere-Asthenosphere Interactions</td>
<td>Mineralogy and Petrology</td>
</tr>
<tr>
<td>Maryland 4</td>
<td>Ore-Forming Processes/Source Regions and Transport of Metals (Symposium organized by M. Elcadi)</td>
<td>Ore-Forming Processes/Source Regions and Transport of Metals (Symposium organized by M. Elcadi)</td>
</tr>
<tr>
<td>Salon C + D</td>
<td>Geochemistry of Sulfur</td>
<td>Geochemistry and Radiocarbon Analyses</td>
</tr>
<tr>
<td>Salon E</td>
<td>Tectonics (Symposium organized by F. Barker)</td>
<td>Granitoids</td>
</tr>
<tr>
<td>Salon F</td>
<td>International Geochronology Mapping (Symposium organized by A. Darney)</td>
<td>Poster Session</td>
</tr>
<tr>
<td>Hunt</td>
<td>Poster Session</td>
<td>Poster Session: 10:00 - 10:30 AM</td>
</tr>
<tr>
<td>Valley</td>
<td></td>
<td>Ingersoll Lecture of the IAGC 4 PM (A. E. Ringwood)</td>
</tr>
</tbody>
</table>

#### THURSDAY, MAY 12

| Maryland 1 + 2 | Anabase Environment (Symposium organized by J. C. G. Walker) | Palaeomagnetics and Occurs (Symposium organized by J. C. G. Walker) |
| Maryland 3 | Platinum Group Elements (Symposium organized by L. Dany and G. Carlin) | Platinum Group Elements |
| Maryland 4 | Low Temperature Geochemistry | Environmental Geochemistry (Symposium organized by J. O. Nriagu) |
| Salon C + D | Diagenesis of Humic Substances (Symposium organized by F. G. Hatcher) | Diagenesis of Humic Substances (Symposium organized by F. G. Hatcher) |
| Salon E + F | Crystal Chemistry | Metamorphism and Metacratonism |
| Hunt | Cosmogenic Radionuclides (Symposium organized by L. Brown and D. Lai) | Cosmogenic Radionuclides (Symposium organized by L. Brown and D. Lai) |

#### FRIDAY, MAY 13

| Maryland 1 + 2 | 11th Symposium on Geochemical Cycles (Symposium organized by B. Gregor) | 11th Symposium on Geochemical Cycles (Symposium organized by B. Gregor) |
| Maryland 3 | Mineral Deposit | Hydrothermal Solutions |
| Maryland 4 | Environmental Geochemistry (Symposium organized by J. O. Nriagu) | Environmental Geochemistry (Symposium organized by J. O. Nriagu) |
| Salon C + D | Organic Geochemistry (Symposium organized by R. P. Philip) | Organic Geochemistry (Symposium organized by R. P. Philip) |
| Salon E + F | Mantle Mineralogy and Petrology (Symposium organized by D. Egger) | Mantle Mineralogy and Petrology (Symposium organized by D. Egger) |
| Hunt | Cosmogenic Radionuclides (Symposium organized by L. Brown and D. Lai) | Cosmogenic Radionuclides (Symposium organized by L. Brown and D. Lai) |

### Schedule of Presentations

#### WEDNESDAY, MAY 11, 1988

**WEDNESDAY AM**

**MODERN CONCEPTS IN CRYSTAL CHEMISTRY, Maryland 1 & 2**

M. S. T. Bukowski, Chairman

**8:30**  J. K. Bardet: MODERN ELECTRONIC IDEAS FOR SOLIDS

#### WEDNESDAY, MAY 11, 1988 (Continued)

**WEDNESDAY PM**

**ORE FORMING PROCESSES, Maryland 4**

M. T. Elcadi, Chairman

**8:30**  M. D. Barton: PETROLOGICAL CONSTRAINTS ON THE DEVELOPMENT OF FLUORINE-RICH MAGMAS AND ORE DEPOSITS

**8:50**  P. Candela: ON PROGRESSIVE MAGMATIC AQUEOUS PHASE EVOLUTION
WEDNESDAY, MAY 11, 1988

WEDNESDAY AM
ORE FORMING PROCESSES, Maryland 4
M. T. Einseid, Chairman

9:10 E. S. Ilton, D. R. Veblen: Cu IN SHEET SILICATES FROM ROCKS ASSOCIATED WITH PORPHYRY COPPER DEPOSITS: A TRANSMISSION ELECTRON MICROSCOPY STUDY

9:30 J. H. Billes, M. T. Einseid: ALTERNATIVE SOURCES OF METALS AND FLUIDS IN THE VERMONT PORPHYRY COPPER DISTRICT, NEVADA

9:50 K. Muenchenbach, B. E. Neubit: GENERATION OF MESOTHERMAL AS DEPOSITS BY DEEP CONVECTION OF METEORIC WATER

10:10 COFFEE


11:00 M. D. Hannington, S. B. Scott: SULFIDATION REACTIONS AS GUIDES TO GOLD DISTRIBUTION IN MODERN AND ANCIENT VOLCANIC MASSIVE SULFIDE (VMS) DEPOSITS

11:20 W. E. Seyfried, Jr., M. E. Berndt: HYDROTHERMAL ALTERATION PROCESSES AT MID-OCEAN RIDGES: EXPERIMENTAL AND THEORETICAL CONSTRAINTS ON CA-FIXATION AND HEAVY METAL MOBILITY

11:40 U. M. Graham, H. Ohmoto: ROLE OF ANHYDRITE IN THE FORMATION OF MAGNESITE, PYRITE, URANITE, SPHALERITE AND CHALCOPYRITE IN THE BLACK-SMOKE CHIMNEYS

GEOCHEMISTRY OF SULFUR, Salon C-D, E. C. Spiker, Chairman

9:10 A. M. Bailey, J. F. Sherrill, J. Blackson: CONTROLS ON SULFUR DISTRIBUTION, FORMS OF SULFUR, AND PYRITE FORMATION IN RECENT ORGANIC-RICH SEDIMENTS OF THE MESSINA DELTA

9:30 D. Shea, W. A. Macrehan: TRACE METAL SPECIATION IN FRESHWATER OF CHESAPEAKE BAY SEDIMENTS

9:50 M. A. A. Schoenen, H. L. Barsen: KINEMATIC PATHS FOR FORMATION OF FeSxS2 BELOW 1000 °C

10:10 COFFEE

10:40 C. J. Kaiser, H. Ohmoto: MECHANISMS OF SULFATE REDUCTION BY ORGANIC MATTER

11:00 C. S. Eldridge, M. A. McKibben: SULFUR ISOTOPIC SYSTEMATICS IN THE SALT TOWNSHIP SYSTEM: A SHRIMP ION MICROPREP STUDY OF MICROSCALE 65S VARIATIONS

11:20 X. Chu, H. Ohmoto: RATE LAW FOR ISOTOPIC EXCHANGE INVOLVING INTERMOLECULAR AND INTRAMOLECULAR REACTIONS

11:40 E. L. Zedrow, A. P. Beaton: A MODEL FOR SULFUR IN COAL BY OBLIQUE FACTOR METHODS: SYDNEY COAL-FIELD (GLACK CARBONIFEROUS), NOVA SCOTIA, CANADA

TRONDHEIM, Salon E, P. Barker, Chairman

8:30 F. Barker, J. G. Arth: INTRODUCTION TO SYMPOSIUM ON TRONDHEIM—FROM GOLDSMIDT AT TRONDHEIM, 1916, TO THE PRESENT

8:50 W. B. Size, D. Roberts, F. C. Wolf: CONTRASTING TRONDHEIMITE AND PLAGIoclASE OCCURRENCES IN THE NORWEGIAN Caledonides


9:30 S. S. Sorensen: TRONDHEIMITES DERIVED FROM PARTIAL MELTING OF GARNET HORNBLENDITES IN A SUPERIMPOSED ZONE METAMORPHIC SETTING

9:50 W. F. Leeman: TRACE ELEMENT EVIDENCE FOR ORIGIN OF SILICIC MAGMAS VIA PARTIAL MELTING OF MAIFIC PROTOHOT: MOUNT ST. HELENS (MSH) RHYOXYDITES AND CANYON MT. COMPLEX (COC) PLAGIoclASES AS EXAMPLES

10:10 COFFEE

10:40 C. F. Miller, M. D. Barton, M. A. Gallis, R. W. Weaver, R. M. Bruce: TWO-MCA TRONDHEIMITES

11:00 R. P. Rapp, E. B. Watson, C. F. Miller: EXPERIMENTAL PARTIAL MELTING OF AMPHIBOLITE AT 8-28 KBAR: COMPOSITIONS OF LIQUID AND COEXISTING CRYSTAL RESIDUES

11:20 J. S. Beard, G. E. Loggers: TONALITE GENESIS BY GREENSTONE MELTING

11:40 B. R. Hacker: MICROCHEMICAL AND MICROSTRUCTURAL CHANGES DURING EXPERIMENTAL METAMORPHISM OF AMPHIBOLITE

INTERNATIONAL GEOCHEMICAL MAPPING, Salon F, A. Darley and R. Learned, Chairman

8:30 A. G. Darney: GEOCHEMICAL MAPPING: A NEW INTERNATIONAL PROJECT

8:50 B. Bolviken: THE NORDKALLOTT PROJECT: A MULTIDISCIPLINE MAPPING PROGRAMME IN NORTHERN PENNSYLVANIA

9:30 J. A. Plant, M. D. Forrest, P. M. Green, R. T. Smith, R. A. C. Williams: REGIONAL GEOCHEMISTRY IN THE MODELLING OF MINERAL DEPOSITS

9:50 J. M. McNeal: GEOCHEMICAL MAPPING IN THE UNITED STATES

9:50 J. S. Duvall: APPLICATIONS OF MODERN GAMMA-RAY TECHNIQUES IN GEOCHEMISTRY

10:10 COFFEE

10:40 R. G. Garret: REGIONAL GEOCHEMICAL MAPPING BY THE GEOLOGICAL SURVEY OF CANADA

11:00 B. Bolviken: PLANS FOR GEOCHEMICAL MAPPING OF WESTERN EUROPE

11:20 X. Xuejin: PROBLEMS, STRATEGICAL AND TACTICAL, IN INTERNATIONAL GEOCHEMICAL MAPPING

11:40 PANEL DISCUSSION

WEDNESDAY PM

MODERN CONCEPTS IN CRYSTAL CHEMISTRY, Maryland 1-2
J. K. Bartlett, Chairman

2:00 N. L. Ross, R. M. Hazen, L. W. Finger, R. J. Angel, H. K. Mao: RECENT ADVANCES IN HIGH-PRESSURE CRYSTALLOGRAPHY

WEDNESDAY, MAY 11, 1988

2:20 A. Navrotsky: THERMOCHRONICITY, CRYSTAL CHEMISTRY, AND GEOCHEMISTRY—HIGH PRESSURE SILICATES AS A TEST OF BASIC CONCEPTS

2:40 C. T. Prestwitt: THE EFFECT OF CHANGES IN TEMPERATURE, PRESSURE, AND COMPOSITION ON CRYSTAL STRUCTURES

3:00 M. S. T. Bukowski, A. Amato: HIGH PRESSURE PHYSICS OF THERMAL TRANSITIONS THROUGH PARAMETRIC MANY-BODY HAMILTONIANS

3:20 Y. Tardy, P. Vieillard: ESTIMATION OF ENTHALPIES OF FORMATION OF MINERALS BASED ON THEIR DEFINED CRYSTAL STRUCTURES

MINERALOGY AND PETROLOGY, Maryland 3, O. C. Kopp, Chairman

1:30 K. A. Garland: MINERALOGY AND PETROLOGY OF BIFURCATION PHASES FROM ALPINE OLIGOPLITHS: EVIDENCE FOR MORA AND ALKALI MAGMATISM IN THE GLESON BASIN

1:50 V. T. McLennan: GEOCHEMISTRY OF CARBONATITES FROM NEW MEXICO


2:50 O. C. Kopp, D. K. Reeves, M. Rivers: INFLUENCE OF P, Na AND OTHER TRACE ELEMENTS ON CATHODOLUMINESCENCE—A STUDY USING SYNCHROTRON RADIATION

3:10 J. Chaudhuri, N. B. Jadavpur: NOTES ON THE ALTERED ELMITES FROM THE BEACH PLACERS OF SOUTH INDIA

ORE FORMING PROCESSES, Maryland 4, M. Einseid, Chairman

1:30 W. C. Shanks, III, J. F. Slack: COMPARATIVE STUDIES OF METAL AND SULFUR SOURCES IN MODERN AND ANCIENT BESSEMER-TYPE SULFIDE DEPOSITS

1:50 K. A. Geer, H. Ohmoto: CHEMICAL PROCESSES OF ORE FORMATION AT THE MEGGON MINE: EVIDENCE FOR CARBONATE REPLACEMENT

2:10 S. A. Kilian: THE FIVE-ELEMENT SUITE: AN INDICATOR OF NON-MAGMATIC ORE TYPES RELATED TO RIFTING AND BASIN DEVELOPMENT

2:30 B. S. Shemberger, C. H. Gammons, H. L. Barnes: THE SOLUBILITY OF GOLD AND SILVER IN AQUEOUS SULFIDE SOLUTIONS

2:50 G. R. Robinson, Jr., J. J. Hemley, G. L. Cypar: Fe, P AND Zn RATIO IN SULFIDE-SATURATED CHLORIDE-DOMINATED HYDROTHERMAL FLUIDS

3:10 M. Kronen: NITROGEN TRANSPORT AS NH3 IN EPITHERMAL Au-Ag SYSTEMS

GEOCHRONOLOGY AND RADIOISOTOPES, Salon C-D, E. Anders, Chairman

1:30 J. L. Birck, C. Allgeier: CR AND Ti ISOTOPIC ANOMALIES IN METEORITES

1:50 M. Tang, E. Anders: INTERSTELLAR GRAINS IN METEORITES
WEDNESDAY, MAY 11, 1988

WEDNESDAY PM

2:10 Y.-N. Shieh, X. Zhang: OXYGEN ISOTOPE GEOCHEMISTRY OF PRECAMBRIAN SHALES IN THE KAAPAAL CRATON, SOUTH AFRICA

2:30 C. T. Barrie, D. W. Davis, R. Stewart: HIGH PRECISION U-Pb AGES FOR TIME STRATIGRAPHIC CORRELATION OF ARCHEAN MASSIVE SULFIDE-BEARING RHYOLITIC, WESTERN ANITIBI SUBROUP, CANADA


3:10 W. J. Rink, A. L. Odem: POSSIBLE EVIDENCE FOR A NEW EVIDENCE FOR A NEW ELECTRO-AERONOMIC RESONANCE (EPR) INTRINSIC DEFECT QUARTZ GEOCHEMOMETER


GRANITOIDS, Salon E

G. K. Czamanske, Chairman

2:00 L. Andre, J. Klerks, M. Benevell: THE ORIGIN OF A-TYPE GRANITES: TRACE ELEMENT AND S-34 ISOTOPE CONSTRAINTS FROM THE UWENAT, ARCHEAN RING-COMPLEXES (S.E. LIBYA)

2:20 R. M. Bruce, S. G. Weaver, E. P. Nelson: PROGRESSIVE CHANGES IN PERALUMINOUS GRANITE MAGMATISM: DECREASING CRUSTAL INVOLVEMENT IN THE SOUTHERN PATAGONIAN BATHOLITH

2:40 G. K. Czamanske, B. W. King, P. Lamothe, J. R. Budahn: REE COMPOSITION OF GRANITOIDS, QUESTA, NEW MEXICO

3:00 R. L. Hill, H. H. Campbell: ION PROBE ZIRCON U-Pb STUDIES OF GRANITIC SOURCE ROCKS AND EMPLACEMENT, NORSEMAN AREA, WESTERN AUSTRALIA, AND IMPLICATIONS FOR THE EVOLUTION OF ARCHEAN CRUST

3:20 R. E. Meinsheimer, P. Cerar: EVOLUTION OF LATE ARCHEAN GRANITOID ROCKS AND PERIMETRITES OF THE YELLOWSTONE BASIN, NORTHWEST TERRITORIES, CANADA

POSTER SESSION, Hunt

J. D. Rimitstid, Chairman

Posters set up before 10:30 AM and on display all day. Authors present 5:00 - 6:30 PM

1. K. H. Ewing: CHEMOMETRICS IN GEOCHEMISTRY

2. S. M. Bille: DISCRIMINANT FUNCTION IN TRACE ELEMENT GEOCHEMISTRY

3. J. L. Rao: ERROR PROPAGATION ANALYSES IN GEOCHEMICAL CALCULATIONS: I. PRINCIPLES AND METHODS


5. Zhang Lige: Pb, Sr, Nd AND O ISOTOPE COMPOSITIONS OF SOME MUSCOVITE GRAPHITOIDS IN EASTERN CHINA AND THEIR GEOLOGIC SIGNIFICANCE


7. J. N. B. Chaudhuri: NOTES ON THE GEOCHEMISTRY OF THE MONAZITE FROM SOUTH INDIA

8. J. N. B. Chaudhuri: HIGH HAFNIUM ZIRCONS FROM THE BEACH PLACERS OF SOUTH INDIA

9. G. S. Routwal, G. Kumar: PARTITIONING OF ELEMENTS IN SEDIMENT CORES ALONG THE EAST PACIFIC RIDGE


11. A. U. Gebhart: DIAGENESIS OF PERRUSIEUS MINERAL PHASES IN THE NORTHAMPTON IRONSTONE

12. H. Schorina: THE EFFECT OF AaO3 AND FeO3 ON THE ELEMENTAL INTERRELATIONS IN A FERRUGINOUS BALTIXIS PROFILE AS DETERMINED BY NON-PARAMETRIC PARTIAL CORRELATION COEFFICIENTS

13. L. Yan, R. M. Key, R. F. Stallard: INDICATION STUDY OF NUTRIENTS FOR WATER MASS CONSTITUTION IN NEW JERSEY ESTUARIES, BAYS AND COASTAL WATERS

14. P. R. Graff, J. R. Rente, B. Bolviken: ACID SOLUBILITY OF MINERALS, ROCKS AND STREAM SEDIMENTS


17. R. N. Sukheswala, R. K. Aravast, S. G. Vladasan, L. G. Oulian: DECCAN BASALTS ASSOCIATED WITH CARBONATE VOLCANISM, CHIOTA UDAIPUR, GUJARAT, INDIA

18. R. R. Loucks: FORMATION CONSTANTS OF AQUEOUS CURIOUS CHLORIDE COMPLEXES TO 250 C

19. J. C. Green, J. R. Craig, J. D. Rimitstid: GOLD AND GOLD-SILVER MERCURY SECONDARY PHASES ON PLACER GOLD GRAMS: CHARACTERISTICS AND GEOCHEMICAL PROCESSES OF FORMATION

20. J. D. Rimitstid, D. L. Jordan: A MIXED FLOW REACTOR MODEL OF QUARTZ PRECIPITATION IN A FRACTURE

21. J. A. Cremers, J. D. Rimitstid: ESTIMATING THE THERMODINAMIC PROPERTIES OF SILICATE MINERALS AT 298 K

22. P. M. Dove, D. A. Cvetek: THE DESIGN OF A HIGH TEMPERATURE MIXED FLOW REACTOR AND THE HYDROTHERMAL SOLUTION KINETICS OF QUARTZ IN ELECTROLYTE SOLUTIONS

23. J. D. Morgan, R. J. Donahoe: WATER CHEMISTRY IN A DEEP SANDSTONE AQUIFER

24. R. G. Jonasson, J. McAndrew, R. H. McNaught: USE OF ICPSMS IN THE ANALYSIS OF GEOLOGICAL AND ENVIRONMENTAL SAMPLES FOR TOTAL PHOSPHURUS

WEDNESDAY, MAY 11, 1988

THURSDAY AM

ARCHEAN ENVIRONMENT, Maryland 1 +

J. Voiler, P. Lazoek, S. Jansen: MINERALIZATION THROUGH GEOLOGIC TIME

K. Zahnle, J. Kasting, A. McKay, N. Sleep: LARGE IMPACTS AND THE BIOLOGICAL EVENT HORIZON

D. R. Low: EARLY ARCHEAN ORGANISMS AND DEPOSITIONAL ENVIRONMENTS: THEIR RESPONSE TO LARGE METEORITE IMPACTS DURING LATE ACCRETION

N. J. Brude, D. R. Low: ENVIRONMENTAL CONTROL ON DIVERSE STROMATOLITE MORPHOLOGIES IN THE 5000 MSY-OLD PONGOLA SUPERGROUP, SOUTH AFRICA

10:00 COFFEE

R. Buck: LIFE ON THE EARLY ARCHEAN EARTH: THE WARRAWOONA EVIDENCE

A. H. Knoll: ECOLOGICAL COMPLEXITY ON THE EARTH

C. Klein: PRECAMBRIAN BANDED IRON FORMATIONS AS ENVIRONMENTAL INDICATORS

R. Parker: AN OXIDIZING ARCHEAN ATMOSPHERE?

PLATINUM GROUP ELEMENTS, Maryland 2

J. Page: THOUGHTS ON PERMISSIVE ENVIRONMENTS FOR PLATINUM GROUP ELEMENT DEPOSITS - CONVENTIONAL AND UNCONVENTIONAL

R. T. Seal, N. Rait: BEHAVIOR OF Pt AND Pd IN KILATHE IKE LAVA LAKE, HAWAII

S. J. Barnes: THE EFFECTS OF PARTIAL MELTING, CRYSTAL SEPARATION, FRACTIONATION AND SULFIDE SEGREGATION ON N, P, C, H AND CUPRAT RATIO: WITH EXAMPLES FROM NORWAY AND QUEBEC

5
Schedule of Presentations

THURSDAY, MAY 12, 1988

THURSDAY AM
9:40  D. Gottfried, P. J. Arscavage, N. Rain: FRACTIONATION OF PALLADIUM AND PLATINUM IN A MESOZOCIC DIABASE SHEET, GETTYSBURG BASIN, PA
10:00  R. F. J. Scoates, P. L. Schwann, O. F. Eknbrad: GEOCHEMICAL PATTERNS ASSOCIATED WITH PVC MINERALIZED UNITS OF THE FOX RIVER SILL, NORTHEASTERN MANITOBA, CANADA
10:20  COFFEE
11:00  G. E. M. Hall, J. C. Pelchat, C. R. Dunn: THERMODYNAMIC PROCEDURES FOR THE DETERMINATION OF Au, Pd AND Pt IN VEGETATION ASHES AND WATERS BY ICP-MASS SPECTROMETRY

LOW-TEMPERATURE GEOCHEMISTRY, Maryland 4.
J. S. Herman and H. E. Usdowski, Chairs
8:30  R. M. Price, J. S. Herman: GEOCHEMICAL INVESTIGATION OF SALT WATER INTRUSION IN A COASTAL CARBONATE AQUIFER: MALLORCA, SPAIN
8:50  J. S. Herman, K. J. Hoffer, M. M. Lorkasi: CRITICAL SUPERSATURATION AND CALCITE PRECIPITATION RATES IN TRAVERTINE-DEPOSITING STREAMS
9:30  D. Postma, R. Jacobsen: FORMATION AND SOLID SOLUTION IMPROVEMENT FOR CA-HYBRIDROXIDES IN ANOXIC BALTIC SEDIMENTS
10:10  COFFEE
10:40  P. K. Aggarwal, W.-A. Chiu: KINETICS OF KAOLINITE PRECIPITATION AT 60°C AND PH 6
11:00  T. Torgersen, H. Hiyagon, J. H. Reynolds, B. M. Kennedy, W. B. Clarke: ARAGON ACCUMULATION AND THE CRUSTAL Degasissu FLUX OF PAR IN THE GREAT ARTESIAN BASIN, AUSTRALIA
11:20  L. Van, D. A. Crearar, R. M. Key, R. F. Silvare: REACTIONS OF RIVERINE SUSPENDED SOLIDS WITH LOW CONCENTRATIONS OF NaCl: PROCESSES DURING THE EARLY STAGE OF ESTUARINE MIXING
11:40  Y. Tardy, O. Tournet: THERMODYNAMIC ACTIVITY OF WATER IN EARTH'S SURFACE REACTIONS

THURSDAY, MAY 12, 1988

DIAGNOSIS OF HUMIC SUBSTANCES, Salon C = D.
R. P. Philip and P. G. Hatcher, Chairs
8:30  E. C. Spiker, P. G. Hatcher, V. J. Comer: CHEMICAL AND CARBON ISOTOPIC CHANGES IN ORGANIC MATTER DURING EARLY DIagenesis
8:50  W. Orem: EARLY DIAGENESIS OF ORGANIC MATTER AND THE PRODUCTION OF DISSOLVED ORGANIC ACIDS IN PEATS OF THE OKEFENOKEE SWAMP
9:30  T. C. Hoering: HYDROUS PYROLYSIS OF THE ORGANIC MATTER IN HOLOCENE SEDIMENTS
9:50  J. W. Farrington, M. McCaffrey, J. Salveson: EARLY DIAGENESIS OF LIPIDS IN A PROTYPICAL SOURCE ROCK DEPOSITIONAL ENVIRONMENT; SURFACE SEDIMENTS OFF PEIU 15*A
10:10  COFFEE
10:40  R. L. Wershaw: HUMIC SUBSTANCES AS A SEPARATE PHASE IN SOIL AND THEIR GEOCHEMICAL PROPERTIES DURING DIAGENESIS
11:00  M. A. Wilson, A. M. Vassallo, J. M. Oude, A. G. Waters, G. P. Jones: INFLUENCE OF MANAGEMENT ON THE COMPOSITION OF ORGANIC MATTER IN A RED-BROWN EARTH AS SHOWN BY 13C-NUCLEAR MAGNETIC RESONANCE
11:20  L. Lopez, W. Melendez, J. L. Mogollon, C. Bifano, A. Rojas: CHARACTERIZATION OF HUMIC SUBSTANCES IN POLLUtED AND NON-POLLUTED STREAM SEDIMENTS

CRYSTAL CHEMISTRY, Salon E + F.
Petr Cerny, Chairman
8:30  M. A. Wise, P. Cerap: MICROLITE CHEMISTRY IN RARE-ELEMENT PEGMATITES FROM THE YELLOWKNIFE PEGMATITE FIELD, NORTHWEST TERRITORIES
8:50  E. Murad, U. Schvertmann: THE IRON OXIDE MINERALOGY OF SOME DEEP SEA MANGANESE NODULES
9:10  J. F. Bauchfeld, D. R. Veblen: FE-BEARING PLATELET DEFECTS IN METAMORPHIC RUTILE
9:30  P. B. Leavens, A. L. Rieisgord, R. Dietrich: CRYSTAL STRUCTURE OF A UNITE-SCHOOL TURMALINE
9:50  D. R. Veblen, M. J. Wiechmann: DOMAIN STRUCTURES IN LOW-SYMMETRY VESUVIANITES
10:10  COFFEE
10:40  C. Durand, R. Szynmski, N. Lombard: ANALYTICAL ELECTRON MICROSCOPY AS A COMPLEMENTARY TOOL TO INVESTIGATE CLAYS, AS MIXTURES OR MIXED LAYERS
11:00  G. D. Guthrie, D. R. Vebles: SIMPLIFIED HIGH-RESOLUTION TRANSMISSION ELECTRON MICROSCOPE IMAGES OF MIXED-LAYER ILLITE-MONTMORILLITE CLAYS
11:40  P. J. Heaney, D. R. Vebles: A TEM STUDY OF MICROSTRUCTURES AND CRYSTALLOGRAPHIC VARIATIONS IN AGATES

THURSDAY, MAY 12, 1988

COOSMOCenic RADIONUCLides.
Hunt, D. Lai, Chairman
8:30  H. E. Stues: V. M. Goldschmidt and the Origin of the Elements
9:00  J. Klein: COSMOGENIC NUCLIDES: IMPACT ON EARTH AND PLANETARY SCIENCES
9:30  K. Mari: STUDIES OF COSMIC RAY PRODUCED NUCLIDES BY STATIC MASS SPECTROMETRY
9:50  D. Elmore: PERFORMANCE OF ACCELERATOR MASS SPECTROMETER FOR MEASUREMENT OF COSMOGENIC ISOTOPES
10:10  COFFEE
10:40  P. E. Damon: A COMPARISON OF STATE-OF-THE-ART LOW LEVEL COUNTING TECHNIQUES WITH TANDEM ACCELERATOR MASS SPECTROMETER
11:00  F. Vlou, G. M. Riabeck: MEASUREMENTS OF 3He/3H BY ACCELERATOR MASS SPECTROMETER AND THEIR ENVIRONMENTAL APPLICATIONS
11:20  J. Travis: RESONANCE IONIZATION MASS SPECTROMETRY FOR ULTRASENSITIVE DETECTION OF ISOTOPES RATIOS
11:40  N. Thorne: DETECTION OF 81Kr AND ITS APPLICATIONS USING RESONANCE IONIZATION SPECTROSCOPY

THURSDAY PM

PALEOATMOSPHERES AND OCEANS, Maryland 1 + 2, J. C. G. Walker, Chairman
1:30  R. Kuhn: OBSERVATIONAL CONSTRAINTS ON THE CLIMATE HISTORY OF MARS
1:50  J. C. Gerard, D. Delcoeur, L. Francois: THE MAXIMUM ENTROPY DISSIPATION PRINCIPLE: APPLICATION TO THE PAINT YOUNG SUN PARADOX
2:10  E. C. Perry, Jr.: INTERPRETING THE ISOPTIC COMPOSITION OF CHEMICAL SEDIMENTS: WAS THE ANCIENT OCEAN HOT OR COLD?
3:10  COFFEE
3:30  A. C. Lasaga: O2 THROUGH THE PHANEROZOIC: A NEW TREATMENT OF ISOPTIC MODELS
3:50  Y. Kodnsey, B. Lai: RECONSTRUCTING DEPOSITIONAL AND DIAGENETIC ENVIRONMENTS BY ISOPTIC ANALYSIS OF OXYGEN IN PHOSPHATE
4:10  M. Kastner, R. E. Garrison, Y. Kodnsey, A. Shenno, C. E. Reimer: COUPLED CHANGES OF OXYGEN ISOTOPES IN PO43- AND CO32- IN APATITE WITH EMPHASIS ON THE MONTEREY FORMATION, CALIFORNIA
4:30  S. M. Savin, F. Woodraft: MODERN THERMALHEAL CIRCULATION AND SPECULATION ON THE ORIGIN OF THE ANTARCTIC ICESCAP
4:50  F. T. Manheim, C. M. Lane- Bentwick: PALEOCEANOGRAPHIC SIGNIFICANCE OF PACIFIC PERRAONIAN GSSES
THURSDAY, MAY 12, 1988

THURSDAY PM

PLATINUM GROUP ELEMENTS II
Maryland I, 3. G. Curtin and J. Sootes, Chairmen

1:30 A. Naldegg: VARIATIONS OF PGE IN CHROMITITES

2:00 D. Pakunte: PLATINUM-GROUP ELEMENTS ASSOCIATED WITH NICKEL-COPPER MINE SITES OCCURRENCES IN SOME MAGMATIC-ULTRAMAFIC INTRUSIONS OF THE APALACHIAN Orogen

2:30 M. L. Zientek, T. L. Fries, P. J. Lamorte, R. W. Vian: As, Bi, S, and Te GEOCHEMISTRY OF THE J-REEF, STILLWATER COMPLEX, MONTANA

2:50 O. Ekstrand: SULFUR IN MAGMATIC NICKEL AND PLATINUM DEPOSITS: INDICATOR OF SULFUR SOURCE AND PLATINUM ENRICHMENT

3:10 COFFEE

3:40 B. Orberger, G. Friedrich, E. Weisberger: PLATINUM-GROUP ELEMENT REDISTRIBUTION IN ULTRAMAFICS OF THE ACACO OPHIOLITE BLOCK BY HALOGEN-COMPLEXING?

4:00 G. Bascia, R. W. Kay, A. K. Ginnies: R. B. Lipski: PLATINUM-GROUP ELEMENT (PGE) GEOCHEMISTRY IN CHROMITITE DEPOSITS OF THE ACACO OPHIOLITE BLOCK, ZAMBEZIAN OPHIOLITE COMPLEX, PHILIPPINES

4:20 P. L. Lechler, C. Hsu: INTERPRETATION OF SOIL NITRITE-AMMONIUM RATIOS: A NEW PGE PROSPECTING TECHNIQUE

4:40 R. W. Cooper: Ne-Ni-Cu SULFIDE MINERALIZATION NEAR THE BASE OF THE STILLWATER COMPLEX, CHROME LAKE AREA, MONTANA

ENVIRONMENTAL GEOCHEMISTRY II
Maryland II, 4. J. O. Nriagu, Chairman

1:30 I. Kaplan, R. Kawamura, H. Sakugawa, S. S. Steinberg: THE ROLE OF ORGANIC SUBSTANCES IN THE FORMATION AND CONTROL OF ACID RAIN

1:50 D. R. Van Stempvoort, P. Fritz: VARIATIONS IN THE DITOPO COMPOSITION OF SULFATE IN THE PLASTIC LAKE WATERSHED, DORSET, ONTARIO, CANADA

2:10 B. R. Buseck, J. R. Anderson, D. A. Savory: CHEMISTRY OF INDIVIDUAL AIRBORNE PARTICLES FROM THE TROPOSPHERE OF URBAN AND REMOTE AREAS: AN OVERVIEW OF METHODS AND RESULTS

2:30 D. Schwartzman, L. Steff, M. Kasim, E. Kombe, S. Aung, J. Johnson Jr: LICENSING AS POTENTIAL QUANTITATIVE MONITORS OF AIRBORNE HEAVY METALS

2:50 Z. Snibbo, O. S. Zpecacza: Radium-226 AND URANIUM GEOCHEMISTRY IN GROUND WATER OF THE NEWARK BASIN, NEW JERSEY

3:10 COFFEE

3:30 B. Boiviken, R. T. Ootteen, T. Volden: REGIONAL VARIATIONS IN ACID SUSCEPTIBILITY OF SOILS

3:50 M. Kingston: APPLICATION OF DIFFUSE REFLECTANCE SPECTROSCOPY FOR MONITORING ACID RAIN DAMAGE TO BUILDING STONE

THURSDAY, MAY 12, 1988

THURSDAY PM

R-O. Livingston: ELECTROLYTE MODEL FOR PARTITIONING THE EFFECT OF WET AND DRY AIR DEPOSITION ON CARBONATE STONE

5:30 M. Ross, K. S. McGee, D. R. Ross: CHEMICAL AND MINERALOGICAL EFFECTS OF ACID DEPOSITION ON LIMESTONE AND MARBLE SAMPLES PLACED AT FOUR NAPAP WEATHER MONITORING SITES

5:40 J. D. Grace: VARIATION IN RADON ACTIVITY FROM CEMENT BASEMENTS FOR PIKE

INGENIUS OF HUMIC SUBSTANCES, Salon C-6, M. A. Wilson, Chairman

1:30 M. Van denbroeck, F. Behar: STRUCTURAL RELATIONSHIP BETWEEN MOLcular MODELS OF SEDIMENTARY KEROSIN AND HUMIC ACIDS

2:00 S. T. Lu, I. Kaplan: HYDROCARBON GENERATING POTENTIAL BY PYROLYSIS OF DIFFERENT HUMIC COALS

2:20 S. A. Stout, J. J. Boone: ANALYTICAL PYROLYSIS STUDIES OF FOSSIL ANGIOPODEROUS PLANT TISSUES FROM THE BRANDON LIGNITE, VICTORY, MONTANA

2:40 R. E. Botto, R. Hayatsu, K. A. Carrado, R. E. Wiseman: SOLID NMR OF NATURAL ASH AND COAL SAMPLES: MACERALS: A VIEW OF VITRINE METAMORPHISM

3:00 COFFEE

3:30 J. W. Larsen: THE MACROMOLECULAR GEOCHEMISTRY OF THE COALIFICATION PROCESS

4:00 G. C. Kopp, M. L. McCluskey, L. A. Harris: A MULTIVARIATE ANALYSIS OF COALIFICATION FACTORS

4:20 P. C. Lyons: COALIFICATION AND TECTONICS -- NORTHERN APPALACHIAN BASIN

METAMORPHISM -- METASOMATISM, Salon E-2, P. R. J. Tracy and J. K. Bohle, Chairman

1:30 G. F. Bebout, M. D. Barton: FLUID FLOW AND METASOMATISM IN A SUBDUCTION ZONE HYDROTHERMAL SYSTEM: CATALINA SCHIST TERRANE, CALIFORNIA

1:50 J. Hoefs, I. Stroockenbroek, H. Ahrend: ISOPE INVESTIGATIONS CO) OF LOWER CRUSTAL ROCKS FROM THE IVREA ZONE, ITALY: THE CALCITE--GRAPHITE THERMOMETER AND EVIDENCE FOR HETEROGENEOUS FLUID INTERACTIONS

2:10 S. R. Poulton, H. Ohmoto: DEVOLATILIZATION EQUILIBRIA IN DIAFRAGM-PIREX--PYRODISTITE BERING PELITES, WITH RESPECT TO MAGMA--PHELITE INTERACTION AND DEHYDRATION REACTIONS

2:30 R. J. Tracy, R. W. Sheets: HGS-- RICH FLUIDS IN HIGH-GRADE SULFIDIC SCHISTS: EVIDENCE FROM FLUID INCLUSIONS AND FROM FLUID CALCULATIONS BASED ON METAMORPHIC EQUILIBRIA

2:50 J. K. Bohle: "DIVERGENT" METASOMATIC REACTIONS WITH A "COMMON" FLUID

3:10 P. B. Leavens: PROTORE AND METAMORPHISM OF THE FRANKLIN AND STERLING HILL (NEW JERSEY) Zr-Fe-Mn ORE DEPOSITS

THURSDAY, MAY 12, 1988

COSMOGENIC RADIONUCLIDES, Hunt, J. Klein, Chairman

1:30 K. O'Brien, A. De La Zerda Lerner: PRODUCTION RATES AND INVENTORY OF COSMOGENIC ISOTOPES FORMED IN THE EARTH'S ATMOSPHERE

1:50 J. M. Edmond: THE GEOCHEMICAL CYCLE OF 54Fe

2:10 P. E. Damon, S. Cheng: GEOMAGNETIC MODULATION OF COSMOGENIC 36Cl PRODUCTION: A COMPONENT OF THE GEOCHEMICAL FIELD WITH A 4,000 YEAR PERIOD

2:30 F. M. Phillips: APPLICATIONS OF 36Cl AND 129I TO HYDROLOGY


3:10 COFFEE

3:40 N. Valette-Silver, F. Tera, M. Pavich, J. Klein, R. Middleton: 10Be IN HYDROTHERMAL SYSTEMS AND NATURAL WATERS

4:00 M. J. Pavich: 10Be IN SAPROLITE AND SOIL

4:20 W. R. Osterkamp: BERYLLIUM-10 AS A NATURAL TRACER OF WATER MOVEMENT IN THE UNSATURATED ZONE, SOUTHERN HIGH PLAINS OF TEXAS


FRIDAY, MAY 13, 1988

FRIDAY AM

11TH SYMPOSIUM ON GEOCHEMICAL CYCLES, Maryland I, 2. B. Gregor, Chairman

8:30 R. M. Garrels: PRECAMBRIAN GEOCHEMISTRY

9:00 R. Siever: EVOLUTION OF THE SILICA CYCLE

9:30 D. E. Canfield: RATES OF SULFUR REDUCTION AND OXIDATION RESPIRATION IN MARINE SEDMENTS: IMPLICATIONS FOR ORGANIC CARBON PRESERVATION IN EUXINIC ENVIRONMENTS

10:00 COFFEE

10:30 H. D. Holland, N. Das, A. Weinberg: THE EVOLUTION OF SEAWATER DURING THE PHANEROZOIC


11:30 J. M. Hill, R. Conkright, Jr.: BIOGEOCHEMICAL SEDIMENTARY RESERVOIRS OF CHESAPEAKE BAY

MINERAL DEPOSITS, Maryland 3, J. Stephen Huesner, Chairman

8:30 Y. Zheng, Z. Zhang, W. Shen: PHYSIOGEOCHEMICAL CONDITION OF MINERALIZATION FORMATION IN THE NO. 6217 URANIUM DEPOSIT AND SIGNIFICANCE OF THE REDIATION
Schedule of Presentations
FRIDAY, MAY 13, 1988

FRIDAY AM
8:50 R. P. Philip, J.-N. Ouang, C. A. Lewis: ADVANCES IN MASS SPECTROMETRIC TECHNIQUES APPLIED TO PETROLEUM GEOCHEMISTRY
9:00 S. C. Brassell: BIOLOGICAL MARKERS AS ENVIRONMENTAL INDICATORS: RECENT SEDIMENTS AS A KEY TO PRECURSOR/PRODUCT RELATIONSHIPS AND DIAGENETIC PATHWAYS
9:50 G. J. Van Berkel, G. L. Glish, S. A. McLuckey: NEW MASS SPECTROMETRIC APPROACHES TO GEOPHYSICALLY ANALYSIS
10:10 COFFEE
10:40 N. E. Fegan, D. T. Long, W. B. Lyons, C. M. Hines, R. Less: TRACE METAL ENRICHMENTS IN SASKATCHEWAN ENVIRONMENTS
11:00 M. Toke: DEPOSITION OF METALS FROM THE JOMBO HILL GEOTHERMAL FIELD, EAST PROVINCE, KENYA
11:20 J. S. Kuehl, M. J. K. Fohr: CHEMISTRY AND ORIGIN OF MINERAL FORMATION IN THE FRANKLIN MINE COMPLEX, CA
11:40 S. Yasuhisa: IMPORTANCE OF TUNNEL-STRAIN FRACTURES FOR THE TRANSPORT OF TUNGSTEN IN HYDROTHERMAL SOLUTION: CASE STUDIES ON MAJOR JAPANESE TUNGSTEN DEPOSITS
ENVIRONMENTAL GEOCHEMISTRY
11:50 M. E. F. K. Fohr: ENVIRONMENTAL GEOCHEMISTRY OF ARSENIC IN THE FAIRBANKS, ALASKA AREA
12:10 J. A. Davis, C. C. Fuller, R. G. Claypool-Frey: KINETICS OF TRACE ELEMENT SOLVENT AND SURFACE REORGANIZATION PROCESSES AT MINERAL-WATER INTERFACES
12:30 D. B. Hawkins: ENVIRONMENTAL GEOCHEMISTRY OF ARSENIC IN THE FAIRBANKS, ALASKA AREA
12:50 J. A. Davis, C. C. Fuller, R. G. Claypool-Frey: KINETICS OF TRACE ELEMENT SOLVENT AND SURFACE REORGANIZATION PROCESSES AT MINERAL-WATER INTERFACES
13:10 COFFEE
14:00 A. White: OXIDATION-REDUCTION REACTIONS AT THE AQUEOUS-SOLID INTERFACES OF IRON AND TITANIUM OXIDES
14:20 M. Machesky, P. Jacobs: CALORIMETRIC ACID-BASE TITRATIONS OF AQUEOUS ALUMINA SUSPENSIONS
14:40 S. Nakashima, H. Kitas: DIFFUSION AND FIXATION OF A MOBILE RADIONUCLIDE IN SEDIMENTS
ORGANIC GEOCHEMISTRY, Salon C + D, P. G. Hatcher, Chairman
FRIDAY AM
11:40 H. O. A. Meyer: MANTEL METABASOMATISM OF XENOLITHS FROM KIMBERLITE IN MNAS GERALIS, BRAZIL
COSMOGENIC RADIONUCLIDES, Hunt, G. Raabeck, Chairman
8:30 J. Beer: Be-10 IN POLAR ICE: STATUS OF THE ART
9:10 W. S. Broekert: IMPLICATIONS TO CLIMATE THEORY OF THE RADIOCLOCK CHRONOLOGY OF THE LAST DEGLACIAL
9:30 D. Lar: COSMOGENIC TRACERS IN THE OCEANS: APPLICATIONS TO NUTRIENT CYCLES AND LARGE SCALE CIRCULATION
9:50 T-L. Ku: MARINE GEOCHRONOLOGY WITH BERYLLIUM-10
10:10 COFFEE
10:40 S. Amari, M. Ozima: EXTRATERRESTRIAL ORIGIN NOBLE GASES IN SEDIMENTARY ENVIRONMENTS
11:00 G. M. Raabeck, F. Yoon, D. Bouret: APPLICATIONS OF 10Be MEASUREMENTS IN MISCELLANEOUS ENVIRONMENTS
11:20 P. Showna, R. Maddison, J. Klein: RADIONUCLIC PRODUCTION OF 10Be and 26Al IN URANIUM AND THORIUM ORES; IMPLICATIONS FOR STUDYING TERRITORIAL SAMPLES CONTAINING LOW LEVELS OF 10Be and 26Al
FRIDAY PM
11TH SYMPOSIUM ON GEOCHEMICAL CYCLES, Maryland 1 + 2, B. Gregor, Chairman
1:30 L. Yan, R. M. Key, R. F. Sturk: THE ROLE OF ESTUARIES IN THE GEOCHEMICAL CYCLE: A STUDY OF SELECTED METALS AND ORGANIC CARBON IN NEW JERSEY ESTUARIES
2:00 Y. Suzuki, E. Tanoue, Y. Sugimura: NEW ASSUMPTION ON THE ISOTOPE GEOCHEMICAL CYCLE OF CARBON AND NITROGEN
3:00 COFFEE
3:30 L. R. Kemp, E. J. Barron: COUPLED MODELS OF GEOCHEMICAL CYCLES AND CLIMATE
4:00 G. P. Landic, R. A. Berner: THE COMPOSITION OF ANCIENT AREAS OF GAY RUBY INCLUSIONS IN FOSSIL AMBER
HYDROThERMAl SOLUTION CHEMISTRY, Maryland 3, S. A. Wood, Chairman
1:30 S. A. Wood, D. Vlasopoulos: THE HYDROTHERMAL SOLUBILITY OF TUNGSTEN OXIDES AT 50°C AND 1 KBAR IN HCl, NaCl, NaOH AND PURE WATER SOLUTIONS
1:50 P. Krahnstoeck, S. A. Wood: THE SOLUBILITY OF CuO IN HYDROTHERMAL CHLORIDE SOLUTIONS FROM 150 TO 250°C
2:10 S. A. Wood, A. Macel: THE SOLUBILITY OF PLATINUM AS BISULFIDE AND HYDROXIDE COMPLEXES AT 25°C
Schedule of Presentations

FRIDAY, MAY 13, 1988

FRIDAY PM
HYDROTHERMAL SOLUTION
CHEMISTRY: Maryland 3
S. A. Wood, Chairman
2:30 D. Vlassopoulos, S. A. Wood, A. Mucci: THE SOLUBILITY & SPECIATION OF GOLD IN AQUEOUS SOLUTIONS CONTAINING ORGANIC LIGANDS AT 25°C
2:50 J-M. Chow: THE EFFECT OF Au-Ag ALLOYING ON THE Ag-AgL BUFFER
3:10 COFFEE
3:40 C. H. Gammons, D. S. Sheesberger, H. L. Barnes: ROLE OF ELECTRON IN THE HYDROTHERMAL TRANSPORT AND DEPOSITION OF GOLD AND SILVER
4:00 M. M. Yang, D. A. Cerrar, D. E. Irish: RAMAN SPECTROSCOPIC STUDIES OF HYDROTHERMAL SOLUTIONS
4:20 S. Nakashima, J-R. Dismar: KINETICS OF U DEPOSITION BY ORGANIC MATTER UNDER HYDROTHERMAL OR DIAGENETIC CONDITIONS
4:40 R. Hellmann, D. A. Cerrar, R. Zhang: DISSOLUTION STOICHIOMETRY OF ALITE DISINTEGRATING UNDER HYDROTHERMAL CONDITIONS
ENVIROMENTAL GEOCHEMISTRY
II: Maryland 4, J. G. Niargu, Chairman
1:50 J. F. Barker: THE BIODEGRADATION OF MONOAROMATIC HYDROCARBONS IN GROUNDWATER: A COMPARISON OF LABORATORY AND FIELD OBSERVATIONS
2:10 A. J. Ramirez, A. W. Rose: HUMAN INFLUENCE ON THE PLUVIAL TRANSPORT OF TOTAL ORGANIC CARBON, NITROGEN AND PHOSPHORUS
2:30 M. Magaritz, D. Rosen: ON THE SCALE OF CHEMICAL HETERGENEITY OF GROUNDWATER
2:50 J. L. Rao, Y. Li: HYDROGEOCHEMICAL CHARACTERISTICS OF A SMALL WATERSHED IN SOUTHERN CHINA
3:10 COFFEE
3:40 W. C. Ishpording, G. C. Flowers: MAN-INDUCED DISSOLUTION OF SILICICLASTIC DEPOSITS BY STRONG ALKALI ATTACK

FRIDAY, MAY 13, 1988

4:00 J. Wang, G. C. Ulmer, D. E. Grandstaff, J. J. Friel: BASALTIC RESIDUOUS GLASSES: AN OLD AND A NEW PROBLEM
4:20 B. Bolviken, R. Nilsen, R. T. Ottesen: COMPARISON OF GEOCHEMICAL AND EPIDEMIOLOGICAL DATA IN NORWAY
4:40 J. O. Niargu: THE SILENT EPIDEMIC: ENVIRONMENTAL METAL POISONING
ORGANIC GEOCHEMISTRY. II
Salon C + D. R. P. Philp, Chairman
1:30 C. L. Thompson-Rizer: AMORPHOUS KEROGENS
1:50 P. R. Buseck, B. J. Huang, B. Miner: STRUCTURAL VARIATIONS IN PROVINCIAL KEROGEN AS SEEN BY TRANSMISSION ELECTRON MICROSCOPY
2:10 F. Gerling, E. Faber, W. Stahl: GENETIC CHARACTER OF SHALLOW GASES AND THEIR RELATIONSHIPS TO DEEP RESERVOIR GASES AND SOURCE ROCKS
2:30 A. Jeffrey, I. Kaplan, R. Poreda, H. Craig: THE ORIGIN OF NATURAL GASES FROM CONVERGENT PLATE MARGINS
2:50 P. Shen, Y. Xu: STUDY ON THE STABLE ISOTOPIC COMPOSITION OF THE GASEOUS HYDROCARBON FROM TERRESTRIAL ENVIRONMENTS IN CHINA
3:30 J. B. Roen: KEROGEN IN DEVONIAN-MISSISSIPPIAN BLACK SHALES, APPALACHIAN BASIN

MANTLE MINERALOGY AND PETROLOGY. II
Salon E + F. D. Egger, Chairman
1:30 V. J. M. Salter, N. Shimizu: HFSE DEPLETIONS IN PERIDOTITES, LOCAL VARIATIONS AND A POSSIBLE ORIGIN
1:50 J. K. Meen: MINERAL ASSEMBLAGES IN VEINS FORMED BY OLIVINE-PERIDOTITE REACTION. IMPLICATIONS FOR MELTING OF SCUM

FRIDAY, MAY 13, 1988

2:10 J. D. Pastier, B. J. Wasamaker: ANALYSIS OF EXPERIMENTALLY REEQUILIBRATED FLUID INCLUSIONS IN Mantle Olivine BY LASER RAMAN MICROPROBE AND MICROTERMOGRAPHY
2:30 J. M. Brenan, E. B. Watson: WETTING PROPERTIES OF POSSIBLE MANTEL METASOMATIC FLUIDS
2:50 T. More: FAST AND DELAYED CHEMICAL REACTIONS IN THE GARNET LHERZOLITE MINERALOGY - AN EXPERIMENTAL STUDY
3:10 COFFEE
4:00 D. Elston, N. Shimizu, J. F. Casey, S. C. Komor: ION PROBE ANALYSIS OF CLINOPYROXENES FROM CUMULATE ROCKS OF THE BAY OF ISLANDS OPHOLITIC: EVIDENCE FOR VERY DEPLETED PRIMORDIAL MAGMAS
4:20 C. M. Scarfs, E. Takahashi: MELTING OF PERIDOTITE TO 25 GPa WITH COMMENTS ON THE EARLY HISTORY OF THE MANTLE
4:40 E. Takahashi: COMPOSITIONAL HETEROGENEITY IN BASALT MAGMA SOURCE REGIONS IN THE UPPER MANTLE

COSMOGENIC RADIONUCLIDES. Hunt, G. Herzog, Chairman
1:30 G. F. Herzog: SPHERULES, TEKTITES, AND MARTIAN METEORITES
1:50 K. Nishizumi: COSMOGENIC NUCLIDES IN LUNAR AND METEORITE SAMPLES
2:10 D. M. Shu, M. D. Higgins, M. G. Truscott, T. A. Middleton: BORON IN CHONDRITE METEORITES
2:30 J. Morris, F. Tera: SEDIMENT RECYCLING IN VOLCANIC ARCS: EVIDENCE FROM 138Ce AND 10Be/10Be RATIOS IN ARC LAVAS
2:50 M. C. Monaghan: THE ORIGIN OF 10Be IN ISLAND-ARC VOLCANICS
3:30 D. Lab: SUMMARY AND CONCLUSIONS

Advertisements

SEDIMENTOLOGIST, Wright State University. The Department of Geological Sciences invites applications for a tenure-track position at the assistant professor level in clastic sedimentology, beginning September 1988. The successful candidate will have Ph.D. in hand and will be expected to teach at the undergraduate and graduate levels and to participate in the Department's M.S. Program. The Department is an active one with 12 faculty. It has an emphasis on professional practice, but maintains a firm commitment to basic research. Send a letter of application, curriculum vitae and the names of three referees to Dr Paul Pushkar, Chairman, Search Committee, Department of Geological Sciences, Wright State University, Dayton, OH 45435.

Wright State University is an affirmative action/equal opportunity employer. Closing date for applications is 29 April 1988.
10 PERCENT DISCOUNT
ON ORDERS OF 10 OR MORE

75th ANNIVERSARY VOLUME
Economic Geology
1905-1980

The 75th Anniversary Volume is an outstanding clothbound volume. 964 pages and contains review papers by specialists in the various fields:

Introduction ........................................... P.K. Sims and B.J. Skirnar
Ore-forming Processes in Geologic History ....................... Charles Meyr
The Relationship of Mineral Deposits to Early Crustal Evolution ........................................... C.R. Ar throesser
Geology and Concepts of Genesis of Important Types of Uranium Deposits ................................... J.T. Nash, H.C. Granger, and S.S. Adams
Gold and Uranium in Quartz-Pebei Conglomerates .............. D.A. Pretious
Sediment-Hosted Stratiform Deposits of Copper, Lead, and Zinc ........................................................................ L.B. Gurlashef and N. Williams
An Overview of Sandstone-Lead Deposits and their Relationship to .................................................. Red-Bed Copper and Carbonate-Hosted Lead-Zinc Deposits .................................................. A. Bopylkie and D.F. Sangster
Prophecy Copper Deposits:
Part II. Hydrothermal Alteration and Mineralization ............... R.H. White and A.A. Bookstrom
Skarn Deposits ........................................... M.T. Einaudi, L.D. Meinert, and R.J. Newberry
Active Geothermal Systems and Hydrothermal Ore Deposits ........................................... D.E. White
Fluid Flow and Genesis of Hydrothermal Ore Deposits ........... L.M. Cathles
The Granulite Series and Mineralization ........................................... Shunsu Ichihara
Nickel Sulfide Deposits: Classification, Composition, and Genesis ........................................... A.J. Nardetti
The Character and Economic Significance of Precambrian Paleowatering and ........................................... Erosion Surface of Southern Africa ........................................... Andrew Bultin and Noel Tyler
Nickelliferous Latite Deposits ........................................... J. Paul Gokfrit
Ferroanambers and Nodules of the Deep Sea ......................... C. Ross Heath
Geology, Geologists, and Mineral Exploration .......................... E.L. Onle and R.L. Bales
Electrical Methods in Mining Geophysics ............................. G.W. Hohm on and S.H. Ward
Gravity and Magnetic Methods in Mineral Exploration ............. Philip M. Wright
Mapping and in Uranium Exploration ................................... Stanley H. Ward
Well Logging and Borehole Geophysics in Mineral Exploration ........................................... W.E. Glenn and G.W. Holmann
Seismic Methods in Mineral Exploration .............................. Philip M. Wright
The Environment of Exploration: Economic, Organizational, and Social Constraints ................. G.G. Snow and B.W. Mackenzie
The Appraisal of Mineral Resources ........................................... Devere Harris and F.P. Agerberg
Physical Factors that could Restrict Mineral Supply .......... J.H. Dehnsy, Jr., and G. Singer

PUBLICATION PRICE. Payment must be prepaid
USA, Canada, Mexico, Central America ................................ $30.00
All other Foreign Countries ........................................... $36.00
Airmail is OPTIONAL at an additional rate. Write this office for the airmail rate to your country.

MASTERCARD □ VISA □ AMERICAN EXPRESS □

CARD # ........................................... Exp. Date ........................

Signature ...........................................

Make checks payable (in US Dollars only) to: PUBCO. 75th Anniversary Volume. 

Number of copies ordered: 

Copies .............. $ .............. 

Airmail, optional: $ .............. 

Less 10% Discount on orders of 10 or more. $ .............. 

Total Amount Enclosed .............. $ .............. 

Mail to: PUBCO, 75th Anniversary Volume
P.O. Box 637 
University of Texas at El Paso 
El Paso, Texas 79968-0637 USA 

This volume is not included in your subscription to Economic Geology or your membership in the Society of Economic Geologists.
**Hotel Reservation**  
**V. M. Goldschmidt Conference**  
**May 11–13, 1988**

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone no. (area code)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address (street or box no.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(city) (state) (zip code) (country)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For arrival on: (day) date (day) date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depart on: (day) date (day) date</td>
</tr>
</tbody>
</table>

Please reserve ___ no. of rooms for ___ people: Room rate $96.32

State preference — Room with ( ) two double beds ( ) one king size bed

Name(s) of person(s) sharing accommodations ________________________

<table>
<thead>
<tr>
<th>Carte Blanche</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Express</td>
</tr>
<tr>
<td>MasterCard (Please include interbank no. below card no.)</td>
</tr>
<tr>
<td>Check or money order AMOUNT $ ____________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Card no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expiration date</td>
</tr>
</tbody>
</table>

I authorize Marriott’s Hunt Valley Inn to charge my account for one night’s deposit and all applicable taxes. (This holds your reservation after 6:00 p.m. on day of arrival.)

Signature ________________________

*Check out time is noon. Rooms may not be available for check-in until after 4:00 p.m.*

*Rooms not reserved before April 1, 1988 will be released for sale to the general public.*

Mail this form directly to:  
**Hunt Valley Inn**  
245 Shawan Road  
Hunt Valley, MD 21031-1099

---

**REGISTRATION FEES:**  
Member of sponsoring societies (please check)  
- AEG  
- EAG  
- GS  
- IAGC  
- MSA  
- SEGH  
- Member $100 $ ____________  
- Nonmember $120 $ ____________  
- Student $50 $ ____________  
- Guest $30 $ ____________  
- Banquet number attending at $27 $ ____________  
- Tour or Field Trip $ ____________

TOTAL ENCLODED: $ ____________

Payment by:  
- Check or Money Order (U.S. Dollars)  
- VISA  
- MasterCard

Cardholder’s name (please print) ________________________

Card number ________________________

Expiration date: mo/yr.  
- I will be driving  
- I will be flying

Arrival date ________________________ Time ________________________

To plan for adequate room size, please check those technical sessions which you expect to attend:  

- [ ] contributed  
- [ ] symposium  
- [ ] atmospheric chemistry  
- [ ] geochemical cycles  
- [ ] cosmochemistry  
- [ ] paleoceanography  
- [ ] environmental geochemistry  
- [ ] organic geochemistry  
- [ ] exploration geochemistry  
- [ ] ore-forming processes  
- [ ] fossil fuels  
- [ ] cosmochemical processes  
- [ ] environmental geochronology  
- [ ] geochronology  
- [ ] radiocarbon dating  
- [ ] marine geochemistry  
- [ ] marine geochronology  
- [ ] meteorites & tektites  
- [ ] mineral deposits  
- [ ] mineralogy & crystallography  
- [ ] mantle petrology  
- [ ] geochronology  
- [ ] material science  
- [ ] metallochemistry  
- [ ] metasomatism  
- [ ] petrology, igneous  
- [ ] petrology, metamorphic  
- [ ] petrology, sedimentary  
- [ ] petrology, experimental  
- [ ] stable isotope geochemistry  
- [ ] trace element geochemistry  

Mail this form to:  
**Donna Ricketts, Conference Coordinator**  
409 Keller Building  
The Pennsylvania State University  
University Park, PA 16802
THE GEOCHEMICAL SOCIETY

Special Publication No. 1

MAGMATIC PROCESSES:
PHYSICOCHEMICAL PRINCIPLES

(Editor B. O. Mysen)

500 pages; typeset; 2-column format; hard-bound; publication, 1987

This volume represents a collection of 30 papers given at Kona, Hawaii,
June 17-23, 1986 in honor of the retirement on July 1, 1986 of

DR. HATTEN S. YODER
Director of the Geophysical Laboratory

The book is divided into five parts:

Part A
STRUCTURE AND PROPERTIES OF SOURCE REGIONS

Part B
UPPER MANTLE MELTING AND FRACTIONATION

Part C
CONTINENTAL MARGIN PROCESSES

Part D
MAGMA ASCENT, EMPLACEMENT AND ERUPTION

Part E
CRUSTAL FELSIC MAGMA PROPERTIES AND PROCESSES

Price: $65.00 ($45.00 to members of The Geochemical Society)
Prepayment (which includes all postage and handling charges) is required.

Order from: THE GEOCHEMICAL SOCIETY
204 Deike Bldg., Pennsylvania State University,
University Park, PA 16802 U.S.A.

THIS BOOK IS ESSENTIAL TO EVERY MODERN PETROLOGIST AND
GRADUATE STUDENT

WRIGHT STATE

Wright State University
Dayton, Ohio 45435

Department of
Geological Sciences

Nonprofit Organization
U.S. Postage Paid
Permit No. 551
Dayton, Ohio 45401