

**November 30, 2000**

**VGP Section Newsletter #2**

As we are now into the busy run-up to the end of the year, here is VGP newsletter number two, to inform you of recent developments and remind you of key events in the coming weeks. VGP members wishing to submit items or announcements for inclusion in future issues may contact Sarah Fagents at [fagents@asu.edu](mailto:fagents@asu.edu).

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**(1) BOWEN AWARD RECIPIENT**

The 2000-2001 recipient of the VGP Bowen Award is Francis Albarede, Ecole Normale Superieure de Lyon, France. The award ceremony will be early evening (see program for exact time but ~6:00 P.M, Saturday) in Moscone Center, Room 133). Please attend and congratulate Francis. As last year, light snacks will be provided by AGU with beer supplied by GERM.

Also, as announced in the Oct 24 EOS, Francis assumes editorship of JGR Solid Earth on Jan 1, 2001.

**(2) NEW VGP WEBMASTER NEEDED** (as soon as possible!)

Mark Ghiorso has resigned as VGP Webmaster. We thank Mark for initiating our WEB site and for providing a well organized base for future enhancements and expansion. AGU section Web sites are going to become increasingly important, and we seek a knowledgeable volunteer to take over as Webmaster as soon as possible. There will be a meeting of section Webmasters at the fall AGU meeting and this meeting can introduce you to what the various sections are doing and planning. If you are interested in this position please contact Fred as soon as possible ([fafrey@mit.edu](mailto:fafrey@mit.edu)).

**(3) ACS TECHNOLOGY MILESTONES**

John Dickey has called our attention to an American Chemical Society Project called "Technology Milestones". The purpose is to recognize a "125 years of innovative breakthroughs in chemistry and chemical engineering that have transformed our world". Certainly, the field of Geochemistry has contributed and this is an opportunity for us to "wave our flag", since the ACS will publicize this list. Nominations can be submitted at the ACS Web site:  
<http://www.acs.org/milestones/>.

The deadline for nominations is December 1, 2000, so you must act now.

#### **(4) FIGURES IN AGU ABSTRACTS**

Mike Rhodes (Univ. Massachusetts) expressed concern about the fact that the Fall 2000 electronic abstract submission no longer allows for inclusion of illustrations. Graphics can be quite useful in abstracts but have been used only by a few VGP members in the past. AGU decided against the use of illustrations because tight publication schedules don't allow for dealing with diverse sources of illustration files. Instead, AGU now provides hot links to URLs in the on-line version of the abstract volume. This allows for a direct on-line access to backup information and illustrations. The potential of such on-line resources goes well beyond the limits of an abstract volume in terms of color usage, space, and other advantages of the electronic medium. This, of course, is not available when reading through the abstract volume in the conference hall. Is this a satisfactory compromise? We seek your opinions - please reply to H. Staudigel, Chair of VGP Publications Committee > (hstaudigel@ucsd.edu).

#### **(5) GERM MEETING ANNOUNCEMENT**

The next Geochemical Earth Reference Model meeting will be held in La Jolla (CA) on March 6-9, 2001. Find details about the meeting and register on line: <http://earthref.org/GERMworkshop.htm>

Important deadlines for GERM 2001:

Saturday 16 Dec. 5 p.m. GERM beer at the VGP reception  
January 15, 2001  
Deadline for abstracts and final registration

There will be some financial assistance for graduate students.

#### **(6) EDUCATION/OUTREACH NEWS**

Once again this year, we are organizing the award of the VGP outstanding student presentation awards. This year the judging will be organized by members of the VGP education and outreach committee (rather than by one person). As in past years, judging will be done by the chair of the session, together with one or two additional judges. So, expect a call.

Last year we began what we hope will be a tradition of having a small reception for VGP undergraduates who are attending the meeting. That reception will be just prior to the VGP reception on Saturday December 16th. For details, contact Roger Nielsen at [rnielsen@oce.orst.edu](mailto:rnielsen@oce.orst.edu).

#### **(7) REPORT ON VOLCANOLOGY AND TECTONICS SHORT COURSE, EASTERN SLOVAKIA, JUNE 2000.**

During the week of 25th June 2000, a short course in volcanology and tectonics was held in eastern Slovakia under joint sponsorship of the Center for Volcanology, University of Oregon, the Department of Geology and Mineralogy, Technical University, Kosice, Slovakia, and the Geological Survey of the Slovak Republic. The course, organized by Branislav Zec and Gordon Goles, made use of the facilities of the Technical University's field station at Herl'any, in a pleasant rural setting about 20 km ENE of Kosice. Lectures and discussions were intense and wide-ranging. Topics covered included an overview of recent studies of the Western Carpathian arc, discussion of various analytical techniques for study of volcanic and plutonic rocks and of clastic sediments derived in part from such rocks, and (for comparison with the Carpathians) case studies of New Zealand, the Cascades arc of the Pacific Northwest, and the Skaergaard Intrusion. Participants comprised in sub-equal numbers university faculty and senior scientists, and students in M.Sc. and Ph.D. programs. On Friday, 30th June, we examined parts of the Miocene volcanic complexes of Slanske vrchy, Vihorlatske vrchy, and Zemplinske vrchy ("vrchy" = "mountains"). Our field trip ended very enjoyably with wine-tasting in Mala Trna, a village in the Slovak part of the Tokay wine district.

All concerned agreed that the short course was successful, and of exceptional value to all participants. This participant, in particular, welcomed very much the opportunity to learn more about the complex Neogene tectonic setting of the Western Carpathian arc, and about results of recent quite detailed studies of volcanic complexes in the Slovak part of the arc. Dr. Zec and I hope to organize a similar short course to be held during summer of 2002, and would welcome participation by other volcanologists and tectonicists.

Gordon G. Goles  
Professor of Chemistry and Geology  
University of Oregon  
goles@oregon.uoregon.edu

### **(8) AGU 2001 SPRING MEETING NEWS FROM THE PROGRAM COMMITTEE**

The AGU 2001 Spring Program Committee has approved these themes for the meeting:

- Coastal Processes and Estuaries
- Mathematical Geosciences
- Biological & Geochemical Tracers in Geoscience
- Science for Decision Making(ers)
- Remote Sensing
- Land Use Change and Sustainable Development
- Climate Reconstruction
- Physics and Chemistry of Earth Materials
- Natural Hazards
- Solid Earth Structure and Evolution

VGP will sponsor the following Special Sessions:

*V01 - Continental Weathering and Ocean Chemistry (Joint With GS, H, OS)*

Recent studies link chemical weathering on the continents to changes in global ocean chemistry. This session will focus on the specific linkages between chemical weathering on the continents as recorded by fluvial, estuarine and sediment geochemical processes and the chemistry of the oceans. Contributions that focus on spatial and temporal chemical variations in river water and ground water chemistry, estuarine chemistry, ocean chemistry as well as experimental studies of mineral/rock weathering are solicited. The goal is a multidisciplinary session that brings together experimental and aqueous geochemistry, sedimentary and isotopic-geochemical aspects of these and related topics.

Conveners: Robyn E. Hannigan, Arkansas State University, Department of Chemistry and Program for Environmental Science, AR, 72467, Tel: +1-870-972-3086, Fax: +1-870-972-3089, E-Mail: hannigan@navajo.astate.edu; Asish R. Basu, University of Rochester, Department of Earth and Environmental Sciences, Rochester, NY, 14627, Tel:

+1-716-275-2413, Fax: +1-716-244-5689, E-Mail:  
abasu@earth.rochester.edu;

*V02 - New Views of Mars Volcanism: Extrusive, Explosive, and Possible Influences of H<sub>2</sub>O (Joint With P)*

Before the recent Mars missions, volcanic activity on Mars was thought to be primarily "old" (restricted to more than 1.3 b.y. ago) and mafic. Although a range of eruption styles seemed likely, available topographic data poorly constrained the existing models. Today, analyses of Pathfinder and MGS data suggest a range of lava compositions, and provide topographic and image evidence for more extensive volcanism -- some of it quite recent (possibly even current). This session is intended to explore our changing views of the thermal and chemical evolution of Mars by examining new evidence for volcanic activity on Mars throughout its geologic history. We will provide a forum for discussing compositional data, proposed eruption styles and mechanisms, and evidence for recent volcanic activity.

Conveners: Susan Sakimoto, NASA/GSFC, UMBC, Code 921, Greenbelt, MD, 20771, Tel: +1-301-614-6470, Fax: +1-301-614-6522, E-Mail: sakimoto@denali.gsfc.nasa.gov; Tracy Gregg, University at Buffalo, Department of Geology and Geophysics, 876 Nat. Science and Mathematics Complex, Buffalo, NY, 14260-3050, Tel: +1-716-645-6800 ext. 2463, Fax: +1-716-636-4827, E-Mail: Tgregg@nsm.buffalo.edu; Lori Glaze, Proxemy Research, 20528 Farcroft Lane, Laytonsville, MD, 20882, Tel: +1-301-313-0026, Fax: +1-301-313-0021, E-Mail: lori@proxemy.com;

*V03 - Advances in Subsurface Sampling and Borehole Measurement*

During the last several years the technology for acquiring subsurface samples and for characterizing and monitoring subsurface conditions has undergone a number of significant advances. For example, these new technologies have enabled us to expand the temporal spectrum of observations with real-time, continuous monitoring of borehole conditions in the short term and greatly extended shallow water sediment records over the longer term. We can now access and recover samples from extreme environments to depths of 6 km and conduct geophysical surveys at substantially higher temperatures than were possible even a decade ago. These technologies have not only made it possible to greatly expand the breadth of our analysis of regional and planetary processes they have also increased our awareness of the ability of specialized technologies to provide us with access to environments that were heretofore inaccessible.

This special session invites submissions on state-of-the-art technologies for borehole sampling, measurement, and monitoring as well as papers by those whose research programs require significant advances of currently available technology in order to monitor or sample challenging subsurface environments.

Conveners: Donald Thomas, University of Hawaii, DOSECC and Department of Geophysics, 2525 Correa Road, Honolulu, HI, 96822, Tel: +1-808-956-6482, Fax: +1-808-956-3188, E-Mail: dthomas@soest.hawaii.edu; Allan R. Sattler, Sandia National Laboratories, PO Box 5800, Albuquerque, NM, 87185-1033, Tel: +1-505-844-1019; David Goldberg, Columbia University, Lamont-Doherty Earth Observatory, Route 9 W, Palisades, NY, 10964, Tel: +1-845-365-8674 ext. 674,

*V04 - Petrological and Geochemical Constraints of the Formation of Archean Cratons (Joint With GS, MSA, T)*

The Archean cratons of Earth are noteworthy for their occurrences of tonalite-trondhjemite-granodiorite and komatiite along with a mantle keel that contains metasomatized, depleted harzburgite, eclogite and diamonds. Contributions from experimental petrology, theoretical petrology, mineralogy, and trace element and isotope geochemistry are invited that focus on the processes of formation and assembly of cratons and whether craton formation requires conditions unique to the Archean Earth.

Conveners: Timothy L. Grove, MIT, Department of Earth Atmospheric and Planetary Sciences, Cambridge, MA, 02139-4307, Tel: +1-617-253-2878, Fax: +1-617-253-7102, E-Mail: tlgrove@mit.edu; Steven B. Shirey, Carnegie Institution of Washington, Department of Terrestrial Magnetism, 5241 Broad Branch Road, NW, Washington, DC, 20015, Tel: +1-202-686-4370 ext. 8473, Fax: +1-202-364-8726, E-Mail: shirey@dtm.ciw.edu;

*V05 - The Construction of Archean Cratons: Reconciling GS, T)*

Our understanding of the growth, stabilization, and reactivation of Archean cratons hinges on radiometric dates from both crustal and mantle xenoliths and exposed rocks. In particular, the relationships between timing of lithospheric assembly and development of a thick buoyant "tectosphere" are not well known. We seek papers that address the interpretation and integration of radiometric dates from crustal and mantle rocks, with the specific goal of constraining the timing and processes of tectosphere/crustal juxtaposition and reactivation.

Conveners: Samuel A. Bowring, MIT, Department of Earth Atmospheric and Planetary Sciences, Cambridge, MA, 02139, Tel: +1-617-253-3775, Fax: +1-617-253-6735, E-Mail: sbowring@mit.edu; Desmond E. Moser, University of Utah, Department of Geology and Geophysics, 135 S, 1460 E, Salt Lake City, UT, 84112, Tel: +1-801-585-3782, Fax: +1-801-581-7065, E-Mail: demoser@mines.utah.edu.

VGP will cosponsor the following Special Sessions:

*GP06 - Banded Iron Formation, its Chemical and Physical Properties and Relation to the Origin of Life (Joint With B, GS, M, MRP, P, V)*

Conveners: G. Kletetschka, GSFC/NASA, Code 921, Greenbelt, MD, 20771, Tel: +1-301-286-3804, E-Mail: gunther@denali.gsfc.nasa.gov; J. William Schopf, UCLA; S. Moorbath, Oxford, United Kingdom;

*GS01 - Magmatic Volatile Histories: Stable Isotopic Tracing of Sources and Degassing Processes in Magmatic Systems and Implications for Volcanology and Earth System Science (Joint With M, T)*

Stable isotopic tracing of magmatic volatiles (CO<sub>2</sub>, H<sub>2</sub>O, and SO<sub>2</sub>/H<sub>2</sub>S in particular), from their source to magmatic degassing processes, have provided information of potential use to several disciplines in science. Isotopic fractionation between volatile species in the melt and exsolving vapor phases often allows quantification of volcanic volatile budgets, particularly when the extent of degassing is constrained by studies of glass inclusions and tephra matrix glasses. These results have implications for several fields of research, including volcanology, hazard management, climatology/atmospheric science, and economic geology. This session will bring together contributions from the field, laboratory, and theoretical/numerical modeling to outline a state-of-the-art understanding of what we know and what we have yet to learn regarding sourcing, storage, and degassing of volatiles from magmas in all tectonic settings.

Conveners: Bruce E. Taylor, Geological Survey of Canada, Ottawa, ON, K1A 0E8, Canada, Tel: +1-613-943-1286, E-Mail: btaylor@nrcan.gc.ca; Charlie Mandeville, American Museum of Natural History, New York, NY, 10024-5192, Tel: +1-212-769-5339, E-Mail: cmandy@amnh.org;

*GS02 - Light Stable Isotope Ratio Standards Metrology: Recent Advances and Needs Assessment (Joint With V)*

The measurement, calibration and data reduction issues

concerning the light stable isotope reference materials (e.g., tritium, sulfur, nitrogen, oxygen and carbon, both inorganic and organic) are of major importance to all that use isotopes as a tool to quantify earth processes. Over the past several years there have been some exciting metrological advances including a novel and very successful CO<sub>2</sub> intercomparison exercise, the nearly fully realized VCDT scale for sulfur isotopes and a reassessment of the half life of tritium. The value assignments of nearly all of the standards for the above mentioned elements will soon be updated and published. This session will focus on how best to effectively relate and disseminate measurement results across laboratories, industries, nations, and international networks so that real progress is made at understanding complex chemical systems of importance to the atmospheric and geologic communities and are traceable at the highest level.

Additionally, despite the fact continuous flow mass spectrometric techniques are proliferating, there exists almost a complete lack of reference materials for these analyses. Contributions are invited that focus on these issues so that: 1.) the atmospheric and geologic communities are informed of current NIST and IAEA recommended practices and 2.) as a forum for presenting new results on appropriate isotopic reference materials for both bulk and compound specific continuous flow techniques.

Conveners: Donna B. Klinedinst, National Institute of Standards and Technology, 100 Bureau Drive, Stop 8372, Gaithersburg, MD, 20899-8372, Tel: +1-301-975-3927, Fax: +1-301-926-6689, E-Mail: donna.klinedinst@nist.gov;

*H06 - Geologic Sequestration of Carbon Dioxide (Joint With GS, OS, PP, V)*

Over the past several years interest has grown in the possibility that geologic formations such as deep brine formations, oil and gas reservoirs, and unminable coal seams can be used to sequester carbon dioxide. A number of issues must be addressed to assess the effectiveness and safety of this approach for managing greenhouse gases. In the short run these include questions such as how much sequestration capacity is available, what are the desirable attributes of geologic formations for sequestration, and how can carbon dioxide migration be monitored? In the long run, we need to understand long-term hydrodynamic trapping mechanisms and whether geochemical interactions will transform carbon dioxide into stable mineral phases. This session invites papers on (1) methods for modeling and predicting sequestration capacity, (2) methods for geophysical,

hydrological and geochemical monitoring of carbon dioxide migration in subsurface environments, (3) geochemical interactions controlling the long term fate of sequestered carbon dioxide, and (4) geomechanical factors affecting the integrity of the reservoir seal.

Conveners: Sally M. Benson, Lawrence Berkeley National Laboratory, Earth Sciences Division, Tel: +1-510-486-5875, Fax: +1-510-486-7714, E-Mail: [sembenson@lbl.gov](mailto:sembenson@lbl.gov); Larry Myer, Lawrence Berkeley National Laboratory, Earth Sciences Division, Tel: +1-510-486-6456, Fax: +1-510-486-7714, E-Mail: [lrmyer@lbl.gov](mailto:lrmyer@lbl.gov);

*H10 - The Isotope Signature of the Groundwater Recharge (Joint With B, GS, V)*

The geo-hydrological processes at the interface between the atmosphere and lithosphere, involving the plant cover, soil and surface waters, are crucial both with respect to the quantity and quality of the groundwaters formed. The stable isotope composition of the groundwaters compared to that of the precipitation input (termed the Isotope Transfer Function {ITF} of the recharge process) is being widely used to characterize the geographic site of the recharge (based on the altitude effect on the isotopic composition of precipitation), the seasonality of the recharge process as well as the assessment of the contribution of surface waters such as lakes or reservoirs. More often than not, however, only very crude recipes for the ITF are being used, which neglect the eco-hydrological feedbacks since the degree of isotope fractionation or selection for the different climate and landuse settings are not satisfactorily quantified. The scope of such a suggested session would be the assemblage of actual field experiences for a variety of settings, including cases of changing environmental patterns due to development such as urbanization and agriculture, On the other hand, attempts to model the effect of processes in the surface layer and soilwaters on the isotope composition and chemistry of the groundwater recharge flux should be reported. The expected outcome of this session would be a more reliable use of the isotopic tracing tool for the process of groundwater recharge. It should further enable a better paleo-climatic interpretation of the isotopic composition of palaeowaters.

Conveners: Klaus-Peter Siler, GSF-Munich, Hydrology Institute, Munich, Germany, Joel Gat, Ben Gurion University, Center for Water Science and Technology Israel;

*H17 - Isotopic Tracers of Microbial Activity in Hydrologic Systems: Can They Be Trusted? (Joint With B, GS, V)*

Determining the important biotic and abiotic chemical processes in hydrologic systems is essential to our ability to assess both trends in water quality and the effectiveness of remediation efforts. Isotope tracers are commonly used as process monitors in hydrologic systems, but can provide ambiguous information. For example, stable isotope variations resulting from abiotic processes may be similar in magnitude to those resulting from biologic activity, and thus the isotope compositions considered alone may not provide a robust "biosignature". The purpose of this session is to explore the effectiveness of both stable and radiogenic isotope tracers as monitors of both biotic and abiotic processes. We particularly encourage abstracts that discuss water quality studies in which application of a "multi-tracer" approach has provided an especially rigorous assessment.

Conveners: Thomas Bullen, USGS, MS 420, 345 Middlefield Road, Menlo Park, CA, 94025, Tel: +1-650-329-4577, Fax: +1-650-329-4538, E-Mail: [tdbullen@usgs.gov](mailto:tdbullen@usgs.gov); Thomas Johnson, University of Illinois at Urbana-Champaign, Urbana, IL, 61801, Tel: +1-217-244-2002, Fax: +1-217-244-4996, E-Mail: [tmjohnsn@uiuc.edu](mailto:tmjohnsn@uiuc.edu);

*H18 - Chemical Budget Studies in Hydrologic Systems (Joint With B, GS)*

Chemical budgets reflect the basic material facts of systems: inputs and outputs, accumulations and depletions. Sound budgets can improve understanding of groundwater flow, weathering, nutrient and contaminant transport, and the interaction of biota with hydrologic systems (watersheds, aquifers, soils, river networks). While conceptually simple, the key elements of budgets are often difficult to determine in natural, heterogeneous systems. This session will focus on recent advances, applied and theoretical, in determination of chemical budgets in hydrologic systems, including the critical link between hydrologic and chemical budgets, definition of meaningful boundaries and fluxes across boundaries, direct vs. indirect measures of change in storage, and implications for understanding of important element chemical cycles.

Conveners: David Genereux, North Carolina State University, Marine, Earth & Atmospheric Sciences, Jordan Hall, Raleigh, NC, 27695-8208, Tel: +1-919-515-6017, Fax: +1-919-515-7802, E-Mail: [genereux@ncsu.edu](mailto:genereux@ncsu.edu);

*H26 - Advances in Transformations and Transport of Arsenic, Mercury, and other Toxic Metals (Joint With GS, V)*

Session being discussed and developed in committee.

Conveners: Rudolph Hon, B.C.

*M01 - Elastic Properties of Materials at High Pressure and Temperature (Joint With MRP, SEDI, T, V)*

Conveners: Baosheng Li, SUNY at Stony Brook, Mineral Physics Institute, ESS Building, Stony Brook, NY, 11794, Tel: +1-516-632-9642, E-Mail: Baosheng.Li@sunysb.edu;

*M02 - Characterizing Organic and Inorganic Hydrothermal Systems (Joint With GS, V)*

The development and application of new experimental procedures, supplemented by rigorous theoretical modeling, have recently provided new insights into several key organic and inorganic hydrothermal systems. Direct observations of experiments at extreme conditions reveal valuable and unique information for these systems including metastable and non-quenchable phases. While spectroscopic methods enable monitoring phase-equilibria, kinetics and reaction pathways, in-situ X-ray analysis of these products make the characterization of the structure as well as interpretation of the nature of inter-molecular interactions possible. Increasing number of such experimental results are scattered amongst different disciplines such as molecular physics, physical chemistry, organic geochemistry and high-pressure crystallography. The goal of this session is to bring together diverse techniques and results to help better understand observed phenomena. Studies addressing a wide variety of questions in organic and inorganic hydrothermal systems including structure, phase-equilibria, mineral-fluid interactions and reaction kinetic in chemical and biochemical systems are invited to contribute to this special session. In addition to invited presentations, contributed papers are solicited discussing organic reactions, supercritical fluid behavior, catalytic reaction networks at high pressure and temperature, in-situ molecular spectroscopy and crystallography.

Conveners: Anurag Sharma, Carnegie Institution of Washington, Geophysical Laboratory, 5251 Broad Branch Rd., NW, Washington, DC, 20015, Tel: +1-202-686-2410, Fax: +1-202-686-2419, E-Mail: sharma@gl.ciw.edu; Przemyslaw Dera, Carnegie Institution of Washington, Geophysical Laboratory, 5251 Broad Branch Rd., NW, Washington, DC, 20015, Tel: +1-202-686-2410, Fax: +1-202-686-2419, E-Mail: pdera@gl.ciw.edu;

*Sediments (Joint With GS, V)*

Reduced sediment bioturbation due to low oxygen has

resulted in the preservation of particularly detailed records of past environmental change linked to climate. With this special session, the conveners hope to provide a representative update of the many on-going efforts to recover and interpret such records, both marine and lacustrine, throughout the world. Submissions describing novel techniques that either reduce the effort required to obtain high-resolution information from laminated sediment or improve the dating of such records are also encouraged.

Conveners: Alexander van Geen, Columbia University, Lamont-Doherty Earth Observatory, Route 9 W, Palisades, NY, 10964, Tel: +1-845-365-8644, Fax: +1-845-365-8154, E-Mail: [avangeen@ldeo.columbia.edu](mailto:avangeen@ldeo.columbia.edu); Larry C. Peterson, University of Miami, Rosenstiel School of Marine & Atmospheric Science, 4600 Rickenbacker Causeway, Miami, FL, 33149, Tel: +1-305-361-4692, Fax: +1-305-361-4632, E-Mail: [peterson@rsmas.miami.edu](mailto:peterson@rsmas.miami.edu);

*P02 - New Views of the Moon (Joint With GS, P, V)*

Recent spacecraft missions are refining our view of Earth's nearest neighbor. The Lunar Prospector and Clementine spacecraft returned data that have revealed fundamental new insights into the record of the early history of the Solar System, and are stimulating new Earth-based measurements and lab studies.

Conveners: Brad Joliff, Washington University, St. Louis, Mo, E-Mail: [blj@levee.wustl.edu](mailto:blj@levee.wustl.edu); Carle Pieters, Brown University, Providence, RI, 02912, Tel: +1-401-863-2416, E-Mail: [Carle\\_Pieters@brown.edu](mailto:Carle_Pieters@brown.edu);

*S04 - How Rifting Worked in Northeastern North America (Joint With GS, T, V)*

This session addresses the Massive basaltic volcanism, lithospheric thinning, and subsidence strongly interacted during the Mesozoic rifting of North America from Pangea. These processes left an imprint that spans a wide range of processes and spatial scales, from local faulting, to sedimentary basin subsidence, to regional patterns of fabric in the upper mantle. This session will combine recent contributions from geophysics, structural geology, geochemistry, and geochronology that improve our understanding of the formative processes of the Northeastern North American passive margin.

Conveners: Vadim Levin, Yale University, PO Box 208109, New Haven, CT, 06520, E-Mail: [vadim@geology.yale.edu](mailto:vadim@geology.yale.edu); Bill Menke, Columbia University, Lamont-Doherty Earth Observatory, Department of Earth and Environmental Sciences, Route 9 W, Palisades, NY, 10964, E-Mail:

menke@ldeo.columbia.edu; Paul Olsen, Columbia University, Lamont-Doherty Earth Observatory, Department of Earth and Environmental Sciences, Route 9 W, Palisades, NY, 10964, E-Mail: polsen@ldeo.columbia.edu;

*S06 - The Structure and Early Evolution of Cratons (Joint With GS, T, V)*

In the last decade, several large-scale, multidisciplinary projects have focused on the problem of understanding the continents. They have involved a variety of techniques, including, seismic imaging, geological mapping, geochemistry, geochronology, heat flow, and geodynamical modeling. In this session we review results of these studies and their implications for our current understanding of the structure, composition, and geological evolution of continents. While we welcome contributions regarding all aspects of continental structure and evolution, we aim to focus on the Archean, which gives us glimpses of dynamics and evolution in the earliest era of continental history.

Conveners; Paul Silver, Carnegie Institution of Washington, Washington, DC, 20015, Tel: +1-202-686-4370 ext. 4386, Fax: +1-202-364-8726, E-Mail: silver@dtm.ciw.edu; Rob van der Hilst, MIT, Cambridge, MA, 02139, Tel: +1-617-253-6977, Fax: +1-617-258-9697, E-Mail: hilst@mit.edu;