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Councilors for 1987

D.A. Crerar, D.J. DePaolo, J.I. Drever, A.W. Hofmann, W.T. Holser, C. Lee, R.O. Rye, R. Wollast

Meetings and Symposia

GEOCHEMICAL SOCIETY 1986 ANNUAL MEETING in conjunction with the Annual Meeting of the Geological Society of America, San Antonio, Texas, November 9 through 13. Hotel reservation deadline October 10 (reservation form on p. 6); preregistration deadline October 10 (registration form on p. 8). For further information see GSA News and Information Vol. 8 No. 8, August 1986, or apply to GSA Meetings Department, P.O. Box 9140, Boulder, CO 80301, Tel. 303-447-2020.

SUNDAY NOVEMBER 9

GS SYMPOSIUM: MICROBIAL CONTRIBUTIONS AND TRANSFORMATIONS IN THE SEDIMENTARY RECORD
River Room, Convention Center, 9:00 A.M.

Robert B. Gagosian and J. Bruno Risatti, Presiding

MORNING SESSION

- INTRODUCTION, Robert Gagosian 9:00 A
- 1 R. S. Wolfe*: ANAEROBIC MICROBIAL DEGRADATION OF BIOMASS IN SEDIMENTS--THE FIRST FEW "MICROSECONDS" OF A GEOLOGICAL RECORD [104461] 9:15 A
- 2 J. Bruno Risatti*, J. Gelwicks, J. M. Hayes: SEDIMENTARY BIOGENIC ACETATE AND METHANE: STABLE ISOTOPE RELATIONSHIPS [104459] 9:55 A
- COFFEE BREAK 10:35 A
- 3 Ray Takigiku, J. M. Hayes*, R. Ocampo, H. J. Callot, P. Albrecht: ISOTOPIC COMPOSITIONS OF GEOPORPHYRINS: INDICATORS OF MICROBIAL CONTRIBUTIONS TO AND REWORKING OF SEDIMENTARY ORGANIC MATTER [104460] 10:55 A
- 4 David J. Des Marais*, Hoa Bui, Michael Cheatham: THE HYPERSALINE MICROBIAL MATS IN THE SALTERN AT GUERRERO NEGRO, BAJA CALIFORNIA SUR, MEXICO: A CARBON ISOTOPIC STUDY OF A PURELY MICROBIAL ECOSYSTEM [104463] 11:35 A

AFTERNOON SESSION

- 5 Christopher S. Martens*: BIOGEOCHEMISTRY OF VOLATILE FATTY ACIDS IN ORGANIC-RICH COASTAL AND HYDROTHERMALLY-ALTERED MARINE SEDIMENTS [104462] 1:30 P
- 6 Cindy Lee*: MICROBIAL DECOMPOSITION OF ORGANIC NITROGEN COMPOUNDS IN OXIC AND ANOXIC WATERS [104464] 2:10 P
- COFFEE BREAK 2:50 P
- 7 T. A. Langworthy*: BACTERIAL LIPIDS AND CONTRIBUTIONS TO THE SEDIMENTARY RECORD [104472] 3:10 P
- 8 D. J. Repeta, J. R. Ertel, R. B. Gagosian*: SOURCES AND MICROBIAL TRANSFORMATION OF CAROTENOID IN SEDIMENT [104455] 3:50 P

MONDAY NOVEMBER 10

GEOCHEMISTRY I: GENERAL GEOCHEMISTRY (I)
Centro Room, Convention Center, 8:00 A.M.

James I. Drever and Michael E. Zolensky, Presiding

- 1 Ellen K. Wright*: STRATIFICATION AND PALEOCIRCULATION PATTERNS OF THE UPPER CRETACEOUS WESTERN INTERIOR SEAWAY OF NORTH AMERICA [107936] 8:00 A
- 2 M. A. Wadleigh*, J. R. Kramer, H. P. Schwarcz: ISOTOPIC COMPOSITION OF SULPHATE IN COASTAL PRECIPITATION: MARINE VS. ANTHROPOGENIC SOURCES [108197] 8:15 A
- 3 Steven R. Tarnoff*, Richard W. Hurst: ANOMALOUS STRONTIUM ISOTOPIC COMPOSITIONS IN RECENT SEAWATER AND MARINE CARBONATES FROM THE GULF OF CALIFORNIA [94623] 8:30 A
- 4 M. Alisa Mast*, James I. Drever: EFFECT OF ORGANIC CHELATES ON THE DISSOLUTION RATE OF OLIGOCLASE [102942] 8:45 A
- 5 Joseph P. Pinto*, Heinrich D. Holland: EVIDENCE FROM PALEOSOLS FOR ATMOSPHERIC OXYGEN DURING THE EARLY PROTEROZOIC [102986] 9:00 A
- 6 Greta K. Nelson*, L. Robert Gardner: "GHOST" CORE STONES IN A GRANITE SAPROLITE - EVIDENCE FOR EPISODIC IRON MIGRATION DURING WEATHERING [102557] 9:15 A
- 7 James L. Conca*, Michael C. Malin: DISCRETE ILLITE IN SURFACE DEPOSITS ON WEATHERED FERRAR DOLERITE FROM THE ALLAN HILLS, ANTARCTICA [90071] 9:30 A
- 8 W. E. Glassley*, K. J. Jackson, W. L. Bourcier: COMPUTER MODELING OF THE AQUEOUS GEOCHEMISTRY OF THE ARCHEAN HYDROSPHERE AND THE FORMATION OF BIF [85545] 9:45 A
- 9 M. R. Veley*, P. Ortoleva, Jessica M. Elzea: A NEW METHOD FOR CALCULATING GEOCHEMICAL CONDITIONS FOR THE CREATION OF DIAGENETIC MINERAL ACCUMULATIONS [103253] 10:00 A
- 10 L. R. Kump*: EVAPORITES, PHOSPHORITES, AND THE MODELLING OF CHANGES IN OCEAN CHEMISTRY DURING THE PROTEROZOIC-PHANEROZOIC TRANSITION [97923] 10:15 A
- 11 Michael E. Zolensky*, James B. Foces: ALTERATION OF TEPHRA IN GLACIAL ICE BY "UNFROZEN WATER" [109133] 10:30 A
- 12 Vicki M. Harder*: FLUORITE: A NEW FISSION TRACK AGE DATING MINERAL [107956] 10:45 A
- 13 P. Wilde*, W.B.N. Berry, M.S.Q. Hunt, K. Rice, C. J. Orth, J. S. Gilmore, L. R. Quintana: CHEMOSTRATIGRAPHIC ANALYSIS ACROSS A JURASSIC EXTINCTION EVENT IN THE YORKSHIRE TOARCIAN [101045] 11:00 A
- 14 C. J. Orth*, J. S. Gilmore, X. Y. Mao, J. E. Barrick: Pt-GROUP ELEMENT ANOMALIES IN THE LOWER MISSISSIPPIAN OF OKLAHOMA: TERRESTRIAL PROCESSES [108277] 11:15 A
- 15 Thomas B. Hanley*, Christopher Chalokwu: PETROCHEMISTRY OF AMPHIBOLITES FROM THE UCHEE BELT, SOUTHERN APPALACHIAN Piedmont [106115] 11:30 A

* denotes speaker. [104461] etc. are Abstract Numbers (refer to GSA Abstracts with Programs)

POSTER SESSION I
South Hall, Convention Center, 8:00 A.M. - 12:00 Noon

Authors will be present from 9:00 A.M. to 11:00 A.M.

GEOCHEMISTRY

- William H. Casey*, George R. Holdren: RATES AND MECHANISMS OF BRUCITE DISSOLUTION [107161] Booth 4
- Harvey E. Belkin*, Francesca Tecce: HYDROTHERMAL PHLOGOPITE FROM THE SH2 WELL, SABATINI VOLCANIC DISTRICT, LATIUM, ITALY: FLUID INCLUSIONS AND CHEMISTRY [109007] Booth 5
- I-Ming Chou*: SOLUBILITIES OF SYLVITE ALONG THE THREE-PHASE CURVE IN THE BINARY SYSTEM KCl-H₂O [109018] Booth 6
- G. L. Macpherson*, L. S. Land: BORON IN FORMATION WATERS OF TERTIARY AND QUATERNARY-AGE SEDIMENTS, GULF OF MEXICO BASIN [109038] Booth 7
- S. E. Robinson-Cook*, Andrew R. Campbell, Philip R. Kyle, Jacques Renault: AN EXAMINATION OF THE GEOCHEMICAL CONTROLS ON INFRARED TRANSPARENCY IN THE MINERAL WOLFRAMITE [109139] Booth 8
- S. M. Kay, R. W. Kay*, J. Romick, G. Yagodzinski: SPACIAL VARIATIONS IN TRACE ELEMENT RATIOS IN THE ALEUTIAN ARC [109602] Booth 9
- George R. Helz*, Damian Shea: CONTROL OF Cu SOLUBILITY IN SULFIDIC WATERS AT LOW TEMPERATURES; DOES Fe PLAY A ROLE? [76445] ... Booth 10
- Stephen A. Macko*, Ali E. Aksu, Peta J. Mudie: PALEOCLIMATIC HISTORY OF THE NANSEN SOUND AREA, ARCTIC OCEAN [86863] Booth 11
- Giorgio Bellumini, Edward Ruth, Meixun Zhao*, Jeffrey Bada: KINETICALLY COUPLED ORGANIC DIAGENETIC REACTIONS AND THEIR IMPLICATIONS; AN AMINO ACID EXAMPLE [87007] Booth 12
- David B. Wenner*, J. Alexander Speer: IMPLICATIONS REGARDING THE OCCURRENCE OF GRANITES FORMED FROM PRIMITIVE SOURCE ROCKS IN THE SOUTHERN APPALACHIAN PIEDMONT [93570] . Booth 13
- R. Hervig*, N. Dunbar, H. Westrich, P. Kyle: DIRECT DETERMINATION OF INITIAL H₂O AND F CONTENT OF RHYOLITIC MAGMAS BY ION MICROPROBE [94313] Booth 14
- Dan E. Olson*, Carl J. Bowser: PHASE ASSOCIATIONS OF Al AND THE FORMATION OF AUTHIGENIC ALUMINOSILICATES IN MANGANESE NODULES FROM THE NE EQUATORIAL PACIFIC [105097] Booth 15
- Sonia Esperanca*, Anthony N. LeCheminant: ISOTOPIC EVIDENCE FOR MULTIPLE ENRICHMENT EVENTS FROM MICA-LAMPROPHYRE DYKES IN THE DISTRICT OF KEEWATIN, CANADA [108297] Booth 16
- Dennis O. Nelson*, David C. Gerlach: Sr, Nd, AND Pb ISOTOPIC COMPOSITIONS OF ROCKS OF CLARION ISLAND, EAST-CENTRAL PACIFIC OCEAN [108555] Booth 17
- Randall T. Cygan*, Charles R. Carrigan: CHEMICAL DIFFUSION AND HEAT CONDUCTION: SIMULATION OF COUPLED TRANSPORT PROCESSES IN MAGMA AND BRINE [107774] Booth 18
- G. K. Bayhurst*, D. R. Janecky: METAL COMPOSITIONS OF MAUNA LOA SUBLIMATE [108482] . Booth 19
- G. B. Morgan VI*, David London: METASOMATISM OF AMPHIBOLITIC WALLROCKS AROUND THE TANCO PEGMATITE, MANITOBA [108856] Booth 20
- Joseph McKee*, Timothy P. Wilson, David T. Long, Robert M. Owen: GEOCHEMICAL PROCESSES AT THE WATER/SEDIMENT INTERFACE IN PROFUNDAL LAKES: EXPERIMENTS WITH A MANNED SUBMERSIBLE [85954] Booth 21
- Ray Takigiku, B. N. Popp*, M. W. Johnson, J. M. Hayes: COUPLED VARIATIONS IN CARBON-ISOTOPIC COMPOSITIONS OF CARBONATES, TOTAL ORGANIC CARBON, AND GEOPORPHYRINS [87028] Booth 22
- C. G. Barnes*, C. M. Allen, R. H. Brigham: ISOTOPIC HETEROGENEITY IN A TILTED MID-JURASSIC PLUTONIC SYSTEM, KLAMATH MOUNTAINS, CALIFORNIA [88179] Booth 23
- Debra J. Malek*, David D. Lambert: TRACE ELEMENT AND ISOTOPIC EVIDENCE FOR SELECTIVE POST-CRYSTALLIZATION CONTAMINATION OF A MAFC ALKALIC ROCK FROM THE TRANS-PECOS MAGMATIC PROVINCE, TEXAS [97869] Booth 24
- Steven M. Jones*, Roy K. Dokka: EFFECTS OF TIME AND TEMPERATURE ON THE LENGTH DISTRIBUTIONS OF FISSION TRACKS: IMPLICATIONS FOR THERMAL-HISTORY STUDIES OF OROGENIC BELTS AND BASINS [99165] Booth 25
- Robert L. Cullers*: DISTRIBUTION OF REE IN SOIL AND STREAM SEDIMENT DURING WEATHERING OF GRANITIC ROCKS IN GEORGIA AND COLORADO, USA [99610] Booth 26

MARINE GEOLOGY/OCEANOGRAPHY

- J. T. Andrews*: LATE QUATERNARY CONTINENTAL MARGIN MARINE SEDIMENT FLUX ADJACENT TO ODP LEG 105, SITE 645, BAFFIN BAY [108489] Booth 29
- Rosemary C. Capo*, Donald J. DePaolo: PLEISTOCENE Sr ISOTOPE STRATIGRAPHY AND PALEOCEANOGRAPHY [98964] Booth 30
- F. Jeanne Shaub*: COASTAL PLAIN-TO-BASIN SEDIMENT THICKNESS, GULF OF MEXICO [91742] ... Booth 31

- R. C. Shipp*, J. T. Kelley, D. F. Belknap: THE IMPACT OF SEA-LEVEL FLUCTUATIONS ON THE MIXED-PROCESS INNER SHELF IN THE NORTHWESTERN GULF OF MAINE [93764] Booth 32
- Lawrence A. Krissek*, Philip Hughes, Robert Rathbone: SEDIMENTATION HISTORY OF THE TERRA NOVA BAY POLYNYA, WESTERN ROSS SEA, ANTARCTICA [107582] Booth 33
- Thomas R. Carney*, Lawrence A. Krissek: THE LATE PLEISTOCENE AND PLEISTOCENE RECORD OF ICE-RAFTING AT DSDP SITE 580, NW PACIFIC--A COMPARISON OF COARSE-SAND ABUNDANCE AND MASS ACCUMULATION RATE OF ICE-RAFTED DETRITUS [107594] Booth 34
- Adolfo Molina-Cruz*: LATE PLEISTOCENE-HOLOCENE OCEANOGRAPHIC CHANGES IN THE MOUTH OF THE GULF OF CALIFORNIA [85065] Booth 35
- S. Locke*, R. Thunell: A COMPARISON OF THE LAST GLACIAL/INTERGLACIAL CYCLE IN THE GULF OF ADEN AND RED SEA [101015] Booth 36
- Nazrul I. Khandaker*, Robert G. Sutton: ON THE DISTINGUISHING CHARACTERISTICS BETWEEN THE PROXIMAL AND DISTAL TURBIDITES OF THE NOVA SCOTIAN CONTINENTAL MARGIN, CANADA [102182] .. Booth 37
- Ellen Thomas*: TIMING OF MIOCENE FAUNAL CHANGES OF BENTHIC FORAMINIFERA, PACIFIC AND ATLANTIC [102230] Booth 38
- James T. Liu*, Gary A. Zarillo: PARTITIONING OF A SANDY SHOREFACE [105809] Booth 39
- Edward M. Pokras*: DIATOM PRODUCTIVITY AND CLIMATIC CHANGE IN THE EASTERN EQUATORIAL ATLANTIC, 0-150,000 YR BP [107323] Booth 40
- James W. Turner, Jr.*, Paul F. Ciesielski: LATE PLEISTOCENE-EARLY PLEISTOCENE DISSOLUTION AND WATER MASS PATTERNS IN THE HIGH LATITUDES OF THE SOUTHEAST INDIAN OCEAN [95283] Booth 41
- Ivy D. Hanchett, Paul F. Ciesielski: SURFACE WATER MASS AND SEA ICE CONDITIONS IN THE ANTARCTIC OF THE SOUTHWEST ATLANTIC DURING THE LAST 200,000 YEARS [95285] Booth 42
- Margaret J. Herron*, John B. Anderson: MARINE GEOLOGY OF THE WESTERN SOUTH ORKNEY PLATEAU AND EASTERN POWELL BASIN MARGIN, ANTARCTICA [96737] Booth 43
- Anne K. Rutledge*, Les E. Shephard, William R. Sorenson: CLAY FABRIC OF NARES ABYSSAL PLAIN FINE-GRAINED TURBIDITE SEQUENCES [108211] Booth 44
- Al Werner*, Duane Kitzis: TEXTURAL LOGGING OF SOFT SEDIMENT CORES USING A LASER LOGGING TOOL [109253] Booth 45
- Harley J. Knebel*, Ronald C. Circe: LATE QUATERNARY BURIED VALLEYS BENEATH DELAWARE BAY [85363] Booth 46
- Chris P.G. Pereira*, Steve A. Macko: THE CANADIAN ARCTIC ARCHIPELAGO 'NOGAP' ORGANIC GEOCHEMISTRY/SEDIMENTOLOGICAL STUDY OF INTER-ISLAND CHANNELS [86864] Booth 47
- Stefan Gartner*, Ting-Chang Huang: PLEISTOCENE-PLEISTOCENE BIOCHRONOLOGY, AND CLIMATE AND SEDIMENTARY CYCLES OF THE NORTHERN GULF OF MEXICO [91244] Booth 48
- F. A. Mueller*, D. S. Jones, M. A. Arthur, J. Zachos: Sr, C, AND O ISOTOPIC VARIATIONS ACROSS THE K/T BOUNDARY AT BRAGGS, ALABAMA [95287] Booth 49
- John D. Jeffers*, John B. Anderson: TECTONIC CONTROLS ON SEDIMENTATION IN THE BRANFELD STRAIT, ANTARCTIC PENINSULA [96734] Booth 50

TUESDAY NOVEMBER 11

GEOCHEMISTRY II: GEOCHEMISTRY OF HYDROTHERMAL SYSTEMS
Centro Room, Convention Center, 8:00 A.M.

Susan W. Kieffer and Teresa Suter Bowers, Presiding

- 1 Yuch-Ning Shieh*, Guo-Xin Zhang: STABLE ISOTOPE STUDIES OF VEIN TYPE TUNGSTEN DEPOSITS IN DAJISHAN, JIANGXI PROVINCE, SOUTHEAST CHINA [85238] 8:00 A
- 2 Andrew P. Gize*, Catherine K. Richardson: COMPOSITION OF PETROLEUM INCLUSIONS FROM THE CAVE-IN-ROCK FLUORSPAR DISTRICT, ILLINOIS [102771] 8:15 A
- 3 F. Ghazban*, D. C. Ford, E. P. Schwarcz: MULTISTAGE DOLOMITE FORMATION AT NANISIVIK, NWT, CANADA [105588] 8:30 A
- 4 D. R. Cole*: STABLE ISOTOPE GEOCHEMISTRY OF HYDROTHERMALLY ALTERED ROCKS FROM GEOTHERMAL SYSTEMS IN ICELAND [108123] 8:45 A
- 5 Peter C. Lichtner*, William M. Murphy, Harold C. Helgeson: LAGRANGIAN FORMULATION OF FLUID-ROCK INTERACTION COUPLED TO FLUID FLOW [108529] 9:00 A
- 6 Eric H. Oelkers*, Harold C. Helgeson: ARE HYDROTHERMAL SOLUTIONS REALLY ASSOCIATED AT SUPERCRITICAL PRESSURES AND TEMPERATURES? [108537] 9:15 A
- 7 Susan W. Kieffer*, Richard W. Henley: FLOW OF H₂O-CO₂ MIXTURES IN GEOTHERMAL WELLS: PREDICTION OF CALCITE DEPOSITION [108098] 9:30 A
- 8 Teresa Suter Bowers*: THE GEOCHEMICAL CONSEQUENCES OF H₂O-CO₂ FLUID IMMISCIBILITY ON ORE DEPOSITION; A REACTION PATH APPROACH [91501] 9:45 A

9 Jeffrey S. Seewald*, William E. Seyfried, Jr.: Ca and Na METASOMATISM DURING HYDROTHERMAL BASALT ALTERATION: AN EXPERIMENTAL STUDY [103775]	10:00 A
10 George V. Albino*: SODIUM METASOMATISM AND 'FENITIZATION' ALONG THE MELONES FAULT, SIERRA NEVADA FOOTHILLS, CALIFORNIA [109486]	10:15 A
11 J. R. Bowman*, W. T. Parry, W. P. Kropp, S. A. Krueger: ISOTOPIC EVOLUTION OF HYDROTHERMAL SOLUTIONS IN THE BINGHAM CANYON, UTAH, PORPHYRY COPPER SYSTEM [103977]	10:30 A
12 Gregg Bluth*, Hiroshi Ohmoto: SULFUR ISOTOPE GEOCHEMISTRY OF HYDROTHERMAL VENT SITES FROM THE EAST PACIFIC RISE AT 13 DEGREES N [101288]	10:45 A
13 Hiroshi Ohmoto*: ARCHEAN MASSIVE SULFIDES: A PRODUCT OF WARMER OCEANS? [101295]	11:00 A
14 J. C. Alt*: A HYDROTHERMAL/BACTERIAL IRON DEPOSIT FROM A SEAMOUNT NEAR 21 DEGREES N, EAST PACIFIC RISE [95618]	11:15 A
15 Keith A. Kvenvolden*, Janet L. Morton, Mark L. Holmes: HYDROTHERMAL PETROLEUM ASSOCIATED WITH POLYMETALLIC SULFIDES, ESCANABA TROUGH, OFFSHORE NORTHERN CALIFORNIA [102790]	11:30 A
16 Eugene S. Ilton*, Hans P. Eugster: THE EXCHANGE OF Zn, Mn, Cd, Cu AND Fe BETWEEN MAGNETITE AND A SUPERCRITICAL AQUEOUS CHLORIDE SOLUTION [101938]	11:45 A

GEOCHEMISTRY III: AQUEOUS GEOCHEMISTRY
Fiesta E Room, Convention Center, 1:30 P.M.

George R. Holdren and D. Kirk Nordstrom, Presiding

1 Donald Langmuir*: THE KINETICS OF ACID RAIN DISSOLUTION OF LIME MORTAR AND PORTLAND CEMENT [64985]	1:30 P
2 Thomas H. Giordano*: ANGLEITE SOLUBILITY IN ACETATE SOLUTIONS TO 70 DEGREES C [87505]	1:45 P
3 Kathryn L. Nagy*, John W. Morse: THE SOLUBILITY OF CALCITE IN SODIUM-CALCIUM- CHLORIDE BRINES TO 90 DEGREES C AND EVALUATION OF THE INTERACTION BETWEEN CALCIUM AND CARBONATE IONS [91722]	2:00 P
4 R. F. Faux*, E. Busenberg, L. N. Plummer, P. A. Candelaria: THE DISSOLUTION KINETICS OF MAGNESITE FROM 25 DEGREES-85 DEGREES C AND PH'S OF 0 TO 10 AT ATMOSPHERIC PCO2 [93407] ...	2:15 P
5 L. E. Bary*, Dhanpat Rai: THE KINETICS OF Cr(VI) REDUCTION TO Cr(III) BY FERROUS IRON-CONTAINING SOLIDS [107746]	2:30 P
6 Ann S. Maest*, Rachel Wing: THE ARSENIC AND IRON REDOX COUPLE IN SELECTED NATURAL WATERS [107232]	2:45 P
7 Susan C. Webb*, John V. Walther: A SURFACE COMPLEXATION MODEL FOR THE pH DEPENDENCE OF ALUMINO-SILICATE DISSOLUTION RATES [104308]	3:00 P
8 Kenneth R. Applin*: THE DIFFUSION COEFFICIENT OF DISSOLVED SILICA AT 25 DEGREES C [90953] ...	3:15 P
9 George R. Holdren, Jr.*, William Casey, Don. L. Stevens, Jr.: MECHANISMS OF FELDSPAR WEATHERING: EVIDENCE FOR p-H DEPENDENT CHANGES IN THE DOMINANT REACTION SITE TYPE [107163]	3:30 P
10 John A. Chermak*, J. Donald Rimstidt: THE OXIDATION OF GALENA AND SPHALERITE IN ACIDIC FERRIC CHLORIDE SOLUTIONS [85406]	3:45 P
11 D. Kirk Nordstrom*, James W. Ball: UNRAVELING THE GEOCHEMICAL BEHAVIOR OF IRON AND ALUMINUM IN STREAMS ACIDIFIED BY ACID MINE WATERS [103701]	4:00 P
12 William A. Kornicker*, John W. Morse: THE SURFACE CHEMISTRY OF MACKINAWITE AND PYRITE [91728]	4:15 P
13 T. J. Wolery*, K. J. Jackson: ACTIVITY COEFFICIENTS IN AQUEOUS SALT SOLUTIONS--THE ION SIZE PROBLEM [85544]	4:30 P
14 Jeffery C. Seitz, Jill D. Pasteris*, Brigitte Wopenka, Robert J. Bodnar, S. Michael Sterner: USING LASAR RAMAN MICROPROBE (LRM) SPECTROSCOPY TO BRIDGE THE GAPS IN MICROTHERMOMETRIC (MT) COMPOSITIONAL DATA IN THE CO2-CH4-H2O SYSTEM [109371]	4:45 P
15 Steven J. Pritz*, David W. Hinz, Ethan L. Grossman: HYPERFILTRATION-INDUCED FRACTIONATION OF CARBON ISOTOPES [86058]	5:00 P
16 U. Fehn*, R. Teng, D. Elmore, P. W. Kubik, H. E. Gove: OSMIUM ISOTOPES DETERMINED IN SUB-PPB SAMPLES: EXAMPLES FROM TWO IMPACT CRATERS [89858]	5:15 P

WEDNESDAY NOVEMBER 12

GEOCHEMICAL SOCIETY SYMPOSIUM: EVOLUTION OF THE
RIO GRANDE RIFT AND THE GEOCHEMISTRY OF RELATED MAGMATISM
Mission Room, Convention Center, 8:10 A.M.

David D. Lambert and E. Craig Simmons, Presiding

INTRODUCTION	8:10 A
1 Wolfgang E. Elston*: EVOLUTION OF RIO GRANDE RIFT AND BASIN AND RANGE PROVINCE: A 60-MA CONTINUUM [107469]	8:15 A
2 Christopher D. Henry*, Jonathan G. Price, Fred W. McDowell: CONCURRENT MAGMATIC AND TECTONIC VARIATIONS IN TRANS-Pecos TEXAS AND ADJACENT CHIHUAHUA DURING THE TERTIARY [107466]	8:30 A
3 K. L. Cameron*, M. Cameron: THE TRANSITION FROM HIGH-K CALC-ALKALIC TO ALKALIC MAGMATISM IN WEST TEXAS: THE QUARTZ NORMATIVE ROCKS [106995]	8:45 A
4 Michael L. Ross*, David D. Lambert: K, Rb, Ba, REE AND Sr ISOTOPE GEOCHEMISTRY OF ALKALIC ROCKS FROM THE TRANS-Pecos MAGMATIC PROVINCE, TEXAS: EVIDENCE FOR MULTIPLE SOURCE REGIONS [91879]	9:00 A
5 William C. McIntosh*, John F. Sutter, Charles E. Chapin: STRATIGRAPHIC FRAMEWORK FOR MOGOLLON-DATIL VOLCANIC FIELD BASED ON PALEOMAGNETISM AND HIGH-PRECISION 40Ar/39Ar DATING OF IGNEOUS ROCKS [91872]	9:15 A
6 Michael Bikerman*, Keith Bell: ISOTOPIC Sr AND Nd STUDY OF THE MOGOLLON-DATIL VOLCANIC ROCKS, NEW MEXICO (USA) [104245]	9:30 A
COFFEE BREAK	9:45 A
7 M. A. Dungan*, M. Colucci, K. Ferguson, P. W. Lipman: TEMPORAL EVOLUTION OF THE PLATON-SUMMITVILLE CALDERA COMPLEX, SE SAN JUAN VOLCANIC FIELD, COLORADO [107467]	10:00 A
8 Paul Morgan*, G. Randy Keller, William R. Seager: THERMAL AND STRUCTURAL EVOLUTION OF THE SOUTHERN RIO GRANDE RIFT: GEOPHYSICAL AND GEOLOGICAL EVIDENCE FOR MAJOR NEOGENE PLUTONISM [107472]	10:15 A
9 W. Ian Ridley*, M. R. Perfit, R. Shuster, J. G. Crook: MAGMATIC PROCESSES AT MT. TAYLOR VOLCANIC COMPLEX, NEW MEXICO [91874]	10:30 A
10 Steven D. Balsley*, David C. Kuentz, John A. Wolff, Philip K. Kyle: GEOCHEMISTRY OF A LARGE-VOLUME HIGH-SILICA RHYOLITE MAGMA SYSTEM ASSOCIATED WITH THE RIO GRANDE RIFT: THE BANDELIER TUFFS, NEW MEXICO [107464]	10:45 A
11 Bradley S. Singer*, Albert M. Kudo: ASSIMILATION-FRACTIONAL CRYSTALLIZATION (AFC) ORIGIN OF PLIO-PLISTOCENE INTERMEDIATE LAVAS FROM THE CENTRAL RIO GRANDE RIFT AND VICINITY [99660]	11:00 A
12 Julia C. Crowley*, Sidney Niemeyer, Henry F. Shaw: SOURCE CHARACTERISTICS OF RIO GRANDE RIFT BASALTS INFERRED FROM Nd, Sr, and Pb SYSTEMATICS [91877]	11:15 A
13 J. L. Cooper*, W. K. Hart: THE ROLES OF MANTLE AND CRUSTAL RESERVOIRS IN THE EVOLUTION OF THE SPRINGVILLE AND RIO GRANDE RIFT VOLCANICS [103810]	11:30 A
14 W. S. Baldrige*, F. V. Perry: LATE CENOZOIC BASALTIC VOLCANISM OF THE CENTRAL RIO GRANDE RIFT AND SOUTHEASTERN COLORADO PLATEAU: CONSTRAINTS ON RIFT PROCESSES [87136]	11:45 A

GEOCHEMISTRY IV: ORGANIC GEOCHEMISTRY AND DIAGENESIS
Centro Room, Convention Center, 8:00 A.M.

Lynton S. Land and P. E. Hare, Presiding

1 Regina M. Capuano*: THE EFFECT OF CO2 SOLUBILITY ON CEMENT FORMATION IN PETROLEUM BASINS [100003]	8:00 A
2 Jose V. Bonilla*, Michael H. Engel, C. Anthony Lewis, R. Paul Philp: REDISTRIBUTION OF BIOLOGICAL MARKER COMPOUNDS DURING CRUDE OIL MIGRATION [85177]	8:15 A
3 Michele Moisis Thomas*, Jamie A. Clouse, Gregory C. Frye: THE INFLUENCE OF ADSORBED ORGANICS ON CARBONATE WEETABILITY AND DISSOLUTION: MODEL AND NATURAL SYSTEMS [108099]	8:30 A
4 Vaughn D. Robison*, Michael H. Engel: ORGANIC GEOCHEMICAL CHARACTERIZATION OF A LATE CRETACEOUS TRANSGRESSIVE SEQUENCE IN EGYPT [96515]	8:45 A
5 Alan J. Kaufman*, John M. Hayes, Andrew H. Knoll, Gerard J.B. Gerns: SECULAR VARIATIONS OF CARBON ISOTOPES IN THE LATEST PROTEROZOIC NAMA GROUP, NAMIBIA/SOUTH WEST AFRICA [103255]	9:00 A
6 R. I. Haddad*, C. S. Martens: SOURCES AND DEGRADATION OF FATTY ACIDS IN AN ANOXIC COASTAL SEDIMENT [109493]	9:15 A
7 Everett L. Shock*, Harold C. Helgeson: THERMODYNAMIC PROPERTIES OF AQUEOUS ORGANIC SPECIES IN THE DIAGENETIC ENVIRONMENT [108530]	9:30 A
8 Austin Long*, L. F. Warneke: D/H RATIOS IN FOSSIL PLANT MATERIAL FROM PACKRAT MIDDENS IN SOUTHWEST U.S. YIELD PALEOCLIMATIC INFORMATION FOR LATE PLEISTOCENE AND HOLOCENE [101981]	9:45 A
9 P. E. Hare*, Marilyn L. Fogel, Thomas W. Stafford, Jr., Thomas C. Hoering: PALEODIETS AND STABLE ISOTOPES IN AMINO ACIDS FROM FOSSIL PROTEINS [107414]	10:00 A

- 10 M. L. Tuttle*, M. B. Goldhaber: SULFUR GEOCHEMISTRY AND ITS IMPLICATIONS FOR THE DEPOSITIONAL AND EARLY DIAGENETIC HISTORY OF THE GREEN RIVER FORMATION [108714] 10:15 A
- 11 L. M. Pratt*, D. L. Gautier: ANOMALOUS SULFUR ISOTOPE TREND IN PYRITIFEROUS CARBONATE CONCRETIONS FROM THE UPPER CRETACEOUS PIERRE SHALE [103742] 10:30 A
- 12 Lynton S. Land*: SALINE BRINES, FRIO FORMATION, SOUTH TEXAS: CONTRIBUTION FROM BASEMENT EXHALATION? [91873] 10:45 A
- 13 Cynthia G. Nahnybida*, Ian E. Hutcheon: ACTIVE FORMATION OF DIAGENETIC CHLORITE IN AN OVERPRESSURED ZONE, SCOTIAN SHELF, CANADA [102502] 11:00 A
- 14 S. J. Burns*, P. Weig, P. Baker: EARLY DIAGENESIS OF KNOX GROUP CARBONATES, EASTERN TENNESSEE: TRACE ELEMENT AND ISOTOPIC EVIDENCE [99149] 11:15 A
- 15 Ronald K. Stoessell*: DOLOMITE-CALCITE EQUILIBRIA FROM DEDOLOMITIZATION EXPERIMENTS AT 300 BARS AND 100 DEGREES, 150 DEGREES AND 200 DEGREES C [88586] 11:30 A

GEOCHEMICAL SOCIETY LUNCHEON

Salon del Rey (North), Hilton Hotel.....12.00

Tickets (\$15) on sale at ticket sales counter in registration area from Sunday until Tuesday noon.

GEOCHEMICAL SOCIETY AWARDS CEREMONY AND GOLDSCHMIDT LECTURE

Salon del Rey (North), Hilton Hotel.....12.45

(No tickets required)

Presentation of Ingerson Festschrift Volume to F. Earl Ingerson by the International Association of Geochemistry and Cosmochemistry

Best Paper Award, Organic Geochemistry Division: Michael D. Lewan, Amoco Production Co. Research Center, for "Evaluation of petroleum generation by hydrous pyrolysis experiments." Phil. Trans. Roy. Soc. (Lond.) A 315, 123-134 (1985).

F.W. Clarke Medal: Mark Kurz, Woods Hole Oceanographic Institution

V.M. Goldschmidt Medal and Lester W. Strock and Family Honorarium: Claude Allègre, University of Paris

Geochemical Society Goldschmidt Lecture. Claude Allègre, University of Paris: Formation and Evolution of the Continental Crust

THURSDAY NOVEMBER 13

GEOCHEMISTRY V: IGNEOUS ROCKS

Centro Room, Convention Center, 8:00 A.M.

Bruno Gilletti and Peter Deines, Presiding

- 1 Barry L. Weaver*: TRACE ELEMENT CONSTRAINTS ON THE ORIGIN OF OCEAN ISLAND BASALTS (OIB) [109312] 8:00 A
- 2 Don Elthon*: RARE-EARTH ELEMENT GEOCHEMISTRY OF PLUTONIC ROCKS FROM THE OCEANOGRAPHER FRACTURE ZONE: EXTREME FRACTIONATION OF BASALTIC MAGMAS IN A FRACTURE ZONE [109265] 8:15 A
- 3 Sung-Tack Kwon*, G. R. Tilton: Pb ISOTOPIC STUDIES OF CANADIAN SHIELD ALKALIC COMPLEXES: CORRELATION WITH Sr ISOTOPIC EVOLUTION [103580] 8:30 A
- 4 David A. Pickett*, Brian H. Mason, G. J. Wasserburg: NEODYMIUM AND STRONTIUM ISOTOPIC CHARACTERISTICS OF NEW ZEALAND GRANITOID AND RELATED ROCKS [99285] 8:45 A
- 5 B. V. Rao*, A. J. Naldrett, N. M. Evensen, B. O. Dressler: TRACE ELEMENT AND Sr, Nd-ISOTOPIC CONSTRAINTS ON THE GENESIS OF THE SUDBURY IGNEOUS COMPLEX, ONTARIO, CANADA [107327] 9:00 A
- 6 W. K. Hart*, R. C. Walter: CRUST/MANTLE PROCESSES ALONG THE WESTERN AFAR MARGIN, ETHIOPIA [103812] 9:15 A
- 7 T. Palacios, C. A. Matos Alves, J. Munha*, R. Kerrich: PETROGENETIC SIGNIFICANCE OF TRACE-ELEMENT AND ISOTOPE VARIATIONS IN BASALTS FROM THE LISBON COMPLEX (PORTUGAL) [109103] 9:30 A

- 8 T. Palacios, J. Munha, C. A. Matos Alves*, R. Kerrich: CHEMICAL AND ISOTOPIC EVIDENCE FOR ASSIMILATION OF CRUSTAL MATERIAL BY BASALTIC MAGMA IN THE LISBON VOLCANIC COMPLEX (PORTUGAL) [109104] 9:45 A
- 9 I. S. Williams, S. C. Eriksson*, W. Compston: APPLICATION OF INHERITED ZIRCONS TO TERRANE ACCRETION: AN EXAMPLE OF ARCHEAN ZIRCONS FROM THE COASTAL BELT OF MAINE [108186] 10:00 A
- 10 K. R. Simmons*, R. A. Wiebe, G. A. Snyder, E. C. Simmons: U-Pb ZIRCON AGE FOR THE NEWARK ISLAND LAYERED INTRUSION, MAIN ANORTHOSITE COMPLEX, LABRADOR [87323] 10:15 A
- 11 Lawrence J. Gaher*, K. A. Foland, C. E. Corbato: ON THE SIGNIFICANCE OF ARGON RELEASE FROM BIOTITE AND AMPHIBOLE DURING VACUUM HEATING [109074] 10:30 A
- 12 P. Deines*, J. W. Harris: RELATIONSHIPS AMONG NITROGEN AND 13C CONTENT OF DIAMONDS AND THE COMPOSITION OF THEIR MINERAL INCLUSIONS [101304] 10:45 A
- 13 Bruno J. Gilletti*: COOLING RATES DERIVED FROM $\Delta^{18}O$ OF MINERALS IN IGNEOUS AND METAMORPHIC ROCKS [104690] 11:00 A
- 14 Gary R. Byerly*, Paul Carpenter, Darrell J. Henry, Donald R. Lowe: TOURMALINES OF THE BARBERTON GREENSTONE BELT [93085] 11:15 A
- 15 Michael E. Fleet*, Neil D. Macrae: PARTITION OF Ni BETWEEN OLIVINE AND SULFIDE: THE EFFECT OF TEMPERATURE, FO2 AND FS2 [100578] 11:30 A
- 16 Clive R. Neal*: MEGACRYST FORMATION AND ALNOITE GENESIS [104140] 11:45 A

GEOCHEMISTRY VI: GENERAL GEOCHEMISTRY (II)
River Room, Convention Center, 1:00 P.M.

Gunter Faure and J. N. Moore, Presiding

- 1 C. L. Erickson*, R. J. Bodnar: DETERMINATION OF CRITICAL PROPERTIES OF AQUEOUS SOLUTIONS USING SYNTHETIC FLUID INCLUSIONS [107801] 1:00 P
- 2 Robert J. Bodnar*, S. Michael Sterner: DETERMINATION OF THE VOLUMETRIC PROPERTIES OF H2O-CO2 FLUIDS AT 600 DEGREES C AND 3 KBAR USING SYNTHETIC FLUID INCLUSIONS [107812] 1:15 P
- 3 S. Michael Sterner*, Robert J. Bodnar: EXPERIMENTAL DETERMINATION OF PHASE RELATIONS IN THE SYSTEM NaCl-KCl-H2O AT 1 KBAR AND 700 DEGREES AND 800 DEGREES C USING SYNTHETIC FLUID INCLUSIONS [107778] 1:30 P
- 4 D. Kirk Nordstrom*: A POSSIBLE MECHANISM FOR FLUID-INCLUSION LEAKAGE INTO THE DEEP GRANITIC GROUNDWATERS AT THE STRIPA RESEARCH SITE, SWEDEN [103702] 1:45 P
- 5 Susan L. Brantley*, David Crerar, Brian Evans: POROSITY REDUCTION BY SOLUTION-TRANSFER: EXPERIMENTAL EVIDENCE FOR QUARTZ [96651] 2:00 P
- 6 Raymond Siever*: OCEANIC SILICA GEOCHEMISTRY AND NODULAR CHERT FORMATION [107815] 2:15 P
- 7 Norbert Clauer*, Sam Chaudhuri, Kathleen W. Massey: RELATIONSHIP BETWEEN CLAY MINERALS AND ENVIRONMENT BY THE Sr ISOTOPIC COMPOSITION OF THEIR LEACHATES [107425] 2:30 P
- 8 J. N. Moore*, M.C. Adams: THERMAL AND CHEMICAL EVOLUTION OF THE CAPROCK IN THE SALTON SEA GEOTHERMAL FIELD, CALIFORNIA [103969] 2:45 P
- 9 D. R. Janecky*, R. W. Charles, F. Goff: HYDROTHERMAL REACTIONS AND HYDROLOGIC INTERPRETATIONS FROM CSDP WELL RDO-2B, LONG VALLEY, CALIFORNIA [108483] 3:00 P
- 10 M. A. McKibben*, A. E. Williams, J. P. Andes, Jr., C. S. Oakes, S. Okubo, W. A. Elders: METAMORPHOSED PLIO-PLAISTOCENE EVAPORITES IN THE SALTON SEA GEOTHERMAL SYSTEM, SALTON TROUGH RIFT, CALIFORNIA [99373] 3:15 P
- 11 C. S. Eldridge*, M. A. McKibben, A. E. Williams, W. Compston, I. S. Williams, J. L. Walshe: SHRIMP ION MICROPROBE MEASUREMENT OF THE SULFUR ISOTOPIC COMPOSITIONS OF SULFATE AND SULFIDE MINERALS FROM THE SALTON SEA GEOTHERMAL SYSTEM, CALIFORNIA [85375] 3:30 P
- 12 Geoffrey Thompson*, Susan E. Humphris, Peter E. Rona: HYDROTHERMAL PRECIPITATES FROM A BLACK SMOKER VENT, TAG AREA, MID-ATLANTIC RIDGE 26 DEGREES N [104473] 3:45 P
- 13 Linda M. Bonnell*, Thomas F. Anderson: ISOTOPIC ANALYSES OF REDUCED SULFUR IN CRETACEOUS SHALES: DSDP SITE 511 [87738] 4:00 P
- 14 Gunter Faure*, Brenda K. Lord: CONCURRENT VOLCANIC ACTIVITY AND GLACIATION IN THE ROSS EMBAYMENT, ANTARCTICA, RECORDED AT DSDP SITE-270 BY Sr ISOTOPIC DATA [109071] 4:15 P
- 15 Crayton J. Yapp*: THE POSSIBILITY OF DETERMINING CO2 PARTIAL PRESSURES IN GEOLOGICAL SYSTEMS WITH IRON-OXYHYDROXIDES [99634] 4:30 P

GENERAL INFORMATION

GSA has blocked rooms at twelve hotels that are offering special convention rates to GSA meeting attendees. GSA endorses these hotels for quality, cleanliness, and service.

TO MAKE YOUR HOTEL RESERVATION

Complete IN FULL the attached Official Housing Request Form and return it immediately. The Housing Bureau will accept reservations submitted on this form ONLY. Your request must be postmarked NO LATER THAN OCTOBER 10. AFTER OCTOBER 10, reservations must be made directly with the hotel. Because many hotels will be filled by this time, you can expect to make several phone calls.

NOTE: You MUST include the hotel code on the Housing Request Form. Codes are identified in parentheses on the hotel description page.

ASSIGNMENT

Hotel rooms will be assigned on a first-come, first-served basis as they are received by the Housing Bureau. Acknowledgment will be sent to you from the Housing Bureau once your form has been processed. Confirmation will be sent from the hotel to which you have been assigned. You should receive both within three weeks of your mailing date. Please check to be sure all information is correct.

ROOM DEPOSITS

Your room will be held until 6:00 p.m. on your date of arrival unless you send one night's room deposit. Due to the possibility of unforeseen delays in your arrival time, we strongly recommend that you send in a deposit regardless of your current schedule.

To make a deposit on your room, either (1) send a check or credit card number with your housing form payable to GSA Housing Bureau (and it will be forwarded to the appropriate hotel) OR (2) wait until you have received your hotel confirmation and mail a check directly to the hotel or call the hotel with your credit card number.

CHARGES AND CANCELLATIONS

If you must CHANGE your hotel reservation, simply write or call the hotel directly and indicate the change desired.

If you must CANCEL your reservation BEFORE OCTOBER 10, write to the Housing Bureau immediately so that other reservations can be accommodated. AFTER OCTOBER 10, please cancel directly with the hotel. Your notice of cancellation must be received **within 48 hours** of your scheduled arrival or your deposit will not be refunded.

NOTE: All rooms will be taxed 10%. Remember... **DON'T BE A NO-SHOW!**

AIR TRANSPORTATION

GSA has designated the Cain Travel Group of Boulder, Colorado, as the official airline reservation agent for the San Antonio meeting. United and Delta airlines are the official co-airlines.

Cain has been GSA's official agency for five years and is a proven resource for those who want to work with a travel agent in determining the best possible airfares. The agency service is free, and it can save you both time and money.

Reduced rates will be up to 40% off coach depending on the dates of travel. United and Delta have also offered an additional 5% off any available fare, but restrictions will apply. These rates will be available only to GSA travelers.

All participants booking through Cain Travel will automatically become eligible for inclusion in a drawing for two roundtrip tickets to anywhere in the continental United States prior to August 31, 1987, subject to certain restrictions. In addition, clients will be eligible for a second drawing for \$500 in travel credits.

Reservation Procedures:

1. Book early. Understand and write down the restrictions, if any.
2. Call Cain Travel at (800) 346-4747 (toll free) or (303) 443-2246, Monday-Friday, 7:30 a.m. to 5:30 p.m. MST.
3. Identify yourself as a GSA traveler.
4. The agent will quote you the discounted fare for your itinerary and confirm your reservation.
5. Payment options: Check payable to Cain Travel Group; major credit card; invoice to your firm.
6. All payment must reach Cain no later than seven days prior to departure. No reservations can be accepted by Cain after this deadline, which allows adequate mailing time.
7. Tickets will be sent to you via *certified mail* upon receipt of payment or credit card authorization.
8. In the event of a decrease in your airfare after the ticket has been issued, call Cain Travel and they will re-ticket you at the lower fare.

The Cain Travel Group will provide a customer service desk at the Convention Center.

GROUND TRANSPORTATION

GSA will not provide a shuttle service in San Antonio. Most GSA hotels are within walking distance from the Convention Center. The city offers convenient and reliable service to and from the airport and for getting around downtown. Below is information to help plan your trip.

Airport Transportation. Routes from the airport to hotels are serviced by 40-passenger buses, VIA Limousine Service. They will stop at all GSA hotel properties upon request. Hours are 6:30 a.m. to 11:55 p.m. 7 days a week, departing from the airport every 30 minutes. Cost is currently \$5.

VIA Limousine Service will also take you back to the airport. However, hotel pick-ups are not automatic. You must make your reservation by calling VIA at 227-5251. Service runs every 30 minutes. Cost is currently \$5.

Cab fare is approximately \$12 each way per carload. Service is available 24 hours.

Downtown Transportation. VIA Streetcar services the downtown area and major sightseeing attractions. Service is available from 7:00 a.m. to 9:00 p.m. on Saturday and 7:00 a.m. to either 8:00 p.m. or 9:00 p.m. Sunday through Friday, depending on the route. Stops are made every 10 to 20 minutes. Route maps will be available in your registration packet. Cost is 10 cents per ride.

Car Rental. For those desiring the convenience of a rental car, special low rates are offered by National, which is the official GSA car rental agency. Sample daily/weekly rates: Economy \$29/\$144; compact \$32/\$159; mid-size \$34/\$169; full-size (two-door) \$36/\$179. (four-door) \$37/\$184. Mileage is unlimited, but vehicles must be returned to the same rental location to avoid drop charges. Advance reservations are recommended. Call National at (800)-328-7949. In San Antonio call: (512) 824-8141.

OFFICIAL HOUSING REQUEST FORM

PLEASE READ CAREFULLY AND COPY FOR YOUR RECORDS

FOR HOUSING BUREAU USE ONLY

MAIL TO:

HOUSING
SAN ANTONIO CONVENTION
& VISITORS BUREAU
P.O. BOX 2277
SAN ANTONIO, TEXAS 78298

- PLEASE PRINT OR TYPE ALL ITEMS TO ASSURE ACCURACY.
- COMPLETE EACH PART BELOW IN DETAIL FOR CORRECT AND RAPID COMPUTER PROCESSING.
- SHOULD MORE THAN TWO (2) ROOMS BE NEEDED, SUPPLEMENTAL ROOM LIST **MUST** BE ATTACHED USING SAME FORMAT AS IN PART III.
- ALL ACKNOWLEDGEMENTS WILL BE SENT TO INDIVIDUAL INDICATED IN PART I. ACTUAL CONFIRMATION WILL FOLLOW FROM HOTEL.

PART I

INSTRUCTIONS: Complete requested data using abbreviations as necessary.
(NAME OF PERSON REQUESTING ROOMS)

(LAST NAME)															(FIRST)														
(NAME OF COMPANY OR FIRM)																													
(STREET ADDRESS OR P.O. BOX NUMBER)																													
(CITY)															(STATE)					(ZIP — USA)									
(COUNTRY)															(AREA CODE)					(PHONE NUMBER)									

PART II

INSTRUCTIONS: Select SIX Hotel/Motels of your choice. No request will be processed without SIX choices.

FIRST CHOICE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (HOTEL CODE)	SECOND CHOICE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (HOTEL CODE)	THIRD CHOICE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (HOTEL CODE)
FOURTH CHOICE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (HOTEL CODE)	FIFTH CHOICE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (HOTEL CODE)	SIXTH CHOICE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (HOTEL CODE)

PART III

- INSTRUCTIONS: 1. PRINT OR TYPE NAMES OF ALL PERSONS OCCUPYING EACH ROOM.
2. SELECT TYPE ROOM DESIRED WITH ARRIVAL AND DEPARTURE DATES.
3. SUPPLEMENTAL LIST FOR ADDITIONAL ROOM **MUST** USE SAME FORMAT.
4. PRINT OR TYPE LAST NAME FIRST.

	GUEST NAME/S (PRINT LAST NAME FIRST)	P + 1 — Parlor & one bedroom	P + 2 — Parlor & two bedrooms
ROOM NO. 1	1. _____	CHECK ONE _Single _Triple _Double _Quad _Twin _P + 1 _DbI/DbI _P + 2	ARR. DATE _____ DEP. DATE _____ ARR. TIME _____ <input type="checkbox"/> AM <input type="checkbox"/> PM (Check one) NOTE: Reservation will be held only until 6 p.m. unless special arrangements are made directly with hotel. The hotel may request a deposit.
	2. _____		
	3. _____		
	4. _____		
ROOM NO. 2	1. _____	CHECK ONE _Single _Triple _Double _Quad _Twin _P + 1 _DbI/DbI _P + 2	ARR. DATE _____ DEP. DATE _____ ARR. TIME _____ <input type="checkbox"/> AM <input type="checkbox"/> PM (Check one) NOTE: Reservation will be held only until 6 p.m. unless special arrangements are made directly with hotel. The hotel may request a deposit.
	2. _____		
	3. _____		
	4. _____		

DEPOSIT

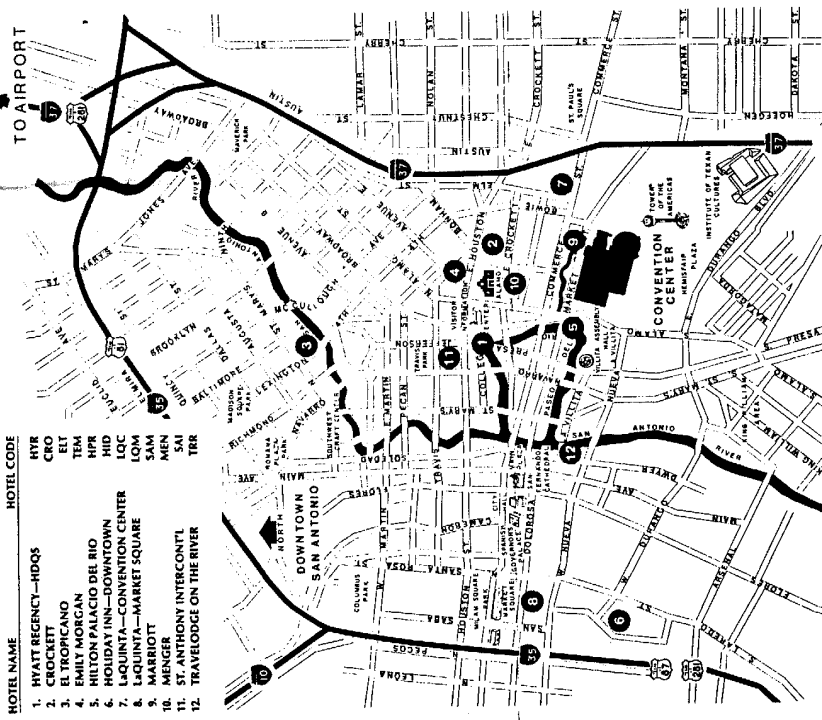
Remit in U.S. funds. Make checks payable to GSA Housing Bureau or charge:

Amer Exp
 MasterCard
 Choice
 VISA
 Diners Club/ Carte Blanche
 Card Number _____ Expires ____/____

NOTE: PLEASE RECHECK ALL ITEMS FOR CORRECT INFORMATION

DOWNTOWN SAN ANTONIO

HOTEL NAME	HOTEL CODE
1. HYATT REGENCY—HQQS	HYR
2. CROCKETT	CRO
3. EL TROPICANO	ELT
4. EMILY MORGAN	EMR
5. HILTON PALACIO DEL RIO	HID
6. HOLIDAY INN—DOWNTOWN	LOA
7. LAQUINTA—CONVENTION CENTER	LAQ
8. MARRIOTT	MAR
9. MARRIOTT	MAR
10. MARRIOTT	MAR
11. ST. ANTHONY INTERCONT'L	SAT
12. TRAVELODGE ON THE RIVER	TRR



1
HYATT REGENCY—HEADQUARTERS (H Y R)
 123 Losoya Street, San Antonio, TX 78205
 512-222-1234 (526 rooms)
 Single: \$83 Double: \$93
 Suite range: \$200-\$570

Located on Riverwalk; 3 restaurants; lounge with concert pianist; lounge with jazz; lounge with DJ; rooftop swimming pool, spa, health facilities overlooking the Alamo; gift shop with newstand; concierge; in-room movies; inside paid parking
 Check-in: 3:00 p.m. Check-out: 12:00 noon CC: AX, V, MC, CB, D

2
CROCKETT (C R O)
 320 Bonham, San Antonio, TX 78205
 512-225-6500 (100 rooms)
 Single/Double/Double-Double: \$69
 Suite range: \$150-\$350

3 restaurants; swimming pool; rooftop spa; access street from Alamo; minutes from Convention Center
 Check-in: 3:00 p.m. Check-out: 12:00 noon CC: AX, V, MC, CB, D

3
EL TROPICANO (E L T)
 110 Lexington, San Antonio, TX 78205
 512-223-9461 (100 rooms)
 Single/Double: \$49 Double-Double/Triple: \$59
 Suite range: \$125-\$404

2 restaurants; Olympic-size pool; lounge with entertainment
 Check-in: 6:00 p.m. Check-out: 12:00 noon CC: AX, V, MC, CB, D

4
EMILY MORGAN (E M)
 705 East Houston Street, San Antonio, TX 78205
 512-225-8486 (125 rooms)
 Single/Double: \$65-\$80

Complimentary full breakfast in bed and evening wine social; most rooms with Jacuzzis, refrigerators, remote-control TV; exercise room & sauna, whirlpool; outdoor pool; 1 restaurant
 Check-in: 2:00 p.m. Check-out: 12:00 noon CC: AX, V, MC, D

5
HILTON PALACIO DEL RIO (H P R)
 200 South Alamo, San Antonio, TX 78205
 512-222-1400 (350 rooms)
 Single: \$85 Double: \$94
 Suite range: \$275-\$540

Located on Riverwalk; lounges with entertainment; sing-a-long pub, piano bar; 2 restaurants; swimming pool, hot tub; inside parking; concierge; bathroom phones
 Check-in: 3:00 p.m. Check-out: 11:00 a.m. CC: AX, V, MC, D

6
HOLIDAY INN—DOWNTOWN (H I D)
 318 West Durango, San Antonio, TX 78204
 512-225-3211 (200 rooms)
 Single: \$43 Double: \$53
 Suite: \$119

Pool and patio; free in-room movies; one restaurant; one lounge
 Check-in: 2:00 p.m. Check-out: 12:00 noon CC: AX, V, MC, CB, D

7
LAQUINTA—CONVENTION CENTER (L Q C)
 1001 East Commerce Street, San Antonio, TX 78201
 512-222-9181 (100 rooms)
 Single: \$35 Double: \$42 Double/Double: \$42
 (No suites available)

Free parking; free local calls, free HBO and Showtime; 1 restaurant; 1 cocktail lounge; outdoor pool
 Check-in: 1:00 p.m. Check-out: 1:00 p.m. CC: AX, V, MC

8
LAQUINTA—MARKET SQUARE (L Q M)
 900 Doloresa Street, San Antonio, TX 78207
 512-271-0001 (100 rooms)
 Single: \$35 Double: \$40 Double/Double: \$45
 (No suites available)

24-hour restaurant nearby; near El Mercado Market Place; free Showtime; free coffee in lobby
 Check-in: 1:00 p.m. Check-out: 1:00 p.m. CC: AX, V, MC

9
MARRIOTT (S A M)
 711 East Riverwalk, San Antonio, TX 78205
 512-224-4555 (300 rooms)
 Single: \$89 Double: \$104
 Suite range: \$260-\$435

1 restaurant; 2 cocktail lounges; in-house, first-aid; airline ticket counter; information desk; newstand; sundry shop; bottle shop; children's rec. center; indoor & outdoor swimming pool; concierge; 50% rooms with balconies
 Check-in: 4:00 p.m. Check-out: 12:00 noon CC: AX, V, MC, CB, D

10
MENGER (M E N)
 204 Alamo Plaza, San Antonio, TX 78205
 512-223-4361 (200 rooms)
 Single: \$44 Double: \$54
 Suite range: \$85-\$144

Free in-room movies; 2 restaurants; 2 cocktail lounges; choose antique-furnished or Texas-size rooms; outdoor swimming pool
 Check-in: 6:00 p.m. Check-out: 1:00 p.m. CC: AX, V, MC, CB, D

11
ST. ANTHONY INTERCONTINENTAL (S A I)
 300 East Travis, San Antonio, TX 78298
 512-227-4392 (100 rooms)
 Single/Double: \$75
 Suite range: \$175-\$450

Traditional accommodations with antiques; 3 restaurants; 2 cocktail lounges with entertainment; health facilities; morning newspaper; in-house movies; paid parking
 Check-in: 3:00 p.m. Check-out: 12:00 noon CC: AX, V, MC, CB, D

12
TRAVELODGE ON THE RIVER (T R R)
 100 Villita Street, San Antonio, TX 78205
 512-226-2771 (100 rooms)
 (Suggested for Student Housing)
 Single: \$40 Double: \$45 Double/Double: \$51
 Suite: \$135

Free in-house movies; free coffee and pot in room; free local calls
 Check-in: 2:00 p.m. Check-out: 12:00 noon CC: AX, V, MC

Credit card codes: AX = American Express / V = VISA / MC = MasterCard / CB = Carte Blanche / D = Diners Club
 All hotels offer discounts or free rooms for children. Check for age limit.

PREREGISTRATION FORM

1986 GSA ANNUAL MEETING • NOV. 10-13 • SAN ANTONIO

PREREGISTRATION must be RECEIVED by October 10. FULL payment and form MUST accompany all preregistration requests. Unpaid purchase orders NOT accepted as valid registration. One form per registrant. Participants in all events, short courses excluded, must pay a preregistration fee. CANCELLATION deadline: October 17. No refunds on cancellations received after this date. Confirmation card will be your receipt.

Type or print ** Copy for your records

Name (Last) _____ (First) _____

Institution/Employer _____ Nickname for badge _____

Mailing Address _____

City _____ State _____ Zip code _____

Country _____ Business phone _____ Home phone _____

Guest/Spouse Name (Last) _____ (First) _____

City _____ State/Country _____

Member Affiliations: (1)GSA _____ (2)CF _____ (3)GS _____ (4)GIS _____ (5)MSA _____

(6)NAGT _____ (7)PS _____ (8)SEG _____ Member # _____

PREREGISTRATION FEES

(registration required for participation in all events)

	Qty	Price	Amount
Professional Member (member affiliation checked above)	(1)	\$ 85	\$
Member One-Day (circle day S M T W T)	(2)	\$ 50	\$
Professional Nonmember	(3)	\$125	\$
Nonmember One-Day (circle day S M T W T)	(4)	\$ 70	\$
Student Member (member affiliation checked above)	(5)	\$ 42	\$
Member One-Day (circle day S M T W T)	(6)	\$ 25	\$
Student Nonmember	(7)	\$ 62	\$
Nonmember One-Day (circle day S M T W T)	(8)	\$ 35	\$
Guest (fill in name above for badge)	(9)	\$ 30	\$
What to Buy & Where	Nov 10 (10)	\$ 7	\$
Historic San Antonio & Luncheon	Nov 10 (11)	\$ 29	\$
San Antonio Culture	Nov 11 (12)	\$ 17	\$
Natural Bridge Caverns & Luncheon	Nov 12 (13)	\$ 32	\$
Burros & Burritos	Nov 12 (14)	\$ 28	\$
Invitational Tennis	Nov 9 (15)	\$ 15	\$
10K Run (circle T-shirt size: S M L)	Nov 12 (16)	\$ 7	\$
5K Run (circle T-shirt size: S M L)	Nov 12 (17)	\$ 7	\$
Total of Column A			\$

Remit in U.S. funds, payable To GSA Annual Meeting

or charge: American Express Choice Diners Club/Carte Blanche MasterCard VISA

Card expires: mo / yr _____ card number _____

Signature _____

FOR OFFICE USE ONLY

Deposit Date _____

Balance Due \$ _____

Refund \$ _____

Refund Ck # _____

Refund Date _____

Comment _____

A/R _____

A/P _____

MAIL TO: 1986 GSA ANNUAL MEETING, P.O. BOX 9140, BOULDER, CO 80301.

TICKETED MEAL FUNCTIONS

	Qty	Price	Amount
Engineering Geology	Nov 11 (18)	\$ 15	\$
Geoscience Information Society	Nov 11 (19)	\$ 15	\$
History of Geology Division	Nov 11 (20)	\$ 15	\$
Hydrogeology Division	Nov 11 (21)	\$ 15	\$
Mineralogical Society	Nov 11 (22)	\$ 15	\$
National Association of Geology Teachers	Nov 11 (23)	\$ 15	\$
Paleontological Society	Nov 11 (24)	\$ 15	\$
Sedimentary Geology Breakfast	Nov 11 (25)	\$ 10	\$
Women Geoscientists Breakfast	Nov 11 (26)	\$ 10	\$
Coal Geology Division	Nov 12 (27)	\$ 15	\$
Geochemical Society	Nov 12 (28)	\$ 15	\$
Quaternary Geology & Geomorphology Division	Nov 12 (29)	\$ 15	\$
Society of Economic Geologists	Nov 12 (30)	\$ 15	\$

PREMEETING

1 Geomorphology of Texas Panhandle	Nov 7-9 (31)	\$235	\$
1a Geomorphology #1 without airfare	Nov 7-9 (32)	\$155	\$
2 Archaeological Geology, S. High Plains	Nov 7-9 (33)	\$235	\$
2a Archaeological #2 without airfare	Nov 7-9 (34)	\$155	\$
3 Igneous Geology, Trans-Pecos Texas	Nov 6-9 (35)	\$250	\$
4 Ouachita Mountain Geology	Nov 6-9 (36)	\$315	\$
4a Ouachita Mountain #4 without airfare	Nov 6-9 (37)	\$236	\$
5 Engineering Geology of San Antonio	Nov 9 (38)	\$ 45	\$
6 Stratigraphy & Structure, Maverick Basin	Nov 7-9 (39)	\$265	\$
7 Cambrian Wichita Mountains Igneous	Nov 7-9 (40)	\$326	\$
7a Cambrian Wichita #7 without airfare	Nov 7-9 (41)	\$235	\$
8 Edwards Aquifer Hydrology, San Antonio	Nov 8 (42)	\$ 55	\$
9 Late Pennsylvanian Paleoenvironments	Nov 7-8 (43)	\$140	\$
10 Gulf Coast Lignites	Nov 6-9 (44)	\$265	\$
11 Geology & Mineral Resources--Salt Domes	Nov 9 (45)	\$ 70	\$
12 Southern Oklahoma Sedimentation	Nov 7-9 (46)	\$326	\$
12a Southern Oklahoma #12 without airfare	Nov 7-9 (47)	\$235	\$
Postmeeting			
13 Precambrian Granites, Central Texas	Nov 14-15 (48)	\$150	\$
14 Edwards Limestone Aquifer History	Nov 14 (49)	\$ 60	\$
15 South Texas Modern Depositional System	Nov 13-15 (50)	\$200	\$
16 Stratigraphy of El Paso Borderland	Nov 13-15 (51)	\$190	\$
16a Stratigraphy #16 without airfare	Nov 13-15 (52)	\$125	\$
17 Texas Cretaceous Volcanic Centers	Nov 14-15 (53)	\$ 95	\$
18 Platform Comanchean, Central Texas	Nov 13-15 (54)	\$150	\$

FIELD TRIPS

Computer Graphics	Nov 8-9 (55)	\$270	\$
Glacial-Marine Sedimentation	Nov 8-9 (56)	\$100	\$
Contaminant Hydrogeology	Nov 8-9 (57)	\$100	\$
Seawater Chronostratigraphy	Nov 9 (58)	\$ 50	\$
Geologic Use of Microcomputers	Nov 9 (59)	\$ 85	\$
Fossil Radiolaria	Nov 9 (60)	\$ 75	\$
Principles of Rock Mechanics	Nov 14-15 (61)	\$135	\$
(62)	\$ 18	\$	\$
Total Column B			\$
Total Column A			\$
Column A + B = Total Remittance			\$

SHORT COURSES

(meeting registration not required)

Computer Graphics	Nov 8-9 (55)	\$270	\$
Glacial-Marine Sedimentation	Nov 8-9 (56)	\$100	\$
Contaminant Hydrogeology	Nov 8-9 (57)	\$100	\$
Seawater Chronostratigraphy	Nov 9 (58)	\$ 50	\$
Geologic Use of Microcomputers	Nov 9 (59)	\$ 85	\$
Fossil Radiolaria	Nov 9 (60)	\$ 75	\$
Principles of Rock Mechanics	Nov 14-15 (61)	\$135	\$
(62)	\$ 18	\$	\$
Total Column B			\$
Total Column A			\$
Column A + B = Total Remittance			\$

ABSTRACTS WITH PROGRAMS

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MAIL TO: 1986 GSA ANNUAL MEETING, P.O. BOX 9140, BOULDER, CO 80301.

EUROPEAN ASSOCIATION FOR GEOCHEMISTRY AND GEOCHEMICAL SOCIETY JOINT 1987 SPRING MEETING in conjunction with the Fourth Annual Meeting of the European Union of Geosciences, Strasbourg, France, 13 through 16 April. The program is still in the formative stage; when completed, it will be mailed out separately. Meantime, please indicate which of the undermentioned symposia and general sessions on geochemistry and related topics would be of special interest to you by marking them with a cross and returning this page to: Organising Committee EUG IV, Department of Earth Sciences, ETH-Hönggerberg, 8093 Zürich, Switzerland.

Name (please print)

Institution

Address

.....

.....

Affiliation (please mark with a cross) EAG.... GS.... EUG....

Symposia

-5. The role of fluids in rock deformation and metamorphism
-6. Lavas and magma ascent
-7. Fluid transport through the crust
-8. Geophysical and geochemical constraints on mantle discontinuities
-9. Destruction and creation of continental lithosphere
- ...10. Evolution of European continental crust: deep drilling, geophysics, geology and geochemistry
- ...11. Deep structure and geochemical evolution of the Aegean Arc
- ...13. Radionuclides and the environment
- ...14. Hydrothermal activity and metalliferous sediments on the ocean floor
- ...15. Degradation of organic matter
- ...19. Global biogeochemical cycles in earth history
- ~~...20. Climatic history~~
- ...24. Exploration geochemistry and economic deposits
- ...25. Water resources and contaminant hydrogeology
- ...28. Results of Ocean Drilling Programme

General Sessions

- ...29. Mineralogy ...30. Igneous and volcanic activity ...31. Metamorphism
- ...33. Diagenesis ...38. Economic geology ...41. Geochemistry
- ...43. Geochemistry and cosmochemistry

The Organising Committee will try to make space available for any special interest group or society within the Earth Sciences, to meet or hold specialist symposia. Interested parties please contact the organisers.