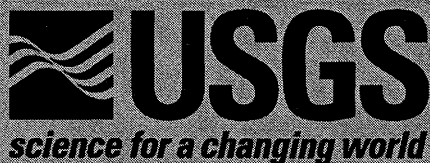


**U.S. Department of the Interior
U.S. Geological Survey**

Publications of the U.S. Geological Survey, 1998

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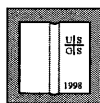
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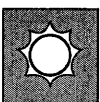
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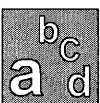
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Publications of the U.S. Geological Survey

This catalog is a list of (1) books and maps¹ that were published during 1998 and (2) articles by U.S. Geological Survey personnel in non-U.S. Geological Survey journals and books that came to our attention in 1998; it supplements the permanent catalogs "Publications of the Geological Survey, 1879–1961," "Publications of the Geological Survey, 1962–1970," and "Publications of the U.S. Geological Survey, 1971 through 1981." These permanent catalogs, as well as some others, are available under the conditions indicated below from USGS Information Services, Box 25286, Federal Center, Denver, CO 80225. The catalogs are also available over the counter at any of the U.S. Geological Survey offices that sell books.

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¹Individual topographic quadrangle maps are not listed; they are shown on State indexes to topographic maps, which are free on application to USGS Information Services, Box 25286, Federal Center, Denver, CO 80225, and to offices where books and maps are sold over the counter. These indexes also show commercial dealers in each State.

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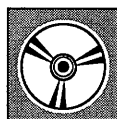
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The Digital Data Series distributes large amounts of digital data (up to 680MB) through the medium of Compact Disc-Read Only Memory technology. This medium takes advantage of the latest technological advances in digital mass-storage and in the internationally recognized standards (ISO-9660) for CD-ROM's. Full instructions on computer technology required to use each CD-ROM are given with each entry. CD-ROM's in the Digital Data Series are available by mail from: USGS Information Services, Box 25286, Federal Center, Denver, CO 80225.

DDS-0011. Geology of the conterminous United States at 1:2,500,000 scale; a digital representation of the 1974 P. B. King and H. M. Beikman map, by P. G. Schruben, R. E. Arndt and W. J. Bawiec. 1998. One CD-ROM. (Release 2.)

The minimum system requirements to use the data with the DOS/Windows mapping software provided on this disc are as follows: (1) IBM or compatible computer with mouse, (2) 640 kb RAM (at least 465 kb free memory), (3) Math coprocessor, (4) MS- or PC-DOS version 5.0 or later, and (5) Super VGA graphics system (640×480 pixels with 256 colors).

DDS-0020. Mineral Resources Data System (MRDS), by G. T. Mason, Jr. and R. E. Arndt. 1996. One CD-ROM. Release 1.

This CD-ROM was produced in accordance with the ISO 9660 standards; however, it contains menu and search programs that operate only on DOS-based computer systems. The minimum system requirements to use the data with the software provided on this disc are as follows: (1) IBM or compatible personal computer (286 or higher processor), (2) hard disk drive with 1 Mb free space, (3) 640 kb RAM, (4) MS- or PC-DOS version 3.0 or later, (5) CD-ROM drive with ISO 9660 software driver, and (6) VGA color monitor. A mouse is optional.

DDS-0038. Digital representation of a map showing the thickness and character of Quaternary sediments in the glaciated United States east of the Rocky Mountains, by D. R. Soller and P. H. Packard. 1998. One CD-ROM.

The minimum system requirements to use the data with software provided on this disc are as follows: Macintosh (1) Macintosh System 7.1 or later, (2) Macintosh 68020 or greater processor: 3.5 Mb RAM available, (3) Power Macintosh: 5 Mb RAM available, and (4) 12.5 Mb hard disk space DOS (1) 386- or 486-based personal computer (486- or Pentium processor-based PC recommended), (2) DOS 3.3 or later, (3) 2 Mb of application RAM available (4) 5 Mb hard disk space Windows (1) 386-, 486-, or Pentium processor-based personal computer, (2) Microsoft Windows 3.1, Windows 95, Windows NT 3.51 or later, (3) 8 Mb RAM available (16 Mb for Windows NT), and (4) 10 Mb hard disk space (5 Mb for Windows 3.1)

DDS-0044. MAINE. Global geoscience transect 8; Quebec-Maine-Gulf of Maine transect, southeastern Canada, northern U.S.A., published as U.S. Geological Survey Miscellaneous Investigations Series map 1-2329, with supporting geographic information system data and PC-compatible seismic reflection and

refraction data, by T. L. Johnson, B. E. Wright, D. B. Stewart and F. N. Zihlman. 1998. One CD-ROM.

System requirements: A color display monitor is strongly recommended with all platforms. Macintosh: (1) Macintosh Operating System 7 or later, (2) Macintosh 68020-040: 2 Mb of application RAM, and (3) Power Macintosh: 4.5 Mb of application RAM. Windows: (1) 386-, 486-, or Pentium-type-processor-based personal computer, (2) Microsoft Windows 3.1, Windows 95, Windows NT 3.5 or later, (3) 4 Mb of RAM, and (4) 5 Mb hard disk space. DOS: (1) 386- or 486-based personal computer (486 recommended), (2) DOS version 3.3 or later, (3) 2 Mb of application RAM (4 Mb recommended), and (4) 5 Mb hard disk space. UNIX: (1) Sun SPARC station workstation, (2) SunOS version 4.1.3 or later, Solaris 2.3 or 2.4, (3) OpenWindows (3.0 or later) or the Motif, window manager (version 1.2.3 or later), (4) 32 Mb of RAM, and (5) 8 Mb of disk space.

DDS-0046. Geology and mineral resource assessment of the Venezuelan Guayana Shield at 1:500,000 scale; a digital representation of maps published by the U.S. Geological Survey, by P. G. Schruben, J. C. Wynn, Floyd Gray, D. P. Cox, J. H. Stewart and W. E. Brooks. 1997. One CD-ROM.

The minimum system requirements to use the data with the Acrobat software provided on this disc are: Macintosh: (1) Macintosh running System 7 or later, (2) Application RAM-2 Mb for Mac 68020-040, 4.5 Mb for Power Mac, (3) 13-inch color monitor, 20-inch recommended, and (4) 5 Mb hard disk space. DOS, Windows 3.x, 95, or NT: (1) IBM or compatible personal computer (386 processor, Pentium recommended), (2) Application RAM-2 Mb for DOS, 4 Mb for Windows (3) MS- or PC-DOS version 3.3 or later, (4) 14-inch VGA color monitor, 20-inch recommended and (5) 5 Mb hard disk space.

DDS-0047. National geochemical data base; PLUTO geochemical data base for the United States, by P. A. Baedeker, J. N. Grossman and K. P. Buttleman. 1998.

This CD-ROM was produced in accordance with the ISO 9660 standard and can be accessed by any computer system that has the appropriate software to read the ISO 9660 discs; however, the disc is intended for use in a DOS environment. The minimum system requirements to use the data with the software provided on this disc are: (1) IBM or compatible personal computer, (2) 640 kb RAM (at least 540 kb free memory); (3) MS- or PC-DOS version 3.3 or later, (4) Microsoft MSCDEX version 2.1 or later, (5) CD-ROM drive with ISO 9660 software drive, (6) Hard disk drive, (7) VGA graphics card, (8) VGA color monitor, and (9) A Microsoft-compatible mouse is highly recommended

DDS-0050. Teaching earth science, edited by T. R. Alpha and M. F. Diggle. 1998.

The minimum system requirements to use the data on this CD-ROM are as follows: (1) Macintosh or compatible computer with a 68020 or higher processor, (2) 8 Megabytes of RAM (recommend 4,500 KB available to HyperCard Player), (3) Apple System Software version 7.0 or later, (4) 13-inch color monitor, (5) CD-ROM drive, (6) HyperCard Player 2.2 or higher viewing software (if you have installed the full HyperCard authoring software, remove HyperCard Player to avoid conflicts), and (7) A generic word-processing program such as SimpleText (included on this CD-ROM).





BOOKS

PROFESSIONAL PAPERS

Professional Papers are mainly comprehensive scientific reports of wide and lasting interest and importance to professional scientists and engineers. Included are reports on the results of resource studies, and of topographic, hydrologic, and geologic investigations. They also include collections of related papers addressing different aspects of a single scientific topic.

P 1066-P. KENTUCKY, INDIANA, OHIO. Middle and Upper Ordovician nautiloid cephalopods of the Cincinnati Arch region of Kentucky, Indiana, and Ohio, by R. C. Frey. Prepared in cooperation with the Commonwealth of Kentucky; Kentucky Geological Survey. 1995. p. P1-P126. (Contributions to the Ordovician paleontology of Kentucky and nearby states; edited by John Pojeta, Jr.)

P 1404-L. Geochemistry of the northern Atlantic Coastal Plain aquifer system, by L. L. Knobel, F. H. Chapelle and Harold Meisler. 1998. p. L1-L57. 8 plates in pocket. (Regional Aquifer-System Analysis; Northern Atlantic Coastal Plain.)

P 1407-A. COLORADO, NEW MEXICO, TEXAS. Summary of the Southwest Alluvial Basins Regional Aquifer-System Analysis in parts of Colorado, New Mexico, and Texas, by D. W. Wilkins. 1998. p. A1-A49. (Regional Aquifer-System Analysis.)

P 1409-A. NEVADA, UTAH. Aquifer systems in the Great Basin region of Nevada, Utah, and adjacent states; summary report, by J. R. Harrill and D. E. Prudic. 1998. p. A1-A66. (Regional Aquifer-System Analysis; Great Basin, Nevada-Utah.)

P 1409-G. UTAH. Ground-water hydrology and simulated effects of development in the Milford area, an arid basin in southwestern Utah, by J. L. Mason. 1998. p. G1-G69. 2 plates in pocket. (Regional Aquifer-System Analysis; Great Basin, Nevada-Utah.)

P 1414-C. Geohydrology and simulation of steady-state flow conditions in regional aquifer systems in Cretaceous and older rocks underlying Kansas, Nebraska, and parts of Arkansas, Colorado, Missouri, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, by D. C. Signor, J. O. Helgesen, D. G. Jorgensen and R. B. Leonard. 1997. 105 p., 2 plates in pocket. (Regional Aquifer-System Analysis; Central Midwest.)

P 1418. Hydrogeologic framework of the Michigan Basin regional aquifer system, by D. B. Westjohn and T. L. Weaver. 1998. 47 p.

P 1422-D. Water quality in the Appalachian Valley and Ridge, the Blue Ridge, and the Piedmont physiographic provinces, eastern United States, by L. I. Briel. 1997. p. D1-D115, 1 plate in pocket. (Regional Aquifer-System Analysis; Appalachian Valley and Piedmont.)

P 1424-D. WASHINGTON. Hydrogeologic framework of the Puget Sound aquifer system, Washington and British Columbia, by J. J. Vaccaro, A. J. Hansen, Jr. and M. A. Jones. 1998. p. D1-D77, 1 plate in pocket. (Regional Aquifer-System Analysis; Puget-WillametteLowland.) (Supersedes Open-file report 96-353.)

P 1550-B. CALIFORNIA. The Loma Prieta, California, earthquake of October 17, 1989; forecasts, by R. A. Harris. 1998. p. B1-B28. (Earthquake occurrence, W. H. Bakun and W. H. Prescott, coordinators.)

P 1551-B. CALIFORNIA. The Loma Prieta, California, earthquake of October 17, 1989; liquefaction, edited by T. L. Holzer, U.S. Geological Survey. Prepared in cooperation with the National Science Foundation. 1998. p. B1-B314. p. B1-B314. 3 plates in pocket. (Strong ground motion and ground failure; coordinated by T. L. Holzer.)

Liquefaction characteristics of San Francisco bayshore fills, by J. L. A. Chameau, G. W. Clough, J. D. Frost, Georgia Institute of Technology; and F. A. M. Reyna, Universidad Católica de Córdoba. p. B9-B24.

Liquefaction hazards in the Mission District and South of Market area, San Francisco, by J. W. Pease, Dames & Moore; and T. D. O'Rourke, Cornell University. p. B25-B60.

Soil liquefaction in the East Bay during the earthquake, by R. E. Kayen, U.S. Geological Survey; J. K. Mitchell, Virginia Polytechnic Institute and State University; R. B. Seed, University of California at Berkeley; and Shin'ya Nishio, Shimizu Corporation. p. B61-B85.

Analysis of liquefaction-induced damage on Treasure Island, by M. S. Power, Geomatrix Consultants; J. A. Egan, Geomatrix Consultants; S. E. Shewbridge, Scott Shewbridge Associates; and John deBecker, J. R. Faris, U. S. Navy. p. B87-B119.

Sand boils and settlement on Treasure Island after the earthquake, by M. J. Bennett, U.S. Geological Survey. p. B121-B128.

Liquefaction at Moss Landing, by L. H. Mejia, Woodward-Clyde Consultants. p. B129-B150.

Observations of multiple liquefaction events at Soda Lake, California, during the earthquake and its aftershocks, by J. D. Sims, C. D. Garvin, U.S. Geological Survey. p. B151-B163.

Postearthquake investigations at liquefaction sites in Santa Cruz and on Treasure Island, by R. D. Hryciw, University of Michigan; S. E. Schewbridge, Scott Shewbridge Associates; Alan Kropp, Alan Kropp and Associates; and Matthew Homolka, CH2M Hill. p. B165-B180.

Direct measurement of liquefaction potential in soils of Monterey County, California, by W. A. Charlie, D. O. Doehring, J. P. Brislawn and Hassen Hassen, Colorado State University. p. B181-B221.

Comparison of computed and measured liquefaction; induced settlements in the Marina District, San Francisco, by K. M. Rollins and M. D. McHood, Brigham Young University. p. B223-B239.

Improved-ground performance during the earthquake, by J. K. Mitchell, Virginia Polytechnic Institute and State University; and F. J. Wentz, Jr., Woodward-Clyde Consultants. p. B241-B272.

Evaluation of liquefaction-hazard mapping in the Monterey Bay region, Central California, by W. R. Dupre, University of Houston; and J. C. Tinsley, III, U.S. Geological Survey. p. B273-B285.



Appendix; maps and descriptions of liquefaction and associated effects, by J. C. Tinsley, III, U.S. Geological Survey; J. A. Egan, Geomatrix Consultants; R. E. Kayen, M. J. Bennett, U.S. Geological Survey; Alan Kropp, Alan Kropp and Associates; and T. L. Holzer, U.S. Geological Survey. p. B287-B314.

- P 1551-C. CALIFORNIA. The Loma Prieta, California, earthquake of October 17, 1989; landslides, edited by D. K. Keefer. 1998. p. C1-C185. 8 plates in pocket. (Strong ground motion and ground failure, T. L. Holzer, coordinator.)

Regional distribution and characteristics of landslides generated by the earthquake, by D. K. Keefer, U.S. Geological Survey; and M. W. Manson, California Division of Mines and Geology. p. C7-C32.

Coastal-bluff failures in northern Monterey Bay induced by the earthquake, by G. B. Griggs, University of California at Santa Cruz; and Nathaniel Plant, Oregon State University. p. C33-C50.

CALIFORNIA. Landslide dams in Santa Cruz County, California, resulting from the earthquake, by R. L. Schuster, G. F. Wieczorek, U.S. Geological Survey; and D. G. Hope II, Santa Cruz County Planning Department. p. C51-C70.

CALIFORNIA. Large landslides near the San Andreas Fault in the Summit Ridge area, Santa Cruz Mountains, California, by D. K. Keefer, U.S. Geological Survey; G. B. Griggs, University of California at Santa Cruz; and E. L. Harp, U.S. Geological Survey. p. C71-C128.

Origin of fractures triggered by the earthquake in the Summit Ridge and Skyland Ridge areas and their relation to landslides, by E. L. Harp, U.S. Geological Survey. p. C129-C143.

Evaluation of coseismic ground cracking accompanying the earthquake; trenching studies and case histories, by J. M. Nolan, Nolan Associates; and G. E. Weber, University of California at Santa Cruz. p. C145-C163.

CALIFORNIA. Analysis of earthquake-reactivated landslides in the epicentral region, central Santa Cruz Mountains, California, by W. F. Cole, D. R. Marcu, P. O. Shires, Cotton, Shires and Associates; and B. R. Clark, Leighton and Associates. p. C165-C185.

- P 1552-B. CALIFORNIA. The Loma Prieta, California, earthquake of October 17, 1989; highway systems, by Mark Yashinsky, California Department of Transportation. Prepared in cooperation with the National Science Foundation. 1998. 191 p. (Performance of the built environment; coordinated by T. L. Holzer.)

- P 1552-C. CALIFORNIA. The Loma Prieta, California, earthquake of October 17, 1989; building structures, edited by Mehmet Celebi, U.S. Geological Survey. Prepared in cooperation with the National Science Foundation. 1998. p. C1-C186. (Performance of the built environment, T. L. Holzer, coordinator.)

Performance of building structures; a summary, by Mehmet Celebi, U.S. Geological survey. p. C5-C76.

Measured response of two tilt-up buildings, by S. L. Wood, University of Texas; and N. M. Hawkins, University of Illinois. p. C77-C90.

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Seismic response of a 42-story steel building, by J. C. Anderson, University of Southern California; and V. V. Bertero, University of California at Berkeley. p. C113-C139.

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Housing repair and reconstruction after the earthquake, by M. C. Comerio, University of California at Berkeley. p. C161-C168.

Impact of the earthquake on habitability of housing units, by J. B. Perkins and Ben Chuaqui, Association of Bay Area Governments. p. C169-C186.

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- P 1577. Evidence for hot mississippi valley-type brines in the Reelfoot Rift complex, south-central United States, in Late Pennsylvanian-Early Permian, by D. L. Leach, L. E. Apodaca, J. E. Repetski, J. W. Powell and E. L. Rowan. 1997. 36 p.
<http://geology.cr.usgs.gov/publications/ppapers/p1577/p1577.html>

- P 1581. ALASKA. Geomorphology of the lower Copper River, Alaska, by T. P. Brabets. Prepared in cooperation with the Alaska Department of Transportation and Public Facilities. 1997. 89 p.

- P 1582. WASHINGTON. Petroleum geology of the State of Washington, by S. Y. Johnson, M. E. Tennyson, U. S. Geological Survey; W. S. Lingley, Washington Department of Natural Resources; and B. E. Law, U. S. Geological Survey. 1997. 40 p.

- P 1583. WYOMING. Bedload and river hydraulics; inferences from the East Fork River, Wyoming, by L. B. Leopold and W. W. Emmett. 1997. 52 p.

- P 1584. ARIZONA. Verification of roughness coefficients for selected natural and constructed stream channels in Arizona, by J. V. Phillips and T. L. Ingersoll. Prepared in cooperation with the Flood Control District of Maricopa County. 1998. 77 p.

- P 1585. UTAH. Hydrology of the Bonneville Salt Flats, northwestern Utah, and simulation of ground-water flow and solute transport in the shallow-brine aquifer, by J. L. Mason and K. L. Kipp, Jr. Prepared in cooperation with the Bureau of Land Management. 1998. 108 p.

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<http://geology.cr.usgs.gov/publications/ppapers/p1588/p1588.html>



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P 1592. NEVADA, CALIFORNIA. The nature and timing of tectonism in the western facies terrane of Nevada and California; an outline of evidence and interpretations derived from geologic maps of key areas, by K. B. Ketner. 1998. 19 p.
<http://geology.cr.usgs.gov/publications/ppapers/p1592/p1592.html>

P 1593. NEVADA. An outline of tectonic, igneous, and metamorphic events in the Goshute-Toano Range between Silver Zone Pass and White Horse Pass, Elko County, Nevada; a history of superposed contractional and extensional deformation, by K. B. Ketner, W. C. Day, Maya Elrick, M. K. Vaag, R. A. Zimmerman, L. W. Snee, R. W. Saltus, J. E. Repetski, B. R. Wardlaw, M. E. Taylor and A. G. Harris. 1998. 12 p.
<http://geology.cr.usgs.gov/publications/ppapers/p1593/p1593.html>

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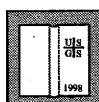
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R. CALIFORNIA. Volcanic rocks of the Santa Maria Province, California, by R. B. Cole, Allegheny College; and R. G. Stanley, U. S. Geological Survey. p. R1-R35.

S. CALIFORNIA. Age and tectonic inferences from a condensed(?) succession of Upper Cretaceous, Paleocene, and Eocene strata, Big Pine Mountain area, Santa Barbara County, California, by J. G. Vedder, R. G. Stanley, Hugh McLean, U.S. Geological Survey; M. L. Cottont; M. V. Filewicz, Unocal Frontier Exploration; and D. R. Vork, Unocal Corporation. p. S1-S33.

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- B 2000-P. UTAH, COLORADO. Geology of the Pennsylvanian and Permian Culter Group and Permian Kaibab Limestone in the Paradox Basin, southeastern Utah and southwestern Colorado, by S. M. Condon. 1997. p. P1-P46. p. P1-P46. 9 plates in pocket. (Evolution of sedimentary basins, Paradox Basin; coordinated by A. C. Huffman, Jr.)

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- B 2150-B. Bedrock geology of the Paducah 1°x2° CUSMAP quadrangle, Illinois, Indiana, Kentucky, and Missouri, by W. J. Nelson, Illinois State Geological Survey. A joint study conducted in collaboration with the Illinois Geological Survey; Indiana Geological Survey; Kentucky Geological Survey; Missouri Division of Geology and Land Survey. 1998. p. B1-B36. 1 plate in pocket. (The Paducah CUSMAP Quadrangle, resource and topographical investigations; coordinated by M. B. Goldhaber.)

- B 2158. UTAH. Laccolith complexes of southeastern Utah; time of emplacement and tectonic setting; workshop proceedings, compiled by J. D. Friedman and A. C. Huffman, Jr., U.S. Geological Survey. 1998. 292 p.
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W 2425. National water summary on wetland resources, compiled by J.D. Fretwell, J.S. Williams, and P.J. Redman, U.S. Geological Survey. 1996. 431 p.
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- OF 98-0252. ARIZONA, NEVADA. Distribution, migrating behavior, and habitat use of razorback sucker (*Xyrauchen texanus*) in Lake Mohave, Arizona-Nevada, by Gordon Mueller, Paul Marsh and Glen Knowles. Prepared in cooperation with Arizona State University; Bureau of Reclamation; National Park Service; Fish and Wildlife Service; Nevada Division of Wildlife. 1998. 88 p. (NC, M, Da; Arizona Geol. Surv., 416 West Congress, Suite 100, Tucson, AZ 85701.)
- OF 98-0296. KENTUCKY. Public ground-water supplies of Henry, Oldham, and Trimble counties, Kentucky, 1995-96, by M. D. Unthank and H. L. Nelson, Jr. Prepared in cooperation with the Kentuckiana Planning and Development Agency. 1998. 1 over-size sheet. (NC, Da, M, Wb.)
- OF 98-0301. Post-stocking dispersal, habitat use, and behavioral acclimation of juvenile razorback suckers (*Xyrauchen texanus*) in two Colorado River reservoirs, by Gordon Mueller and Paul Marsh. Prepared in cooperation with Arizona State University; National Park Service; Bureau of Reclamation; U.S. Fish and Wildlife Service. 1998. 24 p. (NC, M, Da; Arizona Geol. Surv., 416 West Congress, Suite 100, Tucson, AZ 85701.)
- OF 98-0330-A. VERMONT. Digital and preliminary bedrock geologic map of the Mount Carmel 7.5 x 15 minute quadrangle, Vermont, by N. M. Ratcliffe and G. J. Walsh. 1998. One over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M.)
<http://www.anr.state.vt.us/geology/ofreps.htm>
- OF 98-0330-B. VERMONT. Digital and preliminary bedrock geologic map of the Mount Carmel 7.5 x 15 minute quadrangle, Vermont, by N. M. Ratcliffe and G. J. Walsh. 1998. Three 3 1/2 inch IBM-compatible computer diskettes. (NC, Da, M.)
<http://www.anr.state.vt.us/geology/ofreps.htm>
- OF 98-0332. COLORADO. Slide show on gravel deposit models and measuring aggregate quality, Front Range urban corridor, Colorado, by D. A. Lindsey and W. H. Langer. 1998. 19 p. (NC, M, Da, U; Vicki J. Cowart, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203-2277; Chief, Geotechnical Services Branch, Office of the State Engineer, 1313 Sherman St., Room 818, Denver, CO 80203-2277.)
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-98-0332/98-223.html>
- OF 98-0333. MONTANA. Merged aeromagnetic and gravity data for Montana; a web site for distribution of gridded data and plot files, by A. E. McCafferty, Viki Bankey and K. C. Brenner. 1998.



- 20 p. (NC, M, Da, U, S; Montana Bur. of Mines & Geol., Montana Coll. of Mineral Sci. & Technol., Butte, MT 59701.)
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-98-0333/mt.html>
- OF 98-0334. NEW MEXICO. Resistivity of Lake Valley Fault from audiomagnetotelluric measurements, Sierra County, southern New Mexico, by D. P. Klein and R. A. Wise. 1998. 74 p. (NC, M, Da, U; New Mexico Bur. of Mines & Mineral Resources, Campus Station, Socorro, NM 87801.)
- OF 98-0336. MONTANA, WYOMING. Computer spreadsheet for table 1, chemical and isotopic analyses of gases from gas fields, Wind River and Bighorn basins, Montana and Wyoming, by R. C. Johnson, C. W. Keighin, C. N. Threlkeld and Augusta Warden. 1998. One 3 1/2 inch DS/HD IBM compatible computer diskette. (NC, M, Da, U, S; Montana Bur. of Mines & Geol., Montana Coll. of Mineral Sci. & Technol., Butte, MT 59701; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071.)
- OF 98-0339. ARIZONA. SAR studies in two Arizona deserts; sand penetration, geology, and the detection of military ordnance debris, by G. G. Schaber and C. S. Breed. 1998. 114 p. (NC, Da, M, U; Arizona Geol. Surv., 416 West Congress St., Suite 100, Tucson, AZ 85701-1315.)
- OF 98-0342. Characterization of coal and coal combustion products from a coal-burning power plant; preliminary report and results of analyses, edited by G. N. Breit and R. B. Finkelman. 1997. 101 p. (NC, M, Da.)
- Sample collection procedure, by C. F. Eble. p. 10-12.
- Kentucky Geological Survey preliminary and analytical results on feed coal, fly ash and bottom ash, by C. F. Eble. p. 13-16.
- The chemical composition of feed coal, fly ash and bottom ash, by R. H. Affolter. p. 17-43.
- KENTUCKY. Characterization of hazardous trace elements in solid waste products from a coal-burning power plant in Kentucky, by S. S. Crowley, R. B. Finkelman, C. A. Palmer and C. F. Eble. p. 44-49.
- Laboratory leaching behavior of environmentally sensitive trace elements from fly ash and bottom ash samples, by C. A. Palmer, R. B. Finkelman, M. R. Krasnow and C. F. Eble. p. 50-55.
- Magnetic studies of fly ash and bottom ash, by R. L. Reynolds, F. E. Gay, J. G. Rosenbaum and M. E. Brownfield. p. 56-67.
- Radionuclides in coal and coal combustion waste products, by R. A. Zielinski and J. R. Budahn. p. 68-71.
- Water-soluble anions; implications for soluble phases on combustion product surfaces, by G. N. Breit and J. M. Motooka. p. 72-73.
- Coal ash environmental leaching; pH, by Tim Anderson and J. S. Leventhal. p. 74-75.
- Coal ash environmental leaching; elemental, by J. M. Motooka, Tim Anderson, A. L. Meier and J. S. Leventhal. p. 76-78.
- Preliminary geochemical model results of water leachates, by C. A. Rice. p. 79-81.
- Electron microprobe analysis of fly ash and bottom ash, by J. J. McGee. p. 82-84.
- Analytical transmission electron microscopy of fly ash from unit 1, by G. L. Nord, Jr. p. 85-87.
- Petrographic analysis of sized fractions of fly ash; November 1994 samples, by J. C. Hower and A. S. Trimble. p. 88-90.
- Initial report on the sulfur isotope geochemistry of solid waste products from a coal-burning power plant, by E. C. Spiker and A. L. Bates. p. 91-92.
- Organic geochemical studies, by W. H. Orem and H. E. Lerch. p. 93-94.
- Bulk X-ray diffraction analysis, by F. T. Dulong. p. 95-96.
- Fly ash petrography, by James Pontolillo. p. 97-98.
- OF 98-0353-A. Antarctic ice sheet; computer animations and paper model, by T. R. Alpha and A. K. Cooper. 1998. 49 p. (NC, Da, M.)
<http://www.usgs.gov/education/animations/>
- OF 98-0353-B. Antarctic ice sheet; computer animations and paper model, by T. R. Alpha and A. K. Cooper. 1998. One 3.5 inch DS/HD Macintosh-compatible diskette. (NC, Da, M.)
- This report on a 3.5-inch Macintosh format diskette requires an Apple MacintoshTM computer with High-Density drive and Apple Computer, Inc., HyperCard 2.0TM or HyperCard Reader, software.
- OF 98-0354. CALIFORNIA. Preliminary geologic map of the San Francisco South 7.5' quadrangle and part of the Hunters Point 7.5' quadrangle, San Francisco Bay area, California; a digital database, by M. G. Bonilla. 1998. 14 p. (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 185 Berry St., Suite 210, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)
<http://wris.wr.usgs.gov/open-file/of98-354/>
- OF 98-0364. MONTANA. Acid-neutralizing potential of minerals in intrusive rocks of the Boulder Batholith in northern Jefferson County, Montana, by G. A. Desborough, P. H. Briggs, Nilah Mazza and Rhonda Driscoll. 1998. 21 p. (NC, M, Da, U, S; Montana Bur. of Mines & Geol., Montana Coll. of Mineral Sci. & Technol., Butte, MT 59701.)
- OF 98-0372. National Cooperative Geologic Mapping Program status, progress, implementation and recommendations, by J. S. Pallister. 1996. (NC, Da, M.)
- OF 98-0488. Seismic liquefaction features; examples from paleoseismic investigations in the continental United States, by S. F. Obermeier. 1998.
 Available only on the web at <http://pubs.usgs.gov/openfile/of98-488/>
- OF 98-0524. UTAH. Slides of the fluor spar, beryllium, and uranium deposits at Spor Mountain, Utah, by D. A. Lindsey. 1998. (NC, M, Da, U; Utah Geol. Surv., 1594 West North Temple, Suite 3110, P.O. Box 146100, Salt Lake City, UT 84114-6100.)
 Available only on the web at <http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-98-0524/>





THEMATIC MAPS AND CHARTS

GEOLOGIC QUADRANGLE MAPS

Multicolor geologic maps on topographic bases in 7 1/2- or 15-minute quadrangle units; scales mainly 1:24,000 or 1:62,500; show bedrock, surficial, or engineering geology. Maps are accompanied by brief texts and some maps by structure and columnar sections also.

GQ-1761. MARYLAND, VIRGINIA. Geologic map of the Poolesville Quadrangle, Frederick and Montgomery counties, Maryland, and Loudoun County, Virginia, by C. S. Southworth. 1998. Lat 39°07'30" to 39°15', long 77°22'30" to 77°30'. Scale: 1:24,000 (1 inch = 2000 feet). Sheet 40 by 57 inches (in color).

GQ-1772. COLORADO. Geologic map of the Hygiene Quadrangle, Boulder County, Colorado, by R. F. Madole, W. A. Braddock and R. B. Colton. 1998. Lat 40°07'30" to 40°15', long 105°07'30" to 105°15'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 38 by 34 inches (in color).

GQ-1774. MARYLAND. Geologic map of the Kensington Quadrangle, Montgomery County, Maryland, by A. A. Drake, Jr. 1998. Lat 39° to 39°07'30", long 77° to 77°07'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 53 by 38 inches (in color).

GQ-1776. NEVADA. Geological map of the Arrow Canyon NW Quadrangle, Clark County, Nevada, by W. R. Page. Prepared in cooperation with the Las Vegas Valley Water District. 1998. (Supersedes Open-File Report 95-35). Lat 36°37'30" to 36°45', long 114°52'30" to 115°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 44 by 37 inches (in color).

GQ-1801. NEVADA. Geologic map of the Belmont West Quadrangle, Nye County, Nevada, by D. R. Shawe. 1998. Lat 38°30' to 38°37'30", long 116°52'30" to 117°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 58 by 42 inches (in color). (Accompanied by 4 page text.)

GEOPHYSICAL INVESTIGATIONS MAP

Maps on topographic or planimetric bases; various scales; show results of surveys using geophysical techniques, such as gravity, magnetic, seismic, or radioactivity, which reflect subsurface structures that are of economic or geologic significance. Many maps are correlated with the geology.

GP-1013. UTAH. Aerial gamma-ray maps of regional surface concentrations of potassium, uranium, and thorium in Utah, by K. R. Bond and J. S. Duval. 1998. 2 sheets. Lat 37° to 42°, long 109° to 114°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 1, 34 1/2 by 53 1/2 inches; sheet 2, 49 by 29 inches (both in color).

MISCELLANEOUS INVESTIGATIONS SERIES MAPS

Maps on planimetric or topographic bases; regular and irregular areas; various scales; a wide variety of format and subject matter. The series also includes 7 1/2-minute quadrangle photogeologic maps on planimetric bases which show geology as interpreted from aerial photographs. Series also includes maps of Mars and the Moon.

I-1970-B. Map showing the thickness and character of Quaternary sediments in the glaciated United States east of the Rocky Mountains; northern Great Lakes states and central Mississippi Valley states, the Great Lakes, and southern Ontario (80°31' to 93° west longitude), by D. R. Soller. 1998. Lat 37° to 48°, long 80°31' to 93°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 41 by 58 inches (in color). (Accompanied by 10 page text.)

I-1970-C. Map showing the thickness and character of Quaternary sediments in the glaciated United States east of the Rocky Mountains; northern and central plains states (90° to 102° west longitude), by D. R. Soller. 1997. Lat 39° to 49°, long 90° to 102°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 41 by 58 inches (in color). (Accompanied by 9 page text.)

I-2175. GEORGIA, SOUTH CAROLINA, NORTH CAROLINA. Geologic map of the Greenville 1° × 2° quadrangle, Georgia, South Carolina, and North Carolina, by A. E. Nelson, J. W. Horton, Jr. and J. W. Clarke. 1998. Two sheets. Lat 34° to 35°, long 82° to 84°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 55 by 41 inches; sheet 2, 50 by 41 inches (both in color). (Accompanied by 12 page text.)

I-2235. WYOMING. Geologic map and geochronology of the Precambrian and adjacent rocks of the Dodge Ranch-Ayres Spring area, Albany County, Wyoming, by G. L. Snyder, Z. E. Peterman, J. D. Love, U.S. Geological Survey; and G. D. Langstaff. 1997. 2 sheets. Sheet 1, lat 41°52'30" to 42°, long 105°30' to 105°37'30"; sheet 2, lat 40° to 45°, long 105° to 115°. Sheet 1 scale 1:24,000 (1 inch = 2,000 feet). Sheet 1, 58 by 35 inches; sheet 2, 40 by 39 inches (both in color).

I-2236. WYOMING. Geologic map, petrochemistry, and geochronology of the Precambrian rocks of the Bull Camp Peak Quadrangle, Albany County, Wyoming; with a section on crystal differentiation in the Tony Ridge Peridotite, by G. L. Snyder, J. R. Budahn, L. D. Nealey, A. J. Bartel, K. R. Ludwig, U.S. Geological Survey; and J. W. Nicholls, University of Calgary. 1998. 3 sheets. Lat 41°52'30" to 42°, long 105°22'30" to 105°30'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 1, 58 by 42 1/2 inches; sheet 2, 56 by 40 1/2 inches (both in color); sheet 3, 39 by 54 1/2 inches.

I-2364-H. WEST VIRGINIA. Magnetic and gravity anomaly maps of West Virginia, by E. R. King, D. L. Daniels, W. F. Hanna and S. L. Snyder. Prepared in cooperation with the West Virginia Geological and Economic Survey. 1998. Lat 38°07'30" to 38°37'30", long 79°07'30" to 79°45'. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 55 by 33 inches (in color).

I-2389. CALIFORNIA. Bedrock geologic map of the El Paso Mountains in the Garlock and El Paso Peakes 7-1/2' quadrangles, Kern County, California, by M. D. Carr, R. L. Christiansen, F. G. Poole and J. W. Goodge. 1997. Lat 35°22'30" to 35°30', long 117°39' to 117°52'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 40 by 50 inches (in color). (Accompanied by 9 page text.)

I-2426-B. KANSAS, MISSOURI. Bedrock geologic map of the Joplin 1° × 2° quadrangle, Kansas and Missouri, compiled by J. R. Cauley and D. C. Smith. Prepared in cooperation with the Kansas Geological Survey; Missouri Department of Natural Resources, Division of Geology and Land Survey. 1998. Lat 37° to 38°, long 94° to 96°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 43 1/2 by 32 inches (in color).



- I-2442. Geologic map of the Osiris (Jg-12) and Apsu Sulci (Jg-13) quadrangles of Ganymede, by D. E. Wilhelms. Prepared for the National Aeronautics and Space Administration. 1997. Lat -66° to -21°, long 90° to 270°. Scale 1:5,000,000 (1 mm = 5 km) at -30° and -58° latitude. Sheet 54 by 38 inches (in color). (Lambert Conformal projection.)
- I-2444. The planet Venus in four map sheets; 1, Radar image map of Venus; 2, Radar image and shaded relief map of Venus; 3, Altimetric radar image map of Venus; and 4, Topographic map of Venus. Prepared for the National Aeronautics and Space Administration. 1997. Four sheets. All sheets, lat -57° to 57°, long 180° to 180°; lat 55° to 90°, long 0° to 0°; lat -55° to -90°, long 180° to 180°. All sheets, scale 1:50,000,000 (1 mm = 50 km) at 0° latitude; 1:30,573,561 (1 mm = 30.57 km) at 90° latitude; 1:30,573,561 (1 mm = 30.57 km) at -90° latitude. Sheet 1, 32 by 36 inches; sheets 2, 3 and 4, 32 by 29 inches (sheets 3 and 4 in color). (Mercator projections and Polar Stereographic projections.)
- I-2457. The Guinevere Planitia region of Venus in four map sheets; 1, Radar image map of the Guinevere Planitia region of Venus; 2, Radar image and shaded relief map of the Guinevere Planitia region of Venus; 3, Altimetric radar image map of the Guinevere Planitia region of Venus; 4, Topographic map of the Guinevere Planitia region of Venus. Prepared for the National Aeronautics and Space Administration. 1998. 4 sheets. Lat 0° to 57°, long 300° to 180°. Scale: 1:16,354,349 (1 mm = 16.35 km) at 0° latitude; 1:10,000,000 at 52.305° latitude. Sheet 1, 38 by 31 inches; sheet 2, 33 by 29 inches; sheets 3 and 4, 33 by 28 inches (both in color). (Mercator projections)
- I-2458. Revised shaded relief map and controlled color photomosaic of the Tharsis Quadrangle (MC-9) of Mars. Prepared for the National Aeronautics and Space Administration. 1998. Two sheets. Lat 0° to 30°, long 90° to 135°. Scale 1:5,000,000 (1 mm=5 km) at 0° latitude. Sheet 1, 28 by 26 inches; sheet 2, 27 by 20 inches (both in color). (Mercator projections.)
- I-2465. Revised shaded relief map and controlled color photomosaic of the Lunae Palus Quadrangle (MC-10) of Mars. Prepared for the National Aeronautics and Space Administration. 1997. Two sheets. Lat 0° to 30°, long 45° to 90°. Scale 1:5,000,000 (1mm=5 km) at 0° latitude. Sheet 1, 28 by 26 inches; sheet 2, 27 by 20 inches (both in color). (Mercator projections.)
- I-2466. The Sedna Planitia region of Venus in four map sheets; 1, Radar image map of the Sedna Planitia region of Venus; 2, Radar image and shaded relief map of the Sedna Planitia region of Venus; 3, Altimetric radar image map of the Sedna Planitia region of Venus; 4, Topographic map of the Sedna Planitia region of Venus. Prepared for the National Aeronautics and Space Administration. 1998. 4 sheets. Lat 0° to 57°, long 60° to 300°. Scale: 1:16,354,349 (1mm = 16.35 km) at 0° latitude; 1:10,000,000 at 52.305° latitude. Sheet 1, 38 by 31 inches; sheets 2, 3, and 4, 33 by 28 inches (sheets 3 and 4 in color). (Mercator projections)
- I-2475. The Lavinia Planitia region of Venus in four map sheets; 1, Radar image map of the Lavinia Planitia region of Venus; 2, Radar image and shaded relief map of the Lavinia Planitia region of Venus; 3, Altimetric radar image map of the Lavinia Planitia region of Venus; and 4, Topographic map of the Lavinia Planitia region of Venus. Prepared for the National Aeronautics and Space Administration. 1998. Four sheets. Lat -57° to 0°, long 60° to 300°. Scale 1:16,354,349 (1mm = 16.35 km) at 0° latitude; 1:10,000,000 at -52.305° latitude. Sheets 1 and 2, 38 by 30 inches; sheets 3 and 4, 33 by 29 inches (sheets 3 and 4 in color). (Mercator projections.)
- I-2476. The Aphrodite Planitia region of Venus in four map sheets; 1, Radar image map of the Aphrodite Planitia region of Venus; 2, Radar image and shaded relief map of the Aphrodite Planitia region of Venus; 3, Altimetric radar image map of the Aphrodite Planitia region of Venus; and 4, Topographic map of the Aphrodite Planitia region of Venus. Prepared for the National Aeronautics and Space Administration. 1998. Four sheets. Lat -57° to 0°, long 180° to 60°. Scale 1:16,354,349 (1mm = 16.35 km) at 0° latitude; 1:10,000,000 at -52.305° latitude. Sheet 1 and 2, 38 by 30 inches; sheets 3 and 4, 33 by 29 inches (sheets 3 and 4 in color). (Mercator projections.)
- I-2477. The Helen Planitia region of Venus in four map sheets; 1, Radar image map of the Helen Planitia region of Venus; 2, Radar image and shaded relief map of the Helen Planitia region of Venus; 3, Altimetric radar image map of the Helen Planitia region of Venus; and 4, Topographic map of the Helen Planitia region of Venus. Prepared for the National Aeronautics and Space Administration. 1998. Four sheets. Lat -57° to 0°, long 300° to 180°. Scale 1:16,354,349 (1mm = 16.35 km) at 0° latitude; 1:10,000,000 at -52.305° latitude. Sheet 1, 38 by 31 inches; sheets 2, 3, and 4, 33 by 29 inches (sheets 3 and 4 in color). (Mercator projections.)
- I-2482. Revised shaded relief map and controlled color photomosaic of the Oxia Palus Quadrangle (MC-11) of Mars. Prepared for the National Aeronautics and Space Administration. 1997. Two sheets. Sheet 1, lat 0° to 30°, long 0° to 45°; sheet 2, lat 0° to 30°, long 45° to 90°. Scale 1:5,000,000 (1 mm=5 km) at 0° latitude. Sheet 1, 28 by 26 inches; sheet 2, 27 by 20 inches (both in color). (Mercator projections.)
- I-2483. Revised shaded relief map and controlled color photomosaic of the Arabia Quadrangle (MC-12) of Mars. Prepared for the National Aeronautics and Space Administration. 1997. Two sheets. Lat 0° to 30°, long 315° to 360°. Scale 1:5,000,000 (1 mm = 5 km) at 0° latitude. Sheet 1, 28 by 26 inches; sheet 2, 27 by 20 inches (both in color). (Mercator projections.)
- I-2484. Revised shaded relief map and controlled color photomosaic of the Syrtis Major Quadrangle (MC-13) of Mars. Prepared for the National Aeronautics and Space Administration. 1998. Two sheets. Lat 0° to 30°, long 270° to 315°. Scale 1:5,000,000 (1mm = 5 km) at 0° latitude. Sheet 1, 28 by 27 inches; sheet 2, 27 by 20 inches (both in color). (Mercator projections.)
- I-2485. Revised shaded relief map and controlled color photomosaic of the Amenthes Quadrangle (MC-14) of Mars. Prepared for the National Aeronautics and Space Administration. 1998. Two sheets. Lat 0° to 30°, long 225° to 270°. Scale 1:5,000,000 (1mm = 5 km) at 0° latitude. Sheet 1, 28 by 27 inches; sheet 2, 27 by 21 inches (both in color). (Mercator projections.)
- I-2486. Revised shaded relief map and controlled color photomosaic of the Elysium Quadrangle (MC-15) of Mars. Prepared for the National Aeronautics and Space Administration. 1998. Two sheets. Lat 0° to 30°, long 180° to 225°. Scale 1:5,000,000 (1mm = 5 km) at 0° latitude. Sheet 1, 28 by 27 inches; sheet 2, 27 by 20 inches (both in color). (Mercator projections.)
- I-2490. The Ishtar Terra region of Venus in four map sheets; 1, Radar image map of the Ishtar Terra region of Venus; 2, Radar image and shaded relief map of the Ishtar Terra region of Venus; 3, Altimetric



- radar image map of the Ishtar Terra region of Venus; and 4, Topographic map of the Ishtar Terra region of Venus. Prepared for the National Aeronautics and Space Administration. 1998. Four sheets. Lat 55° to 90°, long 0° to 0°. Scale 1:9,145,190 (1mm = 9.14 km) at 56° latitude; 1:100,000,000 at 90° latitude. Sheet 1, 40 by 36 inches; sheet 2, 37 by 36 inches; sheets 3 and 4, 36 by 36 inches (sheets 3 and 4 in color). (Polar stereographic projections.)
- I-2523. The Lada Terra region of Venus in four map sheets; 1, Radar image map of the Lada Terra region of Venus; 2, Radar image and shaded relief map of the Lada Terra region of Venus; 3, Altimetric radar image map of the Lada Terra region of Venus; and 4, Topographic map of the Lada Terra region of Venus. Prepared for the National Aeronautics and Space Administration. 1998. Four sheets. Lat -55° to -90°, long 180° to 180°. Scale 1:9,145,190 (1mm = 9.14 km) at -56° latitude; 1:100,000,000 at -90° latitude. Sheet 1, 40 by 36 inches; sheet 2, 37 by 36 inches; sheets 3 and 4, 36 by 36 inches (sheets 3 and 4 in color). (Polar stereographic projections.)
- I-2544. ARIZONA. Geologic map of the Turkey Creek Caldera, Chiricahua Mountains, Cochise County, Arizona, by E. A. du Bray, J. S. Pallister and D. B. Yager. 1997. 2 sheets. Sheet 1, lat 31°37'30" to 32°05', long 109°07'30" to 109°30'; sheet 2, lat 31°37'30" to 32°07'30", long 109°07'30" to 109°30'. Scale 1:50,000 (1 inch = 4,200 feet). Sheet 1, 41 by 57 inches (in color); sheet 2, 31 by 49 inches.
- I-2548. MISSOURI, ARKANSAS. Geologic map of the Harrison 1° × 2° quadrangle, Missouri and Arkansas, by M. A. Middendorf, Missouri Department of Natural Resources; K. C. Thomson, Southwest Missouri State University; C. E. Robertson, J. W. Whitfield, Missouri Department of Natural Resources; E. E. Glick, U.S. Geological Survey; W. V. Bush, Arkansas Geological Commission; B. R. Haley, U.S. Geological Survey; and J. D. McFarland, III, Arkansas Geological Commission. Prepared in cooperation with the Missouri Department of Natural Resources, Division of Geology and Land Survey; Arkansas Geological Commission. 1997. Lat 36° to 37°, long 92° to 94°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 42 by 32 inches (in color).
- I-2549. Geologic map and Landsat image map of parts of Loralai, Sibi, Quetta, and Khuzar divisions, Balochistan Province, west-central Pakistan, by Florian Maldonado, U.S. Geological Survey; S. H. Khan, J. M. Mengal, Geological Survey of Pakistan; and J. C. Thomas, U.S. Geological Survey. 1998. 2 sheets. Lat 29°30'N to 31°N, long 68°30'E to 66°30'E. Scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 58 by 41 inches; sheet 2, 43 by 41 inches (both in color).
- I-2557. Geologic map of the Dao, Harmakhis, Reull valles region of Mars, by K. H. Price. Prepared for the National Aeronautics and Space Administration. 1998. Lat -57° to -20°, long 240° to 310°. Scale 1:1,004,000 (1 mm = 1.004 km) at 270° longitude Transverse Mercator projection and 1:15,000,000 (1 mm = 15 km) at 0° latitude Mercator projection. Sheet 43 by 36 inches (in color).
- I-2561. Geologic map of the Pavonis Mons Volcano, Mars, by D. H. Scott, J. M. Dohm and J. R. Zimbelman. Prepared for the National Aeronautics and Space Administration. 1998. Lat -2.5° to 7.5°, long 110° to 120°. Scale 1:500,000 (1 mm=500 m) at -87.5° latitude. Sheet 36 by 37 inches (in color). (Polar Stereographic projection.)
- I-2565. COLORADO. Geologic map of the Collegiate Peaks Wilderness Area and the Grizzly Peak Caldera, Sawatch Range, central Colorado, by C. J. Fridrich, Ed De Witt, Bruce Bryant, S. M. Richard and R. P. Smith. 1998. Lat 38°39' to 39°10', long 106°12'30" to 106°50'. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 54 by 42 inches (in color). (Accompanied by 29-page text.)
- I-2581. Geologic map of Callisto, by K. C. Bender and J. W. Rice, Jr., Arizona State University; D. E. Wilhems; and Ronald Greeley, Arizona State University. Prepared for the National Aeronautics and Space Administration. 1997. Lat -57° to 57°, long 180° to 180° and lat 55° to 90°, long 0° to 360°. Scale 1:5,000,000 (1mm=5 km) at 0° latitude and 1:8,388,000 (1mm=8.39 km) at 56° latitude. Sheet 55 by 37 inches (in color). (Mercator projection and Polar Stereographic projection.)
- I-2586. Mapping time-dependent changes in soil-slip-debris-flow probability, by R. H. Campbell, R. L. Bernknopf and D. R. Soller. 1998. Lat 36°30' to 38°30', long 121° to 123°15'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 41 by 56 inches (in color). (Accompanied by 16 page text.)
- I-2595. Geologic map of the MTM-85280 quadrangle, Planum Australe region of Mars, by Ken Herkenhoff. Prepared for the National Aeronautics and Space Administration. 1998. Lat -87.5° to -82.5°, long 260° to 300°. Scale 1:500,000 (1 mm=500 m) at -87.5° latitude. Sheet 40 by 32 inches (in color). (Polar Stereographic projection.)
- I-2601. NEVADA. Bedrock geologic map of the central Block area, Yucca Mountain, Nye County, Nevada, by W. C. Day, C. J. Potter, D. S. Sweetkind, U.S. Geological Survey; and R. P. Dickerson, C. A. San Juan, Pacific Western Technologies. Prepared in cooperation with the U.S. Department of Energy, Nevada Operations Office. 1998. 2 sheets. Lat 36°49'24" to 36°53'36", long 116°25'39" to 116°29'14". Scale 1:6,000 (1 inch = 500 feet). Sheet 1, 36 by 60 inches; sheet 2, 36 by 46 inches (both in color). (Accompanied by 15 page text.)

GEOLOGIC INVESTIGATIONS SERIES

In August 1996, the I-map series name was changed from Miscellaneous Investigations Series Maps to Geologic Investigations Series. All geologic maps approved for publication after August 1996 will be published in the Geologic Investigations Series. The series definition remains the same.

- I-1802-A. Geologic map of the western equatorial region of Mars, by D. H. Scott and K. L. Tanaka. Prepared for the National Aeronautics and Space Administration. 1986. Lat -57° to 57°, long 0° to 180°. Scale 1:15,000,000 (1 mm = 15 km) at 0° latitude. Sheet 55 by 40 inches (in color). (Mercator projection.) (Reprinted 1998.)
- I-1802-B. Geologic map of the eastern equatorial region of Mars, by Ronald Greeley and J. E. Guest. Prepared for the National Aeronautics and Space Administration. 1987. Lat -57° to 57°, long 180° to 360°. Scale 1:15,000,000 (1 mm = 15 km) at 0° latitude. Sheet 51 by 40 inches (in color). (Mercator projection.) (Reprinted 1998.)
- I-1802-C. Geologic map of the polar regions of Mars, by K. L. Tanaka and D. H. Scott. Prepared for the National Aeronautics and Space Administration. 1987. Lat 0° to 90°, long 0° to 360° and lat 180° to 90°, long 0° to 360°. Scale 1:9,203,425 (1 mm = 9.2 km) at ±90° latitude 1:8,418,000 (1 mm = 8.418 km) at ±56° latitude. Sheet 51 by 40 inches (in color). (Polar Stereographic projections.) (Reprinted 1998.)



- I-2467. The Niobe Planitia region of Venus in four map sheets; 1, Radar image map of the Niobe Planitia region of Venus; 2, Radar image and shaded relief map of the Niobe Planitia region of Venus; 3, Altimetric radar image map of the Niobe Planitia region of Venus; and 4, Topographic map of the Niobe Planitia region of Venus. Prepared for the National Aeronautics and Space Administration. 1998. 4 sheets. Lat 0° to 57°, long 180° to 60°. Scale 1:16,354,349 (1 mm = 16.35 km) at 0° latitude; 1:10,000,000 at 52.305° latitude. Sheet 1, 38 by 31 inches; sheet 2, 33 by 29 inches; sheet 3, 33 by 28 inches; sheet 4, 37 by 28 inches (sheets 3 and 4 in color). (Mercator projections.)
- I-2550. Bathymetric map of the Gulf of Carpentaria and the Arafura Sea, by M. S. Grim and N. T. Edgar. 1998. Lat 18°S to 3°S, long 141°E to 132°E. Scale 1:2,500,000 at 0° latitude. Sheet 40 by 32 inches (in color). (Mercator projection.)
- I-2583-D. ILLINOIS, INDIANA, KENTUCKY. Seismotectonic map showing faults, igneous rocks, and geophysical and neotectonic features in the vicinity of the lower Wabash Valley, Illinois, Indiana, and Kentucky, by R. L. Wheeler, Susan Rhea, S. F. Diehl, U.S. Geological Survey; J. A. Drahovzal, Kentucky Geological Survey; G. W. Bear, Indiana University; and M. L. Sargent, Illinois State Geological Survey. Prepared in cooperation with the Illinois Basin Consortium (Illinois State, Indiana, and Kentucky Geological Survey). 1997. Lat 36°30' to 39°, long 87° to 89°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 35 by 49 inches (in color). (Accompanied by 19 page text.)
- I-2584. MONTANA. Geologic maps of western and northern parts of Gallatin National Forest, south-central Montana, compiled by A. B. Wilson and J. E. Elliott. 1997. 2 sheets. Sheet 1, lat 44°30' to 45°30', long 110°45' to 111°30'; sheet 2, lat 45°45' to 46°15', long 110°15' to 111°. Scale 1:126,720 (1 inch = 2 miles). Sheet 1, 33 by 46 inches; sheet 2, 43 by 28 inches (both in color).
- I-2593. MONTANA. Geologic map of the western part of the Cut Bank 1° x 2° quadrangle, northwestern Montana, compiled by J. E. Harrison, J. W. Whipple and D. J. Lidke. 1998. Lat 48° to 49°, long 112°30' to 114°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 42 by 33 inches (in color).
- I-2594. WASHINGTON, MONTANA. Geologic map and cross section across Belt terrane from Chewelah, Washington, to Glacier National Park, Montana, by J. E. Harrison and D. J. Lidke. 1998. Lat 48° to 49°, long 113° to 118°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 40 by 29 inches (in color).
- I-2606. MICHIGAN. Geologic map of the eastern Gogebic Iron Range, Gogebic County, Michigan, by J. S. Klasner, G. L. LaBerge and W. F. Cannon. 1998. Lat 46°22'30" to 46°30', long 89°37'30" to 90°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 56 by 34 inches (in color).
- I-2612. PUERTO RICO. Marine geologic map of the northeastern insular shelf of Puerto Rico; Luquillo area, by R. W. Rodriguez, W. C. Schwab, U.S. Geological Survey; Milton Carlo, University of Puerto Rico; and E. R. Thieler, Duke University. Prepared in cooperation with the Commonwealth of Puerto Rico, Department of Natural Resources. 1998. Lat 18°21'30" to 18°33', long 65°37'30" to 65°52'30". Scale 1:40,000 (1 inch = 3,330 feet). Sheet 38 by 50 inches (in color).
- I-2622. Maps showing distribution of erosional clasts on the Middle Jurassic J-2 unconformity in the western interior of the United States, by R. B. O'Sullivan and G. N. Pipiringos. 1998. Lat 36° to 48°, long 102° to 114°. Sheet 44 by 34 1/2 inches.
- I-2624. ARIZONA. Geologic map of the Bartlett Mountain Quadrangle, Pima and Santa Cruz counties, Arizona, by Harald Drewes. 1998. Lat 31°22'30" to 31°30', long 111°15' to 111°22'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 43 by 39 1/2 inches.
- I-2625. CONNECTICUT. Sidescan sonar image, surficial geologic interpretation, and bathymetry of the Long Island Sound sea floor in Niantic Bay and vicinity, Connecticut, by L. J. Poppe, U. S. Geological Survey; R. S. Lewis, Connecticut Department of Environmental Protection; J. F. Denny and K. F. Parolski, U. S. Geological Survey; M. L. DiGiacomo-Cohen, Connecticut Department of Environmental Protection; and D. S. Tolderlund, U. S. Coast Guard Academy. Prepared in cooperation with the State of Connecticut, Department of Environmental Protection, Geological and Natural History Survey. 1998. Two sheets. Lat 41°16'N to 41°19'N, long 72°7'W to 72°12'W. Sheet 1, scale 1:20,000 (1 inch = about 1,667 feet); sheet 2, scale 1:11,750 (1 inch = 952 feet). Sheet 1, 47 by 41 inches; sheet 2, 57 by 32 inches.
- I-2627. NEVADA. Bedrock geologic map of the Yucca Mountain area, Nye County, Nevada, by W. C. Day, U.S. Geological Survey; R. P. Dickerson, Pacific Western Technologies; C. J. Potter, D. S. Sweetkind, U.S. Geological Survey; C. A. San Juan, R. M. Drake, II, Pacific Western Technologies; and C. J. Fridrich, U.S. Geological Survey. Prepared in cooperation with the U. S. Department of Energy, Nevada Operations Office. 1998. Lat 36°46' to 36°55', long 116°23' to 116°30'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 38 by 35 inches (in color). (Accompanied by 21 page text.) <http://greenwood.cr.usgs.gov/maps/covers/i-2627/i2627.html>
- I-2629. NEVADA. Geologic map of the southern Independence Mountains, Elko County, Nevada, by K. B. Ketner. 1998. Lat 41° to 41°07'30", long 115°52'30" to 116°07'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 51 by 29 inches.
- I-2630. NEW MEXICO, TEXAS. Geologic map of the Cienega School Quadrangle, Otero County, New Mexico, and Hudspeth County, Texas, by J. M. O'Neill. 1998. Lat 32° to 32°07'30", long 105° to 105°07'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 42 1/2 by 28 inches (in color). <http://greenwood.cr.usgs.gov/maps/covers/i-2630/i2630.html>
- I-2631. NEW MEXICO. Geologic map of the Cornudas Mountains, Otero County, New Mexico, by J. M. O'Neill and C. J. Nutt. 1998. Lat 32° to 32°07'30", long 105°27'30" to 105°40'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 44 by 35 inches (in color). <http://greenwood.cr.usgs.gov/pub/i-maps/i-2631/i2631.html>
- I-2632. CONNECTICUT. Sidescan sonar image, surficial geologic interpretation, and bathymetry of the Long Island Sound sea floor off Milford, Connecticut, by D. C. Twichell, U. S. Geological Survey; R. N. Zajac, University of New Haven; L. J. Poppe, U. S. Geological Survey; R. S. Lewis, Connecticut Geological and Natural History Survey; V. A. Cross, D. R. Nichols, U.S. Geological Survey; and M. L. DiGiacomo-Cohen, Connecticut Geological and Natural History Survey. Prepared in cooperation with the State of Connecticut, Department of Environmental Protection, Geological and Natural History Survey; University of New Haven. 1998. Two sheets. Lat 41°02' to 41°06', long 73°02' to 73°06'. Scale 1:15,000 (1 inch = 1,250 feet). Sheet 1, 47 by 41 inches; sheet 2, 54 by 32 inches.



I-2640. CONNECTICUT, NEW YORK, RHODE ISLAND. Sidescan sonar image, surficial geologic interpretation, and bathymetry of the Fishers Island Sound sea floor, Connecticut, New York, and Rhode Island, by L. J. Poppe, U.S. Geological Survey; R. S. Lewis, Connecticut Department of Environmental Protection; J. F. Denny, K. F. Parolski, U.S. Geological Survey; and M. L. DiGiacomo-Cohen, Connecticut Department of Environmental Protection. Prepared in cooperation with the State of Connecticut Department of Environmental Protection, Geological and Natural History Survey. 1998. 2 sheets. Lat 41°17'N to 41°19'N, long 71°52'W to 72°W. Sheet 1, scale 1:15,000 (1 inch = 1,250 feet); sheet 2, scale 1:12,500 (1 inch = about 1,040 feet). Sheet 1, 56 by 40 inches; sheet 2, 43 by 41 inches.

I-2641. NEW MEXICO, COLORADO. Map showing inferred and mapped basement faults, San Juan Basin and vicinity, New Mexico and Colorado, by D. J. Taylor and A. C. Huffman, Jr. 1998. Lat 35° to 37°30', long 106°30' to 109°30'. Scale 1:500,000 (1 inch = about 8 miles). Sheet 35 by 29 inches (in color).

I-2649. NEBRASKA. Field investigations of suspected late Quaternary faults in central Nebraska; evidence of non-tectonic origins, by M. N. Machette, A. J. Crone, K. M. Haller, L. A. Bradley, W. J. Stephenson, R. A. Williams, J. K. Odum, U.S. Geological Survey; and V. L. Souders, University of Nebraska. 1998. Sheet 43 by 33 1/2 inches (in color).

CIRCUM-PACIFIC MAP SERIES

Multicolor equal-area maps at scales of 1:10,000,000 for the Northwest, Northeast, Southwest, Southeast quadrants of the Pacific and the Arctic and Antarctic regions, and of 1:17,000,000 for the whole Pacific Basin. The series consists of base, geographic, geodynamic, plate-tectonic, geologic, tectonic, mineral-resources, and energy-resources maps, as well as other miscellaneous maps.

CP-0047. Mineral-resources map of the Circum-Pacific region; Antarctic sheet. Compiled by George Gryc, U.S. Geological Survey. 1998. Lat 30° to 90°, long 0° to 0°. Scale 1:10,000,000 (1 inch = about 160 miles). Sheet 54 by 41 inches (in color). (Accompanied by 19 page text.)

Circum-Pacific Map Project, by George Gryce, U.S. Geological Survey. p. 1-4.

Land resources, by Michael P. Lee, U.S. Nuclear Regulatory Commission. p. 4-9.

Seafloor sediment, by F. W. McCoy, University of Hawaii. p. 9.

Ferromanganese nodules, by D. Z. Piper and T. R. Swint-Iki, U.S. Geological Survey. p. 9-11.

Ferromanganese crusts, by F. T. Manheim and C. M. Lane-Bostwick, U.S. Geological Survey. p. 11.

Polymetallic sulfides, by T. R. Swint-Iki, U.S. Geological Survey. p. 12.

Phosphorites and phosphatized rocks, by D. Z. Piper and T. R. Swint-Iki, U.S. Geological Survey. p. 12.

Heavy-mineral deposits, by Gretchen Luepke, U.S. Geological Survey. p. 12-13.

OIL AND GAS INVESTIGATIONS MAP

Maps show stratigraphic information for certain oil and gas fields and other areas having hydrocarbon potential.

OM-226. FLORIDA. Maps showing hydrocarbon plays of the Florida Peninsula, USGS petroleum province 50, by R. M. Pollastro and R. J. Viger. 1998. Lat 24° to 30°, long 80° to 85°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 55 by 40 inches (in color). (Accompanied by 7 page text.)

MISCELLANEOUS FIELD STUDIES MAPS

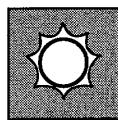
Multicolor or black and white maps on topographic or planimetric bases; quadrangle or irregular areas; various scales. Pre-1971 maps show bedrock geology in relation to specific mining or mineral-deposit problems; the majority of post-1971 maps are preliminary black and white maps on various subjects such as environmental studies or Wilderness mineral investigations.

MF-2219-C. ALASKA. Map showing the distribution of anomalous concentrations of mercury, antimony, and arsenic in stream sediment, heavy-mineral concentrate, and aquatic moss in the Iditarod Quadrangle, Alaska, by J. E. Gray, P. F. Folger and P. L. Hageman. 1997. Lat 62° to 63°, long 156° to 159°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 40 by 52 inches (in color).

MF-2219-D. ALASKA. Map showing the distribution of anomalous concentrations of gold and silver in stream sediment, heavy-mineral concentrate, and aquatic moss in the Iditarod Quadrangle, Alaska, by J. E. Gary, J. M. Motooka and R. M. O'Leary. 1997. Lat 62° to 63°, long 156° to 159°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 40 by 52 inches (in color).

SPECIAL GEOLOGIC MAP

NEW HAMPSHIRE. Bedrock geologic map of New Hampshire, by Lyons, J. B., Dartmouth College; Bothner, W. A., University of New Hampshire; Moench, R. H., U. S. Geological Survey; and Thompson, J. B., Jr., Harvard University. Prepared in cooperation with the U.S. Department of Energy; State of New Hampshire. 1997. Two sheets. Lat 43° to 45°, long 71° to 72°. Sheet 1, scale 1:250,000 (1 inch = about 4 miles); sheet 2, scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 41 by 55 inches; sheet 2, 41 by 57 inches (both in color). Supersedes Open-File Report 86-1.



OUTSIDE PUBLICATIONS

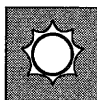
ARTICLES AND REPORTS

Articles by USGS personnel in non-USGS publications recently cited in the GeoRef data base of the American Geological Institute are listed below. Non-USGS personnel who share authorship in articles with USGS personnel are indicated by an asterisk (*) immediately following the name. **These publications are not available from the U.S. Geological Survey.**

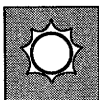
OP-1. R. H. Abrams*, Keith Loague* and D. B. Kent. Development and testing of a compartmentalized reaction network model for redox zones in contaminated aquifers. *Water Resources Research*. v. 34, no. 6, June 1998. p. 1531-1541.



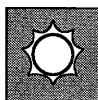
- OP-2. T. S. Ahlbrandt, D. L. Gautier and T. A. Bader*. Low-angle eolian deposits in coastal settings; significant Rocky Mountain exploration targets. *The Mountain Geologist*. v. 31, no. 4, October 1994. p. 95-114.
- OP-3. J. A. Al Tayyar* and R. S. Lewis. Gold reconnaissance in the Hulfayfah area, Kingdom of Saudi Arabia. Saudi Arabian Deputy Ministry for Mineral Resources, Open-File Report. Report no. USGS-OF-97-4, 1997. 29 p.
- OP-4. B. A. Alexander*, C. D. Michener* and A. L. Gardner. *Dasypodidae* Börner, 1919 (Insecta, Hymenoptera); proposed emendation of spelling to *Dasypodaidae*, so removing the homonymy with *Dasypodidae* Gray, 1821 (Mammalia, Xenarthra). *Bulletin of Zoological Nomenclature*. 55, Part 1, March 31, 1998. p. 24-28.
- OP-5. C. M. Allen*, J. L. Wooden and B. W. Chappell*. Late Paleozoic crustal history of central coastal Queensland interpreted from geochemistry of Mesozoic plutons; the effects of continental rifting. *Lithos*. v. 42, no. 1-2, December 1997. p. 67-88.
- OP-6. R. B. Alley*, P. J. Bartlein*, P. U. Clark*, S. W. Hostetler, A. C. Mix* and S. F. Singer*. Unknowns about climatic variability render treaty targets premature; discussion and reply. *Eos, Transactions, American Geophysical Union*. v. 79, no. 15, April 14, 1998. p. 188.
- OP-7. R. B. Alley*, A. J. Gow*, D. A. Meese*, J. J. Fitzpatrick, E. D. Waddington* and J. F. Bolzan*. Grain-scale processes, folding, and stratigraphic disturbance in the GISP2 ice core, in *Greenland Summit ice cores; Greenland Ice Sheet Project 2, Greenland Ice Core Project*. (Claus Hammer, prefacer and others). Washington, DC: American Geophysical Union, 1998. p. 26,819-26,830.
- OP-8. R. B. Alley*, C. A. Shuman*, D. A. Meese*, A. J. Gow*, K. C. Taylor*, K. M. Cuffey*, J. J. Fitzpatrick, P. M. Grootes*, G. A. Zielinski*, M. Ram*, G. Spinelli* and B. C. Elder*. Visual-stratigraphic dating of the GISP2 ice core; basis, reproducibility, and application, in *Greenland Summit ice cores; Greenland Ice Sheet Project 2, Greenland Ice Core Project*. (Claus Hammer, prefacer and others). Washington, DC: American Geophysical Union, 1998. p. 26,367-26,381.
- OP-9. J. E. Almendinger and J. H. Leete*. Regional and local hydrogeology of calcareous fens in the Minnesota River basin, USA. *Wetlands (Wilmington, NC)*. v. 18, no. 2, June 1998. p. 184-202.
- OP-10. J. C. Alt* and W. C. Shanks, III. Sulfur in serpentized oceanic peridotites; serpentization processes and microbial sulfate reduction. *Journal of Geophysical Research, B, Solid Earth and Planets*. v. 103, no. 5, May 10, 1998. p. 9917-9929.
- OP-11. J. C. Alt*, D. A. Teagle*, Tim Brewer*, W. C. Shanks, III and Alex Halliday*. Alteration and mineralization of an oceanic forearc and the ophiolite-ocean crust analogy. *Journal of Geophysical Research, B, Solid Earth and Planets*. v. 103, no. 6, June 10, 1998. p. 12,365-12,380.
- OP-12. An Zhisheng*, S. C. Porter*, Liu Tungsheng* and S. M. Colman. Proposed drilling program backed in China. *Eos, Transactions, American Geophysical Union*. v. 79, no. 12, March 24, 1998. p. 150.
- OP-13. Robert Anders and R. A. Schroeder. CALIFORNIA. Water-quality changes during recharge with recycled water at a research basin in the Montebello Forebay, Los Angeles County, California. *American Water Resources Association Technical Publication Series TPS, in Proceedings of the AWRA symposium on Conjunctive use of water resources; aquifer storage and recovery*. (D. R. Kendall, editor). 97-2, 1997. p. 285-296.
- OP-14. R. T. Anderson*, F. H. Chapelle and D. R. Lovley. Evidence against hydrogen-based microbial ecosystems in basalt aquifers. *Science*. v. 281, no. 5379, August 14, 1998. p. 976-977.
- OP-15. D. J. Andrews. Fault geometry and earthquake mechanics. *Annali di Geofisica, in Earthquake source mechanics*. (Maurizio Bonafede, editor and others). v. 37, no. 6, December 1994. p. 1341-1348.
- OP-16. P. L. Angermeier. Conceptual roles of biological integrity and diversity, in *Watershed restoration; principles and practices*. (J. E. Williams, editor and others). Bethesda, MD: American Fisheries Society, 1997. p. 49-65.
- OP-17. S. S. Anthony. Hydrogeology of selected islands of the Federated States of Micronesia. *Developments in Sedimentology, in Geology and hydrogeology of carbonate islands*. (H. L. Vacher, editor and others). 54, 1997. p. 693-706.
- OP-18. A. K. Armstrong, T. G. Theodore, B. B. Kotlyar, E. G. Lauha*, G. L. Griffin*, D. L. Lorge* and E. W. Abbott*. NEVADA. Preliminary facies analysis of Devonian autochthonous rocks that host gold along the Carlin Trend, Nevada. *Guidebook Series, in Carlin-type gold deposits field conference*. (Peter Vikre, editor and others). 28, 1997. p. 53-73.
- OP-19. Thora Arnadottir*, Freysteinn Sigmundsson* and P. T. Delaney. Sources of crustal deformation associated with the Krafla, Iceland, eruption of September 1984. *Geophysical Research Letters*. v. 25, no. 7, April 1, 1998. p. 1043-1046.
- OP-20. M. A. Arthur*, W. E. Dean and Kirsten Laarkamp*. Organic carbon accumulation and preservation in surface sediments on the Peru margin. *Chemical Geology*. v. 152, no. 3-4, November 16, 1998. p. 273-286.
- OP-21. J. C. Ashleman*, C. D. Taylor and P. R. Smith*. ALASKA. Porphyry molybdenum deposits of Alaska, with emphasis on the geology of the Quartz Hill Deposit, Southeastern Alaska. *Economic Geology Monographs, in Mineral deposits of Alaska*. (R. J. Goldfarb, editor and others). 9, 1997. p. 334-354.
- OP-22. G. M. Atkinson*, D. M. Boore, J. L. Boatwright and R. A. Haddon*. Earthquake source spectra in eastern North America; discussion and reply. *Bulletin of the Seismological Society of America*. v. 87, no. 6, December 1997. p. 1697-1708.
- OP-23. R. A. Ayuso, Benedetto de Vivo*, Giuseppe Rolandi*, R. R. Seal, II and Angelo Paone. Geochemical and isotopic (Nd-Pb-Sr-O) variations bearing on the genesis of volcanic rocks from Vesuvius, Italy. *Journal of Volcanology and Geothermal Research, in Vesuvius*. (F. J. Spera, editor and others). v. 82, no. 1-4, June 1998. p. 53-78.
- OP-24. L. J. Bachman and P. J. Phillips. Hydrologic landscapes on the Delmarva Peninsula; Part 2, Estimates of base-flow nitrogen load to Chesapeake Bay. *Water Resources Bulletin*. v. 32, no. 4, August 1996. p. 779-791.
- OP-25. William Back. T. C. Chamberlin, early American hydrogeologist. *Hydrogeology Journal*. v. 4, no. 3, 1996. p. 94-95.



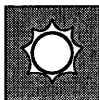
- OP-26. William Back and J. S. Herman*. American hydrogeology at the millennium; an annotated chronology of 100 most influential papers. *Hydrogeology Journal*. v. 5, no. 4, 1997. p. 37-50.
- OP-27. W. H. Bakun and A. G. Lindh. CALIFORNIA. The Parkfield, California prediction experiment. *Earthquake Prediction Research*. v. 3, no. 3-4, 1985. p. 285-304.
- OP-28. W. H. Bakun and C. M. Wentworth. Estimating earthquake location and magnitude from seismic intensity data. *Bulletin of the Seismological Society of America*. v. 87, no. 6, December 1997. p. 1502-1521.
- OP-29. R. F. Balazik. Industrial garnet. *Mining Engineering, in Industrial minerals 1997*. v. 50, no. 6, June 1998. p. 41-42.
- OP-30. L. B. Barber, II, G. K. Brown, K. R. Kennedy, J. A. Leenheer, T. I. Noyes, C. E. Rostad and K. A. Thorn. CALIFORNIA. Organic constituents that persist during aquifer storage and recovery of reclaimed water in Los Angeles County, California. *American Water Resources Association Technical Publication Series TPS, in Proceedings of the AWRA symposium on Conjunctive use of water resources; aquifer storage and recovery*. (D. R. Kendall, editor). 97-2, 1997. p. 261-272.
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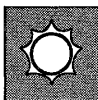
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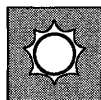
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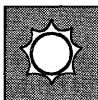
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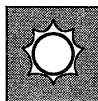
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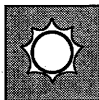
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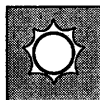
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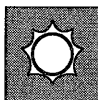
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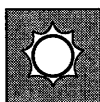
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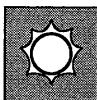
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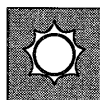
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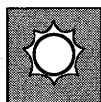
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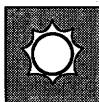
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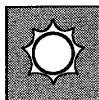
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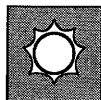
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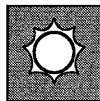
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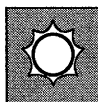
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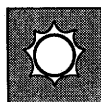
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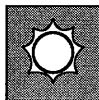
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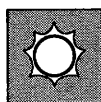
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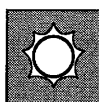
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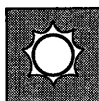
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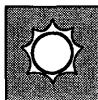
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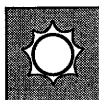
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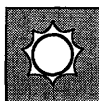
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ABSTRACTS

Abstracts are condensed but informative summaries of presentations made at meetings of scientific and professional organizations. Typically they summarize the principal conclusions of an author's current work but contain little supporting data. Non-USGS personnel who share authorship in abstracts with USGS personnel are indicated by an asterisk (*) immediately following the name. **These publications are not available from the U.S. Geological Survey.**

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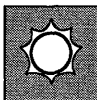
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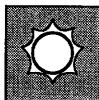
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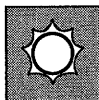
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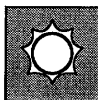
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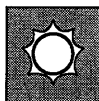
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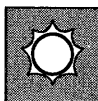
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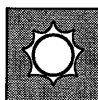
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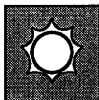
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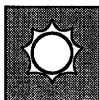
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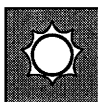
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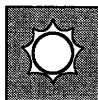
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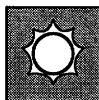
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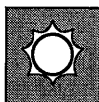
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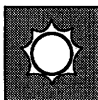
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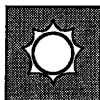
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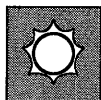
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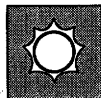


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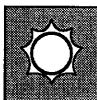


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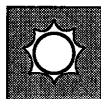
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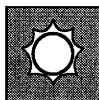
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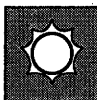
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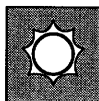
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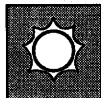
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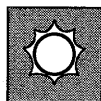
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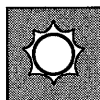
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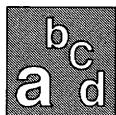


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ABBREVIATIONS USED

A-	Antarctic Geologic Map	MR-	Mineral Investigations Resources Map
B	Bulletin	MSB	Miscellaneous and Special Books
C	Circular	OC-	Oil and Gas Investigations Chart
C-	Coal Investigations Map	OM-	Oil and Gas Investigations Map
CAT	Catalog	OF	Open-File Report
CF	Coal Map	OP	Outside Publication
CP-	Circum-Pacific Map Series	P	Professional Paper
DDS-	Digital Data Series	PB-,ADA	Report available only through the National Technical Information Service
EV	Earthquakes and Volcanoes	PDE	Preliminary Determination of Epicenters
FS	Fact Sheet	SGM	Special Geologic Map
GN	General Interest Publication	SGMI	Geologic Map Index
GP-	Geophysical Investigations Map	SM	Special Map
GQ-	Geologic Quadrangle Map	STM	State Geologic Map
HA-	Hydrologic Investigations Atlas	TWI	Techniques of Water-Resources Investigations
HUM	Hydrologic Unit Map	W	Water-Supply Paper
I-	Miscellaneous or Geologic Investigations Series Map	WRI	Water-Resources Investigations Report
L-	Land Use and Land Cover Map	YR	Yearbook
MF-	Miscellaneous Field Studies Map		

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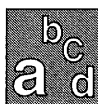
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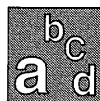
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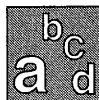
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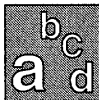
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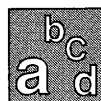
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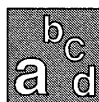
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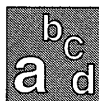
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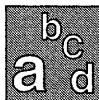
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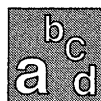
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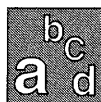
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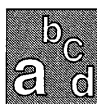
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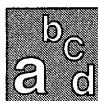
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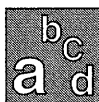
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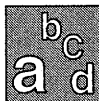
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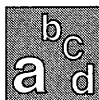
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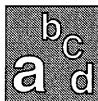
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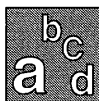
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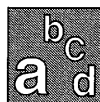
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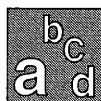
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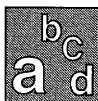
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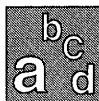
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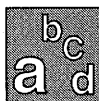
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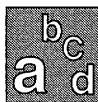
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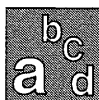
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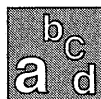
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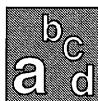
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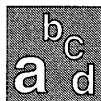
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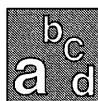
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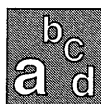
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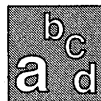
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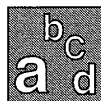
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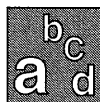
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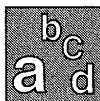
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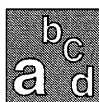
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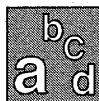
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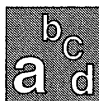
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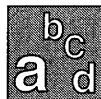
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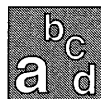
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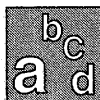
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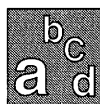
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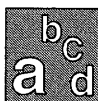
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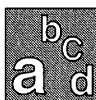
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